Opposites attract: organisational culture and supply chain performance

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Abstract
Purpose – The aim of this paper is to expand the knowledge of buyer-supplier relationships by investigating the extent to which organisational cultural fit between a buyer and supply chain participants influences performance.

Design/methodology/approach – The study was conducted in a FMCG supply chain. A cultural dimensions questionnaire was used in a focal organisation (the buyer) and it identified best and poorest performing supply chain. The results were analysed using a series of ANOVA’s within the respective supply chains. The findings were then triangulated via qualitative methods.

Findings – The findings demonstrate that complementarity rather than congruence between the supply chain partners achieved successful performance outcomes. Organisations in the high-performing supply chain had significantly different cultural profiles, reporting significant statistical differences across all six cultural dimensions. Organisations in the low-performing supply chain had almost identical profiles across all six cultural dimensions with significantly lower mean scores across each dimension.

Research limitations/implications – The deconstruction of organisational culture into its constituent dimensions in a supply chain provides insights for academics. Propositions are presented which provide a platform for further studies. Future studies could develop these findings by using a larger sample, over a longer period of time, and adding mediating variables that impact supply chain outcomes.

Practical implications – Managers should pay attention to cultural evaluation within the supplier selection process as well as finance or strategic evaluations. A shared supply chain culture of norm-based trust and openness may yield better outcomes and reduced conflict and uncertainty throughout the supply chain.

Originality/value – This is one of the first papers to deconstruct and measure organisational cultural fit empirically in a supply chain context.

Keywords Supply chain, Organizational culture, Supply chain performance, Buyer-supplier relationships, Supply chain management

Paper type Research paper

1. Introduction

There are many studies over the years investigating the impact of organisational culture on firm performance (Denison and Mishra, 1995; Flamholtz and Kannan-Narasimhan, 2005; Marcoulides and Heck, 1993; Petty et al., 1995; Yilmaz et al., 2005). The result is a widely accepted view that organisational culture has a significant impact on both business and operational firm performance. “Cultural fit” (also known as cultural compatibility) entered the literature in the early 1990s with a study by Cartwright and Cooper (1993). It stayed largely in social science research in relation to mergers and acquisitions or joint ventures (Cartwright and Cooper, 1993; Deshpandé and Farley, 2013; Sirmon and Lane, 2013; Teerikangas and Very, 2006; Weber and Camerer, 2003; Weber et al., 1996). Lately, the significance of inter-organisational cultural fit on supply chain performance is recognised in the supply chain management literature (Whitfield and Landeros, 2006), but few empirical studies focus on the influence of inter-organisational cultural fit on supply chain performance (Winklohefer et al., 2006). Yet, firms are increasingly forming strategic relationships throughout the supply chain to achieve success (Chen and Paulraj, 2013; Dyer, 2000; Krause et al., 1998; Phillips et al., 2006) with inter-organisational cultural fit recognised as an essential ingredient within these relationships to achieve success (Fawcett et al., 2008; Lau and Goh, 2005; McHugh et al., 2003). Many papers discussing supply chain performance make fleeting or inferential references to the significance of cultural fit in achieving increased and sustained performance.
but most do not focus specifically on or develop the concept (Barringer and Harrison, 2000; Cousins et al., 2006; Lamming et al., 2013; Prahinski and Benton, 2013).

This study is embedded within the relational view, whereby supply chain participants join together in long-term relationships and combine resources (assets, knowledge and capabilities) to deliver competitive advantage. Supply chain partnerships that exhibit compatible behaviours of knowledge sharing, high levels of trust, and joint coordination report supernormal profits for all parties that could not be achieved in isolation (Dyer and Singh, 1998; Zacharia et al., 2011). The relational view compliments the current study as certain behaviours: an outcome focus; open exchange of ideas and information; and goodwill are synonymous with supply chain cultures that report significant positive performance outcomes.

This paper seeks to expand the knowledge in this area of supply chain management by investigating the extent to which organisational cultural fit between supply chain participants (a buyer and its strategic suppliers) positively influences supply chain performance. Another key contribution is insights are gained using mixed methodologies: the survey method alone is limited in conducting supply chain management research (Larson and Halldorsson, 2002; Tangpong et al., 2010). Further, most supply chain relationship studies tend to focus on the buyer side only, the buyers' perception of the supplier, or are purely theoretical or quantitative (Cousins et al., 2006; Mello and Stank, 2005), while this study goes beyond the dyad and uses mixed methods.

The central research question in this study is: “What cultural dimensions between a buyer and its supply chain partners are compatible in support high and poor performance outcomes?”

The key objectives of this study are:
1. to measure the organisational culture of supply chain participants (a buyer and supplier organisations (tier one and two) within a best performing supply chain and an underperforming supply chain;
2. to investigate how differing organisational cultural dimensions between supply chain members influence the performance of the supply chain;
3. to provide a tentative organisational cultural fit model to support high performance outcomes in supply chain relationships; and
4. to develop a set of propositions for large-scale testing.

The paper is presented as follows: first, the literature is reviewed relating to the variables of interest, followed by a detailed research methodology section. Thereafter the results and analysis section is presented. Further a discussion of the findings is summarised and finally further research directions, research implications and limitations are posed.

2. Literature review

2.1 Supply chain relationships

With shorter product life cycles, increased global competition and dynamic environments, many firms are engaging in supply rationalisation (Cousins et al., 2008; McIvor and McHugh, 2000; Prahinski and Benton, 2013). The key objective of this rationalisation programme is to increase competitiveness by reducing the cost base and more effectively managing relationships with fewer, critical suppliers (Fawcett et al., 2008; Cousins, 2002; Tan et al., 2002).

Although the automotive and aerospace industries have long led the way with early supplier involvement and rationalisation initiatives (Cousins and Crone, 2003; Wiengarten et al., 2010), the concept has now permeated across a range of industries and sectors (Cadden et al., 2010; Lamming et al., 2013); while purchasing costs in manufacturing companies are reported to be in excess of 55 per cent (Tully, 1995; Degraeve and Roodhooft, 2001) service companies are reporting up to 35 per cent of cost of sales as direct purchasing costs (Degraeve and Roodhooft, 2001). Such findings have resulted in increased attention on supply chain relationships across sectors to enhance performance outcomes. Supply base rationalisation has led to firms categorising critical suppliers as “strategic” or collaborative (Matopoulos et al., 2007) and moving away from the traditional arm’s-length or adversarial relationships (Sako, 1992; McIvor and McHugh, 2000). To become a strategic supply chain partner, buying firms require suppliers to exhibit a number of key characteristics and capabilities in addition to the standard cost, service and quality measures; for example, during supplier selection stage, Nortel (a large multinational telecommunications firm) measures potential strategic supply chain partners against a range of additional criteria including innovation, strategic fit, customer and industry knowledge, systems development, and, significantly, cultural fit (Cadden et al., 2010).

Many benefits of strategic supply chain relationships have been reported such as increased market share, improved time to market, reduced supply chain lead times and increased profit for supply chain participants (Cousins et al., 2008; Shin et al., 2000). However, in order for these benefits to be maximised, understanding the culture of each supply chain partner organisation is deemed critical (Fawcett et al., 2008; Shub and Stonebraker, 2009), with the ability to align the respective cultures of each supply chain participant recognised as an essential ingredient in delivering the desired performance outcomes (Barringer and Harrison, 2000; McIvor and McHugh, 2000).

2.2 Cultural fit and performance in supply chain relationships

Despite many differing definitions of culture in the literature, there is a general agreement among researchers that culture relates to patterns of values and beliefs that are manifested in organisational members (Hofstede, 1980; Trice and Beyer, 1993; Pothukuchi et al., 2002). Organisational cultural fit is reported as being best measured at the practices level with national culture measured at the values level (Hofstede et al., 1990; Naor et al., 2010; Shankarnahesh et al., 2003).

Cultural fit is a standard term in the literature (Cartwright and Cooper, 1993; Douma et al., 2000; Sirmon and Lane, 2013; Weber et al., 1996) although it appears in many guises in different disciplines including cultural compatibility (Veiga et al., 2000; Weber and Camerer, 2003) and acculturation (Larsson and Lubatkin, 2001). The majority of previous studies have tended to focus the investigation of cultural fit in differing contexts, such as individual corporations or national cultures (Hofstede, 1980; Kale and Barnes, 1992; Parkes et al., 2001; Veiga et al., 2000), and mainly focus on joint ventures or mergers and acquisitions (Hagedoorn and
Although the importance of organisational cultural fit in supply chain relationships has been reported in the literature as significant (Barringer and Harrison, 2000; Cousins et al., 2006; Fawcett et al., 2008; Lamming et al., 2013, Lau and Goh, 2005) research has been inferential or conceptual. Barringer and Harrison (2000) focused on a theoretical overview of many types of inter-organisational relationships and reported, in general, that all inter-organisational relationships are difficult to manage due to the absence of aligned corporate cultures. Further, they suggested that the inability to align cultures results in relationship failure. Meanwhile Fawcett et al. (2008), who reported on benefits and barriers to effective supply chain management made passing remarks that misalignment of cultures in a supply chain context is a key barrier to success.

From an inter-organisational viewpoint, cultural fit is generally referred to as the compatibility of two integrating firms’ cultures (Cartwright and Cooper, 1993). With evidence suggesting that culture incongruence between two integrating firms results in lower productivity, lower financial performance outcomes, lower relationship satisfaction, and higher levels of conflict (Cartwright and Cooper, 1993; Pothukuchi et al., 2002; Weber and Camerer, 2003).

The reported significance of compatible values, beliefs and behaviours (cultural fit) on performance in a supply chain setting is becoming more widespread (McAfee et al., 2002; Mello and Stank, 2005). Bates et al. (1995) reported a significant relationship between organisational culture and manufacturing strategy, while Mello and Stank (2005) develop a useful theoretical framework and report that cultural incongruence have differing influences on supply chain performance outcomes. Further, the authors call for further research, especially empirical research, in this area. McAfee et al. (2002) investigate the role of organisational cultural fit in a supply chain setting. Although the focus of the theoretical study was integrated with developing human resource policies, the study highlighted the influence of cultural fit between supply chain partners in achieving and sustaining successful relationship outcomes.

Therefore, while many authors continually refer to the importance of cultural fit in supply chain relationships few empirical studies are present in the literature. Deshpandé and Farley (2013) are an exception and investigated the influence of organisational cultural fit on supply chain performance outcomes. Albeit, the study is positioned within a marketing/innovativeness context and relies on the buyers’ perception of their suppliers’ culture in the completed single respondent questionnaire, the study is a global study and highlights the significant relationship between organisational culture variables and supply chain performance outcomes. An additional paper by Cousins et al. (2006) refers to the importance of compatible values, behaviours and attitudes between supply chain participants in achieving high performance outcomes.

2.3 Research propositions

The literature reinforces the authors’ central proposition that inter-organisational cultural fit within supply chain relationships can be hugely beneficial for all partners in achieving and sustaining performance outcomes. As Cartwright and Cooper (1993, p. 60) report “The degree of cultural fit that exists between the combining organizations is likely to be directly correlated to the success of the combination”, for example, a supplier who is rigid and bureaucratic with many rules and procedures (process-driven) may struggle to adapt to sudden changes in demand patterns, and this inflexibility could negatively impact responsiveness to customer demand (results-driven).

Therefore, the propositions under study are (see Figure 1):

- **P1.** Compatibility of cultural dimensions between buyers and supply chain partners will lead to a high performing supply chain.
- **P2.** Incompatibility of cultural dimensions between buyers and supply chain partners will lead to a low performing supply chain.

3. Methodology

This study utilises two complementary research methods; survey and case, within a best performing supply chain and an underperforming supply chain of Bakerco (within the UK Fast Moving Consumer Goods (FMCG) sector). The unit of analysis for this study is the organisation.

To date much research involving supply chain relationships focuses on one side of the relationship, i.e. buyers’ or suppliers’ perception of the relationship (Cousins et al., 2008) and tends to use a positivist (survey) approach alone, with only one respondent, usually the buyer firm’s purchasing manager, from a range of organisations (Cousins et al., 2006). These authors call for further research including phenomenological methodologies and supply chain studies to enrich the findings (Ambroze et al., 2010; O’Toole and Donaldson, 2002). As cultural fit is clearly a cause of concern for organisations involved in supply chain relationships (McHugh et al., 2003; Phillips et al., 2006), this study attempts to shed additional insight into inter-organisational relationships by gathering data from beyond the dyad (survey and case) from within a buyer organisation and its key supply chain partners (tier one and tier two strategic suppliers) in a best performing and an underperforming supply chain.

3.1 Case selection

This study investigates supply chain relationships within a FMCG supply chain (Bread and Bakery) in the UK, as it is proposed to be one of the most likely sectors to display the phenomenon of interest. The Bread and Bakery section under study is the second largest in the food sector with sales of over £3 billion annually (Keynotes, 2010). This sector has a long association with supply chain management practices (Webster et al., 2006) and has encountered many challenges over the years. The market is mature and saturated and investment in new product development and marketing are required to sustain market share. Similarly, all participants within the supply chain have dealt with increasing prices (energy and raw materials) since the middle of the decade (Keynotes, 2010). Indeed consumption of Bread and Bakery products fell by 6 per cent between 2005/2006 and 2008 (Keynotes, 2010).

Previous studies of the FMCG sector have shown interesting supply chain practice insights (Menachof et al., 2009; Jharkharia and Shankar, 2006; Webster et al., 2006). For example, Webster et al. (2006) found that the positioning of the buyer in the supply chain, where the buyer is under severe pressure from large powerful retailers to deliver high quality goods at a low cost in the backdrop of volatile demand.
and price changes, has resulted in an adversarial supply chain culture upstream where urgent change management is required. Tummala et al. (2006) report that the single most important prerequisite for achieving this change to enhance supply chain performance is to align corporate cultures between supply chain partners.

3.2 The buyer organisation
The buyer organisation is based in the UK. The organisation has around 300 members of staff and produces a range of perishable products for large retailers such as Tesco, Asda, and Marks and Spencer. The organisation’s products are recognised in the industry as leading brands. The buyer organisation invests heavily in new product development to maintain its position as one of the UK’s major suppliers to its customers. Throughout this study, to allow for anonymity, the organisation will be known as Bakerco. It has been operating in the UK for over 50 years. It is a heavily unionised environment resulting in difficulties changing work practices and terms and conditions over the past ten to 15 years. The average number of year’s service is 20+ for junior staff, whereas it is around five years for senior staff. Labour turnover is under 2 per cent and absenteeism is 4 per cent per annum.

Departments are broken down into production, engineering, distribution, purchasing, finance, HR, marketing, and sales. Senior management includes: managing director, and heads of production, engineering, distribution, sales, marketing and HR. Estimated numbers of management are 20, engineering employees 15, distribution 40, marketing, HR, finance, and purchasing all have under five employees, and production has approximately 200 employees (this includes three shifts).

Albeit the organisation has been largely profitable over the years, the current economic pressures have resulted in an erosion of profitability. With the retirement of many of the senior management in recent times and a young vibrant management team now in place, there is a great appetite and opportunity for organisational change and business improvement to ensure long-term sustainability and competitive advantage. The management team recognise cultural assessment and cultural alignment within their supply chain as a first and fundamental step in this change process.

3.3 Supplier selection
On request, the buyer organisation gave details of its best performing supply chain and an underperforming supply chain. The buyer based its selection on internal supply chain metrics (see Table I) which are common to those used in many supply chain studies, as they relate broadly to cost, service and quality measures (Shin et al., 2000; Cousins et al., 2008). Each supplier involved in the study (both in the best and underperforming supply chain) were of equal importance to the buyer and represented a strategic or critical supplier (Kraljic, 1983).

The buyer negotiated initial access to both tier one and tier two suppliers within the best performing and underperforming supply chain. The supplier organisations are all UK based and are in close proximity to the buyer organisation.

3.4 Best performing supply chain

Tier one supplier: Labelco
Labelco is in operation over 45 years with 92 employees in total. It has been working with Bakerco for 15 years and the work with Bakerco represents 30 per cent of their business. This supplier manufactures labels for Bakerco. This supplier prides itself on innovation and service and suggests that such ethos and values results in long-term relationships and repeat business with its key customers.

Tier two supplier: Inkco
Inkco is also over 40 years old and is also relatively small in size having only 42 employees in total. It has been working with Labelco for 20 years and the work with Labelco represents 45 per cent of their business. This supplier manufactures ink to Labelco. This supplier has won European awards for its manufacturing processes and regards innovation and flexibility as its core values, which the supplier believes permeate its entire organisation. This supplier’s managers state that partnerships are the vehicle to business success.

3.5 Underperforming supply chain

Tier one supplier: Bagco
Bagco is over 100 years old. This supplier has 112 employees in total. It has been working with Bakerco for five years and the work with Bakerco represents 30 per cent of their business. This supplier manufactures plastic bags for Bakerco. Bagco prides itself in its customer service, time to market, innovation and quality.

Tier two supplier: Chemco
Chemco is over 18 years old. This supplier has 101 employees in total. It has been working with Bakerco for five years and the work with Bakerco represents 40 per cent of their business. This supplier supplies chemical agents to Inkco.

3.6 Mixed methods
To cope with the increasing frequency and scale of changes in technology and managerial methods, management researchers are frequently calling for a combination of statistical and qualitative research (Lewis, 1998). A widely accepted and useful approach is research based on preliminary statistical analysis to provide a platform for further analysis using the in-depth case method (Drejer et al., 1998; Pannerselvan et al; Tangpong et al., 2010).
Hofstede's (1980) organisational practices tool, was deemed appropriate for measuring the organisational culture of the supply chain partners in this study.

Hofstede et al. (1990) found that organisations from the same nation differ mainly in organisational practices. Hofstede et al.'s (1990) tool is a recognised tool for measuring cultural fit between integrating organisations (Pothukuchi et al., 2002), however, the revised version by Verbeke (2000) was deemed more appropriate as Hofstede's tool has validation issues (Singh et al., 1996; cited by Verbeke, 2000). The revised organisational practices tool provides a robust validated measurement tool with updated relevant dimensions suitable for this study, i.e. market versus internal dichotomy (essentially supply chain related). Verbeke (2000) suggests that this updated tool is beneficial in research with production-related and supply chain organisations. All scale dimensions were above the 0.7 α suggested by Nunally (1978) thereby supporting reliability.

The cultural instrument used is a 35 item, five-point Likert scale. The 35 items are broken down into six independent dimensions to assess organisational culture at a manifested practices level these are: results versus process; employee versus job; open versus closed; loose versus tight; normative versus pragmatic; and market versus internal.

When organisations differ in their organisational practices, previous studies reported conflict, misunderstanding, and interaction problems leading to late delivery of orders, poor response to unexpected demand changes, and increased product cost (Pothukuchi et al., 2002). For example, the employee versus job orientation measures the extent to which employees are supported in their work, through personal and work pressures or events. In other words, is it about getting the job done, or a concern for the person? Differences in this dimension within supply chain relationships may result in conflicting communication methods and organisational commitment issues, negatively impacting relationship performance. Verbeke (2000) suggests that a high mean score on each dimension is the optimum cultural profile as this reflects an organisation that is results-driven, employee-focused, externally-oriented and where communication is encouraged (see Table I).

Prior to issue of the relevant cultural questionnaires to all staff within the participating supply chain organisations (buyer and each tier 1 and tier 2 supplier organisation: five in total, see Table II), a panel of six academics, and ten practitioners from the same industry evaluated each questionnaire to support content validity. Some minor adjustments to wording and scaling were made.

Management from each participating supply chain organisation briefed employees as part of the monthly team brief on the supply chain culture study. The researchers attended these briefs and were able to distribute questionnaires face to face in hard copy format to employees who did not have access to e-mail. The remaining questionnaires were issued via the respective human resources manager via e-mail, or to line managers for staff who were not available on the day of issue. A number of sealed confidential boxes were located throughout the participating organisation for returns. Some of the e-mail questionnaires were also returned in this way to allow anonymity of staff, whereas some staff were happy to forward via e-mail. All responses were treated anonymously.

The results were analysed using a series of ANOVA’s between the respective supply chain partners in both the “best” and “under” performing supply chain, a technique

### Table I Organisational culture scale definition

<table>
<thead>
<tr>
<th>Scale Name</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Process score (/25)</td>
<td>A high process score indicates an organisation that is highly rule driven, very procedural where staff will not alter from their defined roles. A low process score indicates an organisation that is focused on results and will deviate from set roles and responsibilities to ensure the job gets done.</td>
</tr>
<tr>
<td>Employee Score (/40)</td>
<td>A high employee score indicates the organisation cares about the individual and their personal development and growth. A high level of absorptive capacity is evident. A low employee score reflects an organisation that is very much concerned about delivering on the job with no care about employee development.</td>
</tr>
<tr>
<td>Open score (/20)</td>
<td>A high open score indicates an organisation that openly espouses constructive criticism. A low open score would suggest the organisation has a very defensive culture whereby a blame culture exists.</td>
</tr>
<tr>
<td>Tight score (/35)</td>
<td>A high tight score indicates an organisation who thrives on controlling its employees and how they behave. A low tight score reflects a loosely controlled organisation whereby flexibility and autonomy are more prevalent in achieving the set objectives.</td>
</tr>
<tr>
<td>Norm score (/25)</td>
<td>A high norm score indicates a pragmatic organisation which focuses on achievement. A low score on the norm scale indicates an organisation more focused on following standards.</td>
</tr>
<tr>
<td>Market score (/30)</td>
<td>A high market score is reflective of an organisation that is supply chain oriented and concerned externally about its operating environment. A low market score indicates an organisation that is internally focused with little or no concern for its supply chain or operating environment.</td>
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</table>

Given the complex nature of culture, and the nature of this study whereby the authors wish to uncover areas for further research and theory development and testing, an exploratory case study approach prefixed by preliminary statistical research and theory development and testing, an exploratory study whereby the authors wish to uncover areas for further analysis was deemed most appropriate (Eisenhardt, 1989). As external validity is well recognised within quantitative techniques, reliability is sometimes questioned (Eisenhardt, 1989; Platts and Song, 2010). Triangulation of data using mixed methodologies will prove useful in ensuring reliability and validity of the findings.

3.7 Survey

The survey approach aids in providing an understanding of the relationship between varying cultural dimensions within the FMCG supply chain. A pre-validated questionnaire devised by Verbeke (2000), which is an updated version of Hofstede et al.'s (1990) organisational practices tool, was deemed appropriate for measuring the organisational culture of the supply chain partners in this study.


adopted in previous supply chain alignment and integration studies (Quesada et al., 2008).

3.8 Case studies

Post statistical analysis, qualitative research was conducted in the form of multiple case study research. To ensure adequate reliability and validity within the case method, the following was adhered to: a case study protocol was adopted to ensure reliability; multiple chains of evidence, such as in-depth semi-structured interviews, company tours, documentation analysis and informal conversations with staff aided construct validity; whereas replication logic in conducting the case research aided external validity (Voss et al., 2002; Yin, 2003). These methods in triangulation with the survey results provided enrichment and validation in a natural setting where a full understanding is unknown (Yin, 2003).

The buyer and respective participating supply chain participants in both the “best” and “under” performing supply chain identified a list of personnel within their organisation with supply chain responsibilities. A random selection of two personnel at strategic and two at operational level from each participating organisation was selected (24 in total). A series of one-hour semi-structured interviews with each supply chain member from the best performing and the underperforming supply chain followed.

In addition, the research team were invited to an open tour in each of the participating organisations by the respective management teams. These open tours allowed the research team to break away from the standard tour to speak informally with staff from a range of functions and levels. This was extremely useful in gathering direct observations, both through the anecdotal conversations with a range of staff levels, and through the physical artefacts/display boards, etcetera on show. The direct observations and informal contact with staff aided in clarification and verification of survey responses and support construct validity (Boyner and McDermott, 1999). Such methods are deemed essential in triangulating research (Yin, 1994).

The interviews explored the findings of the preliminary data analysis along with supply chain and performance questions to assess the central research proposition that inter-organisational cultural fit influences supply chain performance. This process augmented the statistical findings along with evidence gathered from various other qualitative sources, such as documentation analysis, meeting attendance, and company tours.

3.9 Supply chain performance

A number of studies have highlighted that firms have been unable to maximise the potential of their supply chain performance primarily due to their inability to integrate the needs of the respective partners (Gunasekaran et al., 2013; Lambert and Pohlen, 2001). It is recognised that supply chain performance is difficult to define (Flynn et al., 1994), largely, because any such measures must be understood by each of the supply chain participants (Gunasekaran et al., 2013).

A variety of supply chain performance measures have been recommended. These measures include operational measures such as operating cost, inventory costs, flexibility (Ahmad and Schroeder, 2003; Beamon, 1999; Gunasekaran et al., 2001), delivery performance (Ahmad and Schroeder, 2003; Beamon, 1999; Gunasekaran et al., 2001; Gunasekaran et al., 2013). And financial measures, such as profitability, return of assets (ROA), and cash to cash cycle (Wisner, 2003; Gunasekaran et al., 2001).

Supply chain performance measures were measured through accessing the buyers supply chain metrics, encompassing both operational and financial measures (see Table III). In-depth semi-structured interviews with both key buyer and supplier personnel with supply chain relationship responsibilities were used to correlate the results of the organisational culture instrument with the buyer’s supply chain metrics for both the best performing and underperforming supply chain.

4. Results

This section examines the findings from, first, the survey and second, the interviews and observations of the case companies.

4.1 Survey results

A total of 322 respondents participated in the research. A high response rate from each participating organisation was attained (ranging from 49-64 per cent within the respective partner in the best performing supply chain, and 32-59 per cent in the underperforming supply chain) (see Table I). The results which follow are based on these responses. The sample was divided into two subgroups (best supply chain and underperforming supply chain). Subgroup 1 (known from
here as “Best”) had 253 respondents (buyer respondents represented 71 per cent of the sample due to being a larger organisation whereas suppliers represented 29 per cent of the sample). Subgroup 2 (known from here as “Under”) had 250 respondents (the same buyer respondents as mentioned previously; representing 72 per cent of the sample, with the remaining 28 per cent representing tier one and tier two supplier).

The mean total scale scores for the six organisational culture dimensions are reported in Table IV. In the study, all six dimensions from the best performing supply chain resulted in significant differences between the buyer and its supply chain (either tier one or tier two or both). Across each dimension in the best performing supply chain, the buyer had the lowest mean score. Tier one supplier (Labelco) had the highest mean score across four dimensions (Employee, Open, Loose and Market) whereas Tier two supplier (Inkco) had the highest mean score across the remaining two dimensions (Results and Norm). The results interestingly revealed no significant differences between tier one and tier two suppliers. In the study, all six dimensions from the best performing supply chain resulted in significant differences between Bakerco and its supply chain (either Labelco or Inkco or both). In all cultural dimensions, in the best performing supply chain, Bakerco had the lowest mean score. This is shown in the radar plot in Figure 2.

No significant differences were found in the underperforming supply chain. Across all the cultural dimensions Bagco and Chemco’s average mean scores were significantly lower than the best performing supply chain. This is shown in Figure 3.

### Table IV Mean total scale scores and per cent for cultural dimensions

<table>
<thead>
<tr>
<th>Organisational culture dimension</th>
<th>Bakerco</th>
<th>Labelco</th>
<th>Inkco</th>
<th>Bakerco</th>
<th>Bagco</th>
<th>Chemco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Results score (/25)</td>
<td>10.37</td>
<td>12.29</td>
<td>14.43</td>
<td>10.37</td>
<td>9.33</td>
<td>10.43</td>
</tr>
<tr>
<td>Employee score (/40)</td>
<td>25.87</td>
<td>35.25</td>
<td>27.14</td>
<td>25.87</td>
<td>20.27</td>
<td>23.25</td>
</tr>
<tr>
<td>Open score (/20)</td>
<td>12.57</td>
<td>17.13</td>
<td>15.53</td>
<td>12.57</td>
<td>10.60</td>
<td>10.31</td>
</tr>
<tr>
<td>Loose score (/35)</td>
<td>10.29</td>
<td>15.8</td>
<td>15.37</td>
<td>10.29</td>
<td>11.36</td>
<td>11.86</td>
</tr>
<tr>
<td>Norm score (/25)</td>
<td>15.24</td>
<td>16.61</td>
<td>18.71</td>
<td>15.24</td>
<td>16.20</td>
<td>16.91</td>
</tr>
<tr>
<td>Market score (/30)</td>
<td>23.10</td>
<td>26.00</td>
<td>25.14</td>
<td>23.10</td>
<td>21.20</td>
<td>20.03</td>
</tr>
<tr>
<td>(%) Results</td>
<td>41.48</td>
<td>57.72</td>
<td>41.48</td>
<td>41.48</td>
<td>37.32</td>
<td>41.72</td>
</tr>
<tr>
<td>Employee</td>
<td>64.68</td>
<td>67.85</td>
<td>64.68</td>
<td>64.68</td>
<td>50.68</td>
<td>58.13</td>
</tr>
<tr>
<td>Open</td>
<td>62.85</td>
<td>57.85</td>
<td>62.85</td>
<td>62.85</td>
<td>53.00</td>
<td>51.55</td>
</tr>
<tr>
<td>Loose</td>
<td>29.4</td>
<td>43.91</td>
<td>29.4</td>
<td>29.4</td>
<td>32.46</td>
<td>33.88</td>
</tr>
<tr>
<td>Norm</td>
<td>60.96</td>
<td>74.84</td>
<td>60.96</td>
<td>60.96</td>
<td>64.80</td>
<td>67.64</td>
</tr>
<tr>
<td>Market</td>
<td>77.00</td>
<td>83.80</td>
<td>77.00</td>
<td>77.00</td>
<td>70.67</td>
<td>66.77</td>
</tr>
</tbody>
</table>

Note: Italic items highlight areas of significance.

---

**Opposites attract: organisational culture and supply chain performance**

*Trevor Cadden, Donna Marshall and Guangming Cao*

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Brown-Forsythe statistic, calculated when equal variances are not assumed i.e. when the Levene’s statistic is significant. Post-hoc tests were then conducted to gain more insight. The Tamhane’s post-hoc test was chosen as this test can be used when equal variances are not assumed.

The following was revealed:

* Results cultural dimension produced a significant main effect, $F(3, 49.85) = 7.21, p < 0.01$. Post hoc tests showed that the mean scores for the buyer, Bakerco, and tier two supplier, Inkco, were significantly different ($p < 0.01$).
* Employee cultural dimension produced a significant main effect, $F(3, 20.49) = 30.63, p < 0.01$. Post hoc tests showed the employee scores for Bakerco are significantly different to those reported for tier one supplier Labelco ($p < 0.01$).
* Open cultural dimension produced a significant main effect, $F(3, 22.40) = 22.52, p < 0.01$. Post hoc tests showed that the mean open scores for Bakerco are significantly different to Labelco ($p < 0.01$).
* Loose cultural dimension produced a significant main effect, $F(3, 53.28) = 45.61, p < 0.01$. Post hoc tests showed that the mean loose scores for Bakerco are significantly different to scores reported for both Labelco and Inkco ($p < 0.01$).
* Norm cultural dimension produced a significant main effect, $F(3, 35.94) = 4.12, p < 0.01$. Post hoc tests showed that the mean norm scores for Bakerco are significantly different to scores reported for Inkco ($p < 0.01$). The results also revealed no significant differences in norm scores between the two suppliers ($p > 0.05$).
• Market cultural dimension produced a significant main effect, $F(3, 39.04) = 9.90, p < 0.01$. Post hoc tests showed the market scores for Bakerco are significantly different to those reported for Labelco ($p < 0.01$).

The findings indicate that organisations in the high-performing supply chain have significantly different cultural profiles, having significant differences across all six cultural dimensions. Organisations in the low-performing supply chain have almost identical profiles across all six cultural dimensions with significantly lower mean scores across each dimension. This is in contrast to much of the current literature espousing cultural congruence as an enabler to high performance (Pressey et al., 2007; Weber and Camerer, 2003).

4.1.2 Underperforming supply chain
Across all six organisational culture dimensions there are no significant differences between the buyer (Bakerco) and tier 1 supplier (Bagco) or tier 2 supplier (Chemco) or between the suppliers.

4.2 Case results
Following on from the quantitative results the researchers triangulated the data with interviews and observations with the participants in both supply chains.

4.2.1 Best performing supply chain
The qualitative data reveal the importance of a supply chain that is results-based, employee-focused, flexible, pragmatic, externally-focused, and which thrives on constructive criticism. A supply chain exhibiting these characteristics has a significant influence on achieving and sustaining enhanced performance outcomes for each participant, termed by the authors as a collaborative culture. This concurs with work by Prajogo and McDermott (2011) who report that a flexible and externally-oriented culture (termed “developmental”) is consistently associated with positive performance outcomes. Conversely, where the supply chain’s culture is rule-driven, job-focused, defensive, inflexible and internally-focused, this appears to have a direct correlation with poor performance: adversarial culture.

When we examined the best performing supply chain informants suggested a changing culture within the buying company. The informants described the previous culture of Bakerco as mechanical and obstructive whereas a new team of managers are more people-orientated than before. The general manager stated:

We are a heavily unionised organisation and very mechanical. Staff are low-skilled and a large percentage of our staff are production operatives. It is hard to change the behaviours of these staff, who, in many cases have been here over 30 years. However, we have a new, young, progressive management team who are more people orientated than before …

This statement was endorsed by Labelco and Inkco in the best performing supply chain. The supply manager from Labelco stated:

Bakerco haven’t been open to changing how they do things over the years but in recent times the tide seems to be turning.

The supply manager from Inkco suggested that the culture of Bakerco had not changed but that Labelco were trying to help them change.

We are a customer-focused organisation, more because we have to be … we try to instil new behaviours in our customer (Labelco) and they say they are trying to do the same with their customer (Bakerco) …

4.2.2 Underperforming supply chain
Throughout the underperforming supply chain, the interviews suggest there is conflict, poor communication, and a lack of flexibility, responsiveness and trust. This results in missed orders, late deliveries, quality issues and cost implications. One example was highlighted during the interviews a Bagco supply manager in:

(Bakerco) used to be more mellow, but have become more cut throat, even in meetings things tend to get quite heated and you can find them swearing across the table at us I always use the phrase, we are good at working together when we are not working against each other, which seems to be quite a bit of the time, there is much conflict, especially at times of increased business pressure …

This blame culture was in evidence through observations by the authors in buyer-supplier meetings in the underperforming supply chain. A Bakerco warehouse operative stated:

Nobody wants blame, everybody tries to transfer blame… if you change your mind that is seen as a weakness, where if you think you were wrong and someone has a better solution then you should be willing to change your mind, but I think here people just don’t change their mind cause they don’t want to be seen as weak or whatever …

The themes of blame, distrust and poor performance were stated throughout the interviews with the informants in the under-performing supply chain. It was clear that although the cultures of the buyers and the suppliers were similar this actually caused problems in the relationship and impacted performance. The same defensive and dysfunctional cultural practices of blame, swearing and disagreements were apparent throughout this supply chain resulting in cultural clashes and under performance.

5. Discussion and conclusion
At first glance this study’s findings go against the perceived wisdom that cultural fit or similarity leads to high performing supply chains (Bates et al., 1995; Deshpandé and Farley, 2013; McAfee et al., 2002; Mello and Stank, 2005). The quantitative analysis shows significant difference in the cultures of the buyer and the suppliers in the best performing supply chain and contrary to the current literature, the underperforming supply chain has similar cultural attributes among the buyer and the suppliers.

5.1 Cultural fit
Although previous studies have found that culture dissimilarity between firms results in lower productivity, financial performance and relationship satisfaction (Cartwright and Cooper, 1993; Pothukuchi et al., 2002; Weber and Camerer, 2003) this could be due to the studies taking a dyadic view of cultural fit or the setting studied (mainly merger and acquisitions and joint venture scenarios). When only two firms are involved perhaps cultural similarity is a stronger predictor of positive outcomes. Or perhaps the relationship form (such as merger and acquisition) whereby two integrating firms merge and common processes, systems
Opposites attract: organisational culture and supply chain performance
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and policies are agreed and followed represents environments where cultural clashes by nature are naturally more prevalent. However, in a supply chain scenario whereby multiple participants are involved yet each participant still has autonomy and its own organisational identity, it would appear that as long as cultures are compatible, the culture of each organisation in the supply chain could differ with successful outcomes. For example, in the best-performing supply chain case, the supply base's ability to react to unexpected changes in demands in the downstream supply chain (demonstrated by the high results-based score upstream) results in overall positive performance outcomes. The responsive nature of the supply base appears to support the inadequacies of the buyer organisation.

Meirovich (2010) asserts that if there are overarching cultural dimensions supporting performance then differences may not matter and can lead to a level of success. For example, the suppliers in the best-performing supply chain have significantly higher mean scores on the market orientation leads to high performance (Deshpande and Farley, 2013; Mello and Stank, 2005).

In an era when supply chains are under extreme pressure to cut costs, proactive and collaborative supply chains, which exhibit behaviours of information sharing and joint cost reduction programmes are outperforming adversarial supply chains (Wiengarten et al., 2010). For example, in the best-performing supply chain, the tier 1 supplier, exhibiting collaborative cultural traits and norms tries to develop and educate the buyer through joint cost reduction programmes, creating an atmosphere of trust and open communication. These behaviours demonstrate a supply chain that is more values-based. Dearlove and Coomber (1999) report that values-led firms constantly outperform non values-led firms.

Therefore, the best-performing supply chain appears to be underpinned with the central tenets of the relational view. The supply base are utilising their embedded collaborative cultural values to further strengthen their relationship with the buyer; in return the buyer organisation which has traditionally being adversarial by nature is beginning to recognise the benefits of collaboration in achieving overall supply chain performance improvements.

The findings clearly indicate the importance of an outcome, people, and supply chain-focused culture. The buyer organisation appears able to leverage these characteristics from within its best-performing supply chain. However, while the best-performing supply chain was high performing in relative terms to its underperforming supply chain, there is still room for improvement. Currently the buyer culture has low mean scores across the majority of its cultural dimensions, suggesting an environment which is more process than results-driven, is concerned with the job rather than the person, and focuses on internal operations rather than exhibiting a broader view of its external operating environment.

5.2 Cultural clash
The similarities in the underperforming supply chain may indicate that a “cultural clash” (Cartwright and Cooper, 1993) exists and change needs to occur throughout this supply chain for success. Many studies have made either direct or inferential comments concerning the detrimental impact of adversarial cultures on performance (Kee, 2003; McHugh et al., 2003; McHugh and Brotherton, 2000).

In the under-performing supply chain, the data suggests the presence of an inflexible supply chain with an inherent blame culture. Similar low scores on the results-based dimension highlight organisations that are bound by their procedures and processes. This inability to react to changes in customer demand and dysfunctional defensive styles, which are so prevalent in the FMCG sector, inhibit supply chain performance improvement. These old-style adversarial or dysfunctional cultural practices managed through the transaction cost economics lens where cost, rather than best value (Balthazard et al., 2006; Ketchen and Hult, 2007) is king, are no longer viable.

Creating a culture of performance improvement removes the fear of cause and effect, by instilling a no-blame culture, which typically results in performance being a behavioural rather than an organisational outcome (Neely, 2002). Such a culture is clearly absent in the underperforming supply chain demonstrating the need for increased socialisation techniques to instil norms and behaviours of collaboration throughout the underperforming supply chain.

The similarities in the underperforming supply chain may indicate that change needs to occur throughout this supply chain for success. This is supported by several studies that have either direct or inferential findings concerning the detrimental impact of adversarial cultures on performance (Kee, 2003; McHugh et al., 2003; McHugh and Brotherton, 2000).

5.3 Proposition development
If we take a relational view of organisational cultural fit as a measure of effective supply chain relationships, there are three scenarios as a result of the findings in this study: first, the supplier organisations in the best-performing supply chain have similar collaborative cultures, i.e. shared values, beliefs and behaviours (evidenced by high mean scores across the dimensions). If the other members of their supply chain shared this culture, in this case, we conjecture that the supply chain would be most successful and have positive performance outcomes; second, the organisations in the underperforming supply chain have similar adversarial cultures (evidenced by low mean scores across dimensions, such as being too job-focused, process-driven, and inflexible).

In this case the supply chain would be unsuccessful and there would be negative performance outcomes as a result; and finally, where organisations have opposing cultures, for example, if one organisation has a collaborative culture and one organisation an adversarial culture it is proposed that a moderately successful outcome may occur, but less successful than option one. This would appear to be the situation in the best-performing supply chain, where the buyer is heavily formalised, rule-based and commands a supply chain that is flexible, agile and supports the buyer organisation.

A final scenario is the supplier possessing an adversarial culture and the buyer a collaborative culture then the outcome of the supply chain would again be less successful and result in moderate performance outcomes. This would lead the buyer to search for suppliers with more compatible cultures. We would envisage this scenario occurring in industries where demand is uncertain and volatile,
e.g. electronics. The inability to be responsive and flexible to the customers changing needs could result in poor performance outcomes.

Based on the previous analysis the following propositions could be tested in a large-scale future study to augment external validity:

P1. Buyer and supplier organisations that both have similar collaborative cultures will result in maximum supply chain performance outcomes.

P2. A buyer with an adversarial culture and a supplier with a collaborative culture will result in moderate supply chain performance outcomes.

P3. A buyer with a collaborative culture and a supplier with an adversarial culture will result in moderate or poor supply chain performance outcomes.

P4. A buyer with an adversarial culture and a supplier with an adversarial culture will result in poor supply chain performance outcomes (see Figure 4).

5.4 Implications
Organisations can no longer operate as single entities (Cousins and Crone, 2003). Many organisations are still wedded to the traditional *modus operandi* embedded within transaction cost economics theory. However, there are inherent and well reported weaknesses: it is based solely on economic factors; the unit of analysis is a single transaction at one point in time; it ignores the reality that competitive advantage (or failure) develops over time. These factors are regarded as barriers to organisations sustaining high performance outcomes. However, the evolution of the theory on partnerships and relationships (Sako, 1992, Cousins, 2002) as envisaged through the relational view (Casson, 1998; Dyer and Singh, 1998) is increasingly recognised within supply chain thinking as driving supply chain advantage. Firms need to work closer with fewer suppliers with trust as central to supply chain behaviour and practice. However, trust must shift from the economic definition, which a pseudonym for risk management balancing the effect of costs and benefits (Williamson, 1985), to norm-based trust (whereby trust is embedded within and beyond organisational boundaries as a core value).

A shared supply chain culture of norm-based trust and openness will yield increased outcomes and reduced conflict and uncertainty throughout the supply chain (Cousins et al., 2008). Techniques to create a collaborative culture include project-start meetings to create shared goals, informal meetings throughout the relationship, suppliers based onsite, regular workshops and project team outings (Cousins et al., 2008; Lee and Yu, 2013).

Furthermore, managers should pay as much attention to cultural evaluation within the supplier selection process as it does to finance or strategic factors (Weber et al., 1996). An inappropriate cultural outlook within a supply chain context may have a negative effect on performance outcomes (Whitfield and Landeros, 2006). Further, this study highlights the importance for managers to evaluate the current culture of their own organisation (Wiengarten et al., 2011), and their respective supply chains as part of the supplier evaluation process for existing suppliers. Otherwise a “johari house” can result (Handy, 1995) whereby blind spots and unknowns of each partner impact the success of the overall relationship.

Where clashes or cultural misfit is evidenced, a programme of cultural change, both within and across the supply chain may be required (Ogbonna and Harris, 2002). Cultural myopia within the respective supply chains may have a significant and detrimental impact on achieving and sustaining competitive advantage (Prajogo and McDermott, 2011; Detert et al., 2000).

In addition, this study has highlighted that the need for organisations to accommodate a variety of cultural orientations to achieve, sustain and maximise competitive advantage; for example in this study the buyer has proven adept at leveraging the flexibility, agility and external-focused traits of its suppliers to disguise its own cultural inadequacies. Cultural learning guided by an organisation whose culture is admired (Meirovich, 2010) may be one way of achieving appropriate cultural attributes and lead to better supply chain performance.

Finally, there are interesting insights provided in relation to the role of the supplier within a given supply chain. Socialisation mechanisms within a supply chain context have been reported as an enabler to allow each partner to “learn about the others culture, creating social norms and shared understandings between the parties involved” (Cousins et al., 2008, p. 239). While typically the buyer “controls” the socialisation process, in the best performing supply chain, suppliers with collaborative cultural mind-sets were engaged in a process of “reverse socialisation” (Cousins et al., 2008). Our study found that suppliers were actively engaged in attempts to influence the behaviour of the buyer to enhance supply chain performance without any regard for buyer power in the transaction, for example, the tier one supply manager commented that during site visits to the buyer they would advise the buyer proactively on ways their process and communication mechanisms could be enhanced to provide mutual benefit (Cousins et al., 2008). This is another method organisations can use to participate in cultural evolution or learning (Meirovich, 2010).

5.5 Future research and limitations
Organisational culture is a complex and layered construct with relationships between changing internal and external environments and operational processes (Marcoulides and
Heck, 1993). Deconstructing culture into its constituent parts is the first and most important stage in helping supply chain partners to understand the significance of differing dimensions on performance outcomes (Baird et al., 2011; Gregory et al., 2009; Prajogo and McDermott, 2011). Equipped with this understanding, firms can make better judgements on the strategic direction of the firm (Prajogo and McDermott, 2011) coupled with staff training and development, and organisational design (Shelton et al., 2002). While, this study is a useful first step in providing a linear relationship between differing cultural elements, future studies could expand and develop these findings by assessing culture over a period of time and adding mediating variables which may impact the supply chain outcomes such as socialisation, relational capital, trust and communication.

Further, this study was useful in gaining insights beyond the dyad from relevant supply chain personnel. However, this study aggregated culture at an organisational level, whereas it is recognised that subcultures occur in many organisations (Saffold, 1988; Yilmaz et al., 2005). Future studies could include large-scale studies across many sectors and organisational functions whereby the differing elements of culture can be decomposed and tested using advanced statistical methods may also provide additional insights and generalisability.

Finally, it is accepted that while organisational cultural fit has a significant impact on performance outcomes, there are a multiplicity of other factors which are not included in this study which can have a significant impact on firm performance, such as, organisational size, turnover, buying power, length of relationship, and environmental conditions. Future studies could include these additional factors.

References


Dearlove, D. and Coomber, S. (1999), Heart and Soul and Millennial Values, Blessing/White, Skillman, NJ.


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Operations and Production Management, Vol. 31 No. 5, pp. 554-78.


Further reading


## Appendix

### Figure A1 Verbeke practices questionnaire

<table>
<thead>
<tr>
<th>At my work:</th>
<th>Degree of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process</strong></td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>1. When confronted with problems, the people of a department are:</td>
<td></td>
</tr>
<tr>
<td>Rarely being helped by people of other departments</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>2. The tasks of employees that are absent are:</td>
<td></td>
</tr>
<tr>
<td>Rarely taken over by colleagues</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>3. Requests from other departments are:</td>
<td></td>
</tr>
<tr>
<td>Only carried out if the formal procedures have been followed</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>4. On special projects, there is:</td>
<td></td>
</tr>
<tr>
<td>A laborious cooperation between the various departments</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>5. The employees contribute their bit:</td>
<td></td>
</tr>
<tr>
<td>By directly following the prescribed methods of the managers</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td><strong>Employee</strong></td>
<td></td>
</tr>
<tr>
<td>6. With respect to people who do not feel too happy about their job, but who still perform well:</td>
<td></td>
</tr>
<tr>
<td>New possibilities are being searched for them</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>7. Whenever an employee is ill, or when something has happened in his personal life:</td>
<td></td>
</tr>
<tr>
<td>Managers ask after their problems with interest</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>8. Employees are encouraged to take courses and to go to seminars and conferences to help their self development:</td>
<td></td>
</tr>
<tr>
<td>The managers will attempt to solve these problems</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>9. If there are personal conflicts between employees with a department:</td>
<td></td>
</tr>
<tr>
<td>Show personal interest</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>10. In matters that directly involve them, employees:</td>
<td></td>
</tr>
<tr>
<td>Usually have a say</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>11. My manager compliments employees on work well done:</td>
<td></td>
</tr>
<tr>
<td>Senior Management ensure my job doesn’t become too pressurised:</td>
<td></td>
</tr>
<tr>
<td>Open</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>12. If a manager has a criticism of an employee:</td>
<td></td>
</tr>
<tr>
<td>He/she discusses it openly with them</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>13. Employees express any criticisms of management:</td>
<td></td>
</tr>
<tr>
<td>Directly to the management</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>14. At my work:</td>
<td></td>
</tr>
<tr>
<td>Employees are asked for constructive criticism to help their managers performance</td>
<td>$1 - 2 - 3 - 4 - 5$</td>
</tr>
<tr>
<td>15. The mistakes of a colleague are:</td>
<td></td>
</tr>
</tbody>
</table>
| Personally discussed with him/her | $1 - 2 - 3 - 4 - 5$ | (continued)
Figure A1

Tight

18. Managers always check if the employees are working:
   1 – 2 – 3 – 4 – 5

19. If one is a little late for an appointment with the manager, s/he will be rapped on his/her knuckles:
   1 – 2 – 3 – 4 – 5

20. If an employee goes to the dentist during working hours, there is a check on how long s/he stays away:
   1 – 2 – 3 – 4 – 5

21. Concerning the employees’ expenses, the costs have to be specified in detail:
   1 – 2 – 3 – 4 – 5

22. If an employee is 15 minutes late for work, but goes on for an extra 15 minutes at the end of the day:
   He/She is called to account
   1 – 2 – 3 – 4 – 5

23. The number and duration of the breaks employees take:
   Are always checked by the managers
   1 – 2 – 3 – 4 – 5

24. If an employee has to go to an important appointment:
   S/he has to convince the manager of the importance of the appointment
   1 – 2 – 3 – 4 – 5

Norm

25. In my organisation major emphasis is on meeting customer needs:
   1 – 2 – 3 – 4 – 5

26. Results are more important than procedures:
   1 – 2 – 3 – 4 – 5

27. Employees never talk about the history of the organisation:
   1 – 2 – 3 – 4 – 5

28. I believe where I work contributes little to society
   1 – 2 – 3 – 4 – 5

29. I believe where I work actively honours its ethical responsibilities:
   1 – 2 – 3 – 4 – 5

Market

30. The satisfaction of the customers is:
   Measured regularly
   1 – 2 – 3 – 4 – 5

31. Product promotions/ actions by the competition are:
   Reported in detail to everyone
   1 – 2 – 3 – 4 – 5

32. The consumers preferences are investigated thoroughly:
   1 – 2 – 3 – 4 – 5

33. The company provides products/ services that:
   Meet the needs of the various target-groups
   1 – 2 – 3 – 4 – 5

34. The future needs of the customers are:
   Discussed extensively with the various departments
   1 – 2 – 3 – 4 – 5

35. In talks with customers, people:
   Try to find out about the future needs of the customers
   1 – 2 – 3 – 4 – 5
About the authors

Trevor Cadden is a Lecturer in Operations Management at the University of Ulster. He has considerable experience in supply chain management and operations management. His experience working for many years in US multinationals in supply chain systems implementation, project management, inventory control and management, and performance measurement has provided a fundamental platform for his career in academia. He is an early career researcher, yet has a number of publications to his name, and has previously published in journals such as *Supply Chain Management: An International Journal*; *Production Planning and Control*; and *Journal of Purchasing and Supply Management*. Trevor Cadden is the corresponding author and can be contacted at: t.cadden@ulster.ac.uk

Dr Donna Marshall has researched, taught and published in the supply chain management field for ten years. She has published scholarly articles on outsourcing, relationship management, organisational cultures and values, and environmental uncertainty in international journals such as *International Journal of Operations and Production Management*; *Journal of Purchasing and Supply Management*; and *International Journal of Logistics*. She has won several corporate and research organisation grants investigating the influences on environmental and social sustainability and the effect on supply chain performance, how relationship management mechanisms shape performance outcomes, how power influences relationship outcomes and recently completed a study on organisational culture and values and their impact on relationship performance.

Dr Guangming Cao is a Principal Lecturer at the University of Bedfordshire Business School. He previously lectured in Management at Northwestern Polytechnical University in China and at University of Ulster's Business School. He received his BSc in Mechanical Engineering and an MSc in Systems Engineering both from Northwestern Polytechnical University, and a PhD in Systems Thinking and Change Management from University of Luton. His research on systems thinking and the business value of information technology has appeared in *Supply Chain Management; Systemic Practice and Action Research; Strategic Change; Systems Research and Behavioral Science* and other journals.