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# Opposites attract? Organisational culture and supply chain performance

## 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’ 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, 1993b; Chatterjee et al, 1992; Deshpandé and Farley, 2004; Sirmon and Lane, 2004; Teerikangas and Very, 2006; Weber and Camerer, 2003; Weber et al, 1996). Lately, the significance of inter-organisational cultural fit on firm performance is recognised in the supply chain management literature (Whitfield and Lenderos, 2006), few empirical studies focus on the influence of inter-organisational cultural fit on strategic buyer-supplier relationship performance (Winklhofer et al, 2006). Yet, firms are increasingly forming strategic buyer-supplier relationships to achieve success (Chen and Paulraj, 2004; 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 strategic buyer-supplier 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, 2004; Prahinski and Benton, 2004).

This study is embedded within the relational view theory, whereby buyers and suppliers join together in long-term relationships and combine resources (assets, knowledge and capabilities) to deliver competitive advantage. Partnerships that exhibit behaviours of knowledge sharing, high levels of trust, and joint coordination report supernormal profits for both parties that neither could achieve in isolation (Dyer and Singh, 1998; Zacheria et al, 2011). The relational view theory compliments the current study as certain behaviours: have an outcome focus; open exchanges of ideas and information; and goodwill are synonymous with organisational cultures that report significant positive performance outcomes.

This paper seeks to expand the knowledge in this area of buyer-supplier relationships by investigating the extent to which organisational cultural fit between a buyer and its strategic suppliers positively influences performance. Another key contribution is insights are gained using mixed methodologies: as the survey method alone is limited in conducting supply chain management research (Larson and Halldorsson, 2002; Tangpong et al, 2010). Further, most strategic buyer-supplier 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.

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

The key objectives of this study are:

1. To measure the organisational culture of 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 strategic buyer-supplier relationships; and
4. To develop a set of propositions for large-scale testing.

The paper is presented as follows: Firstly, 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 Strategic buyer-supplier relationships*

With shorter product life cycles, increased global competition and dynamic environments, many firms are engaging in supplier rationalisation (Cousins et al, 2008; McIvor and McHugh, 2000; Prahinski and Benton, 2004). 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 et al, 2003), the concept has now permeated across a range of industries and sectors (Cadden et al, 2010; Lamming et al, 2004), due to purchasing costs in manufacturing companies reported to be in excess of 55% (Tully et al, 1995; Degraeve and Roodhooft, 2001) with service companies reporting up to 35% of cost of sales as direct purchasing costs (Degraeve and Roodhooft, 2001). Such findings have resulted in increased attention on buyer-supplier relationships across sectors to enhance performance outcomes. Supply base rationalisation has led to firms categorising critical suppliers as 'strategic' and moving away from the traditional arm's-length or adversarial relationships (Sako, 1992; McIvor and McHugh, 2000). To become a strategic supplier, 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 suppliers 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 buyer-supplier 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 Stonebaker, 2008), with the ability to align the respective cultures of the buyer and supplier

organisation 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 buyer-supplier 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 practices, behaviours and various artefacts shared by 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; Shankarmahesh et al, 2003).

Cultural fit is a standard term in the literature (Cartwright and Cooper, 1993; Douma et al, 2000; Sirmon and Lane, 2004; 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 Sadowski, 1999; Teerikangas, and Very, 2006). Therefore, although the importance of organisational cultural fit in strategic buyer-supplier relationships has been reported in the literature as significant (Barringer and Harrison, 2000; Cousins et al, 2006; Fawcett et al, 2008; Lamming, et al, 2004, 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 dissimilarity between two integrating firms has resulted in lower productivity, lower financial performance outcomes, lower relationship satisfaction, and higher levels of conflict (Cartwright and Cooper, 1993b; Pothukuchi et al, 2002; Weber and Camerer, 2003).

The reported significance of shared values, beliefs and behaviours (cultural fit) on performance in an inter-organisational supply chain setting is becoming more widespread (McAfee et al, 2002; Mello and Stank, 2005). Bates (1995) reported a significant relationship between organisational culture and manufacturing strategy, while Mello and Stank (2005) develop a useful theoretical framework and report that differing cultural dimensions have differing influences on buyer -upplier 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, whilst many authors continually refer to the importance of cultural fit in strategic buyer-supplier relationships few empirical studies are present in the literature. Deshpandé and Farley (2004) are an exception and investigated the influence of organisational cultural fit on buyer-supplier 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 correlation between organisational culture variables and buyer-supplier performance outcomes. An additional paper by Cousins et al, (2006) refers to the importance of shared values, behaviours and attitudes between the buyer and strategic supplier in achieving high performance outcomes.

#### *2.4 Research propositions:*

The literature reinforces the authors' central proposition that inter-organisational cultural fit within strategic buyer-supplier 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).

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

*Proposition 1:* Similarity of cultural dimensions between buyers and suppliers will lead to a high performing supply chain.

*Proposition 2:* Dissimilarity of cultural dimensions between buyers and suppliers will lead to a low performing supply chain.

**\*\*Insert Figure 1 here\*\***

### **3. Methodology**

To date much research involving buyer and supplier 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). Such authors admit to this limitation and call for further research including phenomenological methodologies and supply chain studies to enrich the findings (Ambrose et al, 2010; O'Toole and Donaldson, 2002). As cultural fit is clearly a major cause of concern for organisations involved in strategic buyer-supplier 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 (quantitative and qualitative) from within a buyer organisation and tier one and tier two strategic suppliers in a best performing and an underperforming supply chain in the Fast Moving Consumer Goods (FMCG) sector.

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; Pannerselvin et al; Tangpong et al, 2010). Post-experimental semi-structured interviews will help provide enrichment and validation to the preliminary findings (Yin, 2003; Eisenhardt, 1989). Given the complex nature of culture, and the nature of the study whereby we wish to uncover areas for further research and theory development and testing, an exploratory case study approach prefixed by preliminary statistical analysis was deemed most appropriate.

The statistical analysis will aid in providing an understanding of the relationship between varying cultural dimensions within the FMCG supply chain. Post statistical analysis, in-depth semi-structured interviews, company tours, documentation analysis and informal conversations with staff were used to provide enrichment and validation of information in a natural setting where a full understanding is unknown (Voss et al, 2002).

The focus organisation (the buyer) identified its best performing supply chain and an underperforming supply chain (both supply chains included tier one and tier two suppliers). A pre-validated organisational cultural dimensions questionnaire (developed by Verbeke, 2000 as an updated version of Hofstede et al's (1990) practices tool) was issued to both the buyer and the respective tier one and tier two suppliers, detailed below (see appendix 1).

The results were analysed using a series of ANOVA's between the respective supply chain partners. The findings were then explored and validated using a range of qualitative methods (A series of one-hour semi-structured interviews with 12 personnel from the best performing and 12 personnel from the underperforming supply chain. Each interviewee had supply chain responsibilities and represented different organisational levels, i.e., two at strategic and two at operational level from each participating organisation: 12 in total. 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. Supply chain performance data for the respective best and underperforming supply chains were also gathered and triangulated via the aforementioned qualitative sources (see Table 1). The unit of analysis for this study is the organisation.

**\*\*Insert Table 1\*\***

### *3.1 Case selection*

This study investigates strategic buyer and strategic supplier relationships within an 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 £3bn 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% between 2005/6 and 2008 (Keynotes, 2010).

Previous studies of the FMCG sector have shown interesting supply chain practice insights (Menachof et al, 2009; Jharkhana 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 the buyer and key strategic suppliers within the supply chain.

### *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 10-15 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% and absenteeism is 4% 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 1) 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).

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% 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% of their business. This supplier provides 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% 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% of their business. This supplier supplies chemical agents to Inkco.

*3.6 Measures*

The 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 buyer and suppliers for 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 issues with validation (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.

The cultural instrument used is a 35 item, 5 point Likert scale. The 35 items are broken down into six independent dimensions to assess organisational culture at a manifested practices level these are: Process versus Results; Employee versus Job; Open versus Closed; Loose versus Tight; Normative versus Pragmatic; and Market versus Internal).

When integrating organisations differ in their 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 a strategic buyer-supplier relationship context could 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 2).

**\*\*Insert Table 2 here\*\***

Prior to issue of the relevant cultural questionnaires within the participating organisations (buyer and supplier organisations), a panel of six academics, and ten practitioners from the same industry evaluated each questionnaire for appropriateness. Some minor adjustments to wording and scaling were made.

In addition, the research team were invited to an open tour 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, et cetera on show. The direct observations and informal contact with staff will aid in clarification and verification of survey responses and support construct validity (Bowyer and McDermott, 1999). Such methods are deemed essential in triangulating research (Sousa and Voss, 2001; Yin, 1994).

Management briefed employees as part of the monthly team brief on the supply chain culture study. The researchers were invited to this brief and were able to distribute questionnaires face to face in hard copy format to employees who didn't have access to email. The remaining questionnaires were issued via the HR manager via email, 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 organisation for returns. Some of the email questionnaires were also returned in this way to allow anonymity of staff, whereas some staff were happy to forward via email. In any case, all were treated anonymously.

**\*\*Insert Table 3 here\*\***

### *3.7 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, 2004; 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, 2004).

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, 2004). 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 1). 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. Both strategic and operational personnel were interviewed (two from each level from each participating organisation to allow for replication). In total 12 one hour (approx.) interviews were conducted.

#### **4. Results**

322 respondents participated in the research. A high response rate from each participating organisation was attained (ranging from 49-64% within the respective partner in the best performing supply chain, and 32-59% in the underperforming supply chain) (see Table 1). The results shown below 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% of the sample due to being a larger organisation whereas suppliers represented 29% of the sample). Subgroup 2 (known from here as 'Under') had 250 respondents (the same buyer respondents as above; representing 72% of the sample, with the remaining 28% representing tier one and tier two supplier).

The mean total scale scores for the six organisational culture dimensions are reported in Table 4. 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.

**\*\*Insert Figure 2 here\*\***

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.

**\*\*Insert Figure 3 here\*\***

##### *4.1 Best performing supply chain*

A one-way ANOVA, using company grouping as the independent variable and total mean scores were analysed using each of the six cultural dimensions as the dependant variable. The following was revealed:

- Results cultural dimension produced a significant main effect,  $F(3,49.85)=7.21$ ,  $p<.01$ . 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,  $F(3,20.49)=30.63$ ,  $p<.01$ . 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,  $F(3,22.40)=22.52$ ,  $p<.01$ . 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,  $F(3,53.28)=45.61$ ,  $p<.01$ . 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,  $F(3,35.94)=4.12$ ,  $p<.01$ . 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,  $F(3,39.04)=9.90$ ,  $p<.01$ . Post hoc tests showed the market scores for Bakerco are significantly different to those reported for Labelco ( $p<0.01$ ).

#### *4.2 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.

## **5. Discussion and conclusion**

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).

However, once the statistical results are triangulated with the qualitative data, deeper insights are provided. 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.

The buying company in our study revealed a changing culture. 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 was endorsed by tier one and tier two supply managers (Labelco’s and Inkco’s) in the best performing supply chain:

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

*“We are a customer-focused organisation, more because we have to be. ...we try to instil new behaviours in our customer (Labelco) but they say they are trying to do the same with their customer (Bakerco) but nothing has changed in 15 years...”*

The statistical results when taken in context of these qualitative findings suggest that the buyer (Bakerco) realises the need to change its own culture. Interestingly, the enabler to success in Bakerco’s best performing supply chain lies upstream with the suppliers. It is the suppliers who determine the success of Bakerco.

This concurs with work by Dearlove and Coomber (1999) who reported that values-led firms constantly outperform non values-led firms. In this instance, it is the values-led suppliers benefitting the buyer. Agility, adaptability and alignment are critical elements in developing ‘best value supply chains’ (Ketchen and Hult, 2007). The supply base’s ability to react to inadequate communication or unexpected changes in demands from the buyer is masking the inadequacies within the buyer organisation in the best performing supply chain. Meirovich (2010) contends that if there are overarching cultural dimensions supporting performance then differences may not matter and can lead to a level of success.

However, throughout the underperforming supply chain, 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. An example was highlighted during the interviews with a tier one supply manager (Bagco):

*“(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: triangulated with the low mean

scores in the open cultural dimension and the following statement from a Bakerco warehouse operative:

*“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..”*

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.

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).

The suppliers in the best-performing supply chain have significantly higher mean scores on the market dimension than in the underperforming supply chain. This outward looking, supply chain-focused cultural dimension may be important for overall supply chain performance. This concurs with several other studies where a supply chain orientation leads to high performance (Deshpandé and Farley, 2004; Mello and Stank, 2005).

The findings clearly indicate the importance of an outcome, people, and externally focused culture. The buyer organisation was able to leverage these characteristics from within its best performing supply chain. However, whilst the best performing supply chain was high performing in relative terms to its underperforming supply chain, there is still much improvement that can be achieved. This shortfall is a result of the buyer culture requiring change. 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.

With regard to using organisational cultural fit as a measure of effective buyer-supplier relationships, there are three scenarios as a result of the findings in this study: firstly, the 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). In this case the relationship would be most successful and positive performance outcomes due to the close match; secondly, both organisations in the under performing 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 relationship would be unsuccessful and there would be negative performance outcomes as a result of the clash (as in underperforming supply chain); 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 best performing supply chain, where the buyer is heavily formalised, rule-based and commands a supply chain that is flexible and

agile and supports the buyer organisation. As the general manager of the buying organisation said:

*“It is easier for us to change our suppliers’ culture than our own.”*

On the other hand, if the supplier possessed an adversarial culture and the buyer a collaborative culture then the outcomes of the relationship would again be less successful and result in moderate performance outcomes, with the buyer searching for a supplier with a more compatible culture. This scenario could occur 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 above analysis the following propositions could be tested in a large-scale future study to augment external validity:

*Proposition 1:* Buyer and supplier organisations that both have similar collaborative cultures will result in maximum buyer-supplier performance outcomes;

*Proposition 2:* A buyer with an adversarial culture and a supplier with a collaborative culture will result in moderate buyer-supplier performance outcomes;

*Proposition 3:* A buyer with a collaborative culture and a supplier with an adversarial culture will result in moderate or poor buyer-supplier performance outcomes;

*Proposition 4:* A buyer with an adversarial culture and a supplier with an adversarial culture will result in poor buyer-supplier performance outcomes;

**\*\*Insert Figure 4\*\***

### *5.1 Implications*

Organisations can no longer operate as single entities (Cousins and Crone, 2003). Many organisations, particularly western based, are still wedded to the traditional *modus operandi* embedded within transaction cost economics theory. However, the inherent and well reported weaknesses, such as based solely on economic factors, and the unit of analysis of a single transaction at one point in time, ignoring the reality that competitive advantage (or failure) develops over time are seen as central barriers to organisations sustaining high performance outcomes. The evolution of the theory on partnerships and relationships (Sako, 1992, Cousins et al, 2002) through relational view and social exchange theory (Casson, 1998; Dyer and Singh, 1998) is increasingly recognised within supply chain thinking. Firms need to work closer with fewer suppliers with trust at the core. However, trust must shift from the economic definition 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, suppliers based on buyers site, workshops, and project team outings (Cousins et al, 2008; Lee 2004).

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). Cultural misfit

within a supply chain context may have a directly 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 (Weingarten 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 et al, 2002). Cultural myopia within the respective supply chains will have a significant and detrimental impact on achieving and sustaining competitive advantage (Prajogo and McDermott, 2010; Detert et al, 2000). Organisations that are flexible and outcome focused, and exhibit high levels of normative trust, cooperation and openness as default behaviours often result in higher performance outcomes for all parties (Mello and Stank, 2005).

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.

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, p239). Whilst typically the buyer 'controls' the socialisation process, in the best performing supply chain, suppliers with collaborative cultural mind-sets were engaged in a process the author's term 'reverse socialisation'. 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).

## *5.2 Future research and limitations*

Organisational culture is a complex and layered construct interwoven with interrelationships 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). Whilst, 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, which served this study. However, this study aggregated culture at an organisational level, whereas it is recognised that subcultures occur in many organisations

(Saffold, 1998; Yilmaz, 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 should include such additional factors.



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**Table 1: Supply Chain Performance Metrics**

<b>Comparison chart of BakerCo Supply chain performance metrics</b>			
<b>Key perspectives</b>	<b>Supply Chain metric</b>	<b>Poor Supply Chain</b>	<b>Best Supply Chain</b>
<b>Customer facing</b>	Overall delivery performance %	49.4%	94%
	On time delivery to commit %	86%	96%
	On time delivery to customer request date	35%	85%
	Order fulfilment lead time (Order to delivery cycle) in days	28-42	5-7
	Customer loyalty	28%	75%
<b>Internal facing</b>	Total supply chain mgt costs (% of revenue)	9.7%	4%
	Inventory carrying costs	4.2%	0.7%
	Order Mgt costs(OMC) / Transport, distribution and freight costs(subset of OMC)	5.6%	0.4%
		2.3%	0.1%
	Inventory days of supply	123.4	20
	Cash to cash cycle time (days)	125.3	35
	Delivery cost (% of revenue)	15%	7%

**Table 2: Organisational Culture Scale Definition**

Process Score (/25)	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.
Employee Score (/40)	A high employee score indicates the organisation cares about the individual and their personal development and growth . A high level of absorbtive 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.
Open Score (/20)	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.
Tight Score (/35)	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.
Norm Score (/25)	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
Market Score (/30)	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.

**Table 3: Data Collection Summary Statistics****Best Supply Chain**

Company	Questionnaires Issued	Questionnaires Returned	Percentage of returned questionnaires usable	Qualitative Interviews (2 strategic and 2 operational: with supply chain responsibilities)
Buyer (Bakerco)	306	181	59%	4
Tier 1 Supplier (Labelco)	92	45	49%	4
Tier 2 Supplier (Inkco)	42	27	64%	4

**Underperforming Supply Chain**

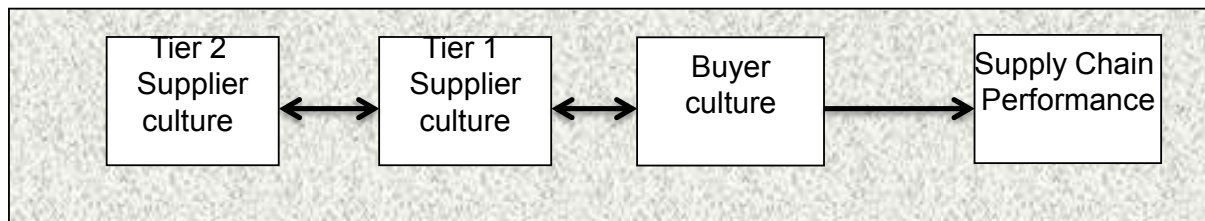
Company	Questionnaires Issued	Questionnaires Returned	Percentage of returned questionnaires usable	Qualitative Interviews (2 strategic and 2 operational: with supply chain responsibilities)
Buyer (Bakerco)	306	181	59%	4
Tier 1 Supplier (Bagco)	112	37	33%	4
Tier 2 Supplier (Chemco)	101	32	32%	4

**Table 4** Mean total scale scores and % for cultural dimensions

	Best Performing supply chain			Underperforming supply chain		
Organisational Culture Dimension (score)	Bakerco	Labelco	Inkco	Bakerco	Bagco	Chemco
Results score (/25)	<b>10.37(M)</b> 2.99(SD)	12.29(M) 4.30(SD)	<b>14.43 (M)</b> 0.98(SD)	10.37(M) 2.99(SD)	9.33(M) 2.38(SD)	10.43(M) 1.96(SD)
Employee score (/40)	<b>25.87(M)</b> 4.10(SD)	<b>35.25(M)</b> 2.56(SD)	27.14(M) 1.46(SD)	25.87(M) 4.10(SD)	20.27(M) 8.61(SD)	23.25(M) 1.32(SD)
Open score (/20)	<b>12.57(M)</b> 3.13(SD)	<b>17.13(M)</b> 0.61(SD)	15.53(M) 0.98(SD)	12.57(M) 3.13(SD)	10.60(M) 4.55(SD)	10.31(M) 1.06(SD)
Loose score (/35)	<b>10.29(M)</b> 1.78(SD)	<b>15.8(M)</b> 4.67(SD)	<b>15.37 (M)</b> 1.46(SD)	10.29 (M) 1.78(SD)	11.36 (M) 1.56(SD)	11.86(M) 1.61(SD)
Norm score (/25)	<b>15.24(M)</b> 2.46(SD)	16.61(M) 3.24(SD)	<b>18.71(M)</b> 0.49(SD)	15.24(M) 2.46(SD)	16.20(M) 3.75(SD)	16.91(M) 0.71(SD)
Market score (/30)	<b>23.10(M)</b> 3.90(SD)	<b>26.00(M)</b> 1.56(SD)	25.14(M) 2.34(SD)	23.10(M) 3.90(SD)	21.20(M) 3.90(SD)	20.03(M) 2.47(SD)
Organisational Culture Dimension (%)	Best performing supply chain			Underperforming supply chain		
Results	<b>41.48</b>	49.16	<b>57.72</b>	41.48	37.32	41.72
Employee	<b>64.68</b>	<b>88.13</b>	67.85	64.68	50.68	58.13
Open	<b>62.85</b>	<b>85.65</b>	57.85	62.85	53.00	51.55
Loose	<b>29.4</b>	<b>45.14</b>	<b>43.91</b>	29.4	32.46	33.88
Norm	<b>60.96</b>	66.44	<b>74.84</b>	60.96	64.80	67.64
Market	<b>77.00</b>	<b>86.67</b>	83.80	77.00	70.67	66.77

**Bold items** highlight areas of significance.

**Figure 1: Proposed model**



P1: Similarity of cultural dimensions between buyers and suppliers will lead to a high performing supply chain.

P2: Dissimilarity of cultural dimensions between buyers and suppliers will lead to a low performing supply chain.

Figure 2 Radar plot of cultural dimensions for best performing supply chain as a percentage

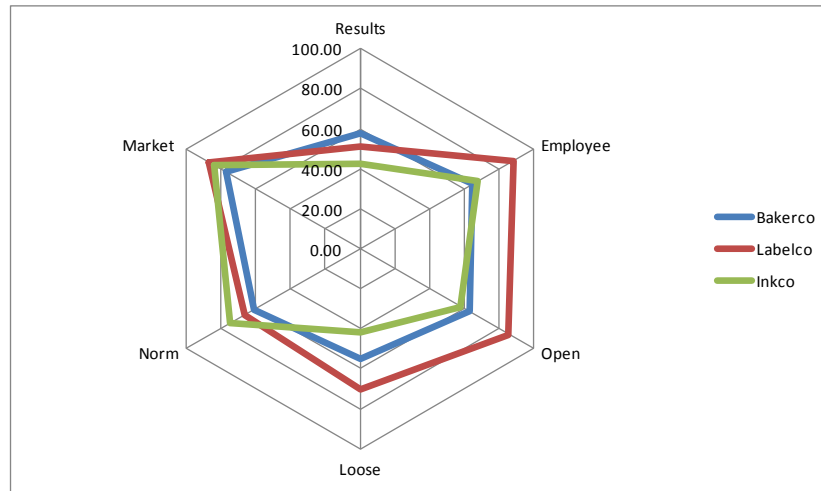
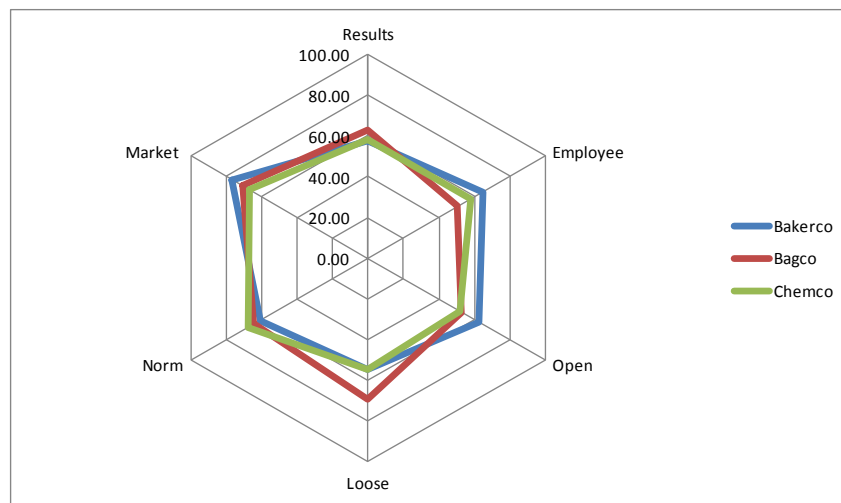
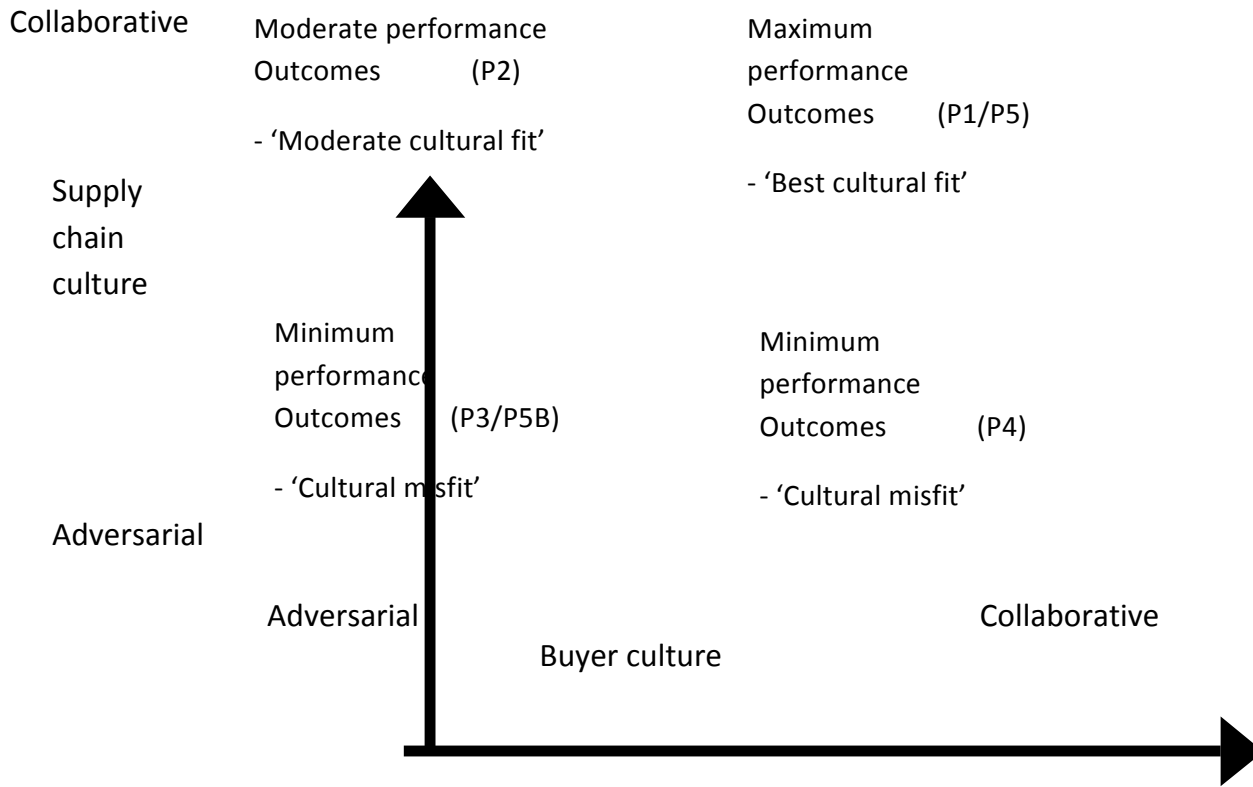


Figure 3: Radar plot of cultural dimensions for underperforming supply chain as a percentage



**Figure 4:** Organisational Culture and Performance Outcomes in Buyer Supplier Relationships





## Appendix 1: Verbeke Practices Questionnaire

At my work:

*Process*

**Degree of agreement**

Strongly disagree    strongly agree

**1. When confronted with problems, the people of a department are:**

Rarely being helped by people of other departments

1 – 2 – 3 – 4 – 5

**2. The tasks of employees that are absent are:**

Rarely taken over by colleagues

1 – 2 – 3 – 4 – 5

**3. Requests from other departments are:**

Only carried out if the formal procedures have been followed

1 – 2 – 3 – 4 – 5

**4. On special projects, there is:**

A laborious cooperation between the various departments

1 – 2 – 3 – 4 – 5

**5. The employees contribute their bit:**

By directly following the prescribed methods of the managers

1 – 2 – 3 – 4 – 5

*Employee*

6. **With respect to people who do not feel too happy about their job, but who still perform well:**
- New possibilities are being searched for them 1 – 2 – 3 – 4 – 5
7. **Whenever an employee is ill, or when something has happened in his personal life:**
- Managers ask after their problems with interest 1 – 2 – 3 – 4 – 5
8. **Employees are encouraged to take courses and to go to seminars and conferences to help their self development:**
- 1 – 2 – 3 – 4 – 5
9. **If there are personal conflicts between employees with a department:**
- The managers will attempt to solve these problems 1 – 2 – 3 – 4 – 5
10. **With respect to birthdays, marriages and births, my manager:**
- Show personal interest 1 – 2 – 3 – 4 – 5
11. **In matters that directly involve them, employees:**
- Usually have a say 1 – 2 – 3 – 4 – 5
12. **My manager compliments employees on work well done:**
- 1 – 2 – 3 – 4 – 5
13. **Senior Management ensure my job doesn't become too pressurised:**
- 1 – 2 – 3 – 4 – 5

*Open*

14. **If a manager has a criticism of an employee:**

He/she discusses it openly with them 1 – 2 – 3 – 4 – 5

**15. Employees express any criticisms of management:**

Directly to the management 1 – 2 – 3 – 4 – 5

**16. At my work:**

Employees are asked for constructive criticism to help their managers performance 1 – 2 – 3 – 4 – 5

**17. The mistakes of a colleague are:**

Personally discussed with him/her 1 – 2 – 3 – 4 – 5

***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**