

Predicting Supply Chain Dyadic Relationship Success: a qualitative study of dyads in Australia

A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy

Submitted by

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Abstract

Supply chain dyadic relationships are considered important to effective supply chain management. Hence measuring the state of supply chain dyadic relationships (SCDR) between a buyer and a supplier is necessary. A number of methods to measure the dyadic relationship have been proposed by researchers. A review of the extant literature on these relationship measurement systems has revealed some areas for improvement. It reveals that existing systems overly focus on a limited range of elements, such as trust or collaboration, and do not always contain all the elements that make up a successful SCDR. A second shortfall lies in measurement approaches which assume a fully developed relationship so that participants have a good understanding of the other party in relation to inter-personal vs inter-organisational, and psychological contract vs physical contract. A better measurement system would predict future relationship success at the earliest stages of the relationship formation. Drawing on transaction cost economics (TCE) and social exchange theory (SET) perspectives, this research, therefore, aims to gain a deeper understanding of the dyadic relationship measurement elements and improving them further to make up a list of holistic SCDR elements with a focus on predicting the supply chain relationship success.

The research has used multi-stage approach in a longitudinal study. The first stage of the research was a literature review to isolate the SCDR elements previously identified. These elements were then confirmed via interviews with an expert panel of practitioners with experience operating within SCDRs. Participants were gathered from both the buy side and sell side of the relationship. The second stage of the research used these qualified SCDR elements to develop a questionnaire that attempted to predict the future state of that relationship. This questionnaire was administered via an on-line platform to a small number of early stage SCDRs. Results were fed back to the participating dyads for comment. Finally, after a period of six months had elapsed, a follow up interview was held to find out whether the predictions from the assessment were accurate.

The results of the research indicated that the SCDR elements from the literature were confirmed by the expert panel with the addition of 'culture matching' as a new element. The questionnaire was found to be useful by the participants in stage two and in each case the results were a

prediction of SCDR success. This was confirmed by the follow up interviews after more than six months had occurred with all participants intending to continue with the relationship.

The creation and testing of the SCDR assessment tool has a number of potentially useful implications. Theoretically, the elements that make up a supply chain dyadic relationship (SCDR) from the literature have been confirmed and enhanced by the addition of culture matching. This helps researchers to understand how SCDRs work when formulating future research projects. Confirmation that it is feasible to predict the likely success of a relationship, be it a SCDR or other business relationship, is also likely to be useful in future research.

For management practices, supply chain executives will have access to a tool that pays attention to the organisational culture that can be used to predict success or potential failure of a putative SCDR. This will be a useful aid to help practitioners to avoid the expense of replacing an unsuccessful SCDR, which can be disruptive and expensive, as a result of cultural issues, solely or partially. Options for management can include exiting the unsuccessful relationship early, thereby limiting the sunk costs in the relationship. Alternatively, a prediction of relationship problems, as specifically identified by the model, would enable the parties to take corrective action early to move the relationship into a successful position.

Statement of declaration

Doctor of Philosophy Declaration

“I, Andrew James Downard, declare that the PhD thesis entitled “Predicting Supply Chain Dyadic Relationship Success: a qualitative study of dyads in Australia” is no more than 100,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

Signature:



Date: 8 November 2018

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Publications-Journals and Conferences

1. Downard, A., Shee, H.K, and Sadler, I. (2015), Validating the Elements of a Supply Chain Dyadic Relationship: A Qualitative Review, Paper presented at ANZAM-OM Symposium, RMIT, June 2015.
2. Downard, A., Shee, H.K, and Sadler, I. (2018), Predicting Supply Chain Dyadic Relationship Success: a qualitative study of dyads in Australia, a manuscript under preparation for submission to SCM: An International journal.
3. Downard, A, Vitasek, K (2016) Vested for Success Case Study: Innovation in Healthcare Outsourcing, Case Study Published by The University of Tennessee, Vested Faculty <http://www.vestedway.com/vested-library/>, August 18, 2016.
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Chapter 1

Introduction

1.1 Chapter introduction

Businesses make a considerable investment when they develop a new relationship with a supplier or wholesale customer. No analytical method exists to assess the likelihood of a new supply chain dyad being successful. Previous work such as the Supply Chain Collaboration Index (SCCI)(Wilding and Humphries, 2006a) or the Interpretive Structural Modelling (Thakkar et al., 2008) use a survey to analyse the elements of an existing dyadic relationship to determine its health.

This research confirms and extends the elements required to fully specify a supply chain dyadic relationship (SCDR) between a buyer and supplier organisation. The preferred elements are then embodied in a novel online questionnaire which is answered by relevant executives in each organisation starting a new SCDR. The proposed holistic SCDR assessment in the form of a questionnaire allows the researcher to assess the health of the various elements of the relationship from each organisation's perspective. This initial feedback is then communicated to the various executives for their information and substantiation. About six months later, the executives in the SCDR are interviewed again to ascertain whether the SCDR has advanced successfully or failed in the manner forecast by the assessment tool.

This procedure was carried out with four dyads. In each case, the putative relationships were found to be quite healthy, both at the start and at the follow-up stage.

Chapter One provides an overview of this thesis. It discusses the research background, a brief literature review, knowledge gap, research aims, the conceptual framework, research method and design, and the contribution to knowledge in both practical and theoretical areas. It also delineates the thesis structure by providing a brief summary of each chapter.

1.2 Research Background

Supply chains are recognised as being fundamental to the success of organisations (Christopher, 2016). Much research has taken place into what technical improvements can be made to the operation and planning of supply chains to make them more efficient and effective (Quang et al., 2017). While improvements continue to be made using these

approaches, there has also been significant focus on the value that can accrue from improving collaboration and relationships (Soares et al., 2018, Panahifar et al., 2018). Therefore, this thesis focuses on the importance of relationships to supply chain success (Teller et al., 2016) and of the importance of measurement to the management of these relationships (Neely et al., 2006).

The first step in measuring supply chain relationships is to define the term 'supply chain'. The field lacks a single well-accepted definition, but there are some common elements. These elements include the inter-organisational nature of supply chains, the need for coordination and the focus on an end customer. The following clear and simple definition is the most useful. A supply chain is defined as: *"The network of organisations that are involved through upstream and downstream linkages in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer."* (Christopher and Peck, 2004), Page 2.

Supply chain relationships are typified by a series of ongoing interactions and exchanges between two parties (Holmlund and Törnroos, 1997). Consideration must be given to whether networks or individual dyads should be the level at which measurement should occur. The literature supports the decision to focus on an individual dyad (Morgan, 2007). This thesis uses the acronym SCDR (Supply Chain Dyadic Relationship) in describing the type of relationships being studied.

Economic value can be gained by maintaining good supply chain relationships. Researchers such as Dyer and Chu (1997) have found specific economic benefits due to maintaining good dyadic relationships. There are economic and social science theories that help explain the connection between relationships and the creation of economic value; for example Transaction Cost Economics (TCE) (Williamson, 2008) and Social Exchange Theory (SET) (Ambrose et al., 2010, Homans, 1974). Both these theories play a key role in understanding the subject (Hsin-Mei, 2006). Often the economic benefits will accrue through the adoption of innovation and technical change which has been identified as the driver of 87% of economic growth (Solow, 1988). It has also been shown that for innovation to flourish the dyadic relationship must be healthy (Mitrega et al., 2017). From the literature, a simple definition of success for a SCDR is that the parties continue to do business together (Holmlund and Törnroos, 1997). This definition is supported by work in the relationship

marketing field (Nwakanma and Jackson, 2007) and the third party logistics field (Large et al., 2011). However, the act of managing the supply chain relationship will in itself lead to success (Lacity et al., 2008).

A key contributor to the ongoing business dealings is the existence of trust between the organisations and individuals involved in the relationship. TCE sees the existence of trust in the relationship as a counter to the likelihood of opportunistic behaviour by one of the parties. SET sees the existence of trust coming from the anthropocentric nature of emotions and beliefs. Both views have been shown to be complementary (Ashnai et al., 2016).

The opposite side of relationship success is the failure of those same relationships. The question is why do these relationships fail? The primary cause of relationships ending is through a breakdown in trust between the parties. Relationships that fail through a lack of trust are sometimes caused by the inability of one party to meet the requirements of the other (Basso and Pizzutti, 2016), but a further prime cause is opportunistic behaviour by one party towards the other (Das, 2004, Hawkins et al., 2008). The mechanisms by which a failure occurs may be explained by Hollmann et al. (2015) in their defection energy model. In this research, the authors showed that as the accumulated defection energy increases the likelihood is that the buyer will defect and change suppliers away from the supplier with which they are dissatisfied (Hollmann et al., 2015). It is also possible that a relationship would start off with negative defection energy if the sourcing and contracting stages have been unsatisfactory. This research thesis proposes that defection energy can be held by both buyer and supplier with either of them capable of making a decision to defect.

Supply chain relationships must be managed because they are important to organisations and so they require the use of measurement tools (Beamon, 1999). Measurement systems that provide some predictive capability are especially important because past events are of limited value in managing a process (Barber, 2008). The challenge for participants in a SCDR to accurately predict the likely outcome of a putative SCDR is supported by social science research which indicates that individuals are relatively accurate in prediction when presented with limited information, a process known as 'thin slices' (Curhan and Pentland, 2007, Fowler et al., 2009).

In conclusion, this research background ends with an exploration of the existing models that have been developed to measure supply chain relationships. These models range from those that concentrate on a particular element of the relationship, for example, trust (Laequddin et al., 2010, Kumar, 1996), to those that take a wider view of what can be measured in a dyadic relationship (Mena et al., 2009, Wilding and Humphries, 2006a). All known existing measurement systems require history between the parties to measure relationship success, and they lack the ability to act as a predictive tool during the earliest stages of a supply chain dyadic relationship.

1.3 Knowledge Gap leading to Research Objectives

While there have been several SCDR measurement tools developed by researchers and commercial organisations (Simatupang and Sridharan, 2005, Humphries et al., 2007, Wilding and Humphries, 2006a), A review of the literature has found further areas for improvements can be made. Many of the existing models focus on a single or limited number of elements such as trust (Laequddin et al., 2010) or collaboration (Simatupang and Sridharan, 2005). Other measurement systems include a more comprehensive list of elements such as communication, reliability or the generation of value (Thakkar et al., 2008, Wilding and Humphries, 2006a). None of the prior studies appear to have formally validated of these elements by reviewing them with practitioners in the supply chain field. The set of established SCDR elements already being used as standard practice deserve further investigation and validation.

Some models explicitly require that participants are knowledgeable about the relationship and their SCDR partner. None of the existing assessment models appear to provide a predictive capability which is an important factor in any process of management (Amsteus, 2011). It is recognised that in the absence of any history of partners there is little quantitative data available to be able to conduct a typical forecast process on SCDR success. Hence this is an opportunity to use a more qualitative approach can be adopted (Moussetis, 2011).

Some of the models have based their research approach on providing an overview of a set of industry relationships situation rather than focusing on individual SCDRs (Boniface, 2012). Whereas others only focus on one side of the relationship (Meena and Sarmah, 2012). These approaches do not provide useful feedback and guidance to the individual SCDRs that take

part in the measurement process. Consequently, there is little incentive for SCDRs to take part in the research as the results may not be fed back to them in a way that is useful.

Organisational personality approaches, that focus at the total organisation level rather than the individual dyad level, have been put forward in some assessment approaches (Gattorna, 2006). An organisation, either a buyer or seller, will have a number of differing SCDRs which will have different strategies applied depending on the nature of the relationships between the parties. Procurement strategy models such as those developed by Kraljic (1983) specifically indicate that a firm may have a number of different approaches to their supply chain relationships (Marjolein et al., 2005). Finally, the literature does not explicitly indicate that the researchers went back to the SCDRs assessed and followed up to see if their results were borne out by subsequent experience in their relationship.

Existing models for assessing supply chain dyadic relationships do not include the important element of culture and the need for there to be a culture match between the two organisations in the dyad. Other researchers have identified the importance of culture to supply chain success (Cadden et al., 2013, Cadden et al., 2010, Roh et al., 2008, Sambasivan and Yen, 2010, Beugelsdijk et al., 2009). Beugelsdijk et al. (2009) explicitly identify culture as the missing link in understanding supply chain dyadic performance.

The work by Cadden et al. (2010) and Cadden et al. (2013) is mainly focused on linking supply chain performance to cultural similarity. Whereas this research takes its lead from Van den Berg and Wilderom (2004) who suggest that it is the internal practices that exist within each organisation that is important. Research into cultural differences and negotiation support the idea that differing cultures can negotiate successfully as long as there is an understanding of those differences (Aslani et al., 2016). A mismatch in culture between two organisations has been shown to have caused failure in mergers and acquisitions (Gelfand et al., 2018). Cadden et al. (2013) also recognise that any assessment of a SCDR should be conducted at an early stage of the relationship which supports the approach in this research.

There is also a gap in the understanding of how relationships fail. Hollmann et al. (2015) provide a model where the buyer is motivated to defect from the relationship and stop using a supplier. This occurs due to a build-up of defection energy which when it achieves a certain

point triggers the defection. The model does not consider that a supplier can also accumulate defection energy and decide to leave the customer/buyer.

The result of the gap analysis and search for improvement opportunities has resulted in the following seven items being identified:

1. No one existing SCDR measurement system includes all the elements that make up a putative SCDR.
2. Several of the existing SCDR measurement systems only focus on one side of the dyadic relationship.
3. Existing SCDR measurement systems are historically focused rather than being explicitly predictive.
4. A separate process of validating the putative list of SCDR elements with practitioners in the field has not been included in previous research.
5. Culture matching is not included in the existing models for measuring SCDRs.
6. Existing researchers do not appear to have followed up their surveyed SCDRs to see if the predicted state of the relationship transpires as suggested by their model.
7. All SCDR measurements have been based on cross-sectional survey data rather than longitudinal studies.

1.3.1 Research Objectives:

The review of the literature and subsequent gap analysis has resulted in the following objectives for this research:

The primary objective of the research is to develop a methodology that will enable the measurement of the elements making up a SCDR, so that success of that SCDR can be predicted. The following sub-objectives are developed from the primary objective:

To investigate the elements that make up a SCDR and validate these with practitioners in the field.

To create a predictive measurement tool and apply it with early-stage SCDRs

To undertake a longitudinal study of the selected SCDRs to ascertain whether the predictions were accurate over time.

This research has an overall objective to be useful to supply chain managers who are in the early process of establishing a buy or supply relationship in an important area of their business.

1.3.2 Research Questions:

The research design leads to a series of research questions. They seek to address the gaps in knowledge identified in the research:

Research Question 1:

How can the list of known SCDR elements be improved by input from relevant practitioners?

Research Question 2:

What kind of assessment tool, using the improved list of elements, will enable prediction of future SCDR relationship success?

Research Question 3:

How can the results of an SCDR relationship assessment be validated at a later point in time?

The above questions and propositions will be used in developing the Research Methodology outlined in Chapter 3.

1.4 Overview of the Conceptual Framework

The conceptual framework for the research considers how a Supply Chain Dyadic Relationship (SCDR) is formed and how a process of measuring the state of the relationship might impact on its likely success. SCDRs tend to fail because of a build-up of 'negative defection energy' a concept developed by Hollmann et al. (2015). The framework harnesses this idea by suggesting that the measurement process will both identify a successful SCDR and also provide visibility of the potential causes of failure, should they exist. Having a measure of the causes of failure at the earliest stages will provide either the support for an early exit or a recipe for what needs to change. The use of a predictive measurement rather than experience will greatly reduce the time to success or exit.

Under this approach, organisations would follow a process of exploration in which the parties discover the nature of a potential relationship. The organisations would then operationalise the relationship until it reaches a steady state. At any stage, the relationship can move to a state of inactivity or deactivation (Polonsky et al., 2010). The predictive SCDR measurement process is aimed at the exploration stage of relationship formation.

1.5 Research Methodology

A multi-stage research approach is undertaken to answer the research questions developed and test the propositions that flow from those questions. The first stage is aimed at answering research question 1 - How can the list of known SCDR elements be improved by input from relevant practitioners? The following propositions are put forward:

Proposition P1a - *An expert panel approach can be used to gather from practitioners in the field.*

Proposition P1b - *An interview method can be devised that will ensure the researcher's bias does not influence the interviewees.*

Essentially this stage is to ensure the basis of the assessment process is well founded and will be accepted by potential SCDRs.

In stage 1 an expert panel comprising of participants from both the buy side and sell side in SCDRs was formed. It was important to ensure both sides of the dyadic relationship were included to avoid unbalanced input to the research. The participants hold both operational and senior management positions within their organisations. Separate interviews were held with each member of the expert panel and interviews followed a script to ensure consistent format and content. A series of laminated information sheets were used at several stages during the interviews. Interviewer bias was minimised by the use of story-telling which was useful in this regard (Wijetunge, 2012, Whyte and Classen, 2012). The interviewees were asked to tell stories about both good and bad SCDRs. The interviewer noted down key words and concepts that the stories highlighted. These were then compared with the list of SCDR elements drawn from the literature.

After the storytelling process the interview continued by explicitly asking the interviewee to nominate their own list of SCDR elements before they reviewed the list generated from

previous literature. Any additions or confirmations were noted and considered in generating the finalised list of SCDR elements. Finally, a set of possible questions taken from earlier researcher's SCDR assessment models (Mena et al., 2009, Wilding and Humphries, 2006a) are reviewed with the interviewee to check for ease of understanding and appropriateness.

Second, an assessment tool was developed that included the validated list of elements and the questions that have proved acceptable to the expert panel. This assessment tool was then set up on a suitable on-line platform so that the potential participants from the dyads being assessed could complete the assessment confidentially. The output from the assessment tool was also improved so that it is easier for participants to comprehend being visual to maximise the understanding of those participating (Bresciani, 2013, Zhang, 2012).

Once the assessment tool was developed a small number of early-stage SCDRs were recruited to take part in the assessment process using the on-line questionnaire. The number was kept small because the interaction with each SCDR was greater than a typical on-line questionnaire-based survey. Also, the level of engagement involves several interviews which is similar to a longitudinal case study. The participants undertook the survey and would then receive a briefing on the results using the report format developed. During this report back session views from participants were gathered to understand the usefulness and usability of the on-line assessment tool. Additionally, feedback was sought regarding the reasonableness and fit of the relationship status as indicated by the report.

The final part of the research followed up interviews with the same participants later to see whether the predicted state of the SCDR occurred. These interviews were scheduled for six to twelve months after the initial assessment at the participant's convenience. The objective was to give enough business ordering cycles to find whether the relationship was to be successful or a failure after the relationship honeymoon posited by Johnston and Hausman (2006). Again, a script was used to guide the follow-up interview.

1.6 Research contribution

It would appear that this research is the first time that an expert panel in the SCDR arena has been interviewed using the storytelling methodology to access unbiased input. It also goes beyond the familiar survey-based study of supply chain relationships with the aim of being useful to those involved in the research (Mohrman et al., 2001).

1.6.1 Contribution to theory

This research contributes to supply chain dyadic relationship assessment literature in a number of ways. Firstly, the research brings together several of the existing tools for assessing the suitability of a SCDR in determining the relationship success (Mena et al., 2009, Thakkar et al., 2008, Roberts et al., 2003, Simatupang and Sridharan, 2005, Wilding and Humphries, 2006a). Using the list of SCDR elements contained in the existing literature, this research puts together a comprehensive putative list of SCDR elements, for example, trust or communication.

Secondly, the putative list of SCDR elements is then validated by an expert panel of practitioners using the storytelling methodology referred to in section 1.6. This process validated the putative list and also brought out an additional item. The addition of culture matching from the input from the expert panel is not new to the supply chain literature but has not previously been included as an element in a SCDR assessment tool. The third contribution to SCDR assessment theory is the identification of ‘culture matching’ element that was added to the putative SCDR list, that this research believes in attaining SCDR success (Van den Berg and Wilderom, 2004). The culture mismatch in a dyad, may indicate an early sign of unsuccessful relationship that the managers can mitigate.

Fourth, this research has used transaction cost economics (TCE) and social exchange theory (SET) in explaining and measuring SCDR success. This provides further support for the view that Transaction Cost Economics (TCE) and Social Exchange Theory (SET) are complementary approaches when dealing with SCDR assessment as suggested by Ambrose et al. (2010).

In addition, this research makes a methodological contribution to the study of dyadic relationships. The revised SCDR elements with inclusion of the culture matching element with five items will facilitate the dyads to assess their relationship at the very outset of their relationship development. This study has enhanced the predictability of the dyadic relationship with the inclusion of culture into the SCDR list. While many studies looked at the buyer-supplier relationship as unequal, for example, the buyer may overpower the

supplier (Wyld et al., 2012), this study considers both parties of mutual inter-dependence and the relationship success for a win-win outcome.

1.6.2 Practical contribution

Practically, the findings provide sound insights for managers in a dyadic relationship. While supplier reliance is mounting, this study provides important assistance to practising managers by predicting how the critical relationship may develop for the strategic benefit of both sides of the dyad. Specific practical benefits anticipated are:

- a) The use of the proposed predictive SCDR assessment at the very beginning of the relationship will prevent the selection of the wrong partner as recommended by Cadden et al. (2013).
- b) Supply chain managers can develop a new relationship with a greater likelihood of success: or exit it before much time and cost have transpired;
- c) The addition of the culture matching element will help managers understand whether they have a suitable match in cultures and take action to correct as necessary;
- d) Managers in a SCDR can work on the identified weaker parts of a relationship;
- e) A healthy dyadic relationship will support a more willing exchange of innovation and technical change ideas (Mitrega et al., 2017).
- f) The tool gives a greater chance that a successful SCDR will result, which is very important in larger, and longer relationships.
- g) The construction of contract governance processes will be aided by the ability to predict success or to identify areas of weakness for ongoing management.
- h) The use of the SCDR assessment tool will enable the relationship to get to a healthy position where the parties are willing to collaborate on innovation.
- i) Public sector managers will be able to use the SCDR assessment tool to meet their requirements for procedural fairness and transparency while managing suppliers.

1.6.3 Ethics approval

This research has received ethics approval from the Victoria University Human Research Committee. While the research methodology gathers inputs from individuals, the individual answers are not published. Rather all inputs are aggregated and reported in summary. Participants attitudes to the research lead the researcher to believe that the information that will be provided to participants is of a type that is avidly sought after in business. The

participation of the interviewees, however, was voluntary and they had the option to quit at any stage of their participation.

1.7 Thesis structure

This thesis is organised into six chapters, as follows:

Chapter 1: Introduction

This chapter provides the reader with an overview and scope of the thesis. It starts with a background to the research and the foundational literature that guides the research. This is followed by a brief analysis of the gaps and opportunities for improvement in the area of SCDR measurement which leads to the research objectives, research questions and propositions. The next section is a summary of the conceptual framework that will inform the methodology which then follows. Finally, the contribution that the research makes to theory and practise is briefly discussed.

Chapter 2 Literature Review

This chapter provides a wide-ranging review of existing theories and studies that impact on SCDR success. The definitions of supply chain and of supply chain relationships are reviewed. The impact of these relationships from an economic viewpoint is then explored with a view to highlighting the importance of SCDRs. A definition of SCDR success and how such relationships fail is then covered before moving on to the importance of measurement. An exploration of the existing research and approaches to measuring SCDRs is followed by a gap analysis. The chapter finishes with the generation of the conceptual framework and the research questions and propositions that will drive the methodology.

Chapter 3 Methodology

The Methodology chapter provides the discussion and support for the multi-stage research process used. The reason for taking up a qualitative rather than a quantitative study is canvassed as well as the details of the interview processes and assessment tool design. The chapter ends with a review of the reliability and validity of the qualitative method that has been adopted.

Chapter 4 Results

In this chapter, the results from each stage of the research are provided. The Stage 1 results were used to improve the assessment tool design. The Stage 2 results are supported by the feedback reports that were provided to the SCDR participants. This chapter ends with the results of the follow-up interviews that were conducted sometime after the initial survey.

Chapter 5 Discussion and Implications

The importance of the results and the extent of their support for the research aims, questions and propositions are delineated. Each objective is reviewed to show whether the research succeeded in answering or supporting the question or proposition. Finally, the implications for theory, research and practical application are reviewed.

Chapter 6 Conclusions, Limitations and Future Research Agenda

This chapter states the further opportunities which exist for researchers to build on the findings of this thesis. In particular, what types of research might assist in extending the understanding of the make-up of SCDR elements and their measurement. The limitations of the research method and the outcomes are then discussed and added to the future research agenda.

1.8 Summary

This chapter provides an overview of the reason behind the present research. It outlines the key pieces of prior work on which it is based. The literature review reveals gaps in the existing methods for measuring the state of SCDRs. In particular the lack of predictive capability and the lack of formal field testing of SCDR elements with supply chain practitioners. The addition of culture matching as an element that makes up a supply chain dyadic relationship is new to SCDR assessment tools. These gaps led to the creation of the research questions to be answered and the methodology that would be applied to answer those questions. The research has successfully answered the questions posed. An overview of the contributions to theory and practice in the field is given.

In the following chapter, a detailed review of the literature will be conducted in a logical flow that proceeds from a definition of supply chain, why supply chain relationships are so important and why focussing at the dyadic level is appropriate. The key part of Chapter two is an analysis of existing SCDR measurement tools and the gap analysis that will drive the research forward.

Chapter 2

Literature Review

2.1 Introduction

This chapter takes a wide-ranging journey within supply chain management, examining the nature of relationships across supply chains and the importance of measuring the state of those relationships. The need for measurement to be able to predict future states to be more useful to management is canvassed. The decision to focus the study on dyadic relationships is explored and justified. An understanding of the economic benefits of getting these relationships right and discussion on the reason for chain relationship failure then follows. The review includes with an exploration of prior research into the models that have been used to measure Supply Chain Dyadic Relationships (SCDR). This enables the creation of a putative list of the elements that make up a SCDR.

The chapter ends with an analysis of the gaps in present knowledge and a conceptual framework to guide the development of research aim and questions. These are covered in detail with the supporting research proposition which together guides the creation of the Methodology (Chapter 3).

2.2 Definition of Supply Chain

To begin, it is necessary to consider the question “What is a supply chain?” Unfortunately, there is not one commonly accepted definition to work with as highlighted by (Burgess et al., 2006). This is partly due to the relative newness of the supply chain discipline (Daugherty, 2011). Other researchers have identified over 150 different definitions of supply chain (Stock and Boyer, 2009).

Some definitions seek to describe the supply chain by referring to the accumulation of functions and activities carried out in managing the supply chain (Stock and Boyer, 2009). A more precise and encompassing definition is provided by The Council of Supply Chain Management Professionals (CSCMP (www.cscmp.org) and quoted by (Naslund and Williamson, 2010), page 13.

“Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers and customers. In essence, supply chain management integrates supply and demand management within and across companies.”

This is a workable definition because it explains the functions as well as the boundaries of supply chain management. However, while it introduces the concept of there being other parties in the supply chain, it makes the assumption that supply and demand can be managed “within and across companies”. This type of cross-boundary coordination is certainly a feature of the most successful supply chains (Frohlichm and Westbrook, 2001). This level of coordination does not come naturally and hence incentives are required to create the necessary alignment (Simatupang et al., 2002). The importance of recognising the fact that there are many parties involved has also been highlighted by Christopher and Peck (2004) who provided the following definition of a supply chain:

“The network of organisations that are involved through upstream and downstream linkages in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer.”(Christopher and Peck, 2004), Page 2.

This is considered to be the best definition because it describes supply chains, good and bad and perhaps most importantly, the concept of providing value; the key reason for being involved in a supply chain in the first place.

Christopher highlights the nature of interdependence as well as the importance of relationships in supply chains in this statement: *“Supply Chain Management by definition is about the management of relationships across complex networks of companies that whilst legally independent are in reality interdependent”* (Christopher, 2016), Page 18. Some firms might consider that they are not part of a supply chain because they don’t seek to manage these activities, perhaps holding to a structure and nomenclature that pre-dates the supply chain concept. Christopher’s quote, however, highlights that a firm buying inputs and selling

to others cannot escape being part of a supply chain. A further contribution from Christopher (2018) reinforces the prior quotes definition of supply chain:

“A network of connected and interdependent organisations mutually and cooperatively working together to control, manage and improve the flow of materials and information from suppliers to end users.” (Christopher, 2018) page 3

For the purposes of this thesis the definition provided by Christopher and Peck (2004) will underpin the discussion.

The fundamental aim of firms that seek to manage their supply chains is to gain efficiencies. Researchers such as Kotzab et al. (2011) and Christopher and Holweg (2011) note the general agreement that exists regarding the positive impacts on firm performance as a result of implementing supply chain management. While there are a number of mechanisms by which the gains in performance are delivered, collaboration between supply chain partners has been highlighted as a key factor (Kampstra et al., 2006b, Wilding and Humphries, 2006a). Adopting a collaborative strategy in a firm’s supply chain is not easy, and difficulties arise if the firm has not made the necessary changes internally (Kotzab et al., 2011). It is also important that collaboration is not imposed on a weaker supply chain partner as this may well result in a reduction in performance of the supply chain, particularly for the weaker party (Co and Barro, 2009).

Supply chains are complex business structures and can be understood from a number of perspectives. Håkansson and Persson (2004) propose that the broad term supply chain can, in fact, be made up of elements that are termed as “Internal Chain”, “Dyadic Relationship”, “External Chain” and “Network”. A similar view is taken by Miemczyk et al. (2012) who describe three levels of analysis, “Dyadic Relationship”, “Supply Chains” and “Industrial Networks”. In selecting the dyadic level for analysis and measurement this thesis takes guidance from Knoppen and Christiaanse (2007) who point out that it is at the dyadic level that transactions are carried out. The efficiency of the firm is driven in the short term by the value created by these transactions. Having provided a definition of supply chains it is now necessary to consider the question ‘what is a relationship?’

2.3 Definition of Supply Chain Relationships

What is meant by the term relationships from a supply chain perspective supporting a business venture? A number of terms are used when describing supply chain relationships.

These include “partnerships”, “alliances”, “consortia” and “networks” (Koleva et al., 2002). Therefore, for the discussion of measuring supply chain relationships, some precision around the term is needed.

The term relationship does not refer to a one-time transaction. There needs to be an ongoing pattern of interactions for a relationship to be considered to be in place. Holmlund and Törnroos (1997) provide the following definition:

“A relationship is defined as an interdependent process of continuous interaction and exchange between at least two actors in a business network context.” (Holmlund and Törnroos, 1997), Page 305.

These authors go on to define business to business (B2B) relationships as being able to be characterised by a number of attributes which are Mutuality, Long Term Character, Process Nature and Context Potential. Each of these attributes has a number of sub-elements which are shown in Table 2.1: The descriptive attributes of a factor such as ‘business to business’ (B2B) relationships as they can be applied to determine the nature of a B2B relationship that might exist between parties under analysis.

Table 2.1 Attributes of B2B Relationships (Holmlund and Törnroos, 1997)

Business to Business Relationship	
Mutuality	Degree of Mutuality
	Degree of Symmetricality
	Power Dependence Structures
	Resource Dependency
Long-Term Character	Continuation
	Strength
Process Nature	Exchange Interaction
	Dynamics
	Use Potential
Context Potential	Degree to which parties are embedded

B2B relationships also operate across a number of dimensions which include legal, personal and economic areas (Holmlund and Törnroos, 1997). These can be grouped under three main titles. The Structural Dimension, which includes elements such as linkages and ties between the businesses, these could be formal institutional bonds such membership of trading associations as well as more casual connections such as the use of common suppliers. Secondly the Economic Dimension, which would include investments, either cross-shareholdings or other mutual investments in a third entity. There may be other types of

economic bonds between the parties such as long-term contracts or leases. Finally, there is the Social Dimension which covers elements such as trust, commitment, attraction and other social bonds. It is this area that is often neglected when evaluating B2B relationships and this is short-sighted because, as pointed out by Drucker (1954), enterprises are “a community of human beings” (Medlin, 2012). As well as the dimensions referred to above, B2B relationships operate across three different timeframes. These are the current state of the dyadic relationship, the accumulated history between the parties and their expectations regarding the future (Biggemann, 2012).

There is discussion on whether the research deals with supply chains or supply networks when looking at the definitions provided earlier. Lamming et al indicate the use of the term network is an attempt to capture both the inbound and outbound flows and complex relationships. They also believe that the use of the term is an attempt to take a more strategic perspective (Lamming et al., 2000). Others have pointed out that individual firms are rarely part of only one supply chain (Sadler, 2007) therefore the use of the term networks is preferable to describe the accumulation of all their inbound and outbound activities (Mills et al., 2004).

The fact that it is potentially networks that are being considered could be the source of difficulty when it comes to measurement. Fortunately, in the definitions of networks a number of sources include in their deliberations that a network is made up of a number of paired organisations that are part of a wider system (Gibbs and Humphries, 2009). The position put forward by Anderson et al that relationships are dyads but these dyads are component parts of networks is also useful in positioning relationships, dyads and networks (Anderson et al., 1994). Morgan makes a similar point in describing networks as being made up of a series of connected dyads which are involved in the overall transactions (Morgan, 2007). This work therefore takes a lead from Morgan and uses the term dyad or dyadic relationship as the level at which supply chain relationships will be measured for this thesis. Dyads beyond that being measured are in fact separate entities which require their own measurement with only second-order effects on the dyad being studied.

Combining measurements from a number of dyads would tend to lose meaning as the averaging effect dampens the signals on the state of the individual dyads. Ferreira et al. (2012) also point to the impossibility of a single firm being able to manage multiple

measurement and control systems for each separate supply chain they are a member of. B2B relationships are not formed into their final form in a single step and these relationships change over time to reflect the experience of the participants. Johnston and Hausman (2006) used the marriage metaphor to describe these changes in the relationship over time. The stages chosen were:

- Stage 1: **Singlehood** –The company does not focus on building long-term relationships but rather explores short-term relationships with many different potential partners
- Stage 2: **Honeymoon** –The company now commits to what it believes will be a long-term, cooperative relationship.
- Stage 3: **Couple-hood** -This stage sees the strengthening of the relationship, there may be tensions with prior existing relationships.
- Stage 4: **Additions to the relationship** – The relationship changes as participants add new products, processes, or other innovations
- Stage 5: **Adulthood** – Similar to a marriage, time can generate issues which the partners must negotiate and resolve.
- Stage 6: **Dissolution** – While not all relationships will go through this stage if the issues found in stage 5 cannot be resolved then sometimes ending the relationship is the best solution.

The above stages were created around work on Relationship Marketing which has been defined as “*the development of mutually beneficial long-term relationships between a seller and a buyer.*” (Nwakanma and Jackson, 2007), Page 56. The Relationship Marketing concept does overlap with the Supply Chain Dyadic Relationship model with some variations. Relationship Marketing covers a wider area than B2B dyads being interested in Business to Consumer (B2C) relationships as well as marketing to groups of customers. A model that is focused on the B2B dyadic relationship is that generated by (Polonsky et al., 2010) who takes a similar approach to Nwakanma and Jackson (2007) since there is an exploration stage followed by a stage where the benefits of working together are actualised. This model also recognises that at any time the relationship might be dissolved or put into a period of inactivity. The concept is illustrated in Figure 2.1.

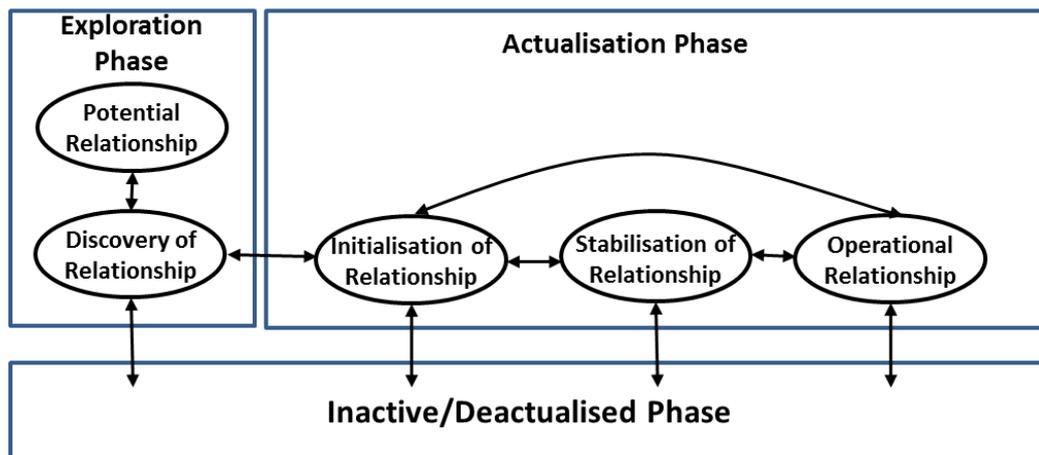


Figure 2.1 Phases and Stages of Relationship Development (Polonsky et al., 2010)

This section clarifies what constitutes a supply chain dyadic relationship. The next matter to consider is why such relationships are important?

The definition of SCDR success is taken from the work of Holmlund and Törnroos (1997) in that a continuing series of transactions or continuation of the relationship is deemed as being a success. This implies satisfaction with the relationship which is important for ongoing business and therefore success (Large et al., 2011) who draw from the relational marketing field as does (Nwakanma and Jackson, 2007). The next section highlights the theories that clarify how the economic benefits of good SCDR relationships are created.

2.4 Economic Value and Supply Chain Relationships

To support the significance of the main subject of this thesis it is necessary to review whether there is an economic benefit for firms to recognise the importance of relationships with the other organisations in their supply chains. There are a number of sources that support the economic benefit of relationships. These detail the gains to be made from good supply chain relationships or by the losses generated by poor ones.

The first example of the gains to be made by fostering good supply chain relationships comes from the automotive industry. From research into the North American, Japanese and Korean automotive industries Dyer and Chu (1997) identified that the untrusting buyer in the automotive industry spends six times the administration cost to source new components versus the trusting buyer. The result of this extra effort is the trusting buyer – who does not use complex tendering, tough contract terms and other mechanisms to “increase competition

between suppliers” – still has a net advantage of US\$1500 per vehicle lower cost per parts over the untrusting buyer (Anklesaria, 2007). This result is achieved with no detriment to the quality of the vehicle; in fact, the opposite appears to be true (Morris, 2009). The number quoted by Anklesaria is supported by the team that run the multi-year ‘Working Relations Index’ that plots the relationship between major suppliers and the North American and Japanese Original Equipment Manufacturers present in the USA. They found that Chrysler had missed out on US\$1052 profit per car which had added up to US\$24billion over 12 years (Henke et al., 2014). Although General Motors saved US\$4.0 billion in the early 1990’s by generating intense competition amongst suppliers, they have not been able to maintain this economic advantage in the long run (Kim and Michell, 1999). It has been suggested that the root cause of General Motor’s decline has been its inability to form relational contracts with key stakeholders such as suppliers or General Motor’s own workforce (Helper and Henderson, 2014). Research into what makes outsourcing agreements successful has shown that those relationships able to concentrate on shared value creation and innovation provide exceptional results (Vitasek and Manrodt, 2012).

Bose, the North American manufacturer of electronic and entertainment systems, has sought to leverage its relationships with key suppliers by eliminating the “sales/purchasing” interface and inviting suppliers straight into the manufacturing process (Sheth and Sharma, 1997). The elimination of the need for staff in these “overhead” areas of the business and removing the expense of contracts and legal support provides a profit increase for both organisations. The risk of opportunistic behaviour is counterbalanced by the maintenance of a mature and trusting relationship as well as the bottom line benefit to both organisations. Relationships that develop in this way have the opportunity to make gains in absolute terms without needing to focus on relative gains; in other words, growing the ‘pie’ without becoming overly concerned at how the pie is divided up. Research in the Irish electronics industry showed a positive connection between good supply chain relationships (communication, trust and adaption) to improved cost outcomes for the parties in the relationship (Fynes et al., 2005).

A similar picture can be found in the world of Information Systems Outsourcing. Willcocks et al. found that basing the business relationship on trust rather than stringent contract terms resulted in a benefit worth 40% of the value of the contract (Cullen et al., 2005). It has been proposed that an arrangement to supply a good or service can be concluded in minutes where trust is present between the parties (Covey and Merrill, 2006). Where trust is not present

time must be taken up with investigation and the development of protections against opportunism. Thus the presence of trust can be seen to increase the speed of interactions (Pandey and Garg, (2009). This concept is supported by Sterman, who identifies improved relationships as a way of reducing uncertainty between supply chain partners with subsequent business benefits to the parties (Sterman, 1989). As with the “trusting buyer” identified by Dyer and Chu (1997), this extra work does convert into economic advantage. The concept of speed equating to economic advantage in supply chains is also supported by (Wilding and Newton, 1996, Wilding and Humphries, 2006a) and (Beesley, 1997).

This discussion highlights the benefits that have been observed as a result of good supply chain relationships. Let us now examine the theories that can help explain how the benefits are derived.

2.5 Theories Supporting the Generation of Economic Value through Relationships

What theories of business interactions can help explain the economic results found by Dyer and Chu (1997) and others (Anklesaria, 2007, Henke et al., 2014)? The most persuasive of the potential candidates is Transaction Cost Economics (TCE) developed by Williamson (2008). In his “Contractual Schema”. Williamson proposes a hierarchy of arrangements that come into play once a firm decides that they are going to contract out a requirement to outside firms. (Table 2.2):

Table 2.2: Williamson’s Contractual Schema, based on (Williamson, 2008)

<i>Arrangement</i>	<i>Nature of Protection</i>	<i>Typical Protection Methods</i>	<i>Economic Cost of Protection</i>
Unassisted Market	No protections at all	Each party must look to their own resources for protection; for example insurances or risk premiums	High Cost
Unrelieved Hazard	There are risks that are not resolved but there are less of them, and some protections exist	The contract may attempt to pass on or assign risk. The State may take a role in enforcement	Medium Cost
Hybrid Contracting	There is market support, and the risks and issues are minimised	The parties combine contractual and relationship-based protections	Low to Medium Cost

The driver to economic advantage through good relationships and trust is that, at the level of Unassisted Markets and Unrelieved Hazard, parties will buffer their pricing and responses to provide added protections as well as a premium to compensate for the increased risk. They may even require funds to be transferred in advance of the delivery of goods or service. This adds cost and impacts negatively onto response times versus the Hybrid Contracting model where suppliers will charge less (Williamson, 2008). So parties that feel safer, because of the reduced likelihood of opportunistic behaviour, will put in place less buffers and this will deliver faster response times and lower costs (Khan and Burnes, 2007). Christopher & Lee also discuss this issue pointing to the response to nervousness in supply chains is to over-order inventory (Christopher and Lee, 2004). There is more to TCE than just risk and cost minimisation: Hammervoll suggests it is also about value creation for the parties involved (Hammervoll, 2009). Thus, TCE is a suitable framework for measuring supply chain relationship success (Ambrose et al., 2010). TCE has been criticised for limiting the use of open innovation through a focus on transaction costs and concerns of opportunism by external partners involved in developing technical change and new ideas (Remneland-Wikhamn and Knights, 2012).

Social Exchange Theory (SET) (Homans, 1974) takes a different view of the Business to Business (B2B) exchange process to TCE but is complementary to it (Ambrose et al., 2010). While TCE focuses on the benefits that accrue to the parties through the transactions, SET considers the benefits of the relationship itself. This ability to extend the benefits of TCE by providing social controls and facilitating exchange is seen as linking TCE and SET in a supportive way (Hsin-Mei, 2006). At its core, SET suggests that the continuance of a B2B relationship is determined by the net rewards that each party gain from the transaction. An ongoing series of rewards will lead to continuation of the relationship (Griffith et al., 2006). Rewards include social as well as economic ones (Hawkins et al., 2008). The link between SET, positive supply chain relationships and performance has been developed by Wu et al. (2014) who break down the aspects of social exchange into trust, commitment, reciprocity and power. These parameters lead to information sharing and collaboration resulting in improved firm performance. Much of the improved performance being likely to come from innovation and technical change rather than working existing assets and the workforce harder (Solow, 1988).

SET also introduces the concept of justice into a B2B exchange breaking justice down into ‘procedural justice’ which relates to the fairness of the procedures that the parties use to govern the conduct of their relationship. The other element is ‘distributed justice’ which refers to the actual outcomes delivered (Griffith et al., 2006). These aspects of justice can act as a counterbalance to power wielded by one party in the relationship over the other (Ireland and Webb, 2007) while providing mutual and reciprocal benefits to both parties. This is the key to the sense of justice experienced by the parties (Griffith et al., 2006). SET provides support to TCE by filling in the gaps that TCE cannot answer. For example, empirical research does not fully support the concept of universal opportunism that is embedded in TCE. SET identifies social norms or personal relationships as an effective governance mechanism (Lambe et al., 2001)

The next candidate which influences the benefits to be found through better relationships and trust is the Resource-Based Theory (RBT) of the firm. Hoyt and Huq propose that the RBT approach can also be applied to firms linked into a supply chain. They found that collaboration and trust between firms in a supply chain allowed the supply chain to accumulate resources that are rare, valuable and hard to imitate, with few substitutes (Hoyt and Huq, 2000). It is known that when firms accumulate this type of resource, it delivers a “Sustainable Competitive Advantage” to that firm (Fahy, 2000). Likewise, as stressed in the work of others (Christopher, 2016) and (Antai, 2011), it is supply chains that compete rather than individual firms. Hence accumulating these resources would deliver a sustainable competitive advantage to the whole supply chain with a resulting economic benefit.

A final model for consideration is the Network Theory of the firm. Ge (2002) has indicated that when the value of a good (which can be a physical good, process or service) changes because the number of people making use of this good increases then this is known as the “Network Effect”. So if firms in a network trust the other parties in the network, they can maximise the use of the goods in the network and thus reap an economic benefit (Ge, 2002). Substitute the words supply chain in place of network and the benefit of leveraging the resources is clear. The more activities or transactions put through a supply chain, the lower the cost to participants in that supply chain. For example, in the case of liquor distribution in Australia, competitors share the same delivery transport because delivery is not a differentiator to their customers and the costs for all are lower (The Independent Liquor Group (Suppliers) Cooperative Limited, 2008 <http://www.ilg.com.au/>).

All the above theories explain how the mechanisms at play make supply chain dyadic relationships successful. Each of the theories provides different views of the same phenomenon. They provide a simple definition of supply chain relationship success: it is a relationship that continues because both parties involved wish for it to do so for economic and social reasons. Transaction Cost Economics underpins the economic aspects of the dyadic relationship, and Social Exchange Theory underpins the social aspects of the dyadic relationship. Therefore, relationship success can be simply defined as one that continues as each party is receiving enough benefit to be prepared to continue to do business with the other party. A brief comparison of the attributes of each of the discussed theories which drove the selection of TCE and SET, with Hi, Med and Low signifying theoretical contribution to SCDR success is shown in Table 2.3 below:

Table 2.3 Selection Matrix for Underpinning Theories (Self Developed)

Decision Factor	TCE	SET	RBT	Network Effects
Creation of Economic Value	Hi	Med	Hi	Hi
Consideration of Relationship	Med	Hi	Low	Low
Consideration of Reputation	Hi	Hi	Low	Low
Consideration of Trust	Hi	Hi	Low	Med
Consideration of Risk	Hi	Med	Med	Med
Focus on Continuing Relationship	Hi	Hi	Med	Med

In the following section we will review the reasons why relationships do not succeed and fail to continue.

2.6 Reasons for Relationship Failure

Supply chain relationships can come to an end for a number of reasons; these range from an end to the requirement for the goods or services provided by the supply chain to wider economic or market factors. Also as Polonsky et al. (2010) note relationships can appear to have ended while in fact being put into hibernation for a range of reasons. Of more interest to the measurement and prediction of dyadic relationship success is that class of failure that come about because of the behaviour of one or both parties. The most damaging behaviour to relationships is where there is a breach of trust.

Two forms of inter-organisational trust have been identified. Firstly “affective trust” which can be interpreted as the goodwill that is present between the individuals involved on both sides of the relationship; this is the personal side of B2B trust. The second aspect is termed “trust in competency” which is about the ability of the party to fulfil their role (Ha et al., 2011). Where one party breaches the trust of the other it can be accidental, which can lead to a reduction in the competency-based trust for the other party. Alternatively, a deliberate breach is called opportunism and has been defined as “self-interest seeking with guile” by Williamson (1996). Opportunistic behaviour by one party is likely to degrade the affective trust of the other party. It is identified as one of the leading causes of relationship dissolution (Das, 2004). Likewise, Schrank and Whitford (2011) point to incompetence and opportunism as being the primary causes of business network failures.

Opportunism has been identified as either active or passive (Mysen et al., 2011, Wathne and Heide, 2000). Active opportunism is usually employed by the powerful party. For example, in monopsony or oligopsony market conditions, where there are a few large buyers, suppliers are exploited by powerful customers (Wyld et al., 2012). This can involve activities ranging from pushing out payment terms to arbitrarily taking discounts on invoices. Opportunism is not the sole province of the customer, Pinnington and Scanlon (2009) report a number of buyers who highlight concern about suppliers’ opportunistic behaviour. Passive opportunism is more subtle; it can include behaviours such as not providing innovation ideas to the other party or letting quality standards slide. Where there is active opportunism from one party, it is extremely likely that there will be passive opportunism from the other. Even where the less powerful party does not have the ability to impact the more powerful party they will put effort into seeking out and creating forms of ‘countervailing power’ that allows them to mitigate the opportunistic behaviour they are experiencing (Handley and Benton, 2012, Freytag et al., 2012). Opportunism can vary in timescale and in the impact it has on the other party. Thus, the impact can range from high to low and timeframe can similarly range between short and long-term (Das, 2004)

Wathne and Heide (2000) also identified the dimension of impact and termed high impact opportunism as being ‘blatant’ or strong opportunism. These authors also define timeframes but take a different approach to Das (2004). Their view is that opportunistic behaviour can occur before the relationship is formalised, by withholding information or providing false information. Or by withholding information or providing false information after the

agreement is formalised. The first case can result in selection bias because had the missing or false information been known, then a different partner might have been selected for the contract. In the second case, the opportunistic partner is failing to abide by the agreement reached at a cost to the impacted partner.

The legal scholar Stuart Macaulay provides another view on reasons for relationship failure. In his work he has identified that there is often a difference between the paper deal and what Macaulay calls the ‘real’ deal (Macaulay, 2003). Aligned with Williamson’s point that all contracts are incomplete (Williamson, 1979) Macaulay suggests that the parties will fill in the gaps as needs arise with an informal arrangement to allow the objective of the contract to be achieved. Should either of the parties revert to the paper deal then the relationship may be stressed and fail. Other researchers have termed this informal arrangement as the psychological contract (Kaufmann et al., 2018). A failure to abide by the psychological contract will lead to an erosion of trust and potential relationship failure.

Wilding and Humphries (2006) identified a model for business relationship failure from the work of Williamson (2008) on an organisational failure framework. This model followed a reinforcing loop that over time would lead to the failure of the relationship through both passive and active opportunistic behaviours (Figure 2.3).

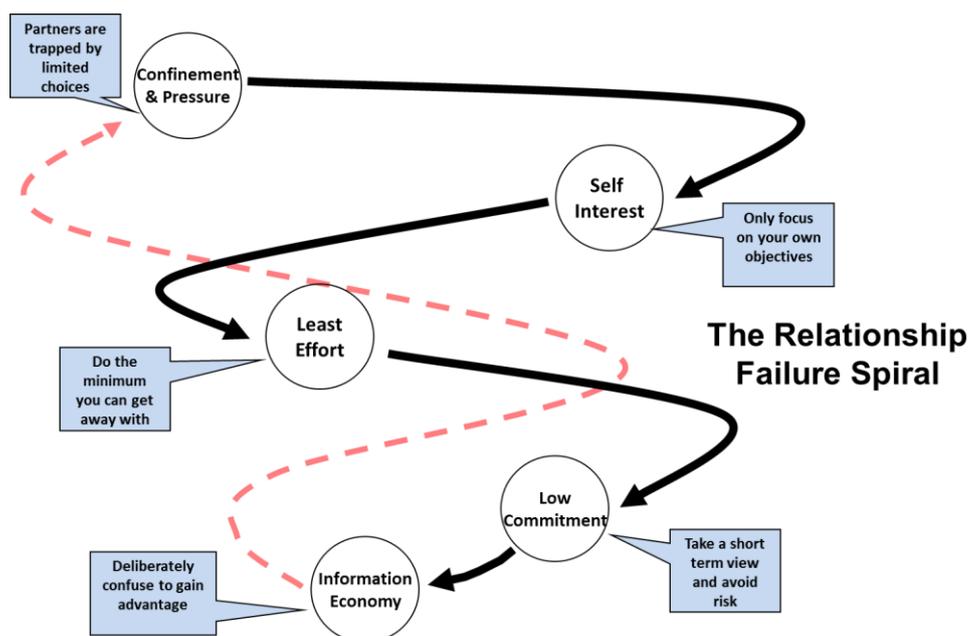


Figure 2.2 The Relationship Failure Spiral After (Wilding and Humphries, 2006a)

The choice of a spiral versus the original loop proposed by Wilding and Humphries (2006a) is based on the work of Autry and Golicic (2010) who suggest that a spiral is a better model to show the stages in a B2B relationship. Later research (Ryals and Humphries, 2010) also reclassifies the original concept as a ‘negative spiral’.

An important reason why the relationship might fail is that it was the wrong relationship in the first place. Sometimes firms will select the wrong partner with whom to form a relationship. Approximately 70% of the respondents to a Deloitte survey quoted by Freytag et al. (2012) expressed dissatisfaction with outsourcing arrangements, and 25% had moved to insource the activities because of this dissatisfaction. Freytag, et al. (2012) identified seven core problems that caused these levels of dissatisfaction and insourcing decisions:

1. poor judgement of whether the activity should have been outsourced in the first place;
2. selecting the wrong supplier;
3. poor preparation of the agreement between the involved parties;
4. a lack of discussion regarding personal matters;
5. the firm losing control of the overview of the outsourcing process;
6. hidden costs of outsourcing which were overlooked; and
7. the absence of consideration for how to terminate the agreement with the supplier (an exit strategy).

At least four of the seven core problems (as underlined) relate to the relationship between the parties rather than technical or execution issues. Partner selection is a difficult process even when objective criteria are used or attempted to be used. Often the criteria conflict; for example quality performance and cost (Nayak et al., 2011). A failure to take into account the future needs of the business can also have a negative impact when tactical decisions are made rather than taking a more strategic approach (Kaufmann et al., 2012).

Some researchers have suggested that the relationship between buyer and seller can come to an end through simple complacency (Friend and Johnson, 2017). In this model, the seller takes the customer's business for granted and misses important signals that they may be about to lose the business. This situation generates what Hollmann et al. (2015) describe as Defection Energy which can either bring the relationship to an end or cycle back to a continuing relationship where the Defection Energy is either dissipated due to improvements made by the offending party or accumulated for future action when the amount of Defection Energy reaches the threshold at which defection is triggered. The Defection Process Framework developed by Hollmann et al (2015) is shown (Figure 2.3)

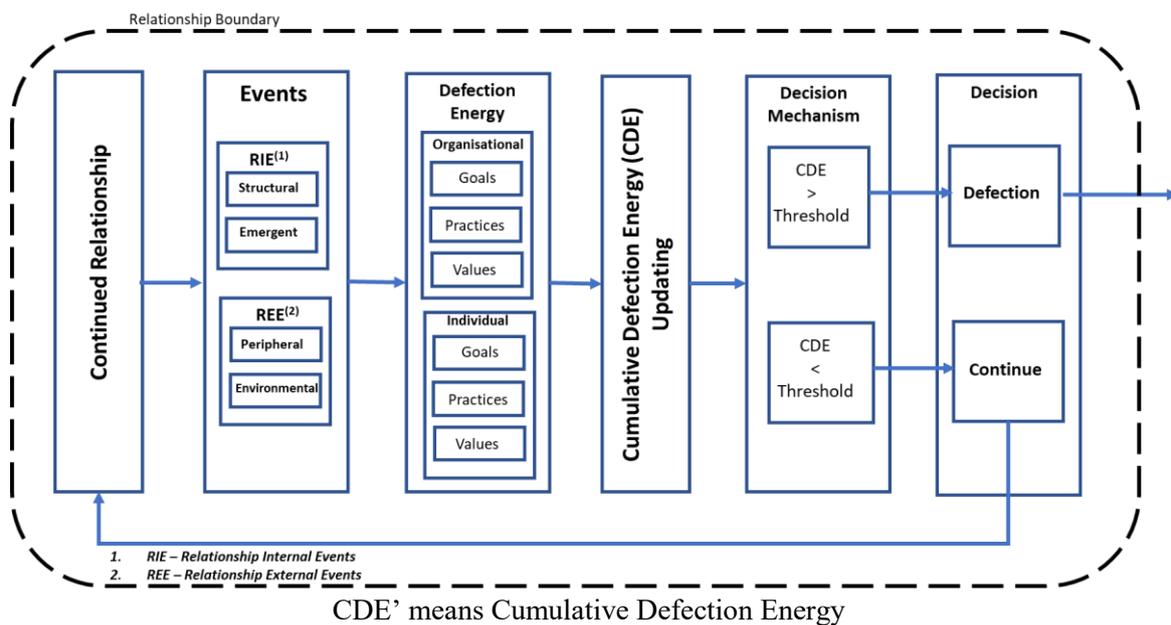


Figure 2.3 Defection Process Framework (Hollmann et al., 2015)

Another model that provides some insight into relationship failure is critical incident theory and Negative Critical Waves (NCW). In this theory, it is suggested that a single or series of critical incidents or failures can reverberate over time and organisation space. The rate of movement and amplitude of these waves are driven by complex factors and can result in the end of the relationship (Edvardsson et al., 2014).

2.7 The Importance of Measurement and Prediction

It has been recognised for some time that measurement is important. The early work of Lord Kelvin (*Popular Lectures and Addresses "Electrical Units of Measurement" (1889)*) supports the concept that if something is to be managed then it must be measured (Neely et al., 2006). Whilst some have suggested that the existence of performance measures in supply chains add

to more open and transparent communication between parties (Gopal and Thakkar, 2012), others have proposed that the unilateral introduction of measurements in a supply chain dyad may reduce trust and performance (Kabadayi and Ryu, 2007).

Unfortunately, measurement across supply chain boundaries is not yet common or standardised in a way that might make comparisons useful (Beamon, 1999, Gunasekaran et al., 2004). Within organisations, the existence of performance measures is well established through traditional accounting practice or through more balanced approaches that take into account both quantitative numbers as well as qualitative information (Kaplan, 1996). The backward-looking nature of traditional performance measures, when applied to supply chains, is also criticised (Barber, 2008). A number of researchers state that qualitative measures are required and specifically highlight the lack of whole of supply chain measures (Gunasekaran et al., 2004, Van Hoek, 1998). Van Hoek (1998) emphasises this concern with the title of his paper “Measuring the unmeasurable” – measuring and improving performance in the supply chain”. In addition, there is a view that, even if numerical measures are available, if they do not measure the right supply chain parameter, then they are worse than a less precise qualitative measurement (Beamon, 1999).

The biggest concern in the supply chain performance measurement is the point made above about measures needing to be across organisational boundaries to be truly a measure of the supply chain. This is difficult when, in practice, the performance management systems of participants in the supply chain are isolated from each other (Papakiriakopoulos and Pramataris, 2010). As a number of researchers have shown supply chains compete, not firms (Christopher, 2016), hence the true measure of performance must be against the competing supply chain (Antai, 2011).

Comparing against equivalent supply chains has been stressed by other researchers who propose that only benchmarks between supply chains provide this sort of measurement (Giannakis, 2007). To be relevant, the supply chain benchmarked against would need to be relatively equivalent and, given the complexity of most supply chains, perhaps an impossible task (Papakiriakopoulos and Pramataris, 2010). Cusack and Rowan (2009) provide six key points that should be considered in creating a benchmarking study:

1. Does the study address all the areas of importance to your company?

2. Do the metrics included in the study address your specific needs?
3. Does the study take a balanced approach to cost and service?
4. Does the study compare apples-to-apples metric data?
5. Does the study have a code of ethics that participants agree to follow?
6. Is there a forum to discuss the findings contained in the report and best practices that should be considered? (Cusack and Rowan, 2009)

The requirements proposed by Cusack & Rowan would present difficulties in trying to compare dyadic relationships as sourcing a comparable dyad would be difficult and the provision of sensitive relationship information problematic.

The need to be able to forecast approximate future conditions has been recognised for some time. Amsteus (2011) points out that Henry Fayol (1919), an early writer on strategic management, claimed that “if foresight is not the whole of management at least it is an essential part of it”. Importantly Amsteus (2011) showed that there was a statistically significant link between managerial foresight and firm performance, therefore good management is more than measuring what is happening in the present but also about making determinations about the future. The statistical methods developed by Walter Shewhart are considered to be of particular benefit in predicting future business results and are a proven methodology (Wilcox and Bourne, 2003).

In making forecasts, there are two situations faced by managers. The first is where there is a historical basis for making predictions where quantitative methods can be applied. The second is where Moussetis (2011) describes the environment as being discontinuous and turbulent. In this case, there is insufficient data to carry out a quantitative calculation, and more qualitative methods must be applied. Moussetis (2011) highlights the “weak signals” approach developed by Ansoff (1975) as being useful in this regard. Future events, even in turbulent environments, will be partially predictable based on the tentative and weak signals that they put out. Management judgement can then be applied to avoid “strategic surprises” (Rossel, 2010).

The existence of information technology has greatly improved management’s ability to make predictions. In most cases of real-time monitoring of business processes, the system has the ability to predict the future outcome with a very high degree of accuracy once 50% of the

process has been undertaken (Metzger et al., 2015). The challenge facing the researchers of SCDR success is that to be useful the measurement and prediction need to occur at the very early stages of the relationship. This aspect is discussed in more detail in section 2.13 where the ability for people to make reasonably accurate predictions about others behaviour, particularly where the behaviour could result in risk, is discussed.

The previous sections provide the background to evaluate existing models for measuring supply chain relationships. This next section compares the models that have been identified as relevant to this research.

2.8 Existing Methods for Measuring Supply Chain Relationships

A number of existing models and processes aim to measure supply chain relationships. Some have remained as theoretical exercises while others have become tools that are used in the commercial field. The commercialisation is not in itself a recommendation for the model although this may point to a larger base of measured dyads. Not all the systems reviewed aimed to measure the whole of the relationship; some focused on a single element such as trust or collaboration. Other approaches mixed measurement areas that covered the state of the relationship with output-based measures such as inventory performance or capacity utilisation (Ramanathan et al., 2011).

There are several relationship assessment models that focus on one side of the relationship, for example, Meena and Sarmah (2012) explicitly state the limitation of their model: that it only focuses on supplier satisfaction with the relationship. Likewise, Boniface (2012) has a similar limitation as well as being narrowly focused on a particular industry, the Malaysian Dairy sector. In both cases, the focus is on insights at the industry level rather than at the individual dyad. These models focus on a wider set of elements than those that make up a supply chain relationship.

Three approaches, the Supply Chain Collaboration Index (SCCI) (Humphries et al., 2007), the Interpretive Structural Modelling (Thakkar et al., 2008) and the Relationship Measurement Matrix (RMM) (<http://www.adsgroup.org.uk>) have the stated aim of measuring the relationship rather than outcome or performance issues. Others, such as the system for measuring trust in supply chain relationships developed by Laeequddin et al. (2010), are explicitly focused on one element. Most of the processes reviewed have a high-

level element of a relationship which is then supported by a series of sub-questions. Table 2.4 provides a comparison of the high-level categories in each system.

Table 2.4 Comparison of Relationship Elements in Current Measurement Systems

Source =	ADS (UK Trade Association)	(Humphries et al., 2007)	(Simatupang and Sridharan, 2005)	(Roberts et al., 2003)	(Thakkar et al., 2008)	
System Name =	Relationship Management Matrix	Supply Chain Collaboration Index	Collaboration Index	Measuring Relationship Quality	Interpretive Structure Modelling	
High Level Relationship Categories	i1	Communication	Creativity	Information Sharing	Trust in Partners Honesty	Business growth – long-term perspective
	2	Capability Management	Stability	Decision Synchronisation	Trust in partners benevolence	Mutual understanding and closeness
	3	Continuous Improvement	Communication	Incentive Alignment	Affective Commitment	Meeting customer/ market requirements
	4	Commercial	Reliability		Satisfaction	Role in decision making
	5		Value		Affective Conflict	Risk/profit sharing

Looking at the list at this high level does not show any degree of similarity apart from perhaps communication. To understand whether there are common themes between the models, it is necessary to drop down to the individual questions and assessment criteria. Because the models “Collaboration Index” and “Measuring Relationship Quality” are only focused on a few elements of a relationship, they will be excluded from this next stage in the analysis. The remaining three models work on the same approach by asking respondents to answer questions on a five-point Likert scale that ranges from “strongly agree” to “strongly disagree”. The example questions on the subject of communication in Table 2.5 show that the SCCI questions provide more context for the respondent to consider, while the other two provide less information regarding the meaning of the question. For example, in the case of “Information Exchange” under the RMM model the respondent would be choosing the extent of agreement, across a five-point scale, that information was being shared in the relationship.

Table 2.5 Comparison of Depth of Questions Between Existing Measurement Systems

<i>Relationship Management Matrix (RMM)</i>	<i>Supply Chain Collaboration Index (SCCI)</i>	<i>Interpretive Structure Modelling (ISM)</i>
<i>Communication Planning</i>	3. Communication – transparency for business success.	<i>Directionality of communication</i>
<i>Information Exchange</i>	Where the other party has proprietary information that could improve the performance of the joint business, it is freely available	
	We would welcome a shared data ‘environment’ where market, planning, technical and pricing information are made freely available	
	We understand the information requirements of all participants in the supply chain from suppliers to customers	
	Exchange of information in this relationship takes place frequently and informally – not just according to specified agreement	
	Objective performance measurement is an important part of this relationship	
	We are aware of the performance requirements for all participants in the supply chain from suppliers to customers	
	We provide the other party with regular information including long-range up to date forecasts and market developments to enable him to do his business better	

The number of questions in each model is relatively similar at 20, 38 and 32 respectively and at this level of analysis, similarities can be found. There are some factors that only exist in one model but as the following analysis (Table 2.6) shows there are more common items within the SCCI model and the other two models than there is between either the RMM or ISM models and the other two.

Table 2.6 Comparison of Elements

Relationship Element	RMM	SCCI	ISM
Communication	✓	✓	✓
Information Exchange	✓	✓	
Risk & Opportunity Sharing	✓	✓	✓
Trust		✓	
Performance Management	✓	✓	

Process & Continuous Improvement	✓	✓	
Innovation	✓	✓	
Value	✓	✓	
Future Intentions/Strategic Alignment	✓	✓	✓
Fairness/Justice		✓	✓
Commercial Relationship	✓	✓	
Commitment		✓	✓
Mutuality/Interdependence		✓	✓
Responsiveness	✓	✓	✓

In aligning the elements, we have looked beyond the specific wording and instead sought out the underlying concept. So, for example, the concept of “fairness” used within the SCCI model is deemed to be the same as the concept of “justice” used by the ISM model. In terms of output, the RMM and SCCI models provide a series of gap analyses, graphs and other outputs that enable the reader to quickly find areas of concern, opportunities for improvement or elements that indicate strength in the relationship. The ISM, on the other hand, provides a more theoretical and mathematically described output that requires the reader to undertake the analysis. As pointed out earlier this may point to a process that has been enhanced with the end user in mind and eventual commercialisation. This is clearly the case with the RMM that has been developed by a Trade Association for use by its members.

Based on the review of elements contained in the above systems and their output, the following is a list of elements from the SCCI model that could be considered as the elements that make up a supply chain relationship. This list has been chosen because of the greater commonality between the SCCI model and the other models assessed:

- Creativity
 - The standard definition of creativity is bipartite: Creativity requires both originality and effectiveness (Runco and Jaeger, 2012). In the context of SCDRs, it relates to the development of new approaches to the promotion of quality, innovation and a long-term focus on high performance (Mena et al., 2009)
- Stability
 - Stability refers to the alignment of objectives and the development of confidence in the other party (Mena et al., 2009). The expectation that

the parties will work in a cooperative rather than an adversarial way will assist in building relationship stability (Ryals and Humphries, 2007)

- Communication
 - Communications between members of different organisations is seen as a critical predictor of overall supply chain performance (Gligor and Autry, 2012). Promoting high quality, open, frequent, trustworthy information sharing is a contributor to SCDR success (Ryals and Humphries, 2007).

- Reliability
 - In the context of SCDRs reliability refers to the basic tasks of delivering the required services or products. It also includes the important issue of reducing costs and building trust in competence (Mena et al., 2009).

- Value
 - The concept of value relates to both whether the parties are receiving value from the relationship but also how such gains are distributed. It is the latter point that can negatively impact the relationship as the more powerful party in the SCDR appropriates value from the weaker party (Chicksand and Rehme, 2018)

- Long-term Orientation
 - Having a long-term orientation is an important social aspect of cooperative relationships. It represents the expectation of working together in the future (Lui and Ngo, 2012). The expectations of the future have been highlighted earlier as having importance to SCDR success (section 2.3)

- Interdependence

- As interdependence increases, the parties view the relationship as important and not only invest in the relationship but also avoid taking actions likely to jeopardise the relationship (Griffith et al., 2017).
- C3 Behaviour (cooperation, collaboration & coordination)
 - C3 behaviour is defined as working together to bring resources into a relationship to achieve effective outcomes in alignment with the objectives of the parties involved, therefore delivering mutual benefit (Humphries and Wilding, 2004)
- Trust
 - Trust is a critical element for SCDR success. It is made up of both cognitive trust, competency, integrity and goodwill. And affective trust, relational and intuitive (Dowell et al., 2015).
- Commitment
 - Commitment is about focusing efforts on building task– knowledge, process alignment and process flexibility to improve the performance of the relationship (Chou et al., 2015). It is based upon the belief that a relationship is worth the effort required to maintain that relationship (Ulaga and Eggert, 2006). Commitment is also defined as the parties in a dyad having a strong focus on the continuation of the relationship with both parties committing to working together on maintaining and extending the relationship (Chen et al., 2011)
- Adaption
 - dyadic adaptations are defined as behavioural or organisational modifications carried out by one party in the dyad, which are designed to meet specific needs of the other party in the dyad (Brennan et al., 2003).
- Personal Relationships

- The communications between SCDR organisations are essentially communications between employees of those organisations. The success or failure of these communications can, therefore, rely on the personal relationships that build up between these employees. A failure in these interpersonal relationships can have an impact on the performance of the SCDR (Gligor and Autry, 2012)

There are only minor elements that are excluded, for example, the relative size of the firms involved or an assessment of the contracts in place between the parties. Examples of questions employed by existing SCDR assessment models are included in Appendix I.

Examples of predictive relationship measurement systems found in other disciplines do not approach the subject in a way that is useful for this research. Using broad search terms such as ‘predicting relationship success’ or ‘measuring relationship success’ has found that some work has been carried out in the area of predicting success or failure of romantic or marriage relationships between individuals. These do not have any bearing on the subject of this thesis.

2.9 Culture and Dyadic Relationships

Agreement on how to define culture relative to supply chain relationships has not yet been reached. A firm’s culture has been described as being similar to an individual’s personality (McAfee et al., 2002) but organisations are not ‘king sized’ individuals (Shi and Wang, 2011). There is some support for the view that culture relates to patterns of values and beliefs that are exhibited in practices, behaviour’s and various common approaches shared by organisational members (Cadden et al., 2013, Sambasivan and Yen, 2010, Hofstede et al., 2010).

In reviewing the culture of organisations, it is important to recognise that there is overlap between the national culture within which an organisation sits and the individuals that sit within the organisation. There have been a number of research projects carried out into the nature of national cultures. The most well know is the work carried out by Hofstede et al (2010) into the differences within a single global company across most regions and countries in the world. In this work, Hofstede originally identified four cultural dimensions which were later extended to six. The model developed by Hofstede is shown in Figure 2.5. Against these six dimensions, a nation's culture could be described by indicating where on the continuum from minus to plus did the nations sit. The basic idea of the model is that a country and its position on the various continuum's distinguishes it from another country with different positioning.

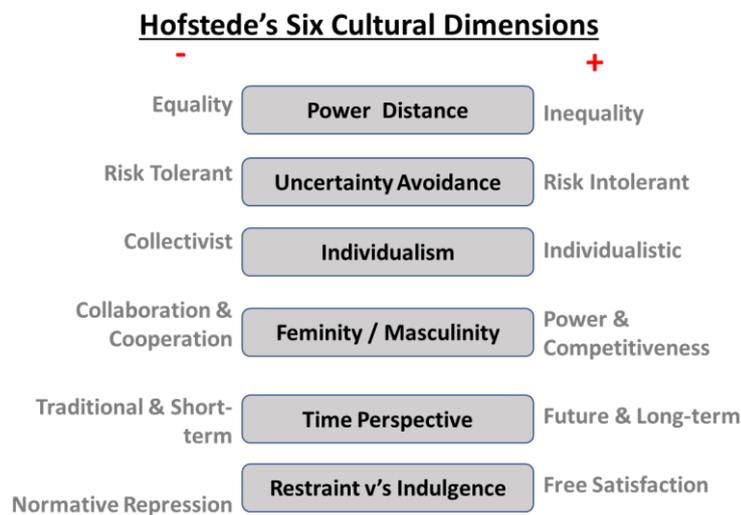


Figure 2.4 Hofstede's Six Cultural Dimensions (Hofstede et al., 2010)

There has been criticism of the work done by Hofstede, many suggesting that it is too simplistic (Shi and Wang, 2011). Other more complex models such as the Global Leadership and Organizational Behavior Effectiveness (GLOBE) have been put forward; however, Shi and Wang (2011) point out this more complex model appears to use the same dimensions as Hofstede except that they break them down into smaller elements. GLOBE has a wider group of respondents versus Hofstede et al (2010) who initially only focused on one organisation across many countries.

Organisation culture has been defined as “*shared perceptions of organisational work practices within organisational units that may differ from other organisational units.*” (Van

den Berg and Wilderom, 2004), Page 571. In their seminal book ‘In Search of Excellence’, the authors stressed the importance of the strength of an organisations culture in reaching success (Peters and Waterman, 1982). Others have pointed to the lack of definition in the concept of strength when it comes to culture (Van den Berg and Wilderom, 2004), suggesting that it is really consensus amongst employees rather than any robustness in the organisation's culture.

Many researchers have concluded that culture is an important factor to consider in understanding supply chain relationships and success (Sambasivan and Yen, 2010, Roh et al., 2008); however, research by Cadden et al. (2013), using an extensive series of constructs for cultural fit, failed to find a correlation between cultural fit, or at least similarity, and supply chain performance. In some cases, the researchers found that organisations that were the most similar culturally had the worst supply chain performance. Despite this, the research by Cadden et al. (2013) does support cultural compatibility but not necessarily similarity or homogeneity. Other researchers have found that culture has been specifically identified as the missing element in building a model of dyadic relationship success (Beugelsdijk et al., 2009). Their model is illustrated in figure 2.5 below:

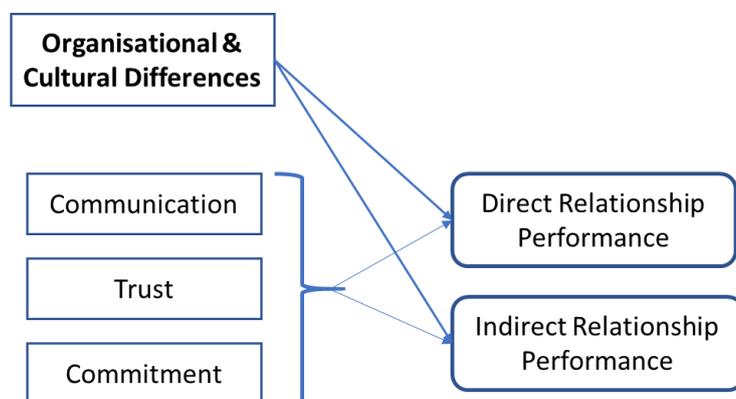


Figure 2.5 Dyadic Relationship Performance Model (Beugelsdijk et al., 2009)

The elements of communication, trust and commitment have been defined as they relate to dyadic relationships earlier in this section. A discussion of culture follows.

The idea that there should be consideration of culture matching is starting to take hold in the strategic sourcing field. For critical suppliers who may form part of a long-term strategy and be engaged as a source of supply over many years, it is important to know there is a good fit.

Some writers have suggested that it is cultural norms that are an important consideration (Keith et al., 2015). They propose that there are six cultural norms that impact on the relationship between customer and supplier:

1. **Reciprocity** – obliges the parties to make fair and balanced exchanges.
2. **Autonomy** – the parties, must abstain from using power to promote their own self-interest at the expense of the other party.
3. **Honesty** – obliges the parties to tell the truth about both facts and their intentions.
4. **Equity** – the parties, must look at the distribution of work and resources critically, just splitting everything 50/50 may not be equitable.
5. **Loyalty** – requires the parties to be loyal to the relationship itself.
6. **Integrity** – means that the parties must be consistent in decision making and in actions.

While these are suitable principles, they do not necessarily consist of something that is easily measurable. For example, measuring honesty has been described as a major empirical challenge (Hugh-Jones, 2015). The author found that questionnaires were not a suitable methodology for this type of measurement. To measure honesty requires the ability to triangulate self-reporting with some information on previous behaviour, for example, self-reporting on coin tosses versus the actual results or previous unethical behaviour. This sort of measurement would be hard to include in an assessment of a SCDR relationship.

None of the SCDR measurement methods canvassed in this section explicitly includes an assessment of cultural fit. Despite the lack of support found by Cadden et al. (2013) for cultural similarity, the weight of support by other researchers suggests that it is a factor that should be included in a comprehensive measurement model (Beugelsdijk et al., 2009, Gattorna, 2006). Perhaps the failure by Cadden et al. (2013) to find correlation is because of the factors being measured were too granular when only some of the aspects of culture are important. This is supported by the researchers who point out that some factors in their earlier results such as market orientation do show a link (Cadden et al., 2010). Roh et al. (2008) suggest that it is more important for the parties to have a culture that fits the particular supply chain environment which appertains. This is illustrated in figure 2.6

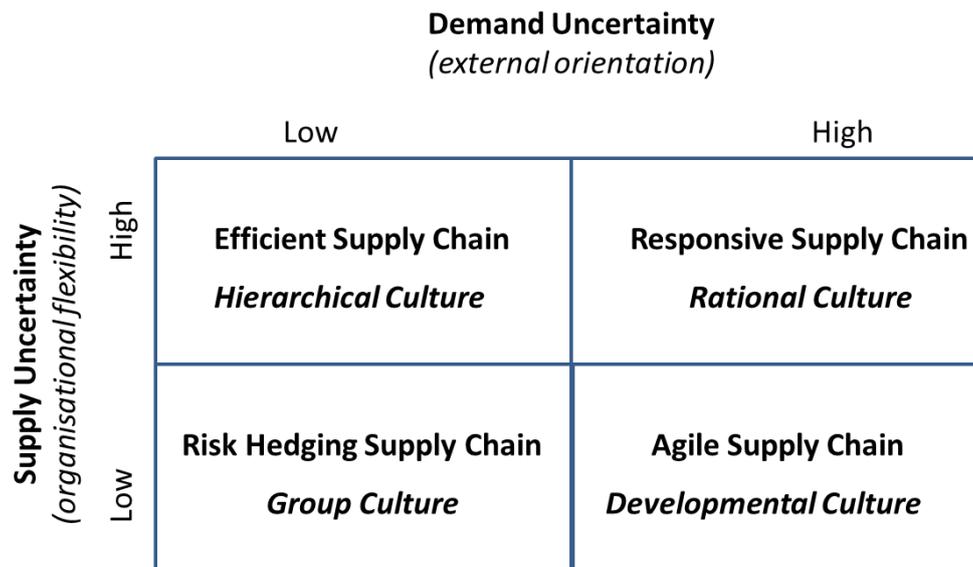


Figure 2.6 Organizational culture and supply chain strategy (Roh et al., 2008)

Van den Berg and Wilderom (2004) highlight that it is the practices that occur within organisations that are most important when considering organisational culture. Other factors such as values are often invisible to the individual. Thus, when considering the matching of organisations cultures, it is these practices that are most influential. Therefore, to bring out the elements of culture that might be relevant to the measurement of SCDRs the following critical factors, with an eye towards practices, were extracted from the work of Hofstede (Taras et al., 2012, Hofstede et al., 2010). In organisational culture matching Hofstede et al (2010) highlight several areas for consideration. Firstly, the parties have clarity on how each of them is organised, otherwise being able to make contact easily with the right people in the opposite organisation can be an irritant if there is lack of clarity. Secondly, an understanding of how the opposite party makes decisions is important. Lack of understanding of this issue can increase the levels of unpredictability which can have a negative effect on the relationship. These factors are important in building a sense of familiarity in the relationship by allowing each party to see inside the workings of the other party and reducing uncertainty (Kwon and Suh, 2004).

Next, we consider the degree to which the parties feel comfortable with the culture of the other party. This is partly driven by the similarity of the parties but does not require them to be completely homogeneous (Hofstede et al., 2010, Taras et al., 2012). The concepts that differing cultures can successfully do business together has been shown to be possible (Aslani et al., 2016). For example, cultures in negotiations have been identified as being

marked by a desire for either dignity, face or honour. Dignity represents an individualist's desire for recognition of their success. Face and honour are come from a collectivist point of view and are built around how others see them in their culture (Aslani et al., 2016). These researchers do not suggest that one type of culture cannot negotiate with another but rather that recognition of the underlying basis of that culture must be considered. In the end, it is respect and a feeling of comfort with the other culture that is important.

The final area that Hofstede et al (2010) consider to be important is the area of precision and accuracy. Hofstede et al (2010) suggest that a mismatch between parties that relate to the amount of precision or flexibility that is present in their dealings can have a serious impact on the relationship. If one of the organisations is looking for a high degree of accuracy and precision in the delivery of services whereas the other is focused on being flexible and agile, then misunderstandings are very likely. A very similar position is taken by Gelfand et al. (2018) where they suggest that many mergers and acquisitions fail because of a cultural mismatch between the parties. The key area they focus on is the looseness or tightness of the two cultures. In the article, they highlight the failure of the Amazon and Whole Foods merger where Amazon has a very tight culture with strict performance monitoring and aggressive targets. Amazon values routine and predictability. Whole Foods, on the other hand, have a loose culture with staff able to use initiative to deliver customer satisfaction. Whole foods value speed and innovation (Gelfand et al., 2018).

2.10 Gaps and Improvement Opportunities with Existing Measurement Methods

The existing relationship measurement methods cited in section 2.8 need to be assessed for their usefulness plus adequacy in measuring for future success and any opportunities for improvement identified. Supply chain relationship measurement systems fall into a number of categories that start with those that only measure the outputs of the relationship, systems that take a "one-sided" view of the relationship and those that measure only a small segment of the elements that go together to make up a supply chain relationship. These systems only provide part of the picture and may result in the firms involved addressing a suggested problem area when higher priorities would be identified by an assessment of the total relationship. Examples of these include the models developed by authors (Laequddin et al., 2010, Roberts et al., 2003, Simatupang and Sridharan, 2005).

Other models provide answers that categorise organisations into a certain type or behavioural style. The assessment tool developed by Gattorna (2006) is based on applying a psychological tool to organisations is one such system. It tends to place a firm into a particular personality category and then assigns likely behaviours to the firm. When these behaviours clash with the behaviours of the partner firm, then a poor relationship will result. This methodology is very much based around a conversion of the Myers Brigg’s personality theories (Myers and Myers, 1980) from individuals to a firm. The view that organisations have personalities is also supported by Anderson (2009) and Gibbs and Humphries (2009).

Expecting that all a firm’s relationships will be of the same character ignores the ideas put forward by theories such as the Kraljic Purchasing Portfolio model (Kraljic, 1983), (see Figure 2.7), and (Marjolein et al., 2005) that most professional purchasing organisations use to categorise how they will interact with a particular combination of supplier and purchased item. This would result in a different set of behaviours being shown towards a supplier of a non-critical item where the risk to supply is low, and the value or profit potential is low versus a supplier of a strategic item where the risk is high, and the value or profit potential is high.

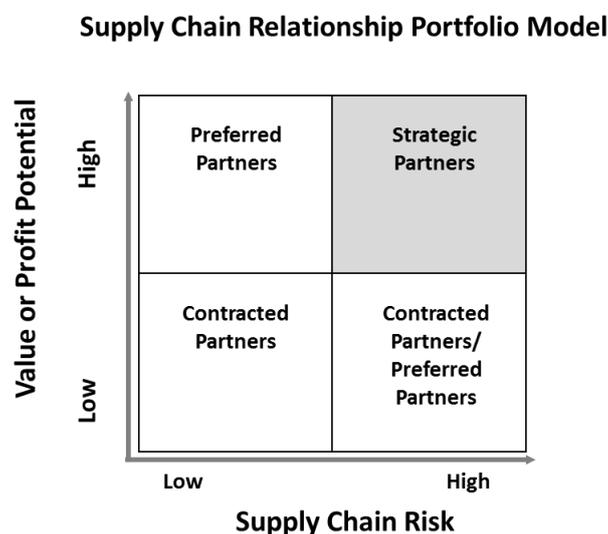


Figure 2.7 Supply Chain Relationship Portfolio Model (Based on Kraljic (1983))

This multiple behaviour approach is also supported by (Hornibrook et al., 2009) who point out that much of the supply chain literature has tended to view collaborative relationships as superior to other types. Kampstra et al. (2006a) call this the “silver bullet” for supply chain

problems (a seemingly magic solution to a complex problem). They counter this “one best” approach by pointing out that firms can get benefit from building a portfolio of different types of relationship which deliver a range of different results and benefits to the parties. In practice supply chain managers will build a hierarchy of supply chain relationships with a few firms being entered into a strategic partnership for long-term value creation; a larger group of firms chosen as preferred partners, being positively selected; with a degree of loyalty being offered and then a much larger group entered into transactional relationship where majority of firms are removed, promoted or added to as the need arises (O'brien, 2009). This is illustrated in Figure 2.8:

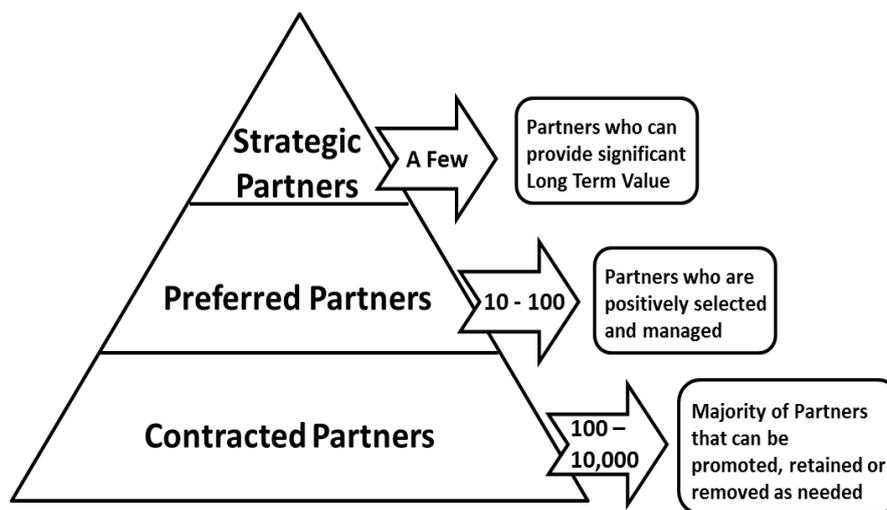


Figure 2.8 A Hierarchy of Supply Chain Relationships (modified from (O'brien, 2009))

A key concern with the existing relationship measurement models is that they require the parties involved in the relationship to have sufficient prior dealings with each other to be able to answer the questions as currently constructed. This means the models are only useful for firms that are already working within a relationship with opportunities for improvement. A more useful measurement tool would be one that is predictive in nature. Such a tool would prevent firms from entering into relationships with little chance of success or provide a clear list of actions to ensure the relationship was successful. Delivering a greater chance of relationship success would give firms confidence in their investment in taking on a new supply chain partner.

The issue of predictive measurement is important as mentioned in Section 2.7. A common failing of all performance management systems is their bias towards the use of “lagging”

indicators. This results in organisations spending too much time looking back at history and fixing the problems of the past rather than including a dose of prediction into improving their performance management system (Mehrabad et al., 2012). This use of “leading” indicators or “up-stream” thinking is seen as being both proactive and preventative in nature (Anderson and McAdam, 2004). These researchers point to the value of a predictive supply chain relationship measurement tool as a preventative as well as a predictive tool when it comes to relationship success. It is unlikely that any party involved in a potential supply chain relationship, that has received a list of potential failure points, would not take action to address the issues and make the relationship stronger. Thus, it is argued the act of measuring the relationship makes the likely success of the relationship more certain. Unless it is measured it cannot be improved effectively.

In summary, the search for improvement opportunities has resulted in the following seven items being identified:

1. No one existing SCDR measurement system includes all elements that make up a putative SCDR.
2. Several of the existing SCDR measurement systems only focus on one side of the relationship.
3. Existing SCDR measurement systems are historically focused rather than being explicitly predictive.
4. A separate process of validating the putative list of SCDR elements with practitioners in the field has not been performed in previous research.
5. Culture matching is not included in the existing models for measuring SCDRs.
6. Existing researchers do not appear to have followed up with their surveyed SCDRs to see if the predictions/state of the relationship continues over time.
7. All SCDR measurements have been limited to cross-sectional survey data where the effect is not measured longitudinally.

The influences on the potential future SCDR measurement approach and the gaps identified are summarised in the following Figure 2.9:

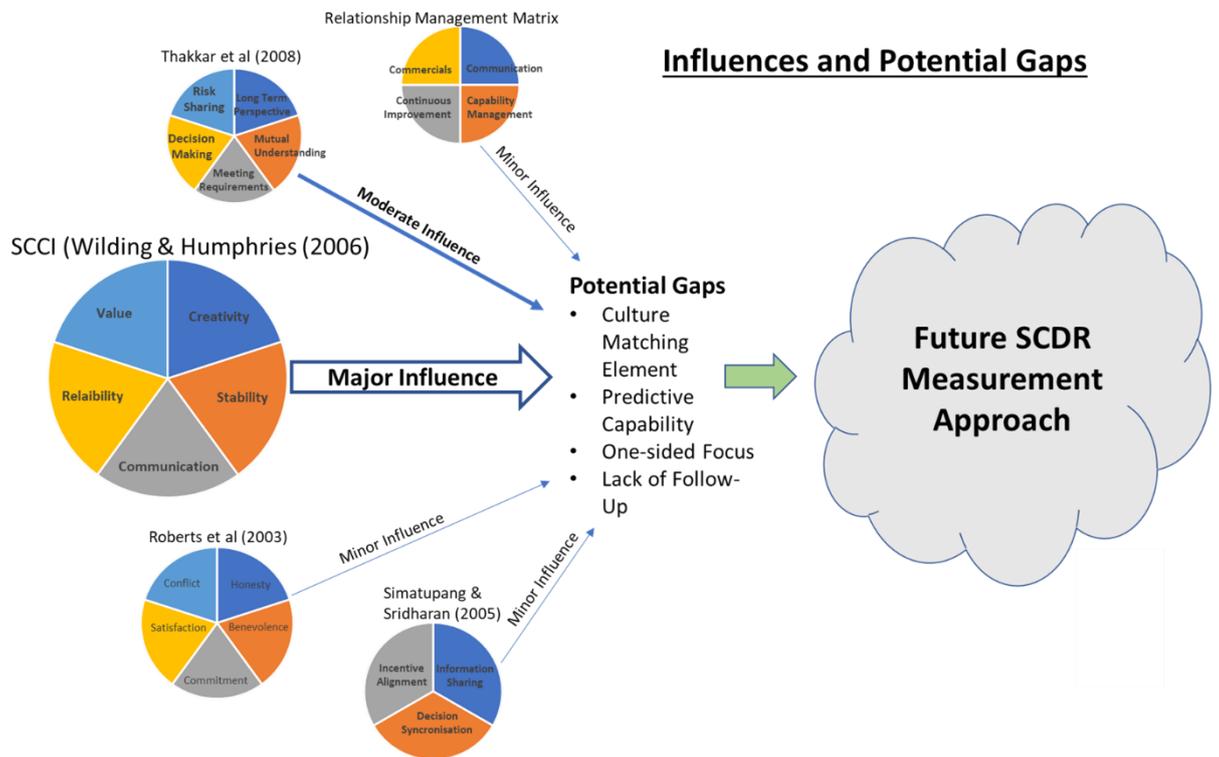


Figure 2.9 Influences and Potential Gaps on Future SCDR Measurement Approach (Self-Developed)

2.11 Research Aims:

The research, therefore, aims to gain a deeper understanding of the component parts or elements that make up a SCDR, to validate these in the field and to use these elements to develop a measurement tool that can assist in predicting the future success of that SCDR. It is this element of prediction that is scarcely mentioned in the existing literature on measuring dyadic relationships and developing such a tool is core to the aims of this research.

The sub-objectives are to:

- Research what elements make up a SCDR;
- investigate these elements that make up a SCDR and validate them with practitioners in the field;
- create a predictive measurement tool with inputs from the practitioners and apply it to early-stage SCDRs;
- undertake a longitudinal study of the selected SCDRs to ascertain whether the predictions were accurate.

2.12 Conceptual Framework

The review of prior research pointed out the benefits that accrue to organisations that form long-term SCDR with their trading partners. These benefits come from the continuing series of transactions that the dyads carry out because the partners are gaining value from each other. The value created is driven by the reducing transaction costs, based on Transaction Cost Economics theory, as well as the social rewards that result from Social Exchange Theory application. It is therefore in the interests of all organisations to maintain long-term SCDRs with their chosen partners.

Business is rarely static, and changes to circumstances are an ever-present phenomenon that firms must deal with. New products become necessary to meet competition, new markets are entered to create growth, and new technologies alter the way existing methods or materials are used. All this change requires firms to manage their supply and distribution channels. The process of management can often require even the most stable and relationship driven organisation to have to seek out new partners, be they manufacturers, suppliers or distribution partners. The process of searching out, evaluating and bringing on-board new partners is an important, time consuming, and at times expensive process. Properly executed acquisition of a new partner sets the business up for a successful relationship and profitable outcomes (Kaufmann et al., 2012). If poorly executed, the acquisition of a new partner can result in significant losses to the business; whether through mismanaging the process, or by selecting the wrong party. The most expensive aspect of the failure is the requirement to repeat the whole process.

The root cause of many relationship failures is found in the initial selection of the partner (Cadden et al., 2010). Selecting the wrong supplier from the choices available is often the major cause of the problem. Failures in selection processes can come from the use of inappropriate criteria; for example, overly focusing on price when quality and delivery are equally important factors. A failure to think strategically can also be the cause of future dissatisfaction with the choices made in selection (Kaufmann et al., 2012). Overall figures for rates of failure and dissatisfaction are hard to come by but a survey finds that 75% of outsourcing parties surveyed expressed dissatisfaction with the arrangement and 25% of respondents planned to 'insource' the work back into their business (Freitag et al., 2012).

To overcome the issues identified requires a degree of prediction in an environment where there is little information on which to base the process. The ‘weak signals’ approach developed by Ansoff (refer section 2.7) provides some confidence that, even in turbulent environments with limited data, there are sufficient signs to enable parties to evaluate the likelihood of relationship success. This is particularly the case where both parties to the prospective SCDR are committed enough to undertake an assessment process to predict the likely success or failure of their relationship.

2.12.1 Wide Conceptual Framework

A measurement tool based on the relationship elements identified in section 2.8 would have a dual benefit to the participants. Firstly, it would provide an indication of whether the relationship is likely to be a successful one or likely to fail. In extreme cases, the parties could decide to terminate their prospective business relationship. The second benefit is that the areas of weakness in the prospective relationship can be identified. If the problem is not beyond recovery, then the parties can make changes to improve those elements and build a more successful relationship. Even in a relatively strong relationship, there will be opportunities for improvement. Dyads that work on the improvement of their relationship are likely to reach a stable state of success faster than those that don’t and almost certainly faster than those that don’t measure at all (Hollmann et al., 2015).

The following framework (Figure 2.10) illustrates the situation between a prospective dyad that does not measure and one that does:

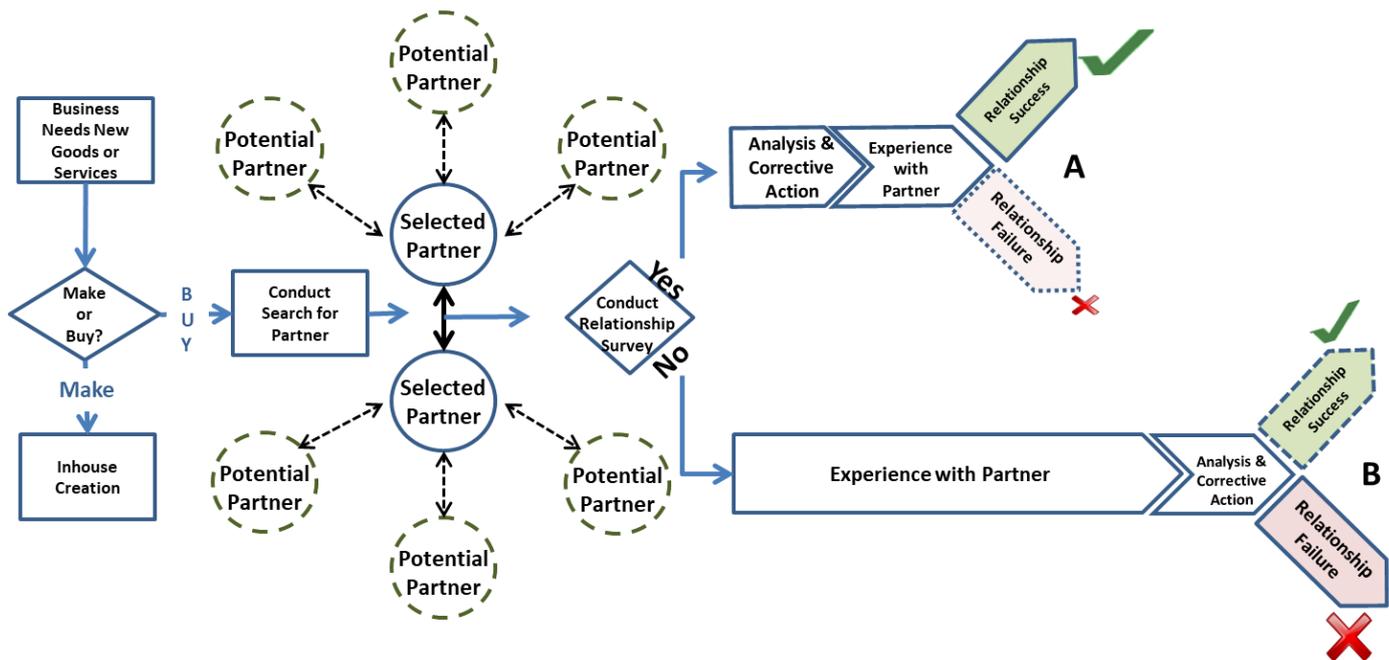


Figure 2.10 Conceptual Framework – Benefits of Relationship Measurement (Self Developed)

The two paths described in Figure 2.9 are as follows:

A: Organisation selects a partner from the field of choices after conducting a ‘predictive’ SCDR measurement process. There is a low rate of SCDR failure or dissatisfaction.

B: Organisation selects a partner from the field of choices with little measurement and relies on experience to guide SCDR success. There is a high rate of SCDR failure or dissatisfaction.

While the first approach referred to in the figure (A) above would appear to add a step into the selection and bringing on-board a new partner it is anticipated that it will shorten the overall time to achieve relationship success. This comes about through the ability to take corrective action early in the process and thereby avoid costly corrections later. In particular, it prevents the selection of the wrong partner, a problem driven by selection bias and lack of good information (Kaufmann et al., 2012). The cost of undertaking a program to find a new source of supply is usually very high (Kavanagh, 2016). In particular, the availability of predictive measurement means partners do not have to wait long to tell if they are in a successful relationship: even though the ‘honeymoon’ effect masks problems in the initial stages. The expected flow of events compared to no analysis is illustrated in Figure 2.11: where the illustration A without predictive measurement is showing a longer timeframe than illustration B which has predictive relationship measurement:

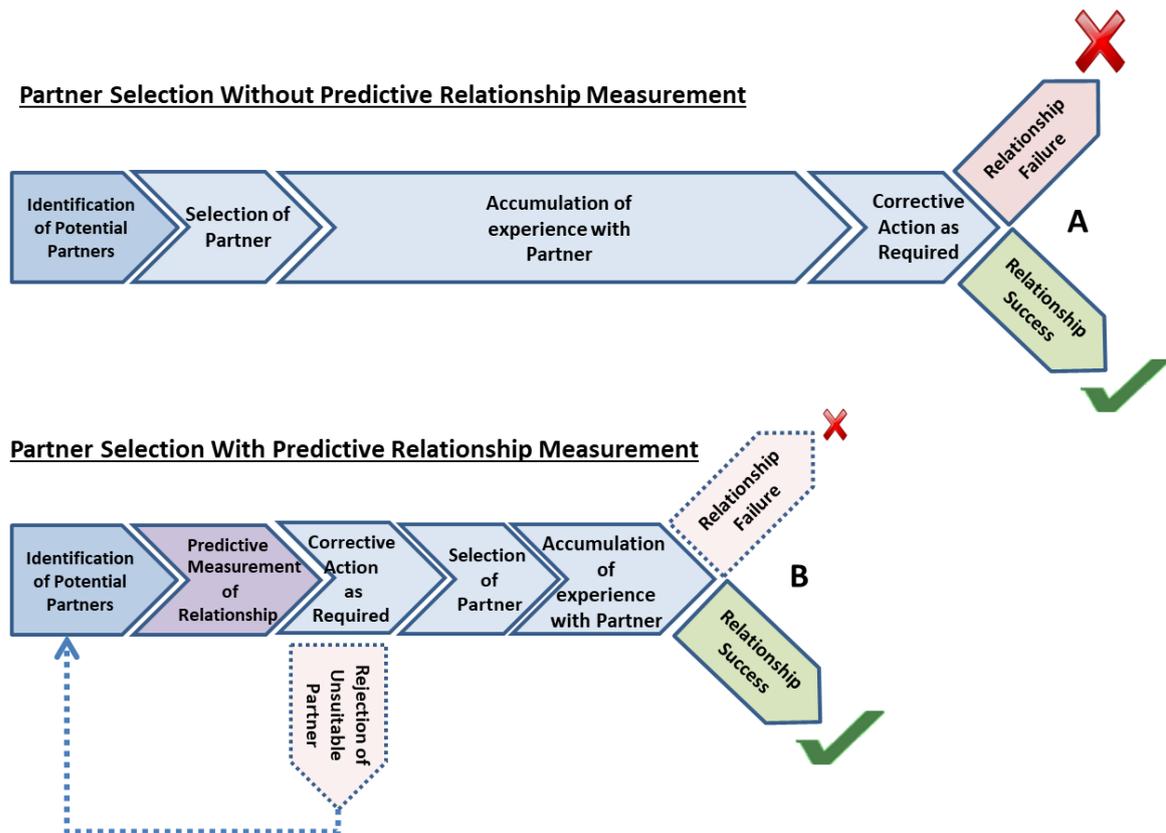


Figure 2.11 Comparison of Use of Predictive Relationship Measurement (Self Developed)

It is noted that there is always a limit to the number of close strategic relationships that an organisation can enter into (Christopher and Jüttner, 2000). As such the choice to enter into a relationship measurement process should form part of a strategic assessment of where the supplier fits into the hierarchy noted in Figure 2.8, page 58. The discourse next details the predictive SCDR measurement and its outcomes.

2.12.2 Predictive Measurement Process & Outcomes

Based upon the research by Hollmann et al. (2015) the mechanisms by which the relationship may fail are identified in the following chart Figure 2.12. This thesis extends on the work by Hollmann et al (2015) by suggesting that both buyer and supplier can defect from the relationship. Where both parties in the relationship are experiencing high satisfaction, the relationship can be said to be successful with the likelihood that transactions will be ongoing, which is the definition of SCDR success (section 2.3). Alternatively, if both parties are dissatisfied then what Hollmann et al (2015) call Cumulative Defection Energy will increase, and both will move towards ending the relationship. The quadrants where either the buyer of services or the seller of services is dissatisfied while the other party is satisfied are a more

complex situation. In these cases, the dissatisfied party is likely to be at risk of defection. This may initiate overt action to end the relationship or covert action to reduce their investment in the relationship. Such action will result in the formerly satisfied party not receiving the benefits that led to this level of satisfaction. Over time the satisfied party will equalise their level of satisfaction with the dissatisfied party and join them in the ‘relationship failure’ quadrant. This assumes that no action is taken by either party to address the original sources of dissatisfaction.

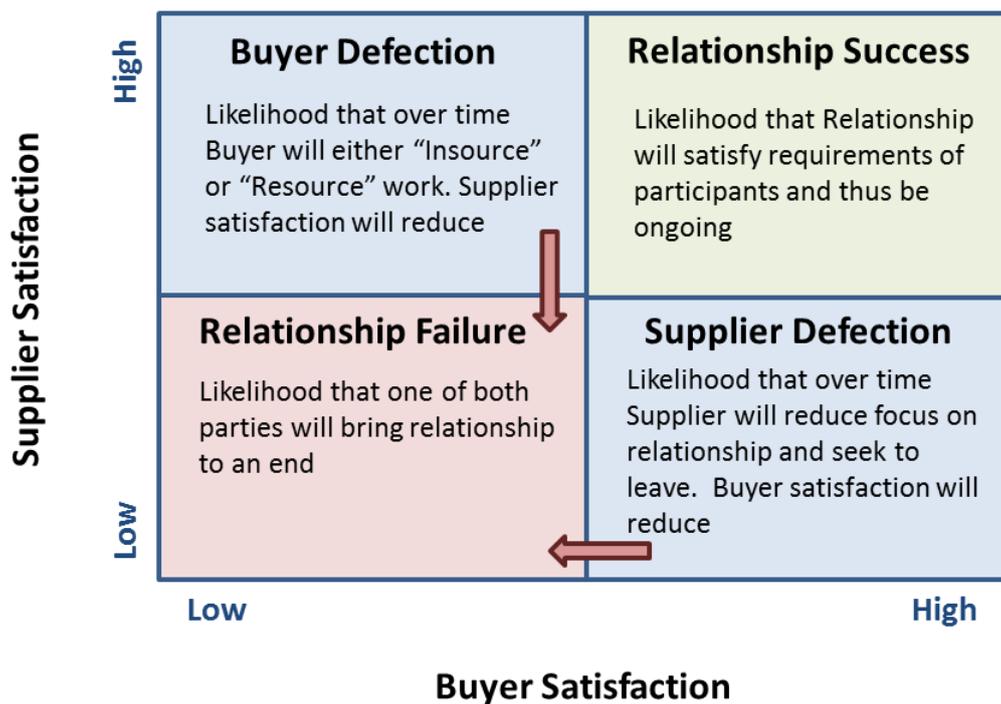


Figure 2.12 Relationship Success/Failure Model – Based on (Hollmann et al., 2015)

The rate at which participants move along the red arrows will be dependent on a number of factors that impact on the Cumulative Defection Energy (Hollmann et al., 2015). While it is possible that both parties started out in the ‘success’ box, there are circumstances where a party might enter the arrangement with a relationship deficit or a higher accumulation of Defection Energy; for example under the conditions of oligopsony (section 2.6) where the seller has a restricted number of available buyers.

Where one or both parties recognise the danger that a deteriorating relationship can bring, then they are expected to take action to arrest the slide. It is anticipated this would result in a shift in the position of both parties so that they occupy the ‘success’ box as illustrated in

Figure 2.13 below. The exact direction of the arrows and the speed of change is expected to be dependent on the amount of effort exerted mitigate the cumulative defection energy and the initial degree of dissatisfaction present (Hollmann et al., 2015). It is believed that the efforts to improve the position of the parties to the relationship would be greatly improved by the existence of a measurement tool that identifies the specific areas that need improvement.

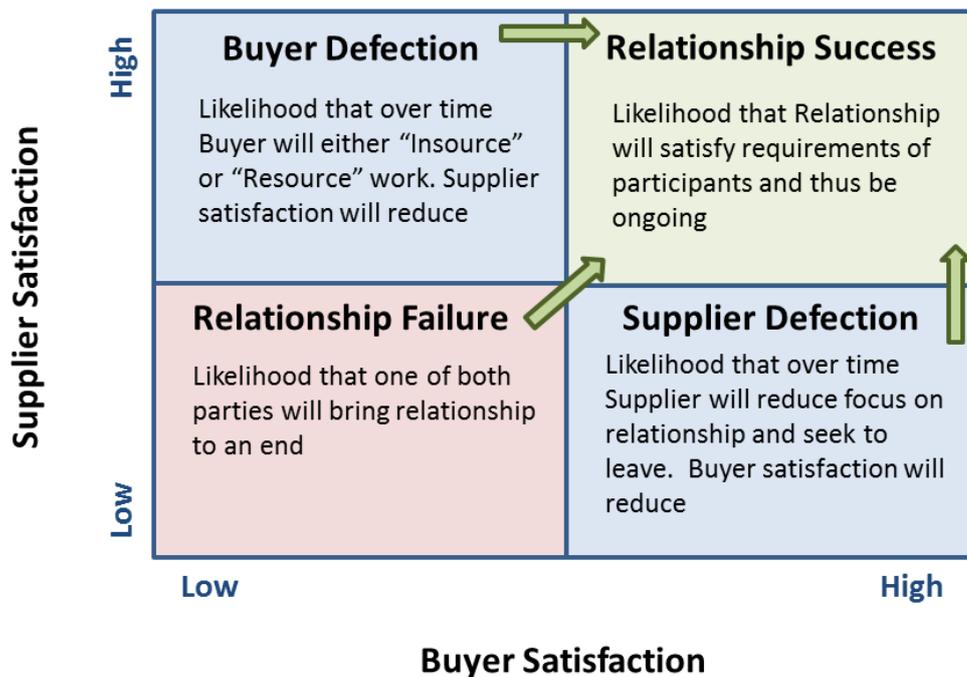


Figure 2.13 Relationship Success/Failure Model With Corrective Action – Based on (Hollmann et al., 2015)

The assessment model relies on two key components to provide its predictive capability early in the development of the prospective SCDR. The first of these is the ability of people to make quite quick assessments of others given limited information or contact. These periods of scant or impoverished information are called ‘thin slices’ in the field of psychology (Fowler et al., 2009). Research into the ability of untrained people to detect individuals that are being dishonest or might present them with some risk in the futures found that accurate impressions could be formed surprisingly quickly. The predictions of these lay people were also found to compare reasonably well with fully trained and experienced assessors (Fowler et al., 2009). This work was also confirmed in a business negotiation context by researchers at the Massachusetts Institute of Technology who found that the first five minutes of interaction in a negotiation was predictive of the final outcome based again on the concept of thin slices (Curhan and Pentland, 2007). It is therefore expected that personnel on each side

of the SCDR will be able to form an opinion on the other party and provide accurate input to a prediction for success.

In a new or prospective SCDR, the parties involved will have little experience of dealing with each other. There is little impact by the ‘shadow of the past’ (Poppo et al., 2008) on the thoughts of the individuals involved as they do not have the length of experience a more mature relationship would have. The lack of history does not mean that trust and collaboration cannot exist until time has gone by. This is particularly the case if the parties have had successful (or unsuccessful) relationships with similar dyadic relationships in the past. Research indicates that the ‘shadow of the future’ is a more powerful mediator on SCDR than any history between the parties (Poppo et al., 2008). The power of the shadow of the future is that it contains expectations about the continuing nature of the transactions that the parties imagine they will undertake. The continuing nature of transactions has been defined as success in the context of a SCDR (section 2.3).

Also of importance in forming an effective SCDR is the development of a shared understanding of the other party’s thoughts and experience relative to the relationship (Beugelsdijk et al., 2009). Even actions or situations that cause dissatisfaction with one partner can be mitigated by the other providing an explanation of reasons behind the action (Henke et al., 2014). The assessment tool proposed in this research aids the development of mutual understanding in a number of ways. The results of the survey will explicitly provide the views of both parties as to the level of satisfaction, or otherwise, in the relationship. Perhaps more subtly the assessment tool asks the person undertaking the assessment to provide an answer reflecting their own view of the question and to also think about the answer that they think the other SCDR party would provide to that question. This allows the participant in the assessment to experience “walking in the other person’s shoes”, a key part of ‘emotional intelligence’ and an aid to building mutual understanding (Schroder-Abe' and Shultz, 2011).

The views of the participants in the SCDR will be made clear in the results of the assessment. If the results are located in the success quadrant, then the parties will be motivated to keep doing what they are doing. Minor elements of negativity can be addressed before they harm the overall relationship.

2.13 Research Questions and Propositions:

To drive the methodology and research design a series of research questions and propositions have been created. They seek to address the knowledge gaps and aims for the research:

Research Question 1: How can the list of known SCDR elements be improved by input from relevant practitioners?

Proposition 1a: An expert panel approach can be used to gather necessary SCDR elements from practitioners in the field.

The use of an expert panel under the Delphi Methodology is well accepted as a research tool (Okoli and Pawlowski, 2004). These researchers state that this method is beneficial in helping researchers to identify the variables of interest and generate propositions. The development of the elements that make up a SCDR fits very well into this class of use.

By using an expert panel of SCDR participants to validate the list of SCDR elements the resulting list and the assessment tool derived will be understood by later respondents to the assessment process in the field.

Proposition 1b: An interview method can be devised to ensure that researchers bias does not influence the interviewees.

Even minimally leading questions have been found to have an influence on an interviewee's responses (Baxter et al., 2006). It is recognised that researchers find it very hard not to seek out the answers they are looking for (Powell et al., 2012). It is therefore very important to develop a method of gathering input from the expert panel that does not inject the researchers bias into the responses.

If proven this proposition will again support the connection between the list of SCDR elements and practitioners in the field.

Research Question 2: What kind of assessment tool, using the improved list of elements, will enable prediction of future SCDR relationship success?

Proposition 2a: Questions can be created that allow respondents to consider the shadow of the future when answering.

The concept of the ‘Shadow of the Future’ is based upon an expectation of multiple or continuous interactions or transaction (Heide and Miner, 1992). The questions must, therefore, ask the respondent to provide an answer which is phrased so that it is future focused and implies an ongoing relationship. Researchers have also found that individuals are able to make rational predictions about the future when asked (Manski, 2004).

Meeting the requirements of this proposition is central to the ability of the assessment tool to have a predictive capability.

Proposition 2b: A suitable definition of SCDR success can be developed from the literature.

To be of value any method of predicting a future state of a SCDR must be able to separate success from failure in the relationship. There is currently no explicit definition available; however, focusing on the expectation that there will be a continuing series of transactions or business cycles may prove to provide an answer (Nwakanma and Jackson, 2007, Holmlund and Törnroos, 1997).

The existence of a definition of success, or its opposite, failure, will be key to communicating what the future might hold for the SCDR. If the relationship is predicted to be a success, then participants will have confidence for the future. If the answer from the assessment process is that the SCDR is headed for failure, then the existence of a success definition provides a target for the parties to the SCDR to aim for in developing countermeasures.

Proposition 2c: The results of the assessment can be represented in a way that will aid in understanding and communication with responding SCDRs.

The output of the assessment tool is likely to be complex with multiple positions arising from respondent’s answers to each question across many questions. It is therefore important to present this complexity in a way that is understandable to a

wide range of people at multiple levels within their organisations. A visual communication method is expected to make this task easier (Zhang, 2012). The proof of this proposition will rest in the feedback from participants to the assessment process at the debriefing or follow up interviews.

Research Question 3: How can the results of an SCDR relationship assessment be validated at a later point in time?

Proposition 3a: An interview process after six months will allow respondents to the assessment process to confirm whether actual results have borne out the predictions provided.

For a predictive model to be validated some effort must be made to see whether the predictions were accurate or not. By its nature such a follow up is a longitudinal study. Such studies have been defined as being theoretically sound and practically useful research methods (Pettigrew, 1990).

Proving this proposition will be the ultimate test of the research. The ability to measure and predict SCDR success is at the core of the work to be done.

Proposition 3b: Participants in the assessment process will find the process useful in managing their SCDR.

That research should be useful is a concept that has been explored by a number of researchers (Narasimhan, 2018, Naslund, 2002). The contention being that to conduct a longitudinal study the participants must believe it is a worthwhile use of their time.

The above questions and propositions will be used in developing the Research Methodology and Design outlined in section 1.4 and detailed in Chapter 5.

2.14 Conclusion

This chapter has provided a framework by which to view the subject of this research. It has focused on the background to why the subject of supply chain relationships is so important and in particular why the relationship between individual dyads should be investigated. Since these Supply Chain Dyadic Relationships (SCDR) are critical, they should be managed, and

therefore measurement is required. While existing measurement tools have been developed the gap analysis in this chapter highlights a number of issues with existing SCDR measurement tools. The primary issue is a lack of prediction capability, which this research will seek to remedy.

The chapter ends with the development of a conceptual framework and research aims, questions and propositions which will drive the development of the research methodology in Chapter 3 which follows.

Chapter 3

Methodology

3.1 Introduction

In Chapter 2, a Conceptual Framework was proposed that took the gaps in knowledge and research objectives to create a model as the basis of this empirical research. This chapter provides the methodology by which the qualitative research can be conducted to test the questions and propositions.

This research is operating in the area of relationships, people's perceptions of the motives of others and concepts such as trust and commitment. It is also focused on the 'shadow of the future' and people's expectations of that future. Hence the nature of the research is less open to quantitative methods, and so a qualitative/mixed methods approach has been chosen.

While it would be possible to survey respondents from the dyads using a quantitative tool this would be more difficult to manage given the longitudinal nature of the research. Particularly given the desire to understand what is happening within that specific dyad over time and not necessarily all dyads over time. This research therefore uses of a survey tool, storytelling and interviews to answer the research questions in order to achieve the research objectives.

This chapter explains the chosen methodology and discusses the approach to engaging with both an 'expert panel' and with the target dyads in Supply Chain Dyadic Relationships (SCDR), covering organisations undertaking either their buying or selling roles in the respective dyad. A more detailed explanation of the chosen research methods is also provided. The method of analysis of survey results and their interpretation is also covered along with the issues of validation and reliability.

The research project consists of two stages, firstly the validation of the elements that make up a SCDR by engaging with an expert panel made up of practitioners in the supply chain field. The second stage is the development and application of a survey tool that will allow participants to understand the status and health of the SCDR in which they are about to become engaged. For the purposes of clarity, each stage in the research will be discussed separately in detail after first providing an overview of the whole research.

3.2 Research Methodology: An Overview

The research methods chosen for this research are a mixed set. This occurs not because of a lack of focus but rather to provide stronger support for the conclusions via mutual support from different perspectives and approaches. The research is fundamentally qualitative in nature; however, the use of some tools such as survey questionnaires and rating scales means that tying the research method to a single description is not appropriate. The methodology is divided into two stages, and each stage is discussed below.

3.2.1 Stage 1: Expert Panel

Stage one starts with a review of the relationship dimensions identified in the literature (refer Chapter 2.8) and the creation of a putative list of the elements that make up a SCDR (Supply Chain Dyadic Relationship). This list takes into account the elements used earlier in other relationship assessment tools and additional items identified in the literature review process.

While the putative list of SCDR elements drawn from the literature in Chapter 2 have a sound basis for inclusion in the study, it is felt that the list would be strengthened by an in-depth review with practitioners who are engaged in buyer-supplier dyadic types of relationship. This would create a list that has the theoretical underpinnings from the literature and empirical support from practitioners in the field. It was therefore decided to consult an expert panel of supply chain and sales practitioners to gather their views. This approach is modelled on the 'Delphi' research method which has been found useful in validating lists and theoretical constructs, as well as confirming a common understanding in their meaning (Okoli and Pawlowski, 2004). The details of the recruitment of experts are discussed in section 3.3.4.

3.2.1 Stage 2: a short survey of SCDR elements

In stage two of this research, the expert panel validated list of SCDR elements was developed into a series of 'statements' that, when responded to by participants, will create an understanding of the state of the emerging SCDR and allow measurement. Where possible the statements were aligned with the existing assessment tools reviewed in Chapter 2 so that a future opportunity to compare results with alternative survey methods might be taken up. This would allow validation of results using an existing peer-reviewed model. The number of statements was also kept as short as possible recognising that shorter surveys obtain a

better completion rate (Deutskens et al., 2004). The survey participants to the survey would then be asked to respond to the statements as it relates to their emerging SCDR using a five-point Likert Scale ranging from 1. being 'strongly disagree' to 4. being 'strongly agree'. These four items would be supported by a fifth option being 'don't know' or 'insufficient information'. Five choices match the number proposed by Likert himself in 1932 (Lozano et al., 2008, Likert, 1932). This number of rating points is considered to be acceptable even though it is not the most statistically accurate of the potential number of rating points (Preston and Colman, 2000). Others argue that significant improvement occurs up to 4 but from that point on the gains become "scarce" (Lozano et al., 2008). To address the 'neutral response' issue, raised later, a final rating choice is provided which allows participants to answer, "insufficient information". This choice is placed at the end of the choices and thus removes a 'middle' choice from the set.

The next step in the research process is to seek out dyads which are engaged in an emerging SCDR and obtain their agreement to participate. A number of people from each organisation who have knowledge about the relationship were requested to complete the on-line questionnaire. Ideally, the number of people from each organisation would be greater than three so that a reasonable average of the perceptions within the organisation could be obtained. The results of the responses are then analysed to see whether the participants see the SCDR in a positive light or not. It is also possible to assess whether there are noticeable differences in perception between and within the organisations involved.

The sampling approach applied to this research can be described as a purposive sample. It is a deliberate selection of participants due to the qualities they possess (Etikan et al., 2016). In this case, the population of SCDRs who are at the very early stages of their relationship where both the buyer and supplier are willing to participate in the research is a difficult population to identify. Obtaining individuals or single organisations agreement to participate in research is much easier.

The results of the analysis are presented to the participating organisations for comment and feedback. This is an opportunity for the organisations to understand the nature of their relationship, be it heading for success or facing difficulties. The SCDR participants can also give feedback to the researcher regarding their perception of the analysis provided and whether it is useful in understanding their dyadic relationship. The members of the emerging

SCDR then have a number of possible responses to the information provided. If the report indicates that they are headed for a successful relationship, then they can keep operating as they have in the past, perhaps with minor adjustments indicated from the analysis. If headed for a troubled relationship, they could decide to bring it to an end before each has invested too much in failure. Finally, if the analysis suggested a relationship headed for failure the parties involved could address the causes of failure and resurrect the emerging SCDR before failure occurs. This element of the research has the attributes of Action Research (Naslund, 2002) in that by drawing attention to the possible shortfalls in the SCDR (or possible areas of strength) it is likely that change will occur.

The final stage in the research is to revisit the participants after a suitable period of time to see whether the results of the survey and analysis had been borne out by actual experience. This is accomplished by an interview or by re-running the survey process with the same participants to confirm the nature and specific areas of change since the last survey. This approach to the research is both qualitative and can be considered as 'Action Research' in style as the researcher cannot help but become involved in any change process that occurs and as such is no longer 'just an observer'. This approach to qualitative research is supported by Naslund (2002) in the article titled "Logistics needs qualitative research – especially action research".

The overview of the research process is summarised in the diagram below (Figure 3.1) The self-developed research flow process is comprised of two stages made up of multiple steps. each one is discussed below.

Steps In Research Process

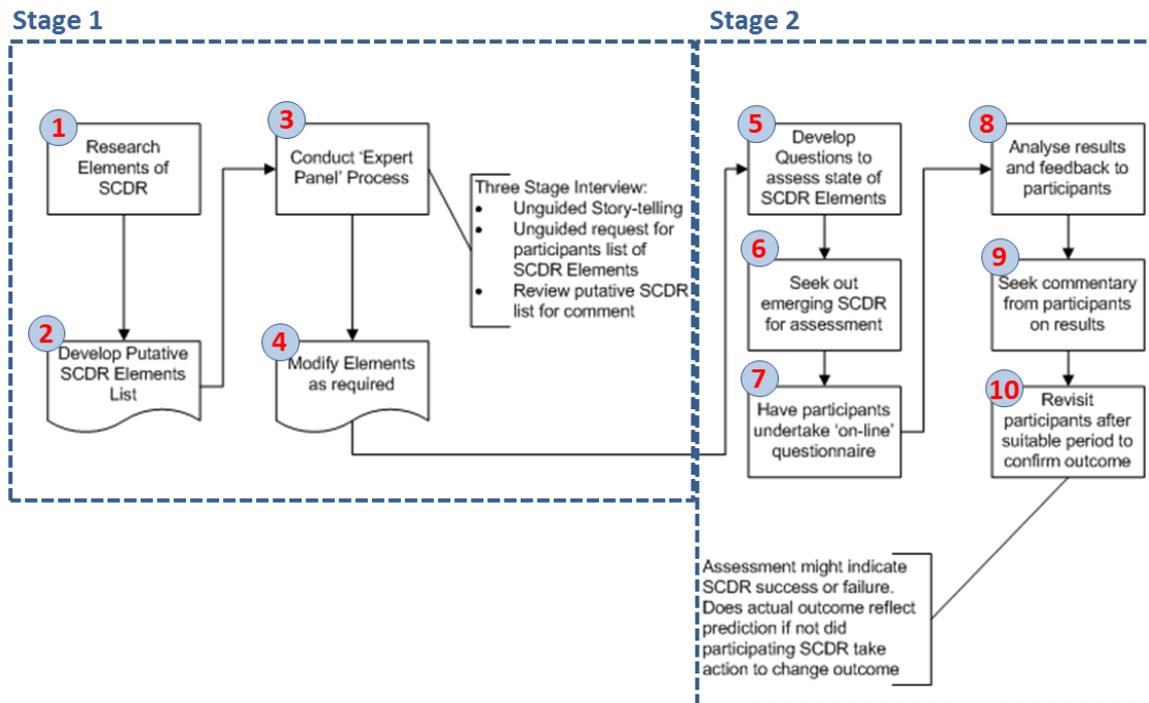


Figure 3.1 Two Stage Research Process (Source: Self Developed by researcher)

3.3 Research Methods – Stage 1

This first stage is intended to confirm that the important dimensions making up a SCDR have been properly identified and that these elements are ones that are supported by practitioners working in the field. Stage one is made up of four steps, the first two steps being a review of the literature and the creation of a putative list of SCDR elements. This list will then be tested in step three by engaging with an expert panel to refine or add to the list. Any changes to the list of SCDR elements will be finalised in step four.

By making sure that the elements chosen resonate with practitioners the trap of impracticality is avoided, and the research will be seen as useful (Mohrman et al., 2001). This initial stage is also important because a failure to measure the right things would make the results less useful. It is also less likely that new insights would be gained if the research merely follows the beaten path that was trodden by prior researchers. Finally, the use of an expert panel to validate the elements of the SCDR provides potential participants in the next stage of the research with confidence that the approach has some authority. This stage may well elicit new understanding of the makeup of SCDRs independently to the second stage of this research.

3.3.1 Expert Panel

This is seen as being important for the research into SCDRs to ensure that it remained grounded and linked with the practicalities of managing supply chains in the field. A key plank in this effort was the engagement with an ‘expert panel’ of practitioners.

The only validation of the elements chosen for assessment by previous researchers was the analysis of final results. All appeared to take their chosen SCDR elements from the literature. Humphries et al (2007) showed the final questionnaire to practitioners for comments before putting the survey into operation (Humphries et al., 2007). None of the other researchers gathered the views of practitioners in the field before developing the survey instrument or undertaking a survey. This is important at a number of levels. Firstly, as pointed out by (Mohrman et al., 2001) if researcher’s wish to access organisations at important times, for instance when setting up a new SCDR, then the work they wish to do must be seen as ‘useful’ by practitioners. Of equal importance is the need for the construct being presented to be understandable to potential participants. There is no point in asking a survey question that is not understood by the respondents.

Hence an expert panel of knowledgeable people in the supply chain and sales functions was approached for their input. It was also seen as important that the input from the panel was not influenced by the researcher’s prior knowledge from the literature or existing bias. The design of the interview method with the expert panel takes this into account.

3.3.2 Delphi technique – background to suitability

The use of an expert panel to guide research is well established in fields such as nursing (Powell, 2003) or supply chain (von der Gracht and Darkow, 2010). The most common method applied to engage with expert panels is the Delphi technique as this imparts the necessary rigour to the process (Hasson and Keeney, 2011). This method is appropriate where insight is sought from practising managers, particularly where academic research is seeking topics for study (Boone et al., 2008). It is also seen as applicable where the judgement of experts is critical (Okoli and Pawlowski, 2004).

The Delphi technique involves engaging with experts in a series of rounds where the input from participants is reviewed by the whole group until consensus is reached on the matter in

hand. The intent is to eliminate any personal bias that an individual might have. Over time this simple approach has been modified significantly with Hasson & Keeney (2011) identifying ten different approaches to applying the Delphi technique.

While the Delphi technique has similarities to ‘focus groups’ it is a more rigorous approach for research. Focus groups have a number of shortcomings which mostly come from the face to face nature of discussions. These include the impact of dominant personalities of outcomes, contagion where a new idea takes off without sufficient analysis and the impact of social status on participation and output (Landeta et al., 2011). The Delphi technique is considered to be a superior method of reaching consensus. It can also be a useful way to generate objections or issues with a proposed course of action (Linstone and Turoff, 2011).

A challenge with panels and the Delphi approach is the degree to which the researcher may influence results and the possibility that well-wishing panel members may seek to skew responses to ‘give the researcher what they are looking for’. To overcome this possibility, the research approach applied included ‘Story Telling’, which is covered next.

3.3.3 Story Telling

To avoid the issue of ‘leading’ the members of the panel by the type or subject of questions to be answered, a different approach was taken to eliciting their input. The issue of interviewers influencing interviewees even though not intending to do so remains a challenge. Even minimally leading questions have been found to have an influence on an interviewee’s responses (Baxter et al., 2006). It has also been found that interviewers find it hard to avoid seeking out answers they are looking for via the process of Confirmation Bias (Powell et al., 2012). This research found that interviewers that adhered more closely to open questions produced better results.

There are a number of ways to prevent the researcher from influencing qualitative research. In this case storytelling (refer step 3 of flowchart Figure 3.1), as a very open questioning approach, has been applied to ensure that the expert panel members are not influenced by the researcher’s views or the literature in stating the elements they think make up a SCDR. Storytelling as a qualitative research tool is an approach that has been criticised. Like the use of case studies, it is seen as having major methodological concerns. Criticisms include the impact of the interviewer on data gathered, truthfulness and the difficulty of testing theory

(Diefenbach, 2009). Nevertheless it has found a place as a tool for extracting tacit knowledge from participants in research (Wijetunge, 2012, Whyte and Classen, 2012). The marketing discipline has also found storytelling to be a useful approach to obtaining insight into consumers' conscious and subconscious views on products. Storytelling can provide a more insightful understanding than other methods such as free-association (Koll et al., 2010). The former method has also found a place in identifying the important factors involved in delivering a successful technology project (Escalfoni et al., 2011). This latter application is particularly relevant to this research.

At its most simple level storytelling involves listening, note taking, confirmation and analysis. The following flow chart (Figure 3.2) provides an overview of the organisation of these steps:

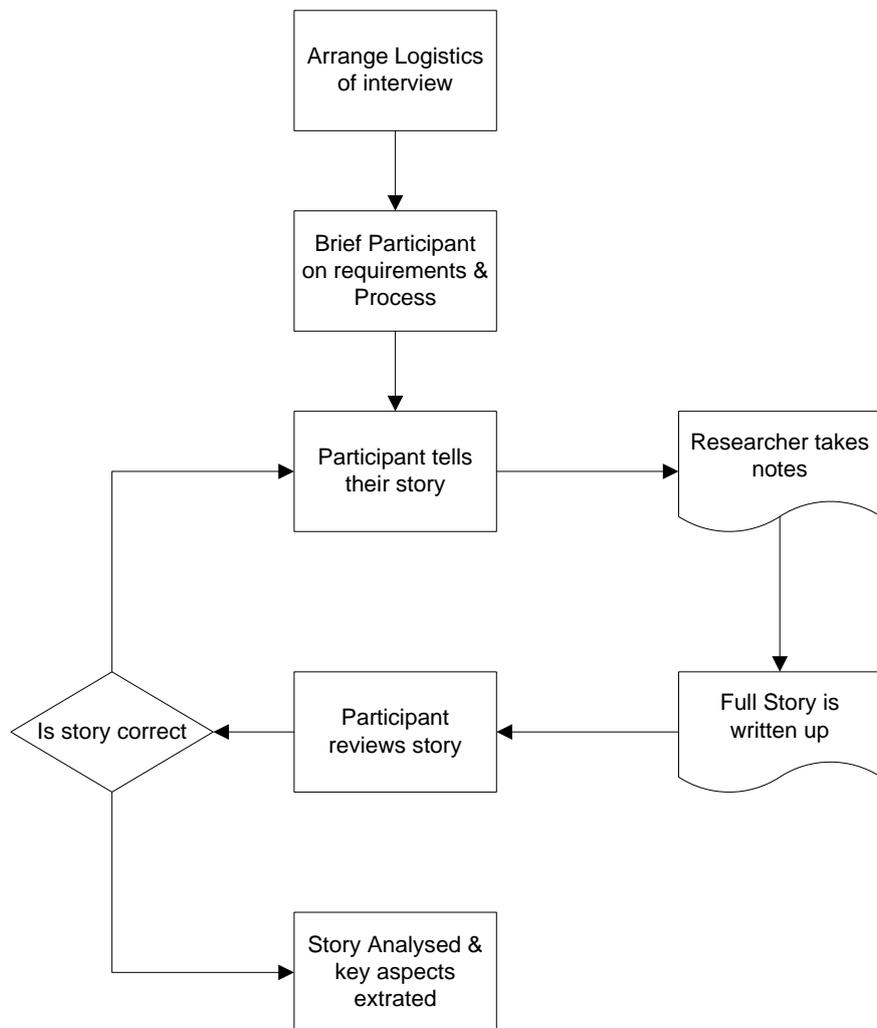


Figure 3.2 Story Capturing Model - an extension of (Wijetunge, 2012)

An important aspect of a good story capture model is that the researcher should not influence the story other than seeking clarification of aspects that are not understood. This prevents the injection of the researchers own bias into the results (Diefenbach, 2009).

3.3.4 Elements of Supply Chain Dyadic Relationship from Literature Review

In Chapter 2.8 the elements of a SCDR were extracted from the work of many authors (Humphries et al., 2007, Thakkar et al., 2008, Mena et al., 2009). Many of the elements were present in all models although the Humphries (2007) Supply Chain Collaboration Index (SCCI) was found to be more comprehensive than the others. This resulted in the following listing of SCDR elements which were explained in detail in section 2.8.

- Creativity
- Stability
- Communication
- Reliability
- Value
- Long term Orientation
- Interdependence
- C3 Behaviour (cooperation, collaboration & coordination)
- Trust
- Commitment
- Adaption
- Personal Relationships

In their research Mena et al (2009) linked the above items into the Williamson Business Relationship Failure model (section 2.6). This resulted in the five dimensions which are shown in table 3.1.

Table 3.1 Dimensions Taken From Williamson Business Relationship Failure Model (Mena et al., 2009)

Dimension	Description
Creativity (bounded rationality)	Promoting quality, innovation, flexibility, opportunity-seeking problem-solving, a long-term approach and encouraging high performance
Stability (business myopia)	Strategic understanding, synchronization of objectives, investment in relationship building assets, e.g. people, infrastructure, IT, training
Communication (information impactedness)	Promoting high quality, open, frequent trustworthy information sharing
Reliability (opportunism)	Establishing and managing reliable, adaptable, continuously improving service and product delivery, lowering joint costs
Value (imprisonment)	Incentivising joint working and a win-win relationship, sharing benefits, commitment to investment and business development

These dimensions will form the basis of the reporting and briefings that result from undertaking the planned assessment.

3.3.5 Selection of Expert Panel Members

The selection process for expert panel members ensures that both sides of the dyad are represented. As well as having ‘buy’ and ‘sell’ representation in the panel input is also sought from senior management who had responsibility for both functions within their own organisation.

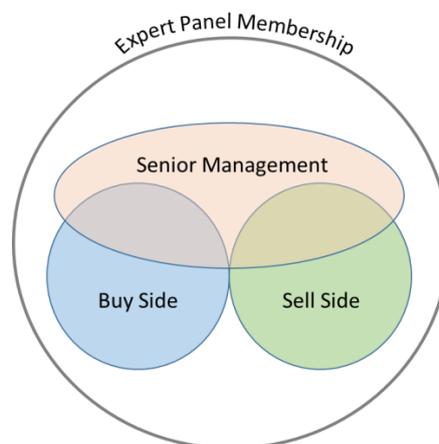


Figure 3.3 Make Up of Expert Panel (Self Developed)

Potential members for the expert panel are identified from the researcher's industry contacts as well as members of university and industry association databases. For example, members of a Supply Chain and Procurement Roundtable (run by the Strategic Industry Research Foundation Ltd <http://www.sirfrt.com.au>) or members of the International Association of Contract and Commercial Management (IACCM www.iaccm.com). The preferred size of the panel is approximately a dozen. This number is supported by work from Gentles et al. (2015) who reviewed the literature and provided a minimum number of interview participants between five and ten for an intensive interaction. The selected panel size at twelve exceeds the recommended range. The targeted participants were middle to senior management from the procurement function, sales managers, supply chain leaders and senior commercial management all of whom were expected to be experienced in both day to day operations of a SCDR as well as strategic decision making. The potential participants were to be contacted by phone with a request for interview and a brief outline of the subject matter. Participants were advised that the interview would take between 30 minutes to one hour. Also it was made clear that they had the option to quit the process at any time without any adverse consequence. The specific make-up of the final expert panel is detailed in Chapter 4 (section 4.2.1).

3.4 Engagement with an Expert Panel

In step three of the flowchart (Figure 3.1) the researcher engaged with the expert panel to test the putative list of SCDR elements. To ensure that the results of each interview would be comparable a series of laminated cards were produced that walked the interviewer through the process and kept the questions the same for each interview. The four parts of the interview are outlined below:

Part 1: Story Telling

The interviewee is requested to tell stories from their experience about supply chain relationships both good and bad.

Part 2: Identification of Elements that make up Supply Chain Relationships

The interviewee is asked to give their opinion on what were the elements that make up a supply chain relationship. Every effort is made to avoid giving guidance for this question.

Part 3: Comment on Chosen Elements from Literature Review

At this stage in the interview the researcher provides a laminated card with the chosen relationship elements printed out and asks for comments from the interviewee.

Part 4: Are Survey Questions Understandable?

Finally the expert panel member is shown a copy of the draft survey questions and asked if they are understandable and whether they could answer those questions in regard to a supply chain relationship they have.

Notes of the interviewee's responses are taken and, where approval is given recordings are made. The results of interviews are assessed to identify key words from the first two stages and whether they match with the items from the literature review.

3.4.1 Analysis of Outcomes from Expert Panel Interviews

A thematic analysis approach will be adopted to analyse the interviews. In analysing the results of the storytelling exact word matches are sought followed by similar wording that covered the same concept. These matches are summarised in Table (3.2) to illustrate the practitioner's view of what were the important elements of a SCDR without the input from the putative list. This chart will elicit which of the existing SCDR elements have the support from the expert panel. The final row is in place to capture any other well supported elements not currently on the list developed from the literature. Depending on results there may be more than one additional row.

Table 3.2 Results Sheet Expert Panel Interview

SCDR Element	Number of Participants Using Exact Term	Number of Participants Using Overlapping Term	Total Count
Creativity			
Stability			
Communication			
Reliability			
Value			
Long term Orientation			
Interdependence			
C3 Behaviour (cooperation, collaboration & Coordination)			
Trust			
Commitment			
Adaption			
Personal Relationships			
<i>Other noted terms not previously identified</i>			

3.4.2 Interim Results from Stage 1

While these results will be discussed in more detail in Chapter 4 it is important to note that the expert panel interviews highlighted the issue of ‘Culture’ as an additional element with support across the expert panel. This led to further literature review and incorporation of additional questions in the survey questionnaire.

Support for the inclusion of culture was found from previous research in the area of business relationships, in particular (Roh et al., 2008). The importance of culture to supply chain relationship success was also highlighted by Cadden et al. (2010) in their proposed ‘Strategic Supply Chain Relations Organisational Culture and Performance’ model. The failure of many SCDRs to deliver results was put down to ‘Cultural Myopia’ by these researchers and they indicated that assessment of ‘Cultural Compatibility’ was best done early in the relationship development phase (Cadden et al., 2010). In searching for some definition of how cultural compatibility might be defined (and importantly assessed) the simplest model was provided by Hofstede et al. (2010) who described inter-organisational compatibility as being about mutual understanding of how each party was organised, how each party made decisions and finally whether there was respect for each other organisational cultural differences.

As well as triggering a return to the literature the conceptual framework developed and described in Chapter 2.12 was reviewed.

3.5 Research Methods – Stage 2

The first stage of the research identified in this chapter was carried out to support this second stage. The conduct of the surveys into emerging SCDRs and the analysis of results is the main intent of the research (see steps 5 to 10 of the Research Process Flow Figure 3.1). In this section of the chapter the researcher discusses the choice of the survey method, construction of the questionnaire and mode of delivery. The important issue of identifying the participants at the right stage of the emerging SCDR is also covered. Finally the approach to analysing and reporting the results of the survey is detailed.

3.5.1 Use of Online Survey

The first step in defining the predictive assessment of SCDR effectiveness is to review the data collection method. An on-line survey was considered the best approach to interacting

with a busy participant group. The use of on-line methods to conduct primary research has increased over recent years. It is a method of qualitative research where the advantages outweigh the disadvantages (Foy, 2004). These advantages are expected to increase as people move more of their activities and interactions on-line (Ilieva et al., 2002). Some concerns have been raised that the results of on-line surveys produce different results than those obtained from more traditional approaches such as telephone surveys or face to face interviews (Sparrow, 2007). The results of comparing mail surveys and on-line surveys, which are similarly self-paced, were found to be a much closer fit (Evans and Mathur, 2005).

As a quick and efficient way to survey a targeted group of participants on-line surveys are a suitable tool. Because of their relative efficiency, on-line data collection methods tend to overcome the logistical concerns of incorporating multiple respondents that have been raised by some researchers (Wagner et al., 2010). The time saving benefit from the participants' point of view is an important issue. Those involved in setting up a new SCDR are very busy and potentially unwilling to get engaged in distractions that take away their time.

As the method to gather respondents' input, it is important to develop a system that categorises the responses, so they may be compared across organisations and the sample group included in the research. The method chosen was the Likert scale which is discussed in section 3.5.3. Before discussing the measurement model, we first need to arrive at the questions to be asked.

3.5.2 Development of the Survey Questionnaire (Step 5 Figure 3.1)

Following from the work carried out using the expert panel detailed in the above section on the stage one research and the literature review in Chapter 2 the actual questionnaire can be constructed. The objective in developing the questions was to balance the theoretical sources of questions with the input from the expert panel. As this is an exploratory study the input from the expert panel was not used to override the questions from the literature or vice versa. This provides a sound theoretical basis for the questions and also maintains relevance for practitioners in the field. A copy of the final version of the questionnaire is available in Appendix A

Much of the development of question statements were based on existing questionnaires, with appropriate rewording for a future expectation's perspective. Many of the questions were predominantly from work done by Mena et al. (2009) and earlier authors Humphries et al.

(2007), (Wilding and Humphries, 2006a) who used the same Supply Chain Collaboration Index model for their paper. Research from the relationship marketing perspective also elicited questions with very similar wording, for example a study by Beugelsdijk et al. (2009). For the questions relating to culture the concepts raised by Hofstede et al (2010) and supported by others (Cadden et al., 2013, Beugelsdijk et al., 2009) were used and stated as questions. For example, where the need for clarity around how the other party makes decisions is questioned the respondents were simply asked “*We understand how they make decisions*”. As with all questions they were asked to answer both for themselves and also to estimate how their partner organisation would answer the same question.

The 43-item questionnaire covered all of the SCDR elements identified from both the literature and expert panel interviews. Some concepts that were covered by more than one question. To ensure a common understanding of some concepts such as ‘organisational culture’ an explanation and suggested definition was provided prior to questions on that subject. Instructions and examples of how to deal with the dual nature of question responses were provided at the beginning of the survey. A copy of the participant introduction is included in Appendix F.

3.5.3 Use of Likert Scales

The use of Likert scales has been linked with survey tools since they were developed by Rensis Likert in the 1930’s (Likert, 1932). They are simple to create, administer and complete, which makes them attractive to researchers. There has been criticism that they are used to generate statistical results which is seen as straying beyond their status as ‘ordinal’ data. Others take a different view, for example Norman (2010) in his summary states:

“Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of “coming to the wrong conclusion”. These findings are consistent with empirical literature dating back nearly 80 years.”(Norman, 2010), Page 631.

Some researchers criticise the traditional Likert scale for gathering opinion, which often use a variation of the strongly agree to strongly disagree continuum. They propose a model such as the Wong-Baker FACES scale (Chimi and Russell, 2009) shown in Figure 3.4.

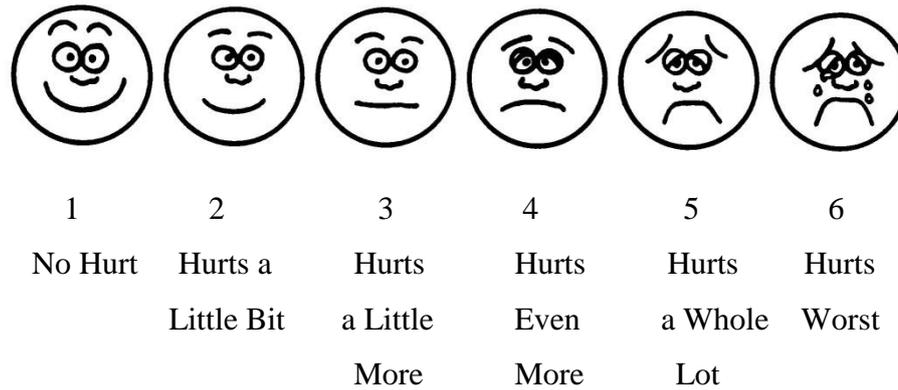


Figure 3.4 Wong-Baker Faces Scale from Chimi & Russell (2009)

Another area of concern raised with the application of the Likert scale method is the confusion that can arise when a middle option ‘neutral’ response is provided. This can result in that response choice becoming a dumping ground for those wishing to apply a ‘Not Applicable’ response or other non-included category (Kulas et al., 2008). Chimi and Russell (2009) make a similar point regarding those respondents that “don’t care” about the answer or question using the neutral or middle point of the scale.

In the questionnaire developed for this research, the questionnaire responses requested from participants was to provide their level of agreement with a ‘statement’ across four levels- (4) Strongly Agree, (3) Agree, (2) Disagree and (1) Strongly Disagree. A fifth option was provided at the end called ‘insufficient information’ (0). This was not placed in the middle so as to avoid the lazy mid-point scoring. If a respondent selects ‘insufficient information’ about an element of a SCDR that they are engaged with then that response in itself provides insight into that relationship. Importantly the respondents were asked to provide their own answer and the answer that they perceived their SCDR partner would provide to the same question. Additional discussion of the use of Likert scales in this research is included in section 3.2.1. page 74.

3.6 Selection of SCDR Participants

The wider community of potential SCDR participants came from a series of contact databases. These included the researchers own contacts, those of the Institute of Supply Chain and Logistics (ISCL) at Victoria University and a number of industry membership groups such as the International Association of Commercial and Contract Management

(www.iaccm.com). Organisations on the lists were contacted by the researchers with a two-part question. Firstly, whether they would be willing to participate in research into supply chain relationships and secondly whether they had a prospective or very early stage SCDR that could form the basis of inclusion in the research.

A major challenge for this research is the ability to identify and persuade SCDRs who are at the right stage in their relationship to participate in the survey. It is quite difficult to contact managers in individual dyads to monitor the right stage at which to administer the survey to them and have their solid approval to proceed from both sides of the dyad. The issue of timing and willingness to participate precludes the creation of a sample using a statistical approach as proposed by (Suri, 2011, Chimi and Russell, 2009). Because of this challenge, the selection of participants is best described as being a 'Purposive Sample'. This is a non-probability sampling method which is useful in providing feedback regarding opinions on subjects such as customer satisfaction (Adams et al., 2007). This aligns well with the purpose of this research. However there has been criticism of the convenience or purposive sampling approach as being the "least desirable" of the qualitative research sample methods (Suri, 2011).

The selection of a small group of knowledgeable people from each organisation within the dyad rather than a single expert or a statistically valid sample is supported by Wagner et al. (2010) who indicate that engaging with multiple informants improves accuracy with the only potential downside being the logistics of gathering input. This downside has been mitigated by using an on-line survey. As an exploratory study and taking into account the sampling size discussion that follows on Page 98, this research is able to operate with a small number of potential dyads given the difficulty in recruitment mentioned in the prior paragraph.

3.7 Survey Questionnaire Delivery and Data Collection

The survey questionnaire was delivered using the Qualtrics on-line portal (www.qualtrics.com). This system allowed the creation of a survey link that allowed the participants to access the survey and enabled the researcher to monitor progress. There were a number of reasons for choosing Qualtrics, firstly, the number of respondents could be scaled up with little additional work other than sending the appropriate invitation and survey link. More importantly this method is less of an imposition for busy business executives. Evans & Mathur (2005) noted that one advantage with on-line surveys was the time factor

involved for respondents. The speed of response and a lower cost are also attributes of the on-line method versus mail or telephone methods of data collection (Deutskens et al., 2006).

On reaching agreement with the senior leadership of the two sides of the SCDR a list of potential participants contact details are obtained and a series of emails explaining the research aim, the reasons for their involvement and the important note that they can decline or exit the research at any time without consequence are sent out. Various consent forms and information for participants are included in this initial contact. A follow up email is then provided that contains the unique portal access details and the questionnaire. The consent is further implied if the dyads return the online responses.

3.8 Analysis of results from Stage 2

In Chapter 2.12.2 the following matrix (Figure 3.5) was proposed to explain the various potential outcomes when participants in a SCDR were polled on their level of satisfaction or dis-satisfaction regarding the business to business (B2B) relationship they were engaged in with each other.

Supplier Satisfaction	High	<p>Buyer Defection</p> <p>Likelihood that over time Buyer will either “Insource” or “Resource” work. Supplier satisfaction will reduce</p>	<p>Relationship Success</p> <p>Likelihood that Relationship will satisfy requirements of participants and thus be ongoing</p>
	Low	<p>Relationship Failure</p> <p>Likelihood that one of both parties will bring relationship to an end</p>	<p>Supplier Defection</p> <p>Likelihood that over time Supplier will reduce focus on relationship and seek to leave. Buyer satisfaction will reduce</p>
		Low	High
		Buyer Satisfaction	

Figure 3.5 Relationship Assessment Matrix – Based on (Hollmann et al., 2015)

The discussion in Chapter 2 also covered the consequences of the relationship being located in any quadrant other than ‘Relationship Success’. The output from the on-line survey tool enables the Buyer’s perception of the position to be plotted and likewise the same can be

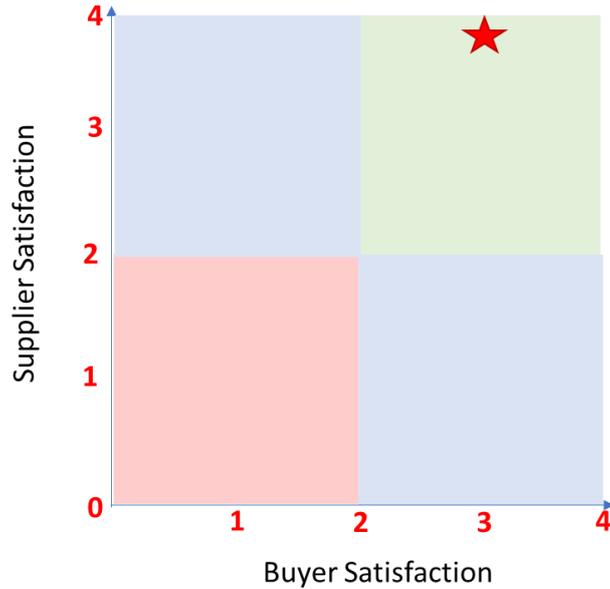
done for the Seller’s perception. This is achieved by having the respondents provide their own response to the various statements and also providing how they believe their opposite partner would respond to the same question. By using this two views approach we are able to plot a position on the matrix. The ability to walk in the other parties shoes is also an important part of understanding relationship quality (Schröder-Abé and Schütz, 2011). Being able to perceive how the partner views a subject is in itself a signal of familiarity and closeness of the relationship.

To enable the analysis of results the scores from the questionnaires are gathered and averaged for each side of the SCDR. There are two scores for each question from each respondent, one for their own organisations point of view and one from their SCDR partners point of view. For example, a respondent from the Buyer organisation might answer a question in the following way:

Table 3.3 Example Question Responses

Question 4j	So far, the other party always does what they say they will do.		
Response for my Organisation	Agree	Score 3	Reason: sometimes they fail to live up to promises
Response I expect the other Organisation to give	Strongly Agree	Score 4	Reason: they appear satisfied with our response to promises

In the above example we can plot the response on the results chart using the scores of 3 and 4. This is shown in Figure 3.6.



★ = Plotted Position example question Table 3.3

Figure 3.6 Plotting of Respondents Scores– (Self Developed)

The chart in Figure 3.7 only shows the plotted score for an individual response to a question. As there will be several respondents from each side of the SCDR the actual scores can be other than whole numbers. For example, assuming four respondents answering strongly disagree, disagree, agree and strongly agree the questions scores would be 1, 2, 3 and 4. The average of these being: $10/4 = 2.5$.

The actual analysis of responses is more complicated than the example given in Table 3.3 and Figure 3.6. There are 43 questions with each respondent providing two answers. This is then multiplied by the number of respondents from each party in the SCDR. To enable the understanding of results from all respondents the average results for each question are gathered and then averaged, firstly by the SCDR category and then by the total score for all questions. In grouping the results and averaging answers from multiple respondents we take the lead from the existing measurement models detailed in Table 2.4, page 47. This is illustrated in Figure 3.7. The total scoring is averaged on the premise that all items in the instrument are assumed to have equal weight. Refer to the discussion on limitations of this approach in Chapter 6, Section 6.3.1.

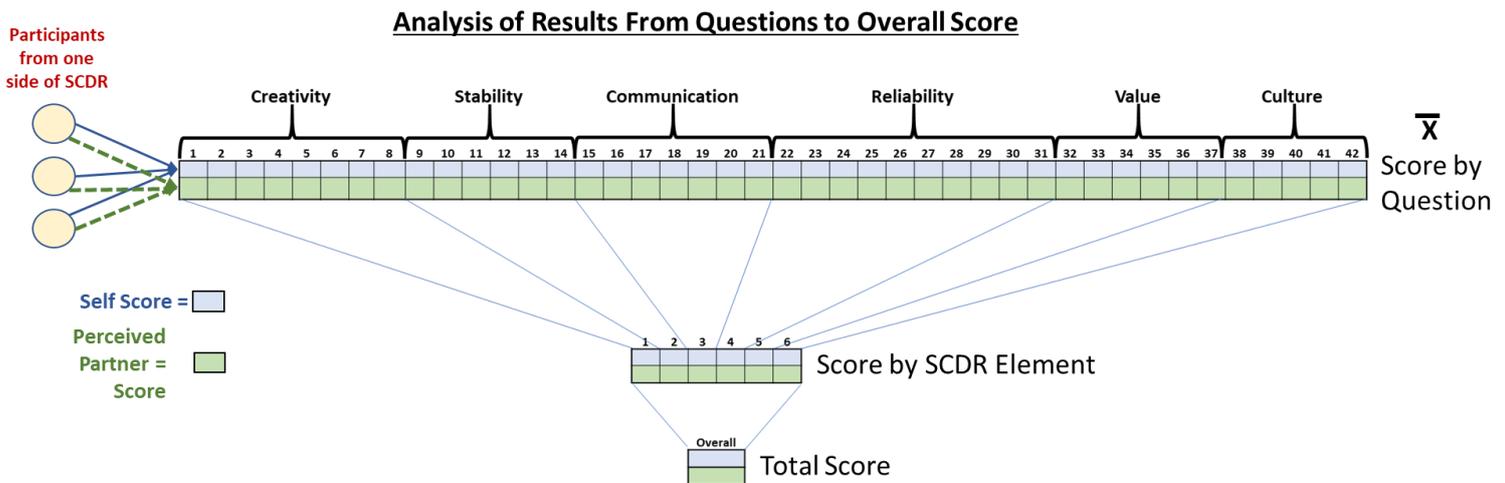


Figure 3.7 Method for Collating Results from Respondents to SCDR Questionnaire – (Self Developed)

The model described in Figure 3.7 only gathers the responses from one side of the SCDR. To provide an understanding of where both organisations in the SCDR believe their relationship to be, either by question, by SCDR element or the overall scoring two positions on the matrix are needed. This is achieved by using two of the models outlined in Figure 3.7 as shown in Figure 3.8.

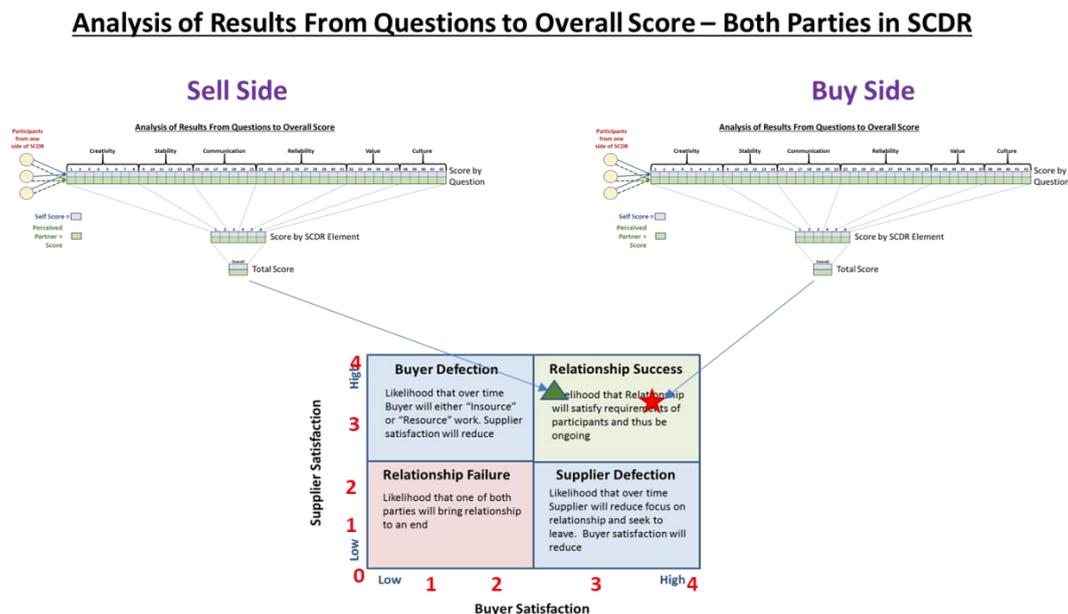


Figure 3.8 Method for Collating Results from Both Members of SCDR – (Self Developed)

Given the potential number of respondents and the expectations for a quick response to feedback from participants to the survey, the methodology described in Figure 3.8 is automated within the analysis spreadsheet (example included in Appendix C).

When the responses are collated the position of scored relationships can be assessed at the high level, the individual SCDR element level or the individual question level. This granularity allows the researcher to drill down to investigate any areas of interest or concern. This approach is illustrated in Figure 3.9. The ability to dissect data relating to individual questions will form part of the confirmation processes detailed in section 3.9.

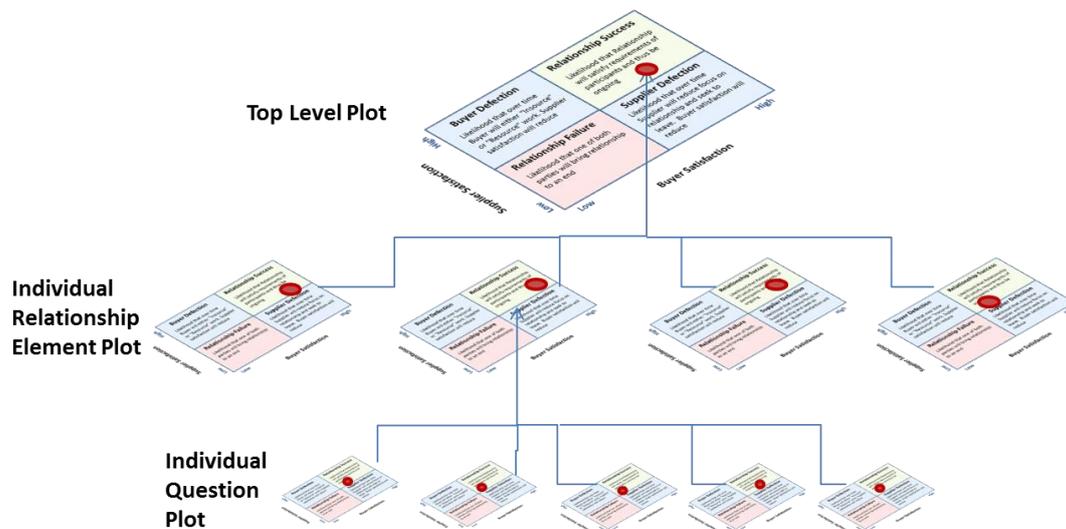


Figure 3.9 Schematic of Score Drill Down Capability (Self Developed)

Having described how the results of the survey are analysed and reported the next section outlines how the survey method and the results are confirmed as being reliable and able to provide new knowledge that can have wider significance than just the sample group.

3.9 Longitudinal Resurvey/Interview

The final element that makes up the mixture of methods that are applied and a key aspect of the quality control for the research is its longitudinal design. The research assesses an organisation’s relationship with the other party in the particular SCDR twice. Once at the very beginning of their relationship, using the assessment questionnaire and a second time using an interview after an appropriate period of time has elapsed (approximately 6 months) to see what changes might have occurred. As explained in Chapter 2 the possibilities on following up the results via interview may include the following possibilities:

- | | <u>1st Survey</u> | <u>2nd Survey</u> |
|----|------------------------------------|------------------------------|
| 1. | Predicted Success = Actual Success | |
| 2. | Predicted Failure = Actual Failure | |
| 3. | Predicted Success = Actual Failure | |
| 4. | Predicted Failure = Actual Success | |
| | <u>With Countermeasures:</u> | |
| 5. | Predicted Failure = Actual Success | |

Options one and two would be considered supportive of the survey tool while three and four would be considered as not supporting the survey tool. The fifth option occurs where the members of the SCDR on being made aware of potential failure take action to resolve the issues highlighted.

The second interview provides both a quality assurance process to confirm that the assessment result was accurate and that the result was more than a short-term impact of the research itself. By confirming the results of the self-assessment via a follow up interview we are essentially triangulating the results via the use of a different research method (survey versus interview) (Golafshani, 2003). The follow up interview also contributes to the trustworthiness of the research outcomes which is a concept some see as the replacement for reliability, validity and generalisability in qualitative research (Sinkovics et al., 2008). Using mixed-methods in research is suggested as a methodology that is superior to single approach methods (Gable, 1994). Others point out that regardless of support for mixed-method research proponents of either quantitative or qualitative will continue to challenge the approach (Choy, 2014).

A defined series of questions are planned for the follow up interview and these are outlined in table 3.4 below:

Table 3.4 Follow Up Interview Questions

Q No	Question	Q No	Question
1	Were you personally involved in completing the relationship survey earlier this year?	7	Did you find the suggestions for improvement actions to be useful, did you undertake any action to implement these suggestions?
2	Did you find the survey easy to complete, if you had any difficulties what were they?	8	Did the elements that make up the relationship survey align with your experience of Supply Chain Relationships in the field?
3	Are you still doing business with the supplier/service provider with whom you conducted the relationship survey? If not why?	9	Did you find the survey opened up communications about issues that might not have been covered under normal circumstances? If so which issues were raised?
4	Has there been any change in the business that you are undertaking with the supplier/service provider, for example increase business or decreased business? If so what are the reasons for the change?	10	Do you think undertaking the Relationship Survey helped or hindered in the development of the relationship? If so how?
5	Did the survey results that were reported back to you match your expectations regarding the state of your relationship?	11	Would you use the survey tool again in the future for important relationships?
6	Were the results from your supplier/service provider as per your expectations or were there any results that were a surprise to you?	12	Would you recommend the Survey Tool to others if they need to measure an important emerging relationship?

As an introduction into the following section 3.10 on Reliability, Validity and Generalisability the following table has been taken from Gable (1994).

Table 3.5 Comparison of Research Methods – Based on (Gable, 1994)

Dimension	Case Study (Qualitative)	Survey (Quantitative)
Controllability	Low	Medium
Deductibility	Low	Medium
Repeatability	Low	Medium
Generalisability	Low	High
Discoverability	High	Medium
Representability	High	Medium

The chart shows that each approach has its strengths and weaknesses. It also introduces two additional concepts by which research outcomes can be assessed. These are discoverability and representability.

3.10 Reliability, Validity and Generalisability

With quantitative methods research, the answers to questions about how repeatable the survey tool might be, or the quality of the answers obtained as well as whether the results could apply more widely than the sample are all matters for statistical analysis. There are a wide range of well established ‘tests’ which can be applied to the data, the results of which can provide confirmation of the outcomes (Banchuen et al., 2017) although qualitative research is harder to verify.

This research was carried out using of mixed methods

3.10.1 Reliability

Is the research method chosen reliable? This is defined as the ability of the method to consistently provide the same result (Adams et al., 2007). This research applies two tests for reliability, ‘Test-Retest’ and ‘Equivalent Form’ were applied in this research. A test-retest approach involves administering the research instrument two times on the same subject and checking the correlation between the results. A high correlation between the results would indicate a reliable research instrument. The assumption is that there have not been any changes in underlying conditions between the two tests.

The equivalent form test involves taking questions from a survey instrument that are measuring the same concept and comparing the results from the same respondent. This provides a measure of internal consistency within the research instrument. For example there might be three questions in the survey that are seeking to measure the concept of trust. If there is a high correlation between the results then the instrument has internal consistency and can be said to be reliable. An example from the questionnaire developed for this research is as follows:

Question 1a: The emerging relationship encourages us to be innovative and flexible in the way we do business.

Question 1h: They have shown themselves to be flexible in addressing the emerging agreement with us.

In this example the subject of flexibility is covered in both questions.

3.10.2 Validity

Validity is a more complex factor than reliability and is made up of a number of different elements. It can be defined as the strength of the conclusions reached in relation to the research questions, whether the measurements taken are actually related to the concepts being studied and finally whether you have measured the concept accurately (Adams et al., 2007). For this research the key measurement of validity will be the initial and follow up survey of the same participants. If the initial survey predicted a successful SCDR and the resurvey shows that the SCDR has in fact continued to run successfully then this will indicate a valid measurement instrument. Likewise if failure in the SCDR was predicted and this occurred then this would reinforce validity. The situation where failure was predicted but the parties took action to address the failing and it became successful is less clear (see section 3.9). If success was predicted and on re-survey the SCDR was failing then this would indicate some issues with validity.

The elements that make up validity include ‘Internal Validity’ which relates to the research instrument and the outcomes seen in the project. ‘External Validity’, which overlaps somewhat with ‘Generalisability’, is focused on the ability of the research results obtained to be generalised into other settings. How the research instrument operationalises the concepts under study is covered by an element called ‘Construct Validity’. And finally ‘Conclusion Validity’ defines whether the research conclusions are reasonable (Trochim, 2015).

The internal validity is managed via the debriefing meeting when the results are presented to the participating members of the SCDR as well as the follow-up interview six months later. A failure to properly describe the relationship in the feedback will trigger questions from those participants. External validity can be judged via the comparison of results between the participating SCDRs as well as the results gained in later uses of the survey tool.

3.10.3 Generalisability

Generalisability or ‘Transferability’ which is a more accurate term in qualitative research, is linked to Validity as detailed in the previous section. It is fundamental to the research process that the results gained from the research are able to provide ‘new knowledge that can be applied outside the context of the specific research. The idea of all research whether it be quantitative or qualitative is that the results can be ‘generalised to the whole population (Myers, 2000). It is the issue of generalisability that is at the core of the argument between the quantitative and positivist field of research and the qualitative.

The present research takes place in a novel setting, the prediction of success or failure of a supply chain relationship at a future period. Although the research is similar to previous work on existing relationships (Mena et al., 2009, Thakkar et al., 2008, Wilding and Humphries, 2006a), it is believed to be the first time that this predictive work has been undertaken. It is claimed that the method used, although subject to review and improvement and is of an exploratory nature, is potentially generable to the whole field of SCDRs in private and public organisations.

While the sample size is small it is not without support from the literature in terms of its ability to provide valid and generalisable contributions to theory. In discussing phenomenology Gentles et al. (2015) reviewed the literature and provided a minimum number of interview participants between five and ten for an intensive interaction. Given the questionnaire process, the debriefing and final interview the engagement with participants to this research can be described as intensive. The number of participants in the process is targeted to be at least four from each SCDR giving a number of sixteen which is above the cut off suggested. The same researchers also provided numbers for case study sample sizes being between four and ten separate cases (Gentles et al., 2015). This research meets the minimum level set, having four separate SCDRs assessed.

3.11 Research Methods Not Considered as Suitable

In deciding to adopt a qualitative approach to this research other methods were considered but rejected as not being appropriate for the aims of this research. The first key decision in this regard was to reject the idea of conducting a quantitative study. Several prior researchers have conducted quantitative research into supply chain relationships (Thakkar et al., 2008, Simatupang and Sridharan, 2005, Wilding and Humphries, 2006a); however, many of these

surveys have not tried to survey both sides of the same relationship (Meena and Sarmah, 2012) or had a very narrow industry focus (Boniface, 2012). The issue with these approaches is that they do not provide insight into individual dyadic relationships which is where this research fills the knowledge gap.

Case studies would provide a method to gain insight into individual dyads. This approach was rejected because it would not build on the work done by previous researchers such as Wilding and Humphries (2006) or Thakkar et al (2008). Some researchers believe that a single case study can provide very insightful breakthroughs in management research (Mariatto et al., 2014, Hopkins and Hawking, 2018). The same researchers admit that the case study approach is more prone to the injection of researcher bias than surveys and self-assessments. They also point out the difficulty in generalising the results from case study research; however, using good process can deliver valid results (Seuring, 2008).

Aligned with the concern about case studies was the reasoning behind not adopting a standalone interview process. Interviews are more open to researcher bias than other methods such as surveys. In the case of stage two, obtaining views of participants about future elements in the SCDR, the use of an online tool is believed to be less liable to researcher bias because the researcher is not in direct face-to-face communication with the participants. Each participant is faced with a survey sent by email which they can deal with at their leisure, without direct contact from the researcher. The issues with interviews were discussed in detail in section 3.3 as was the countermeasure against researcher bias by using storytelling.

Finally, it was seen not to be appropriate to conduct a review of documentation and artefacts to understand the relationship. In a perfect world the contract would describe exactly how the relationship was to work. There are two broad issues with this approach, firstly all contracts are incomplete (Williamson, 1979). An incomplete contract is therefore going to have difficulty in properly describing the relationship involved. The second issue is the likelihood of the parties to develop their relationship but fail to update their contracts and other documentation to reflect the changes in their relationship. It is also unlikely that an emerging SCDR will have a significant number of documents and artefacts to review; therefore, all these issues preclude this approach to researching SCDRs.

3.12 Summary

This chapter has outlined the multi-stage approach that will be taken to complete the research. It includes discussion of the use of an expert panel to validate and improve the list of SCDR elements. The research uses an innovative storytelling approach to avoiding injecting the researchers bias into the expert panel interview process. The improved list, which contained the addition of culture matching, was then used to develop a questionnaire which would be distributed via the Qualtrics online portal. This questionnaire seeks to have a predictive capability on whether the participating SCDR are likely to have a successful relationship.

The question of how to recruit the participants to the SCDR survey, step six (Figure 3.1) is canvassed in this chapter as is the method by which results will be analysed. On completion of the survey questionnaire participants will have two opportunities to feedback on whether the assessment provided seems appropriate to them. The first will be during the briefing session on results and the second will be approximately six months later when they will be interviewed to see if the predictions in the survey feedback were borne out by actual events.

The chapter ends with discussion on the reliability, validity and transferability of the research methodology chosen along with the research methods considered but not selected for the research. In the following chapter the results obtained from applying the methodology will be detailed.

Chapter 4

Results

4.1 Introduction:

In the previous Chapter 3 the research methodology was developed to test the conceptual framework and research propositions. As noted in the methodology, the research has been broken down into two stages, the first being a practitioner validation of the elements that make up a Supply Chain Dyadic Relationship (SCDR) and the second being the application of an assessment tool to measure the state of a putative SCDR during the early point of relationship formation. These stages were described in Chapter 3 using the illustration Figure 3.1.

In the review of Stage 1 process, the method by which candidates for the expert panel were identified and approached will be outlined along with their qualification and role in the SCDRs they are involved with. The results of this process and modifications that the researcher made based on the results generated from the Stage 1 of the research are then covered.

Similarly, for Stage 2 the selection of SCDR candidates to undertake the assessment process is discussed, including the difficulty of obtaining candidates at the right stage in their relationship with a new supply chain partner. The results of each of the assessments undertaken along with the reporting format developed are outlined. This stage then covers the feedback generated by revisiting the participants to determine what value that the assessment provided to their developing SCDR. Section 4.4 will undertake a discussion on the researchers follow up interviews. This chapter is then summarised in section 4.5.

While linked to the same overall research, each of the stage results sections have been written separately starting with the results from the stage 1 activities.

4.2 Stage 1 Research Results

Stage 1 research aims to enable the work in Stage 2. The results from this stage did highlight some findings that impacted on the following stage.

4.2.1 Expert Panel Details

While seemingly a simple process, obtaining willing participants for an interview that is more complex than the normal question and answer format does pose a challenge. Potential participants were contacted by phone requesting their participation with an explanation of the background to the research, the broad format for the interview and expectations regarding timing. The candidates were identified from a number of sources. These included the researchers own contacts database, members of a supply chain and procurement roundtable (run by the Strategic Industry Research Foundation SIRF www.sirfrt.com.au), the International Association of Commercial and Contract Management (IACCM www.iaccm.com) and contacts via the Institute of Supply Chain and Logistics at Victoria University.

This recruitment resulted in a purposive sample of expert panel members that represented both sides of the buy/sell SCDR model. They also came from varying levels of seniority within their businesses. As well as being advised of the planned process and the expected length of the interview (30 to 45 minutes) candidates were advised that they could exit the process at any stage without any disadvantage. The make-up of the final expert panel is outlined in Table 4.1:

Table 4.1 Distribution of purposive sample by role and function

Seniority or Function	Number	Buy Side	Sell Side
General Manager	2	✓	✓
Purchasing	2	✓	
Supply Chain	4	✓	✓
Sales	2		✓

Panel members ages ranged from approximately 35 to 55. All participants were in managerial roles with at least five years' experience at this level. All were tertiary qualified with three holding masters level qualifications. The industries they worked in ranged from building products, petro-chemical manufacturing and heavy vehicle equipment to automotive component production. All had a minimum of ten years involvement operating within supply chain dyadic relationships.

Not all potential candidates who were contacted agreed to participate in the interview. Reasons given ranged from insufficient time to allocate to the interview to concerns they would not be

able to contribute anything of interest to the research. No data was maintained on the number of refusals or reasons as this was not seen as being significant to the research. The candidates that did agree to participate were all interested in the subject matter of the research and keen to be involved and kept informed. Several were able to become involved in the Stage 2 of the research.

4.2.2 Conduct of the Interviews

In the first phase, the researcher conducted the interviews by using of a defined process and a series of laminated prompt cards. None of the interviews were allowed to deviate from the model and all participants expressed comfort with the approach. There was, however, some variation in the ability of participants to tell stories. Some were able to articulate a number of stories that explored a range of different experiences in regard to relationships with their supply chain partners. Others struggled with the concept of unguided storytelling.

The second phase of the interview required participants to detail the elements that they believed made up a SCDR. This was more familiar ground for those expert panel members that had struggled with the storytelling. All participants were able to articulate the elements they felt made up a SCDR. Some identified a short and concise list while others provided an expanded list of elements.

In the final phase, participants were asked to review the list of SCDR elements that had been generated from the literature review. All members of the expert panel were able to provide input on this final phase of the interview.

4.2.3 Interviews and Thematic Analysis

The interviews were recorded in a number of ways by the researcher, firstly via the interviewer's notes and in some cases, where permission was provided, via a recording. Though the quality of recordings was variable it was sufficient for cross-referencing to the interviewer's notes. In analysing the interviews for thematic outputs, the researcher focussed on the use of keywords and concepts in the storytelling component of the interview. This portion of the interview analysis was the most complex as participants were able to use any number of terms to describe the same concept. The second and third parts of the interview were simply noting down a list of terms outlined by the interviewee.

In analysing the stories told by participants a formal coding system was not used as at this early stage there was no preconception as to what might be said in the interviews; however, the putative list of SCDR elements from the literature was available. It is, therefore, possible to identify the terms and concepts raised in the interviews that related to these elements of a SCDR. The importance that the interviewee placed on particular concepts was inferred, either because of the emphasis placed on a specific item or because of its repetition. In reviewing the terms and concepts raised, the use of an exact term and the use of a similar or overlapping term was noted. For example, openness or transparency is an overlap with communication in the list.

The results of the analysis of the stories told are detailed in Table 4.2 and these provide strong support for a number of the elements, in particular *Trust, Communication and Personal Relationships*. While some elements were only mentioned by one participant, no elements failed to garner any mention.

Table 4.2 Breakdown of participant storytelling input versus putative list (n=10)

SCDR Element	Number of Participants Using Exact Term	Number of Participants Using Overlapping Term	Total Count	% of Participants raising Term
Creativity	2	1	3	30%
Stability		2	2	20%
Communication	8	1	9	90%
Reliability	1	4	5	50%
Value	4	3	7	70%
Long-term Orientation		2	2	20%
Interdependence		1	1	10%
C3 Behaviour (cooperation, collaboration & coordination)	3	4	7	70%
Trust	10		10	100%
Commitment	4	3	7	70%
Adaption		1	1	10%
Personal Relationships	3	6	9	90%

There were a number of verbatim comments that were noted by the researcher with examples shown below:

“There are always occasions where suppliers let us down, it’s what happens next that matters. We can accept deviations from promises when they communicate clearly the reason, impact and countermeasures they are taking. Our best supplier is not immune from stuff-ups, but we trust them to do what it takes to keep us going” – Supply Chain Manager – Building Products.

In the above example the concept of communication and trust is clearly mentioned; however, the researcher also took the concept of “do what it takes” as showing the concept of commitment to the relationship.

“Our industry lives and dies by cost savings! Our end customers demand year on year cost reductions and we are contracted to deliver ... no excuses or deviations allowed. We love it when a supplier comes to us and offers something without us having to pull it out of them with hot pliers. There’s a great supplier of ours that keeps surprising us with great ideas that add to our meeting our customers targets. We really value their efforts to help us reduce costs.” – General Manager - Automotive Products Manufacturer

In this next example the researcher identified the concepts of creativity and value as being contained in the story.

“We had a really wicked problem with our quality control of final product, nothing we did seemed to get it right. My QA were saying it must be the raw material from the supplier that was the cause, but no proof provided. My boss told me to haul them in and read them the riot act. It’s my job so I did. In the meeting they suggested that we let them have a go at modifying the raw material and process parameters to see if they could get it right. QA had a fit, but our operations manager knew them well and said we should trust them to do the experiment. End result was they worked all weekend with the ops guy’s and solved it. You can’t buy that sort of commitment.” Purchasing Manager – Petro-chemical Manufacturer.

The example above exhibits a number of the relationship elements. Firstly, there was a good deal of trust in evidence, playing with a petro-chemical facility is not risk free. The Purchasing Manager also mentions commitment explicitly but most importantly the weekend

work alongside the operations team showed C3 behaviour (cooperation, collaboration & coordination).

Next participants were asked to explicitly detail the elements that they believed make up a SCDR. No guidance or prompting was provided by the interviewer at this stage. Again, some participants provided a rich list of elements along with their thoughts behind each inclusion while others were only able to list a smaller number of items.

The output from step two of the interviews provided further support for communication, trust and personal relationships. It was at this stage a few additional items began to appear. For example, a key term that many of the participants felt important was the concept of ‘openness’ or ‘transparency’. This was an overlap with communication but was more about the SCDR partner providing information on what was happening within their organisation and in particular detail about progress towards satisfying the buyer's requirements. Another common comment around openness from the purchasing participants came up most often when discussing pricing and a desire to understand supplier's cost structures.

During step two on the process (refer Figure 3.1) a departure from the putative list of elements was noted. This key addition to the SCDR elements was the subject of ‘culture’, ‘cultural compatibility’ and ‘culture matching’. This input was noted during stage two but on revisiting the stage one storytelling it was found there as well. Verbatim comments around this element included *“you have to understand who's who in the organisation and who can make decisions”* and *“you have to be comfortable with their culture”*. While not all participants raised this element, it was common across buy and sell side of the SCDR and was not confined to a level of seniority. While openness or transparency can be seen as a subset of communication the issue of culture is a new addition to the list.

The third step of interaction with the expert panel was for their review and feedback on the putative list of SCDR elements from the research. This was first done without explanation of the meaning of the element titles and then where requested an explanation was provided. All participants acknowledged the value of the elements outlined on the list, particularly after explanations were provided. Several reiterated their belief that ‘culture’ was clearly missing from the set of elements.

4.2.4 Summary of Results from Stage 1 Interviews

The initial analysis of results confirms that the putative list of SCDR elements developed from the literature review has good support from the expert panel. Not all items were given equal weight by the participants in the interviews but sufficient mention of each of the elements was made to maintain their inclusion in stage two of this research. The expert panel input was to add Culture Matching as a dimension to the questionnaire. The resulting high-level elements for the questionnaire, which maintain the order from the original putative list from Chapter 2.8, are as follows:

Table 4.3 SCDR Questionnaire Dimensions after Expert Panel Input – extension of (Mena et al., 2009)

Dimension	Description
Creativity (bounded rationality)	Promoting quality, innovation, flexibility, opportunity-seeking problem-solving, a long-term approach and encouraging high performance
Stability (business myopia)	Strategic understanding, synchronization of objectives, investment in relationship building assets, e.g. people, infrastructure, IT, training
Communication (information impactedness)	Promoting high quality, open, frequent trustworthy information sharing
Reliability (opportunism)	Establishing and managing reliable, adaptable, continuously improving service and product delivery, lowering joint costs
Value (imprisonment)	Incentivising joint working and a win-win relationship, sharing benefits, commitment to investment and business development
Culture Matching	Matching the way in which members of two organisations relate to each other, their work and the outside world in comparison to other dyads.

4.3 Stage 2 Research Results

The main part of the research focused on the Stage 2 activities which involved the creation and operation of a SCDR measurement tool.

4.3.1 SCDR Participants

To test the SCDR measurement tool requires the identification and recruitment of businesses that are at just the right stage of their emerging relationship and who are willing to engage in

its measurement. This proved to be a very difficult task with participants who were willing to engage but not having suitable emerging relationships. Others who had suitable relationships were unwilling to engage in measurement. The willingness to collaborate in an assessment process as developed by this research requires a high degree of trust. There must be a process of trust signalling from both parties prior to the relationship getting to the point of executing on such a collaboration as assessing their SCDR (Fawcett et al., 2012). A model of how collaborative capability is created and enabled through trust is shown in Figure 4.1. The need for the right preconditions for collaboration further increases the difficulty in recruitment.

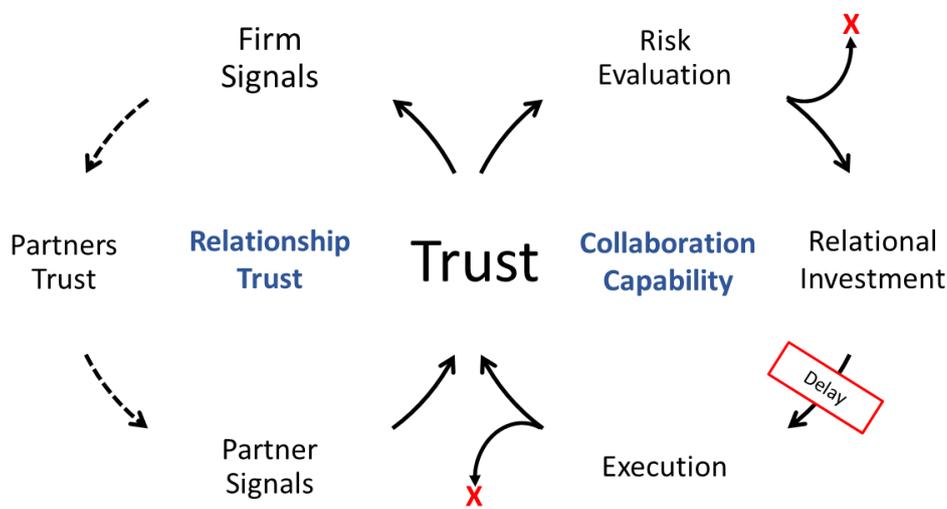


Figure 4.1 Trust and Collaboration Capability Development (Fawcett et al., 2012)

The number of personnel within the organisations that were familiar with the emerging relationship was found to be less than those reported by the researchers that were measuring the state of more mature SCDR (Mena et al., 2009, Wilding and Humphries, 2006a). This was explained by some participants as being a normal part of the process of bringing a new supplier on-board. Until the organisation staff members from the buying organisation were more experienced in dealing with the new supplier the originating sourcing team kept the membership of those engaging with the other party to a select group. Likewise, the seller in the arrangement kept tighter control on providing the required goods or service until they had more experience of the other party’s requirements from a day-to-day perspective.

The result of the recruitment process is the list of following dyads (more detail on the organisations involved is included in Appendix G):

‘BrickCo’ and ‘SuppliesCo’, this dyad is made up of a building products manufacturer (the buyer) and an industrial supplies wholesaler (the supplier). BrickCo is a medium sized family owned business in a regional city in Victoria. It obtains most of the materials it needs from within its own facility. The industrial supplies area is one of its major purchase categories. Prior to the setting up of the contract with SuppliesCo these items were purchased on an ad hoc basis from a number of local sources. SuppliesCo is a division of a significant Australian Stock Exchange conglomerate and is significantly larger than the buyer.

‘ChemCo’ and ‘TransportCo A’, this dyad is made up of an industrial chemical’s manufacturer (the buyer) and a road transport business (the service provider). The arrangement was new and had come about as a result of a Request for Tender process run by ChemCo. The buyer ChemCo is a multi-national chemical company with operations across the world. The transport spend is not a significant area of expenditure, but the safe provision of dangerous goods transport is an area of great risk to the buyer. The impact on customer satisfaction from the successful provision of goods transport also places this function higher on the list for management attention. TransportCo A, the service provider, is a specialist division of an international Third-Party Logistics business which although is a significant player in the 3PL sector is many times smaller than the customer.

‘ChemCo’ and ‘TransportCo B’, this dyad was comprised of an industrial chemical’s manufacturer (the buyer) and a road transport business (the service provider). The arrangement was new and had come about as a result of a Request for Tender process run by ChemCo where this transport company won a different portion of ChemCo’s transport task. TransportCo B is a medium sized transport and courier business owned by a sole proprietor. The service provider, TransportCo B, is very small when compared to the buyer.

‘GovDiv’ and ‘SpecServiceCo’, this dyad was made up of a State Government entity (the buyer) and a specialised service provider (service provider). The members of the new SCDR were known to each other from other contracts with government entities but this was a new interaction for the dyad and personnel involved. The buyer is one of the largest budget areas within the Victorian public service with very specialised needs and the implications of any

failure in the services that are being outsourced is very significant. Governance is a major part of the arrangement between the parties. The service provider is the Australian arm of a major international organisation. In terms of size and power the two organisations are closely matched. Because of the transient nature of staff involved and priority of other duties this was a challenging SCDR to measure but sufficient interaction was obtained to measure the expected future success of the SCDR.

The four dyads identified above meet the criteria for inclusion in the research as outlined in the Table (4.4) below:

Table 4.4 Qualification of Selected Dyads

Dyad Name	Nature of Product	Emerging Relationship	Existence of Trust	Willingness to Commit Time
BrickCo ⇔ SuppliesCo	Parts	Yes	Yes	Yes
ChemCo ⇔ TransportCo A	Service	Yes	Yes	Yes
ChemCo ⇔ TransportCo B	Service	Yes	Yes	Yes
GovDiv ⇔ SpecServiceCo	Service	Yes	Yes	Yes

4.3.2 Response to Online Measurement Tool

The measurement process was conducted completely online. Care was taken to trial the measurement tool with trusted industry and academic experts to ensure it was understandable and the process of completion for participants was not impeded by the workings of the online software. No significant issues were experienced by participants with the online tool; however, approximately one person per dyad had to receive assistance such as unlocking the system or resending an invitation to the system. Only the GovDiv/SpecServiceCo dyad experienced a failure to complete the survey. This involved in one case an internal transfer and the other case the reason was unknown to the main contact person.

Follow up informal discussions with the participants at the presentation of results indicated that the system was usable and did not present difficulties in providing input. Some commented that the number of questions seemed high; however, none nominated questions that could be culled.

The time taken by participants varied considerably with a range from 5.01 minutes to 149.09 minutes. The tool is set up so participants can leave it open in the browser and this is a

possible explanation for the longer time frames. The average time to complete was 23.97 minutes and the more representative time to complete was a median of 12.09 minutes.

The minimum time for the researcher to complete the assessment tool in testing with little consideration to what answers were entered was approximately two minutes. The pre-testing of the assessment tool with trusted colleagues ranged between 12 minutes and 26 minutes with an outlier in excess of one hour. These prior results would indicate that participants were able to spend enough time on the assessment process to provide a considered result.

4.3.3. Method of Analysis of Results

The online software was able to provide a computer 'flatfile' for the responses from participants from a particular SCDR. This required further processing in Microsoft Excel to create output that was understandable to the researcher and to provide feedback to the participants. Those results were put into a table that allowed the output to be represented visually. The graphs and comments from the researchers were provided back to the participants in the dyads as part of the agreed feedback process. An example of the feedback report is provided in Appendix B.

4.3.4 Individual Results

In each of the following sub-sections of 4.3, the results and outputs from the measurement of each SCDR are provided. The reported results in inverted commas are essentially the same as those provided in the report back to the participants in each SCDR.

4.3.5 'BrickCo' and 'SuppliesCo'

The following charts show the scores for the overall relationship and the individual elements set out in the hierarchy detailed in Chapter 3 Figure 3.9. The comments in inverted commas below each chart represent the feedback and discussion held with the participants in the debrief session. The order of the charts commences with the overall result because this is the order that the participants were most interested in. As noted in Figure 3.7 the overall result is built up from the individual questions and the SCDR element results.

The calculation method shown in Figure 3.7 is repeated below in Figure 4.2 with the results from the buyer side of the SCDR included: A copy of this information is included in Appendix D.

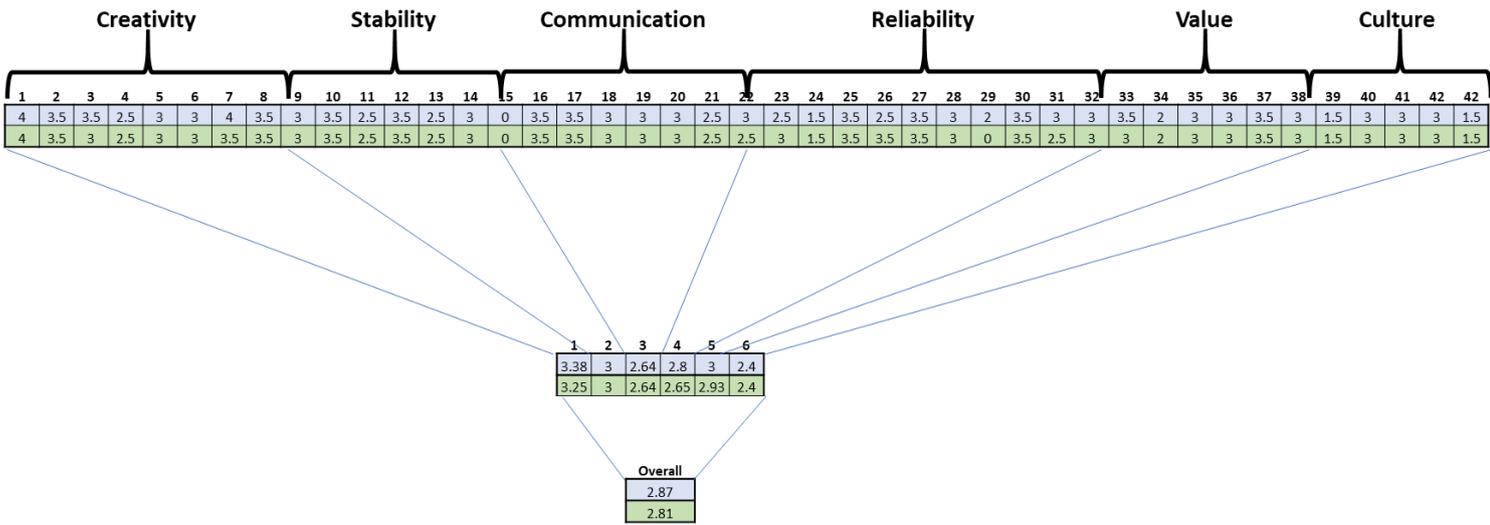


Figure 4.2 Actual Results for BrickCo Respondents

a. Overall Result

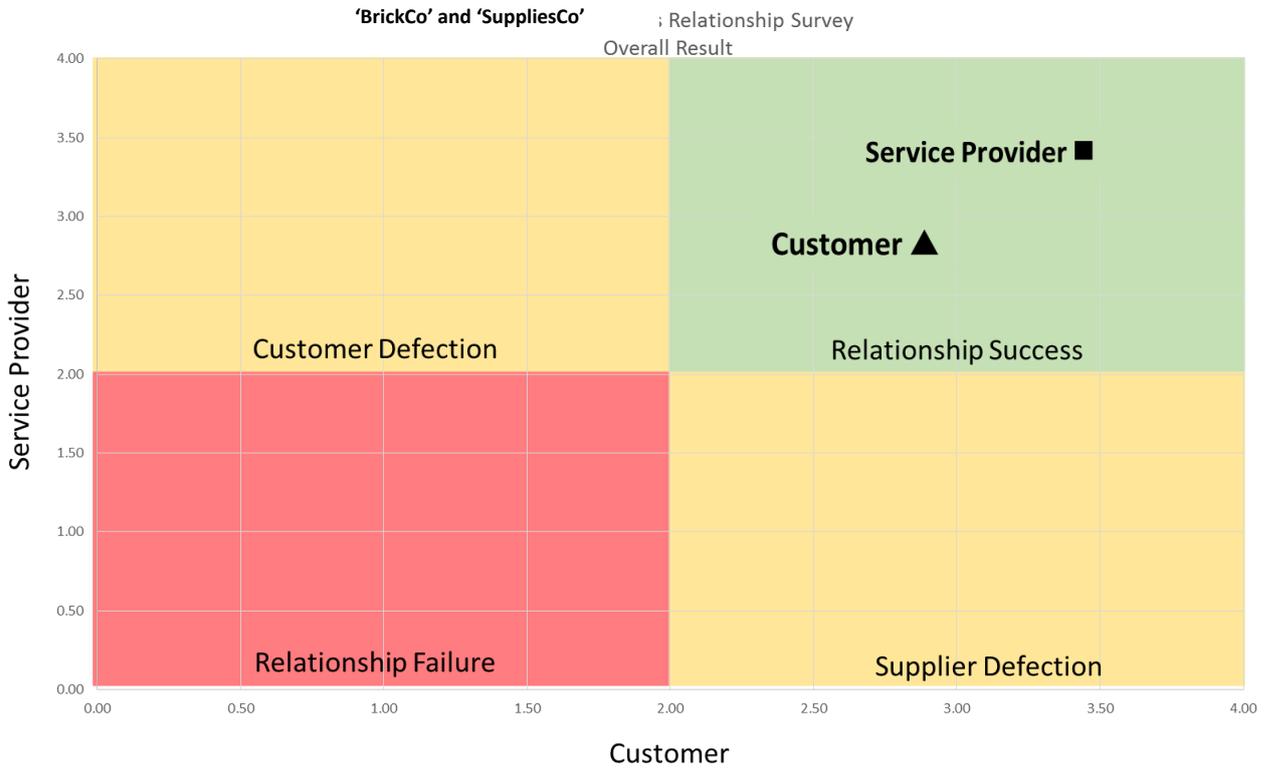


Figure 4.3 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Overall Results

“The key point in this assessment is that the parties are well inside the "Relationship Success" quadrant. Within that quadrant, the Customer is less satisfied with the current relationship than is the Service Provider. Throughout the assessment, this pattern is repeated although it is recognised by the Customer that the relationship is in its early stages.

It would appear that there are a number of areas where operational matters are getting in the way of an improved relationship. The managers responsible should be able to resolve these matters but if they are not addressed the relationship may suffer. In most cases where the Customer is dissatisfied, the Service Provider is aware of this as signalled by a reduction in the 'other party' score they provide. The one area where the Service Provider appears unaware of the concern is in the area of 'continuous improvement'. An ongoing focus on developing the relationship should ensure that the parties remain in the 'Success Quadrant' and continue to move towards the top right-hand corner.” (Figure 4.3)

Both parties in this SCDR had a very clear-eyed view of their emerging relationship and were not afraid to indicate where it was too early to comment on a question. For example, BrickCo felt they could not respond to questions about the availability of cost reductions (Question 4h) as it was too early. They were also not afraid to call out issues they had with responsiveness in completing paperwork (Question 4b). This SCDR was also the most prolific with comments accompanying their answers to the survey.

b. Creativity: encouraging innovation and high performance.

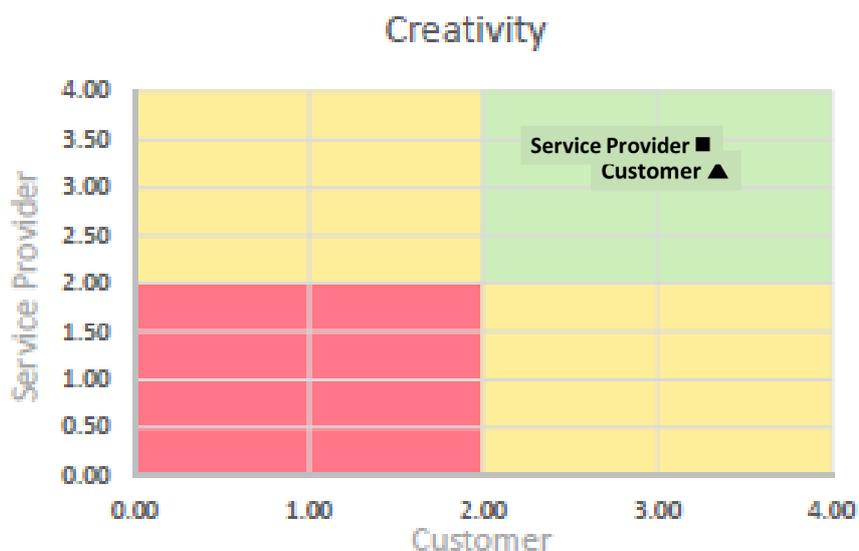


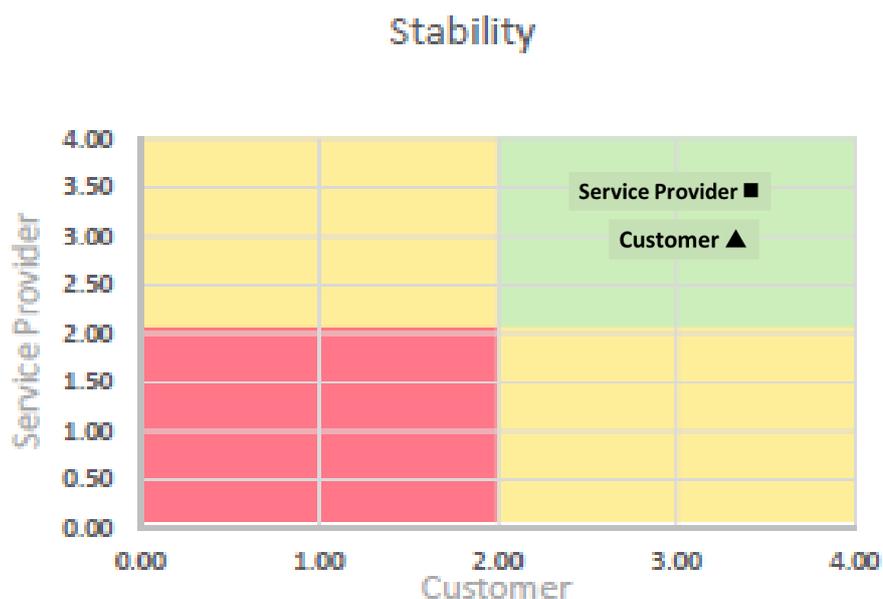
Figure 4.3.1 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Creativity

Comments:

“The scores for creativity are very close with signs of mutual recognition of weaknesses in performance measurement and timeliness. The Service Provider shows awareness of the dissatisfaction felt by the Customer in the area of flexibility.” (Figure 4.3.1).

The understanding by the service provider is reflected by the score they gave for the other party as can be seen in vertical alignment of the plotted results against the Customer axis. If there is vertical or horizontal alignment it indicates that the other party understands their partners position by assigning the same or similar score. If the customer scores their own satisfaction as 2.5 and the supplier put their perceived score for the customer as 2.6 then they are showing an understanding of the customers position.

c. Stability - creating a framework for successful business.



d. Figure 4.3.2 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Stability

Comments:

“The scores are not significantly far apart; however, an area of weakness highlighted on both sides of the relationship is a concern that the other parties’ objectives may not be mutually/fully compatible. For example, the positioning of inventory. There is also a low-

level concern that the relationship might not be able to facilitate the achievement of increasing rewards.” (Figure 4.3.2).

If left unaddressed a mis-alignment of objectives can have a significant negative impact on the relationship. This will act to reduce affective trust as highlighted in the literature section 2.6. An example of mis-alignment was the desire for inventory to be held in the local warehouse by BrickCo versus the policy with SuppliesCo to hold as much inventory centrally in Melbourne. In the debrief and feedback session the participants in the meeting saw the results and were already discussing the impact and how to alleviate the problem. As long as the issue of alignment is being openly discussed the parties should be able to work through the problem. The willingness to adapt to maintain the relationship should come out through the focus on commitment and continuing the relationship. See Chapter 2.8 for details on adaption and commitment.

e. **Communication - transparency for business success.**

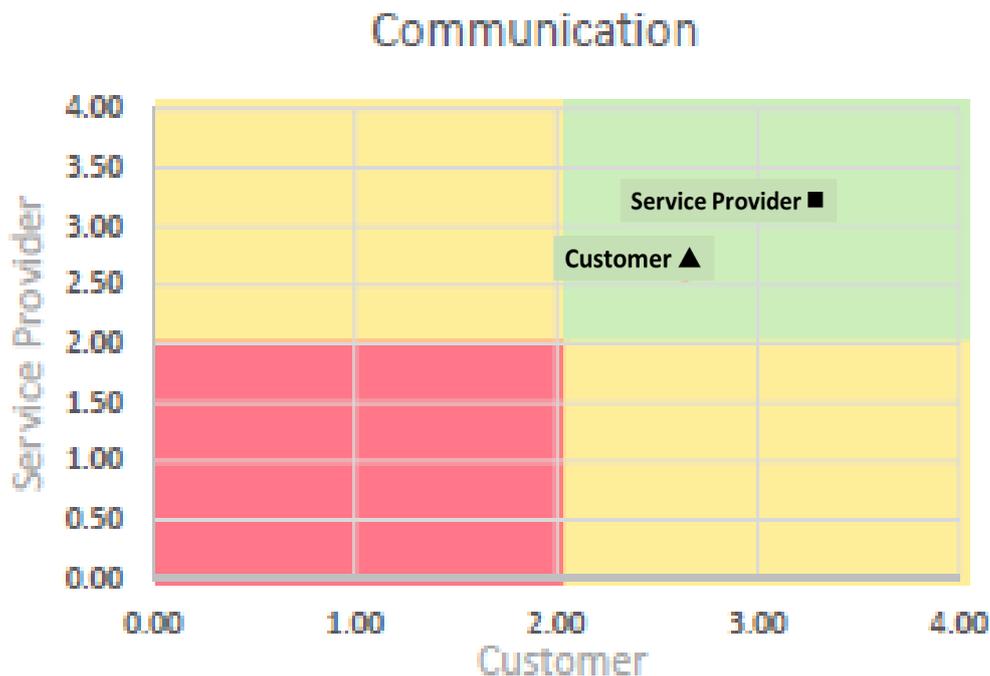


Figure 4.3.3 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Communication

Comments:

“Both parties have concerns about proprietary information that could make the relationship more successful not being freely available from the other party. The issue of performance

measurement was also raised again by the Service Provider. Finally, both parties express dissatisfaction with the exchange of forecasts and other critical information that would facilitate business activities.” (Figure 4.3.3).

These scores are some distance apart and could be the cause of relationship issues in the future if communication is not improved. The comments on the survey instrument and the scores are focused on a sub-set of communication that relates to exchange of documentation and important business information, for example question 3g (i.e. *The exchanges of information so far in this relationship provide clear forecasts and sufficient information to do our job*). It was not an issue that the parties were not talking to each other. Conversations in the debriefing session were about how difficult each party found generating the requested information. While solutions were not forthcoming at the meeting the understanding of the issue and each other’s difficulties in regard to forecast and other information was improving.

f. Reliability - creating reliable business processes.

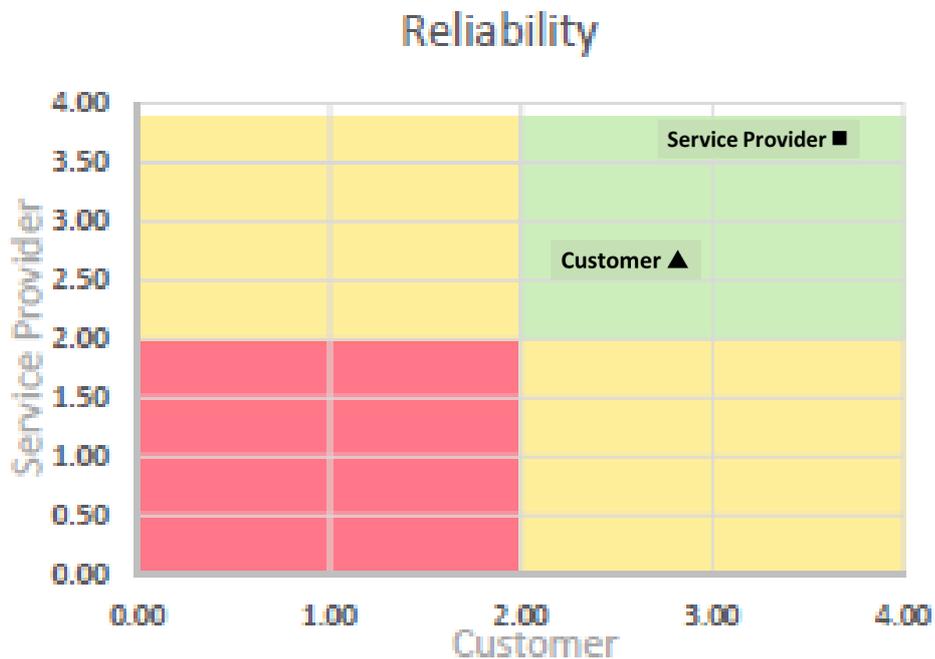


Figure 4.3.4 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Reliability

Comments:

“There are some concerns within the Customer regarding the timeliness and quality of documentation as well as overall continuous improvement activities. This finding is of

particular concern because unlike previous areas of dissatisfaction, there does not seem to be any recognition of the Customers perception by the Service Provider.” (Figure 4.3.4).

As noted in the comments to the parties during the debrief Reliability is one of the SCDR elements where SuppliesCo is unaware of the perceptions from the customer BrickCo. Likewise, BrickCo’s beliefs on where their supplier sits are also out of step. This can be seen in Figure 4.3.4 where there is no vertical or horizontal alignment in the positions plotted. As noted earlier, Figure 4.3.1 shows good vertical alignment which indicates that SuppliesCo has a good understanding of the views of BrickCo. Critical incident theory would suggest that it is possible for each party in the dyad to view the same incident as either trivial or critical as highlighted in Chapter 2.6 depending on their own perspective. A failure to address this misunderstanding could set off a Negative Critical Wave as suggested by (Edvardsson et al., 2014).

g. Value - creating the incentive to work together.



Figure 4.3.5 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Value

Comments:

“Generally, the parties see the same picture in regard to getting Value from the relationship; however, there may be some doubts within the Customer around the willingness of the parties to invest in the relationship. This feeling is echoed by the Service Provider who sees an

opportunity for the parties to do more to work on improving the relationship (based on verbatim comments).” (Figure 4.3.5)

The results for question 5c (i.e. *We are willing to invest more i.e. money, time, information, effort in the emerging relationship*) are the main differentiator in scores seen in Figure 4.3.5. BrickCo provided comments for this question indicating they had concerns that SuppliesCo would not be adapting the standard stocking policies and delivery frequencies to meet BrickCo’s needs. At the same time SuppliesCo provided a comment to question 5g (i.e. *Both sides are working to improve the relationship*) suggesting both parties had more work to do in developing the relationship. It is not unusual in the researcher’s experience for the purchasing representative to downplay the value being received to reduce upward pressure on pricing. Likewise, the sales team are more likely to boost the impact they claim to be providing.

a. Culture Matching (& Understanding)

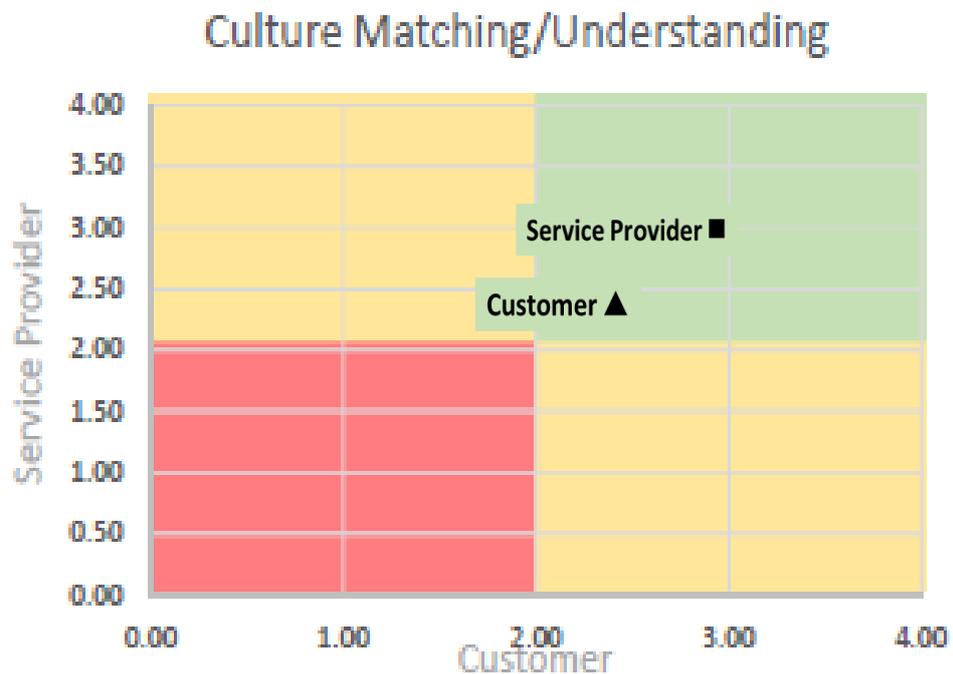


Figure4.3.6 BrickCo (Customer) and SuppliesCo (Service Provider) Relationship Survey Result for Culture

Comments:

“The score for culture matching and understanding shows some good opportunity for improvement. There is some lack of understanding on both sides regarding the other party’s structure and decision-making processes. A conversation about the other parties needs for Precision and Flexibility would also add value.”

The scores in Figure 4.3.6 are the lowest scores of the survey. While the questions on comfort and respect for each other’s culture were higher the scores for how each is organised, and decisions made were lower. This would be an issue if the parties had been doing business for several years; however, in this case it would seem to be a simple opportunity for improvement. The final question where there is opportunity for improvement is question 6e (i.e. *they meet our needs for precision and flexibility well.*) This is an area where both are seeing a need for improvement by their partner.

As noted at the beginning of this section the researcher carried out a review of results with BrickCo and SuppliesCo to deliver the results of the assessment process and to provide comments to aid their understanding of the results. There were two objectives in conducting this review session. The first was to make sure the parties understood the results and the comments made by the researcher. The second was to gather feedback on whether the results appeared right from the perspective of the participants in the SCDR. None of the feedback elicited any contrary views on the state of the relationship. Both parties indicated that the assessment would be useful in guiding discussions on the development of the relationship in the future. Where there were comments or warnings provided in the report there was agreement to discuss and seek resolution of the issues. The usefulness and positiveness of going through the assessment process was supported by both organisations.

4.3.6 'ChemCo' and 'TransportCo A'

The following charts and comments follow the same format as that provided for the previous dyad.

a. Overall Result

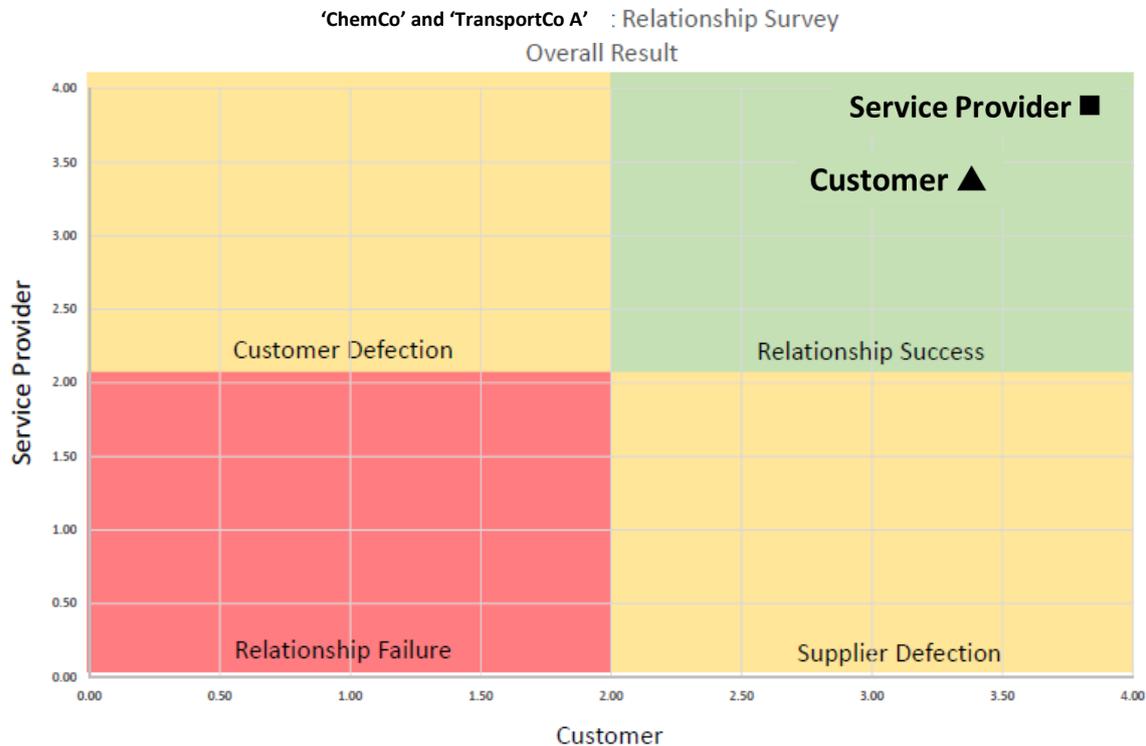


Figure 4.4 ChemCo (Customer) and TransportCo A (Service Provider), Relationship Survey Overall Results

“The key point in this assessment is that the parties are well inside the "Relationship Success" quadrant (Figure 4.4). Within that quadrant the Customer is rather less satisfied with the current relationship than the Service Provider; however, this is not seen as important. There are few warning signs that the parties need to be concerned about although the Service Provider may need to keep an eye on their propensity to overestimate the satisfaction of their Customer. An ongoing focus on developing the relationship should ensure that the parties remain in the 'Success Quadrant' and continue to move towards the top right-hand corner.”

The overall result for ChemCo and TransportCo are positive and well into the success quadrant. Comments from ChemCo included “*Our Logistics providers are an integral part of our business*”. The researcher’s interactions with this dyad indicated a very tight relationship.

b. Creativity: encouraging innovation and high performance.



Figure 4.4.1 ChemCo (Customer) and TransportCo A (Service Provider), Relationship Survey Result for Creativity

Comments:

“Generally, the parties have a similar view of the relationship from the Creativity point of view. The Customer is less satisfied with some minor concerns around flexibility (Figure 4.4.1).”

Even with a lower score the customer is still reporting a high level of satisfaction at around 3.5 out of 4. The main detraction from the customers score is from question 1h (i.e. *They have shown themselves to be flexible in addressing the emerging agreement with us*).

c. **Stability - creating a framework for successful business.**

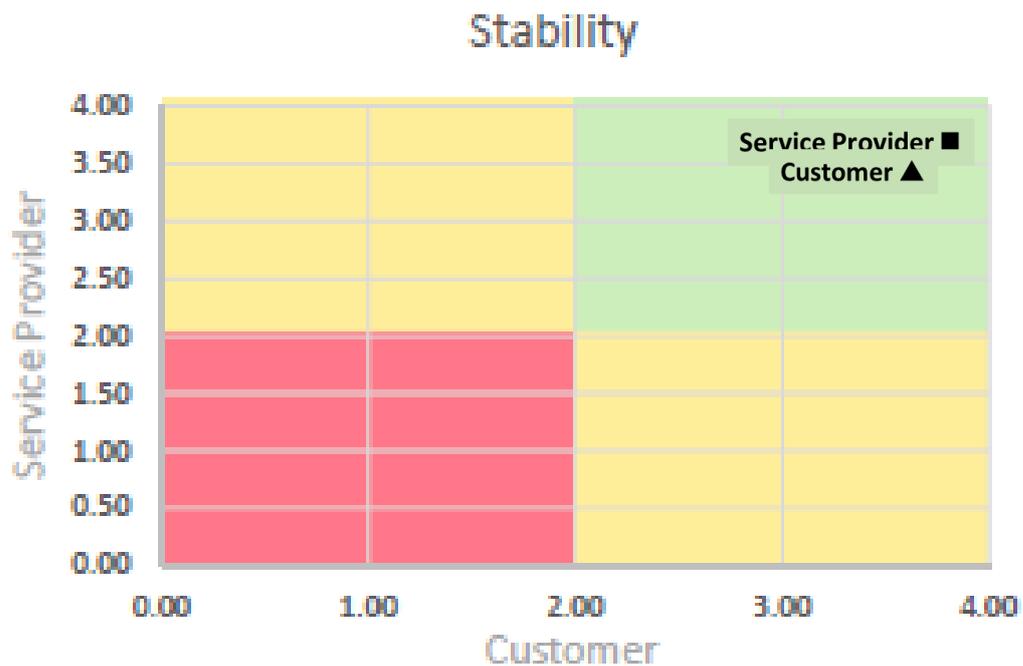


Figure 4.4.2 ChemCo (Customer) and TransportsCo A (Service Provider), Relationship Survey Result for Stability

Comments:

“The scores under Stability are very close. The Service provider recognises that the client is slightly less happy than they are; whereas the client is underestimating how satisfied the service provider actually is. There are no noticeable warning signs under this element of the relationship.” (Figure 4.4.2)

This is a very tightly grouped score which is close to the maximum possible. There were no question responses or verbatim comments that raised concerns or need for further comment.

d. Communication - transparency for business success.

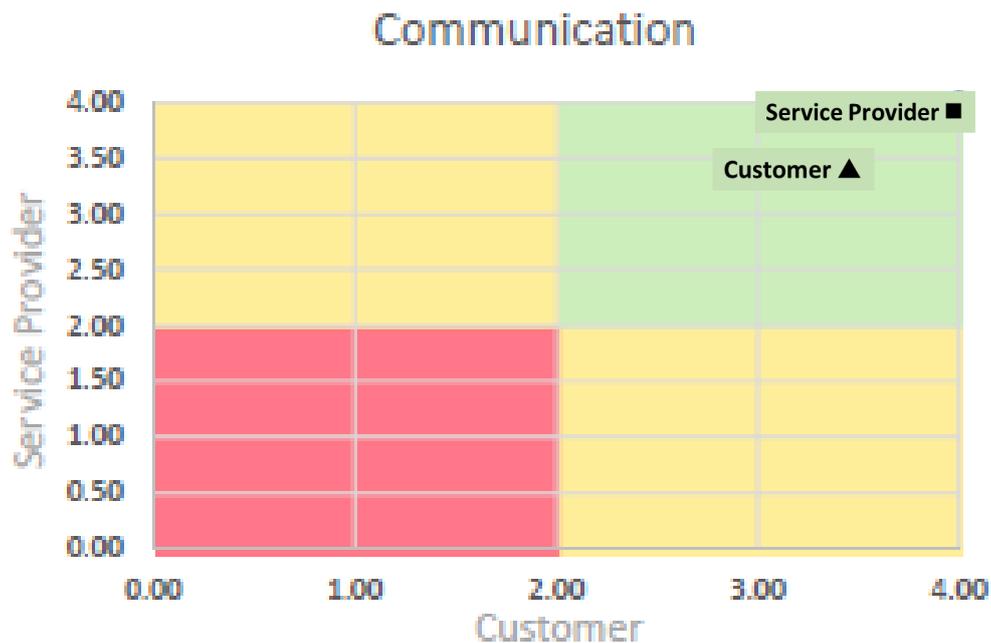


Figure 4.4.3 ChemCo (Customer) and TransportsCo A (Service Provider), Relationship Survey Result for Communication

Comments:

“The Service Provider is fully satisfied with the Communication element of the relationship but is overestimating how satisfied the Customer actually is. The Customer is still registering a relatively high score, but it is still worth keeping an eye on this element to ensure complacency does not lead to problems down the track.”

The results shown in Figure 4.4.3 are again relatively close. Verbatim comments provided on the survey questionnaire highlighted a miss-communication early in the setup of the arrangements. The customer apparently used terminology to describe their requirements that had a different standard meaning within TransportCo A. This led to some service level failures until identified and corrected.

e. Reliability - creating reliable business processes.



Figure 4.4.4 ChemCo (Customer) and TransportsCo A (Service Provider), Relationship Survey Result for Reliability

Comments:

“These scores are very close with no significant issues raised. The Service Provider may have some questions regarding the processes around Continuous Improvement/Cost Reduction which might benefit from a conversation in the future.” (Figure 4.4.4)

The vertical and horizontal alignment for these scores are close and the overall position is also close to the maximum possible score. TransportCo A included a verbatim comment about the way in which continuous improvement would be measured and reported. This was more a comment seeking clarity rather than a potential conflict.

f. Value - creating the incentive to work together.



Figure 4.4.5 ChemCo (Customer) and TransportsCo A (Service Provider), Relationship Survey Result for Value

Comments:

“The Service Provider is very confident on the Value provided and the level of satisfaction on the part of both parties. The Customer, on the other hand, has allocated the lowest scores so far in the survey. Discussions around the willingness of both parties to invest in the relationship (including the willingness of their own organisation to invest) may be of benefit here. The Service Provider will need to keep an eye on the difference in their perception versus that held by the Customer. These are still relatively high scores.” (Figure 4.4.5)

The service provider highlighted in verbatim comments on the questionnaire that they had invested in the relationship – “we have engaged a third-party hazardous recovery provider. we have purchased spill kits and hazardous consignment training for the drivers working on the ChemCo permanent driver account”. It is possible that the commercial ‘game-playing’ that has been mentioned in the comments for BrickCo and SuppliesCo results may be appropriate here as well. In the researcher’s opinion it is unlikely that the service provider truly believes that the customer is perfectly happy with the value being received. The discussion during this element of the results feedback did not highlight any surprise of concern from either party which again points to it being part of the normal interactions around value in these types of arrangement.

g. Culture Matching (& Understanding)

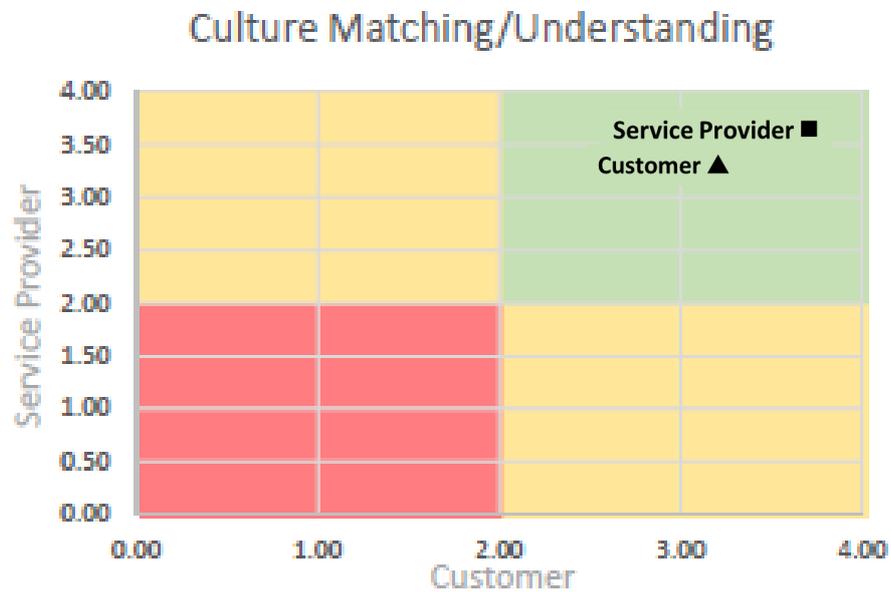


Figure 4.4.6 ChemCo (Customer) and TransportsCo A (Service Provider), Relationship Survey Result for Culture Matching

Comments:

“Both organisations are comfortable with the culture of the other party and the way that each interacts. There are no additional comments under this element.” (Figure 4.4.6)

The only verbatim comment added to the questionnaire by ChemCo was that “*Still needs to fully understand our over-all business but they are getting there*”. These scores point to a healthy culture matching and understanding situation.

4.3.7. 'ChemCo' and 'TransportCo B'

The following charts and comments follow the same format as that provided for the previous SCDRs.

a. Overall Result

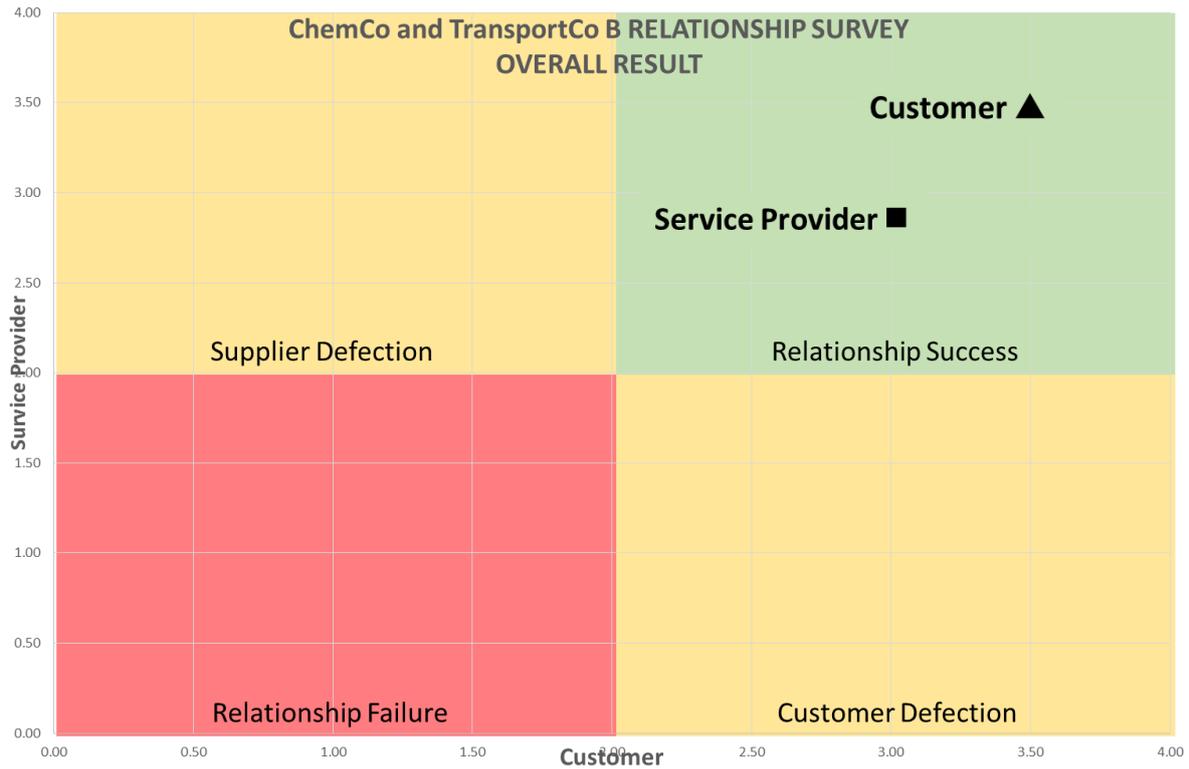


Figure 4.5 ChemCo (Customer) and TransportsCo B (Service Provider), Relationship Survey Overall Results

“Both parties to this arrangement are well inside the success quadrant with the customer being more satisfied with the relationship than the service provider. In fact, the customer is more satisfied than the service provider believes them to be by their other partner scores. There is also ample recognition within the customer that the relationship is in its early stages; however, any failure to improve in some operational areas may cause the ranking to fall over time.

Both organisations have concerns in the area of Reliability, mainly in regard to how and where improvements will come from. There are also some questions within the service provider as to

whether the customer would really “put themselves out” for the service provider under an environment of changed circumstances.

Perhaps the area that could result in improved scores would be to initiate a conversation around the subject of organisational culture. This would help the service provider improve their understanding of the customer and their business.“

The parties to this relationship are within the Relationship Success quadrant as shown in Figure 4.5. Interestingly ChemCo are more satisfied with the relationship than is TransportCo B. This is the reverse of the situation with TransportCo A where the service provider is more satisfied. As will be seen TransportCo B has provided several scores that are close to the failure quadrant.

Relationship Elements Results

b. Creativity: encouraging innovation and high performance.

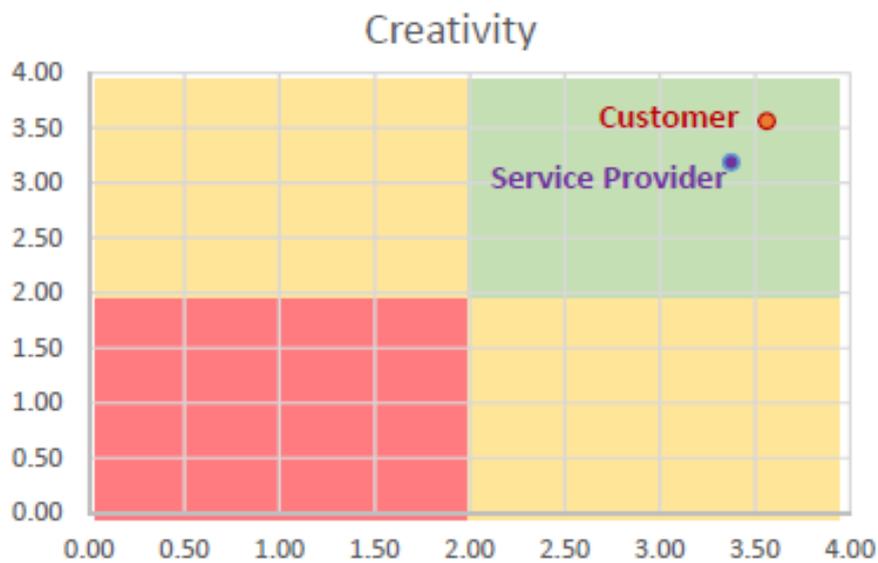


Figure 4.5.1 ChemCo (Customer) and TransportCo B (Service Provider), Relationship Survey Result for Creativity

Comments:

“There are no significant differences in the perceptions between the parties about creativity. The service provider believes that the customer is slightly less satisfied than they actually are. The customer is closer in their perceptions of the service provider’s level of satisfaction.” Generally, the parties have a similar view of the relationship from the Creativity point of view. The Customer is less satisfied with some minor concerns about flexibility. (Figure 4.5.1)

c. Stability - creating a framework for successful business.

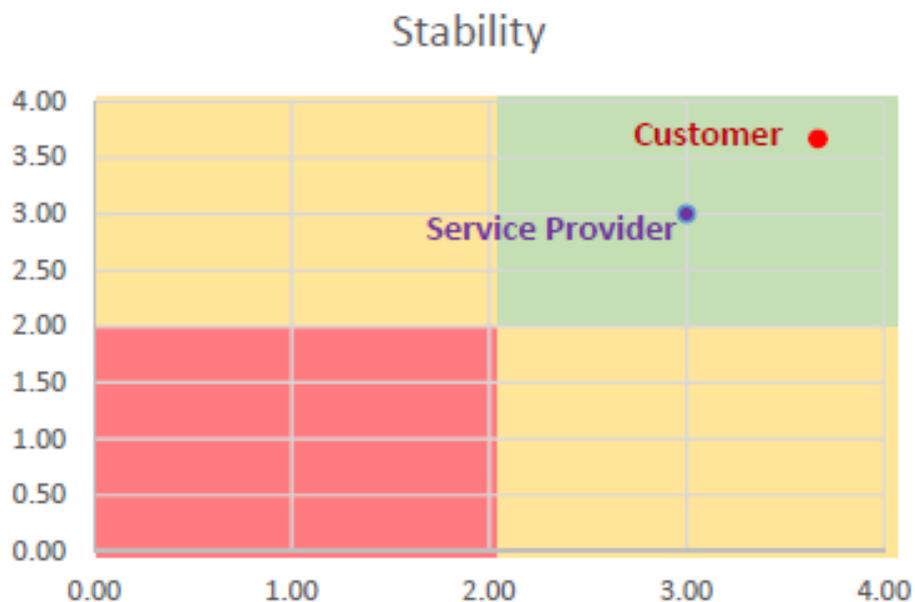


Figure 4.5.2 ChemCo (Customer) and TransportsCo B (Service Provider), Relationship Survey Result for Stability

Comments:

“While there is a wider gap between the perceptions around stability this mainly is driven by a lack of knowledge within the service provider around the ability of the relationship to provide increased rewards in a dynamic business environment.”

The scores under Stability shown in Figure 4.5.2 are close; however, they do exhibit a lack of vertical and horizontal alignment. The gap shown for stability is not considered to be significant.

d. Communication - transparency for business success.

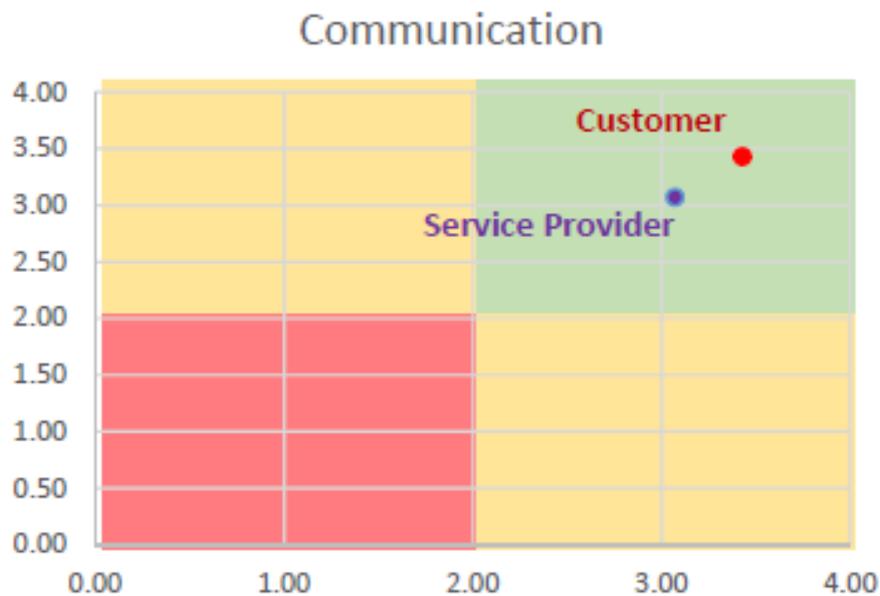


Figure 4.5.3 ChemCo (Customer) and TransportCo B (Service Provider), Relationship Survey Result for Communication

Comments:

“Feelings on communication appear to depend on where you are in the organisational hierarchy. There are several “insufficient information” responses from the service provider. These revolve around not yet understanding expectations for communication requirements by the customer. The mechanisms and process for informal communication could also be made clearer. This is a key area in which a conversation about the findings would add value.”
(Figure 4.5.3)

The responses under Communication, particularly from TransportCo B, highlight the use of individual respondents’ answers to particular questions. In this case more junior members of TransportCo B answered “insufficient information” to two questions: question 3c (i.e. *we*

understand the information requirements of all participants in the supply chain from suppliers to customers). And question 3f (i.e. we are aware of the performance requirements for all participants in the supply chain from suppliers to customers). This highlights an area where communication can be both between and within the organisations that are part of the SCDR.

e. Reliability - creating reliable business processes.

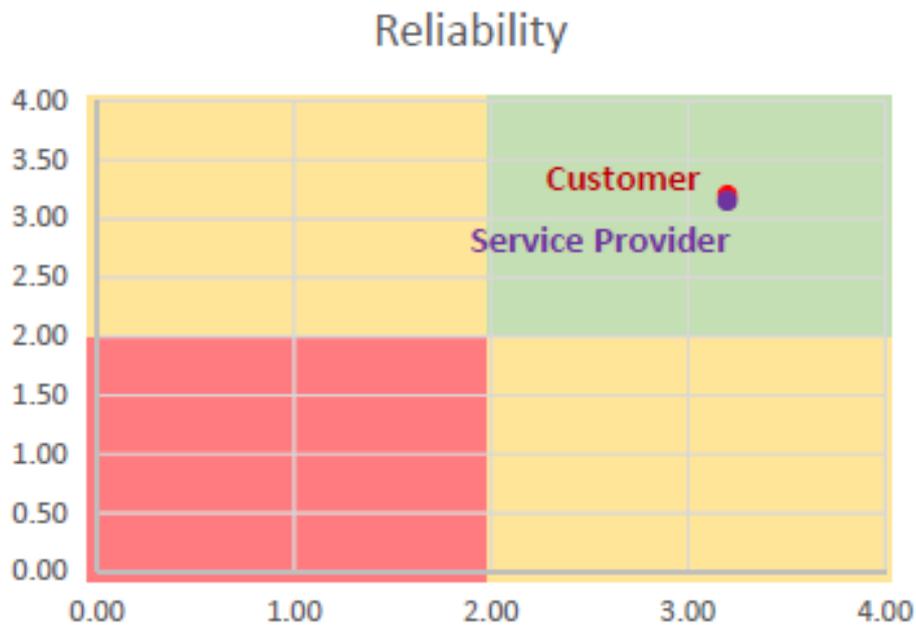


Figure 4.5.4 ChemCo (Customer) and TransportsCo B (Service Provider), Relationship Survey Result for Reliability

Comments:

“The scores for this element came out to be almost identical from both organisations; however, they are marked by several areas where the response was insufficient information. One perception that is commonly held by both organisations is in regard to cost savings and benefits, there is uncertainty about whether such savings will eventuate. The customer also has concerns about the timeliness of the provision of documents. For their part, the service provider has questions regarding the willingness of the customer to put themselves out to help the service provider adapt to changing circumstances” (Figure 4.5.4)

The results shown in Figure 4.5.4 would on first view indicate that the partners have almost the same view of the world as each other. While they have arrived at a similar score the concerns that reduce the score from a perfect four are different. As noted in the feedback given to the participants at the debriefing by the researcher ChemCo are concerned about the timeliness of provision of documents as shown by their response to question 4b (*The timeliness of the provision of documents and responses is entirely satisfactory*) where this is scored low. TransportCo B on the other hand provides a low score to question 4e (i.e. *Such is the goodwill in the emerging relationship, the other party would willingly put him/herself out to adapt to our changing requirements*). These differences are not significant given the common understanding of the other issues under Reliability.

f. Value - creating the incentive to work together.

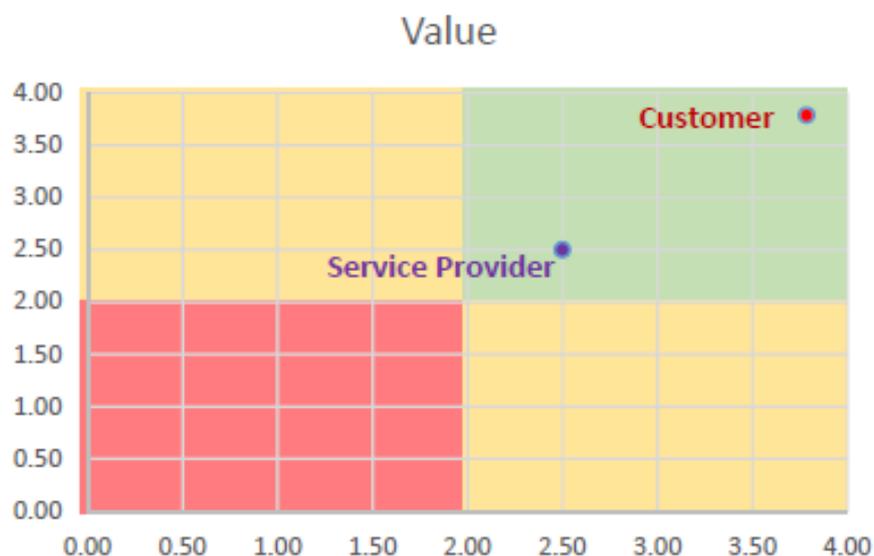


Figure 4.5.5 ChemCo (Customer) and TransportCo B (Service Provider), Relationship Survey Result for Value

Comments:

“While the scores are somewhat apart they are mainly driven by a lack of knowledge within the service provider around the level of commitment to the relationship and whether there is a chance of being trapped in an unsatisfactory relationship down the track. It is likely that continuing to work together successfully will allay these concerns.”

The service provider is approaching the failure quadrant, as seen in Figure 4.5.5, whereas the customer is extremely satisfied. The main issue for TransportCo B is question 5b (i.e. *In dealings with the other party so far we do not get a feeling that we could be imprisoned or restricted within the resulting relationship*). There may be a number of reasons for the concern but given the very high satisfaction from ChemCo it may be that TransportCo B is subject to the winner’s curse (Kern et al., 2002). This is where a service provider bids low to win a contract in the expectation that they can recover margin after commencing the contract. If they are unable to do so they are deemed to be cursed by their win.

g. Culture Matching (& Understanding)

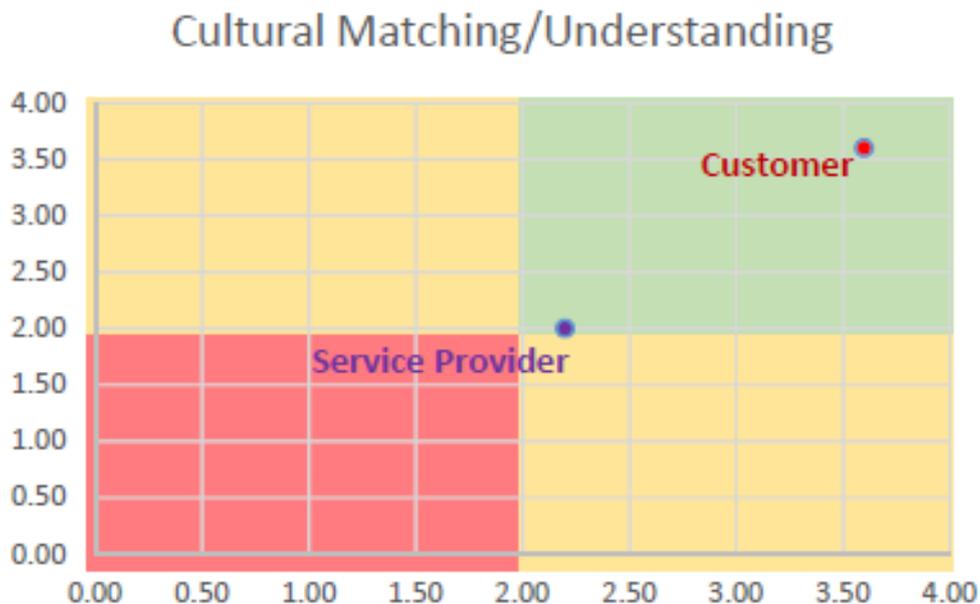


Figure 4.5.6 ChemCo (Customer) and TransportsCo B (Service Provider), Relationship Survey Result for Culture Matching

Comments:

“The wide difference in the scores point to a need for more work on communication around issues that relate to the relationship itself, and, in particular the cultural aspects of each organisation. Left unaddressed area could emerge as a source of concern if failures are occurring elsewhere in the relationship. If it is addressed, it will provide mutual confidence between the partners showing that they can overcome difficulties together”

The score shown in Figure 4.5.6 is close to falling out of the success quadrant for the service provider. As noted in the feedback during the researchers debrief to the SCDR partners if left unaddressed the resilience of the relationship could be tested if failures in other areas, for example missing service level agreement targets may set off a series of critical incidents. The main issue would appear to be a lack of understanding amongst TransportCo B's staff on how ChemCo is organised and makes decisions. The discussions initiated during the debrief by the researcher was a first step towards closing the gap and the parties appeared keen to address this gap.

4.3.8 'GovDiv' and 'SpecServiceCo'

The following charts show the scores for the overall relationship and the individual elements. The parties in this SCDR are a Government Department and a specialist service provider of security services.

a. Overall Result

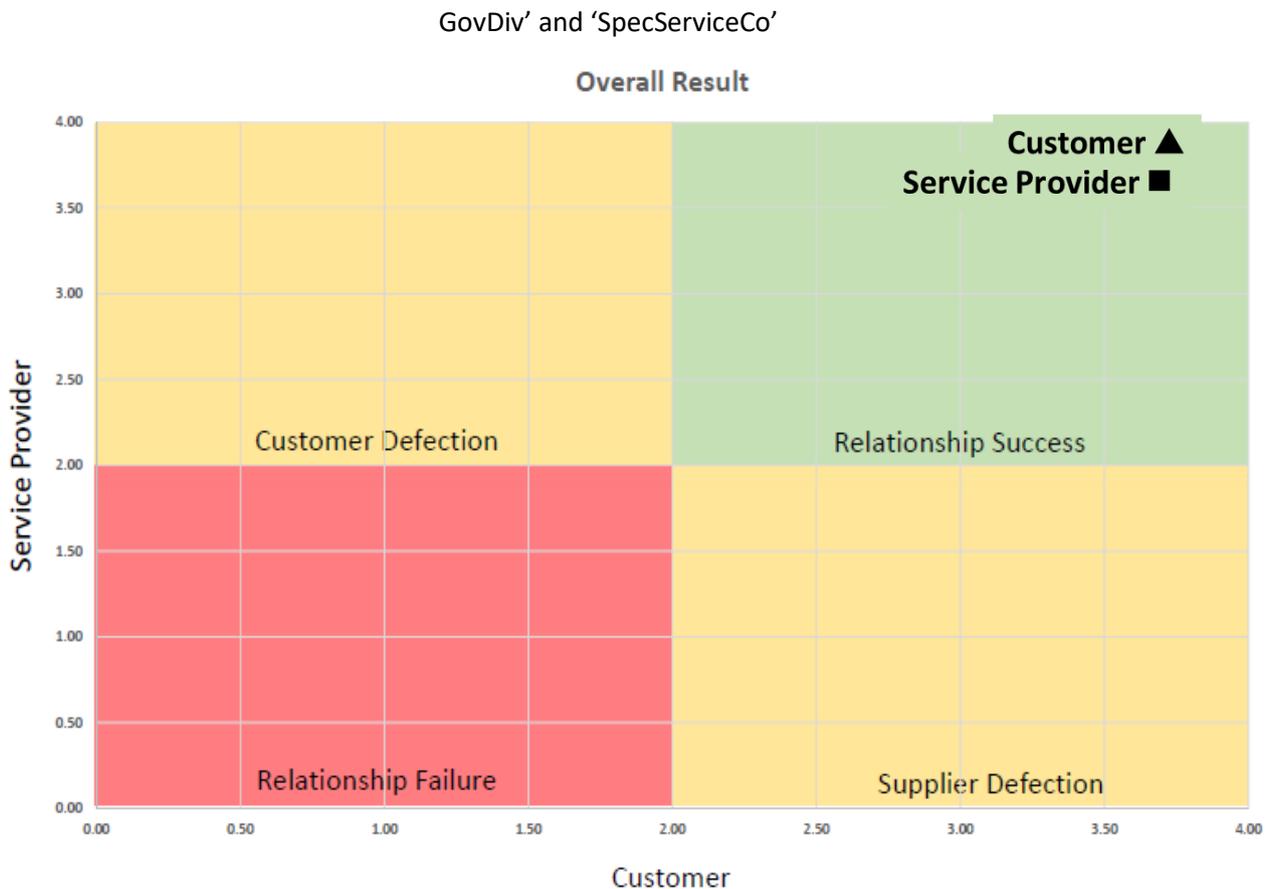


Figure 4.6 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey Overall Results

The key point in this assessment is that the parties are well inside the "Relationship Success" quadrant. Within the results, there is very little difference in the perceptions of the relationship. Apart from a very minor comment around 'Value', there are no suggestions for improvement or change. It should be noted that there was a low number of participants in the survey, so results do not have a secondary view from within one of the organisations. (Figure 4.6).

These results show a good degree of alignment both vertically and horizontally and the scores are the highest for overall result of the four dyads assessed. During the results debrief by the researcher the parties expressed satisfaction with how well they had matched each other's perceptions of the relationship.

Relationship Elements Results

b. Creativity: encouraging innovation and high performance.

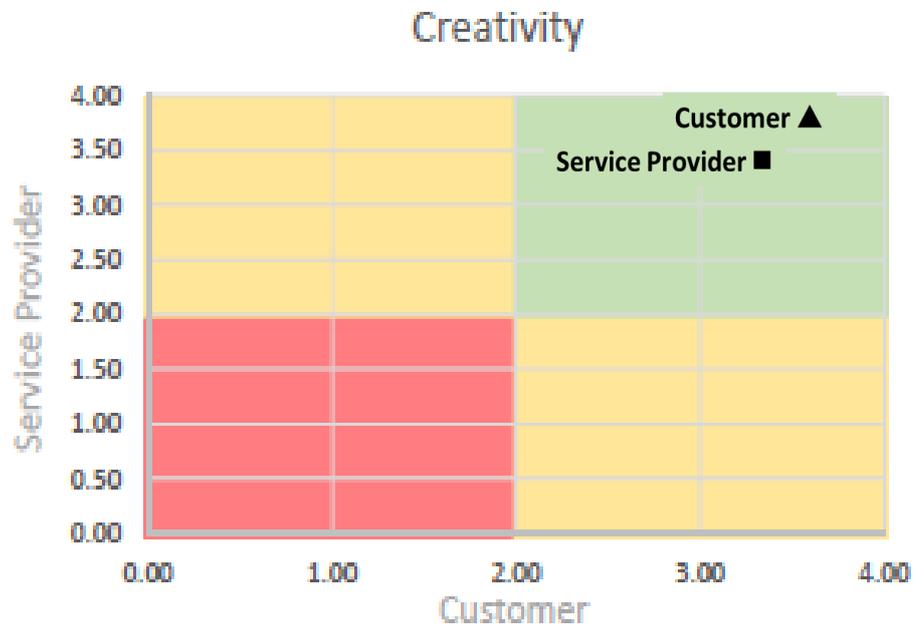


Figure 4.6.1 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey Result for Creativity

Comments:

“The Customer is very slightly more satisfied with the extent of creativity in the arrangement and has overestimated the degree of satisfaction present within the Service Provider. This is not a significant gap and the scores are very close indicating a reasonably consistent view across the parties”. (Figure 4.6.1)

c. Stability - creating a framework for successful business.



Figure 4.6.2 GovDiv’ (Customer) and ‘SpecServiceCo’ (Service Provider) Relationship Survey Result for Stability

Comments:

This is a very tight scoring in the top corner of the 'Success' Quadrant which indicates no issues are seen in the area of Stability. (Figure 4.6.2)

This is another example of the close scoring by the participants to the survey. It was apparent that this dyad was prepared to be generous in their views of the other party versus for example the BrickCo and SuppliesCo dyad who were much more commercially focused.

d. **Communication - transparency for business success.**

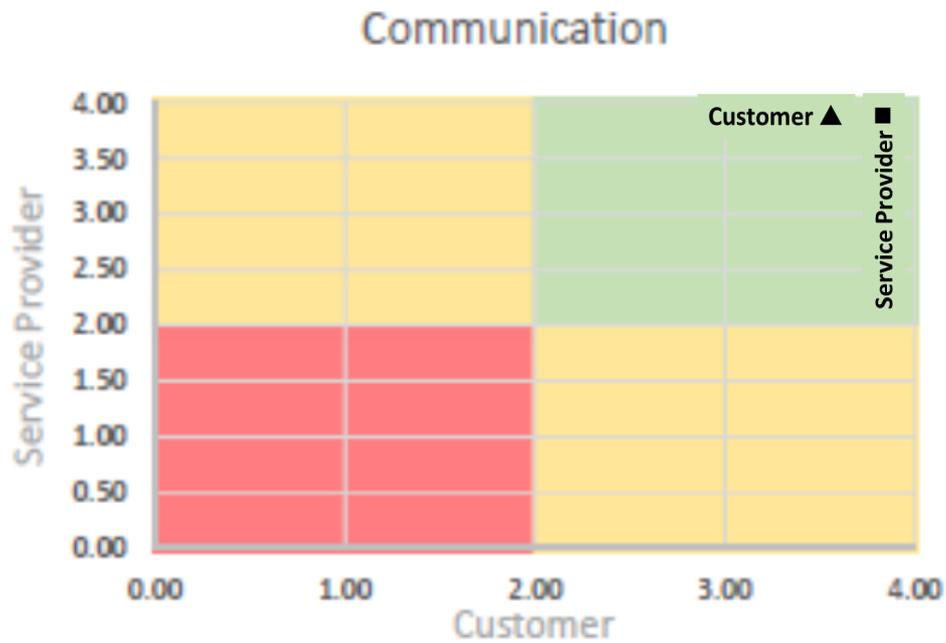


Figure 4.6.3 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey
Result for Communication

Comments:

A very tight grouping in the top corner of the Success Quadrant. No issues are seen by either party in the area of Communications. (Figure 4.6.3)

e. Reliability - creating reliable business processes.



Figure 4.6.4 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey Result for Reliability

Comments:

These scores are again very close, both parties see the arrangement as being 'Reliable'. As noted previously this is a result from a small sample. (Figure 4.6.4)

f. Value - creating the incentive to work together.



Figure 4.6.5 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey Result for Value

Comments: In comparison with other elements, there is a slight indication of difference with the Customer being less satisfied with the value being received from the arrangement. This is a minor difference but sufficient to suggest the Service Provider should keep an eye on to ensure further decline does not occur. The Customer correctly sees that the Service Provider is more satisfied with the Value they gain from the arrangement. The overall differences are not significant; however, the sample size is small. (Figure 4.6.5)

g. Culture Matching (& Understanding)

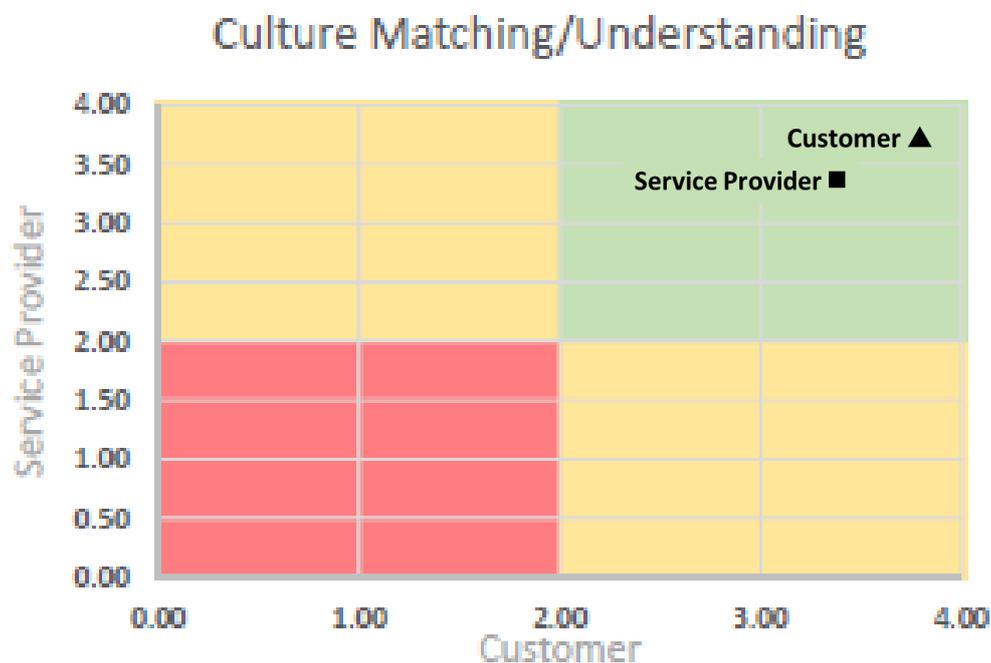


Figure 4.6.6 GovDiv' (Customer) and 'SpecServiceCo' (Service Provider) Relationship Survey Result for Culture Matching

Comments:

The Customer is more satisfied with the culture matching aspects of the arrangement; however, the differences are not great. Discussion during the debrief by the researcher indicated that any lower scores by the service provider reflected concerns with higher level government policy rather than the division that SpecServiceCo was dealing with directly.

(Figure 4.6.6)

4.4 Follow up Interviews

A second interview was carried out with each of the participants in each dyad separately to confirm that the results of the forward-looking survey had been borne out in the actual experience of the parties. This interview was conducted approximately six months after the feedback session at which the report had been provided. The objective of this interview was to see if the criteria for dyadic relationship success defined in Chapter 2.3 had been met. In essence, were the parties still doing business together? The interviews were a mix of face to face and telephone interviews and yielded varying degrees of detail. While a script for the interview was developed it was not possible to follow it in all cases. The intended questions are shown in Chapter 3, table 3.4:

4.4.1 Interview Comments and Feedback- 'BrickCo' and 'SuppliesCo'

The interviews with BrickCo participants involved the Supply Chain leader and the Purchasing leader. The Supply Chain leader had been involved in the assessment and feedback process, but the Purchasing leader was newly appointed (but had read the feedback report previously provided). The notes from the interview are provided in Appendix D, whereas the following paragraphs highlight the key messages and takeaways from the interview.

The Supply Chain Leader who had been involved with the assessment process was clearly more supportive of the use of the assessment process and commented that the existence of the report and the insight into the relationship had given BrickCo the confidence to consider SuppliesCo as a strategic supplier into the future. The comments from the Purchasing leader were more transactional than strategic. This may be impacted by the type of role purchasing has in BrickCo as the previous purchasing staff member when completing the assessment had made verbatim comments that were transactional in nature. For example, both the original respondent and the newly appointed purchasing staff member complained about transactional paperwork issues.

The interview participant from SuppliesCo was the local branch manager who was involved in the assessment and feedback process. A key comment about the process was that the assessment had reminded him to think about the relationship from the customer's point of view. He had previously seen this as difficult, but the questions asked in the assessment help in thinking that way. SuppliesCo were pleased that their business had increased so that a

wider range of items were now being supplied. While SuppliesCo had not been involved in a two-way survey process before they were very positive about it, particularly the clear feedback from the customer and the discussion with a third party involved.

The overall results from the two interviews showed that the assessment, feedback briefing and the follow up interview were very useful in keeping the parties thinking about the relationship. BrickCo also commented that if the circumstances were to arise they would consider using the assessment process again.

The key point to be made is that the organisations in the dyad are still doing business together and the levels of business have in fact grown. The relationship is still positive, and the customer now sees the supplier as strategic. This meets the criteria of SCDR success identified in section 2.3.

4.4.2 Interview Responses and Comments ‘ChemCo’ and ‘TransportCo A’/

TransportCo B’

ChemCo

The interview with the Transport Leader at ChemCo covered both transport companies at the same time. This was due to a busy executive needing to optimise their time. The only difficulty faced was ensuring that any comments were assigned to a particular transport provider. An interesting piece of feedback from the Transport leader was that often the comments they get from service providers are sugar-coated and don’t really surface issues that are important to address. This assessment allowed a discussion that was more open than usual. The process of going through the assessment was seen as important because these two service providers were set to be the two largest contracts managed by the transport group:

According to the Transport Leader there had been some rearrangement of routes and shipment modes which had changed the work allocation since the survey had been completed, but this was not seen as significant. This and other issues from the assessment report continue to be discussed at meetings with the transport companies. It was clear that the Transport Leader saw the report as a communication tool. She was also very positive about the list of SCDR elements and the inclusion of culture which is often missed according to this respondent. Overall the process of measurement and feedback was seen as beneficial.

The responses from the two transport companies were less detailed than the customer and was carried out over the phone. The format followed the interview script but not all questions were answered. In responding they saw the relationship in a very day to day sense. Their view of their performance was seen as being very much about today's deliveries and not a long-term focus.

TransportCo A'

The account manager interviewed had undertaken the survey and was still involved in running the ChemCo account. They were still doing business with the customer with no significant change in the levels of business. When asked about their thoughts on the result of the assessment he indicated that the result was as expected. There were conversations about the opportunities for improvement that were raised by the assessment report. The feelings about the process of assessment and feedback were seen as being positive. To quote the account manager when asked whether the assessment had been valuable he responded, 'It didn't do any harm.' TransportCo A also indicated that they would happily undertake the assessment process with other clients.

TransportCo B'

The account manager for TransportCo B was more forthcoming in responses. While they had seen the process as valuable and had no difficulty with the questionnaire they were still waiting to see the full volume of work they were promised. This indicated that some of the questions might be answered with a lower rating if re-run that day; nevertheless, they were still supportive of the relationship. The account manager also indicated that there had been a number of formal discussions around the opportunities for improvement in the assessment report.

Overall the results of the follow up interviews indicate that the parties are continuing to do business together with no plans to change. The assessment report was still being used to guide conversations about improvement and the relationship was seen on all sides as being strong.

4.4.3. Interview Responses and Comments ‘GovDiv’ and ‘SpecServiceCo’

The second interview with these two participants followed an unstructured approach via telephone conversations. Because of the transient nature of roles, particularly in GovDiv, it was hard to re-establish contact with those that had undertaken the assessment. The key point identified was that the two organisations were still doing business and levels of satisfaction were still high. Because the respondents were not in their original roles they had not used the report to guide improvement discussions.

In summary, they found the process useful but were unsurprised at the results. They did believe that if employed more generally by public sector procurement the assessment would be valuable; However, they had doubts that the process could be embraced by public sector purchasing functions given all the structures around the way procurement was conducted in this public sector. Further discussion of the applicability of the assessment model for the public sector has been included in Chapter 6, Page 158.

As the organisations were still doing business together and that satisfaction was still high the prediction of relationship success is validated. While the researcher was not able to drill down into the specific questions from the interview script the overall feedback is positive. The fact that the relationship is thriving despite the key people involved in the assessment moving on to new roles points to a fundamental good relationship between the parties that goes beyond the personal relationships of a few individuals.

4.5 Summary

In this chapter the results of the research using the methodology developed in Chapter 3 have been covered. These included the interview process using storytelling with the expert panel which resulted in the confirmation of the putative list from the literature and the addition of culture matching element to the list. The chapter continues with the results from assessing four early stage SCDRs. In all cases the results indicated that the dyadic relationships were in the success quadrant. The debriefing session held with each SCDR to deliver the results of the assessment resulted in feedback that the results matched the participants’ perception of their relationship and that the process had been useful. Finally, after six months a follow up interview was conducted to ascertain whether the predictions provided in the feedback of results had been borne out by the actual experience of the participating SCDRs. In all the SCDRs assessed this was found to be the case.

There were no clear patterns in the positioning of the Buyer or Service Provider being consistently more or less satisfied than the other. The Dyads assessed were evenly split between those that had a more satisfied Service Provider and a more satisfied Customer. The only score worth noting was the extremely high score for Value and Communication by TransportCo A. These scores were not markedly higher than the customer ChemCo but do reflect an almost perfect result. This may be a result of the salesperson having a bias towards Impression Management as identified in research by (Johnson et al., 2009). As will be covered in Chapter 5 the sample size is not large enough to make inferences on whether there is an overall pattern on satisfaction or whether each individual dyad is its own island on the issue.

All stages of the methodology were successfully executed, and this chapter has detailed the results from each stage. Then Chapter 5 provides an analysis of the results and tests these against the research aims, questions and propositions.

Chapter 5

Discussion and Implications

5.1 Introduction

Having gathered together the results of the research in Chapter 4, this chapter provides some meaning to those results. This chapter is organised in the following way. After a brief initial discussion in the next section (5.2), the chapter reviews each research question and proposition and outlines the findings to see their acceptance or rejection. In all cases the requirements and propositions have been met successfully. A brief section covers some general observations that come from the findings which are outcomes that did not fall into the research propositions but were worthy of comment. The chapter ends with a discussion on the implications that derive from the successful completion of this research. The implications are broken down into impact on theory and policy for both private and public sector managers.

5.2 Discussion

This research set out with two key themes. First, that better supply chain relationships lead to supply chain success (Holmlund and Törnroos, 1997, Wu et al., 2014). Second, that because supply chain relationships are important, they should be measured and managed (Neely et al., 2006). While several researchers had developed tools for measuring supply chain dyadic relationships (SCDR) (Laequddin et al., 2010, Roberts et al., 2003, Wilding and Humphries, 2006a), the existing SCDR measurement approaches appear to have focused more on past events between the dyads, and to offer relationship elements that are inadequate to capture all aspects of both partners relationship experience. Finally, existing approaches are not capable of predicting in advance the likelihood of success of an emerging relationship. This research therefore aims to explore and develop the key elements of a holistic SCDR and develop an approach that can predict a successful dyadic relationship.

The research used a longitudinal study in two stages. In the first stage, interviews were conducted with an expert panel using an innovative storytelling method (Wijetunge, 2012) to draw out the practitioners view on what elements make up an SCDR. The outcome of the qualitative interviews is discussed in more detail in the next paragraph. The list that was developed from the interactions with the expert panel was then used to develop a

questionnaire with predictive capability. Prediction is seen as an important aspect of management (Amsteus, 2011). This questionnaire was then applied to four emerging supply chain dyadic relationships to ascertain whether it was effective in measuring and predicting the success of the dyadic relationship. The usability of the questionnaire and the participating dyads impressions of the results were obtained via a debriefing session run by the researcher with each of the participating SCDRs. Proof of the success of the predictive capability was confirmed via a follow up interview with the participating SCDRs six months after completing the survey.

The thematic analysis of qualitative interviews with the expert panel shows that the element, culture, of both organisations is quite important for understanding the dyadic relationship and its likelihood of success. The inclusion of culture into the putative SCDR list of elements (i.e., creativity, stability, communication, reliability and value) is believed to be an important improvement in the understanding of dyadic relationships. Without culture an important contributor is missing from the list of SCDR elements and therefore is also missing from the existing methodologies for measuring SCDRs. This input to the SCDR elements was then used to develop an improved methodology, based on prior research (Mena et al., 2009, Thakkar et al., 2008, Simatupang and Sridharan, 2005, Roberts et al., 2003, Wilding and Humphries, 2006a), for assessing the likely state of a dyadic relationship in the future.

This research is not the first to raise the importance of culture to success in supply chain management. Other researchers such as Beugelsdijk et al. (2009) have highlighted how culture impacts on performance. They stress that culture matching does not mean similarity. The connection between culture and supply chain performance has also been made by others (Cadden et al., 2013, Cadden et al., 2010), who raise the importance of making an assessment of cultural fit early in the relationship. Cadden et al. (2013) make the point that culture is only one of many attributes that lead to supply chain success. This research therefore takes a lead from Cadden et al. (2013) by combining culture with the SCDR assessment tool developed from the prior research referred to in the prior paragraph.

Defining what questions to ask to understand the cultural compatibility between members of a SCDR required a review of the wider research into culture. Much of the support for the chosen questions came from the work by Hofstede et al. (2010) who identified the importance of understanding how the other party is organised and makes decisions. The

importance of these points is supported by earlier work (Kwon and Suh, 2004). The next series of questions come from the need for the parties to be comfortable with each other's culture and to be respectful of any differences (Aslani et al., 2016, Taras et al., 2012). The final area of culture that was used to generate questions is the need within each party for accuracy and precision. A mismatch here can lead to a failure to deliver the required level of service or support if a customer expects precision and the supplier is focussed on agility and speed (or vice versa). This aspect of culture was drawn from Hofstede et al. (2010) and supported by Gelfand et al. (2018). While the prior work (Gelfand et al., 2018, Hofstede et al., 2010, Cadden et al., 2013) was used in the development of the five questions on culture it is believed that this is the first time in this study these particular questions have been included in a SCDR assessment tool.

Underpinning this research and the measurement and prediction of dyadic relationship are two economic theories, Transaction Cost Economics and Social Exchange Theory. These have been discussed in detail in Chapter 2.5. From TCE this research takes the structure of the economic interactions between dyads. TCE also provides the model for organisational failure which has been further developed by Wilding and Humphries (2006b) into a series of SCDR elements that make up a successful relationship. SET for its part provides the basis for the interactions between the dyads that generate value, for example through the implementation of technical change and innovation (Mitrega et al., 2017). The value created and the social interactions between the members of the dyad are then the driver for the parties to continue their relationship which has been identified as the definition of SCDR success (Holmlund and Törnroos, 1997). While TCE provides the structural elements that make up a SCDR SET for its part provides the questions to understand the state of the dyadic relationship. Thus, both economic models have their part to play in supporting the basis of this research and work in a complementary way (Ambrose et al., 2010).

5.2.1 Conclusions about each research issue or proposition

The following section reviews the success that this research achieved in answering the research questions and propositions that were identified in section 2.13. The results of the qualitative study are presented in Table 5.1 which summarises all propositions and whether they are supported or not.

The following paragraphs review the research questions and the propositions in detail.

Research Question 1: How can the list of known SCDR elements be improved by input from relevant practitioners?

The list of SCDR elements was sourced from previous research through a review of the literature. These included the Interpretive Structural Modelling (ISM) model (Thakkar et al., 2008), the Supply Chain Collaboration Index (SCCI) (Mena et al., 2009, Wilding and Humphries, 2006a), the Collaboration Index (Simatupang and Sridharan, 2005), Measuring Relationship Quality (Roberts et al., 2003) and a commercial tool called the Relationship Measurement Matrix (ADS_Group_Limited, 2012) (<https://www.adsgroup.org.uk/>) The elements from each model were put together in a matrix and the most complete model, the SCCI, was selected as the literature sourced version. It was also noted that there was significant overlap between the models. The putative list was then reviewed with an expert panel and improved via the addition of culture matching to the list of SCDR elements. This work supports the contention that the first part of research question 1 was been answered.

Proposition 1a: An expert panel approach can be used to gather necessary SCDR elements from practitioners in the field.

An expert panel was assembled consisting of representatives from both the buy and sell sides of SCDRs. These participants represented both operational and senior management levels within their organisations. A modified Delphi approach was used to gather input from the expert panel. Hence proposition 1a has been supported.

Proposition 1b: An interview method for obtaining SCDR elements can be devised that will ensure the researcher's bias does not influence the interviewees.

This research used storytelling to avoid interviewer bias. The participants were invited to tell stories of good and bad supply chain relationships. These stories were then reviewed for keywords and concepts that related to SCDR elements. This input resulted in approval of all existing elements and in the addition of a new dimension,

culture matching, to the list of SCDR elements from the literature. This outcome supports Proposition 1b.

Research Question 2: What kind of assessment tool, using the improved list of elements, will enable prediction of future SCDR relationship success?

Using the existing SCDR assessment tools as a basis, in particular the SCCI suggested by Wilding and Humphries (2006) and the ISM by Thakkar et al (2008), a questionnaire was created that elicited responses that can be used to generate predictions of future SCDR success. This questionnaire was pilot tested by the academic community and the expert panel before applying it to the selected early stage SCDRs. Research Question 2 is therefore answered in the affirmative.

Proposition 2a: Questions can be created that allow respondents to consider the ‘shadow of the future’ when answering.

The actual questionnaire (detailed in Appendix A) asks the respondents to consider their expectations for the future based on the small amount of experience they have with their SCDR partner. The questions have a future based perspective, for example, *“We are happy that our future could be bound to the success of our relationship partner”*. Other questions explicitly ask the respondents to use the limited experience they have with their SCDR partner to date, for example, *“Problems encountered so far are solved in a joint, open, constructive manner”*. Proposition 2a is therefore supported.

Proposition 2b: A suitable definition of SCDR success can be developed from the literature.

While there is no existing clear-cut definition of SCDR success agreed upon, this thesis has drawn from a number of sources to propose that SCDR success is defined by the continuation of the relationship through ongoing business or transaction cycles (Holmlund and Törnroos, 1997, Nwakanma and Jackson, 2007, Large et al., 2011). If there was an increase in dissatisfaction within the SCDR then the dissatisfied party will start to make moves towards exiting the relationship. Such moves would be apparent to the researcher at the follow up interview. Based on this, Proposition 2b is met.

Proposition 2c: The results of the assessment can be represented in a way that will aid in understanding and communication within responding SCDRs.

Using the principles of visual communication (Bresciani, 2013), the results of the SCDR assessments were conveyed by a series of cascading graphs that indicated whether, for the overall result, the SCDR element or the individual question was in the success, failure or one of the defection quadrants. This allowed the results to be explained, provided the ability to drill down to the root cause element and to probe if the results needed further investigation. It is also possible to delve into individual responses from participants should the need arises. However, this would need to consider the ethical and privacy commitment made to participants. Feedback from the review sessions with the SCDRs indicated that the report was easy to understand and communicated the results effectively. It is therefore held that Proposition 2c has been met.

Research Question 3: How can the results of an SCDR relationship assessment be validated at a later point in time?

By undertaking a follow up interview after more than six months, the SCDR participants have had the opportunity to go through several transaction or business cycles. If there were an increase in dissatisfaction or a build-up of negative defection energy (Hollmann et al., 2015), then this would be apparent in the follow up interview. All of the interviews conducted indicated an intent to continue the relationship which aligned with the predictions from the assessment that the SCDRs were in the success quadrant (Figure 2.11 Relationship Success/Failure Model). Based on this outcome Research Question 3 is answered positively.

Proposition 3a: An interview process after six months will allow respondents to the assessment process to confirm whether actual results have borne out the predictions provided.

The follow up interviews were all held successfully with the same dyads, and the results indicated that the predictions of success were supported by the intent of the SCDR partners to continue with the relationship. Therefore, Proposition 3a is positively supported.

Proposition 3b: Participants in the assessment process will find the process useful in managing their SCDR.

The feedback provided by the participants at the results briefing and during the follow up interviews was that the process of undertaking the assessment and the discussions it generated were very useful in managing their SCDR. They became closer and more familiar with their partners which has been highlighted as being important to relationship continuation and success (Schurr, 2007). Proposition 3b is therefore held to be met.

Table 5.1 Overview of Research Outcomes

Research Question and Proposition	Result
Research Question 1: How can the list of known SCDR elements be improved by input from relevant practitioners?	Positive Answer
Proposition 1a: An expert panel approach can be used to gather necessary SCDR elements from practitioners in the field.	Positive Evidence
Proposition 1b: An interview method for obtaining SCDR elements can be devised that will ensure the researcher’s bias does not influence the interviewees.	Positive Evidence
Research Question 2: What kind of assessment tool, using the improved list of elements, will enable prediction of future SCDR relationship success?	Positive Answer
Proposition 2a: Questions can be created that allow respondents to consider the ‘shadow of the future’ when answering.	Positive Evidence
Proposition 2b: A suitable definition of SCDR success can be developed from the literature.	Positive Evidence
Proposition 2c: The results of the assessment can be represented in a way that will aid in understanding and communication within responding SCDRs.	Positive Evidence
Research Question 3: How can the results of an SCDR relationship assessment be validated at a later point in time?	Positive Answer
Proposition 3a: An interview process after six months will allow respondents to the assessment process to confirm whether actual results have borne out the predictions provided.	Positive Evidence
Proposition 3b: Participants in the assessment process will find the process useful in managing their SCDR.	Positive Evidence

5.2.2 General Observations:

Overall the research met its goals with a few minor gaps due to the limited available sample dyads in their early relationship stage. An objective of this thesis was that the research be useful to participants in the supply chain field. Based on the feedback from participating SCDRs, this goal was met. Respondents took the view that taking part in the measurement process and the following feedback session opened up lines of communication that were unlikely to be considered without being involved in the research.

One participant in the follow up interviews had not taken part in the assessment itself but had read the report. This person was less supportive of their SCDR partner than the other participants from their own organisation and was less committed to the SCDR assessment tool. While involved in procuring supplies from this key supplier, this person was very transactional in their relationship. Thus, this person was less involved in the relationship forming process that the SCDR assessment provided to the participants from both sides of the SCDR. This situation appears to support the position that familiarity is a key factor in developing better relationships with suppliers (Schurr, 2007).

One contributor to the behaviour of the SCDR participants in maintaining a successful relationship is possibly due to the involvement of an independent third-party. The existence of such third-parties has been identified as a positive influence on dyadic relationships (Adobor and McMullen, 2014). Further, as long as the members of the dyad see the third-party as being independent then the third-party can form an altruistic bridge between the parties thus strengthening the relationship. This occurs even without active governance by the third-party.

5.3 Implications for theory

The research contributes to supply chain dyadic relationship (SCDR) literature in several ways. Firstly, while a number of existing supply chain relationship measurement tools were identified in literature (Roberts et al., 2003, Thakkar et al., 2008, Simatupang and Sridharan, 2005, Wilding and Humphries, 2006a), some, were found to be more comprehensive. Whereas others took a narrower view of the elements that make up a SCDR, for example, only focusing on a single element such as trust (Laequddin et al., 2010). Of the existing

models, the Supply Chain Collaboration Index (SCCI)(Wilding and Humphries, 2006a) was the most influential in developing the assessment tool that this research has identified. This was due to its more comprehensive nature as well as its focus on dyads. Other models such as the Interpretive Structure Modelling (ISM) tool by Thakkar et al. (2008) or the Collaboration Index by Simatupang and Sridharan (2005) had a lesser influence. An illustration of the influences in developing the assessment tool created in this research is shown in Figure 5.1. The contribution made to theory is a review of a range of the existing SCDR assessment models, then selecting and combining them to develop a more complete list of dyadic relationship elements and subsequent assessment tool.

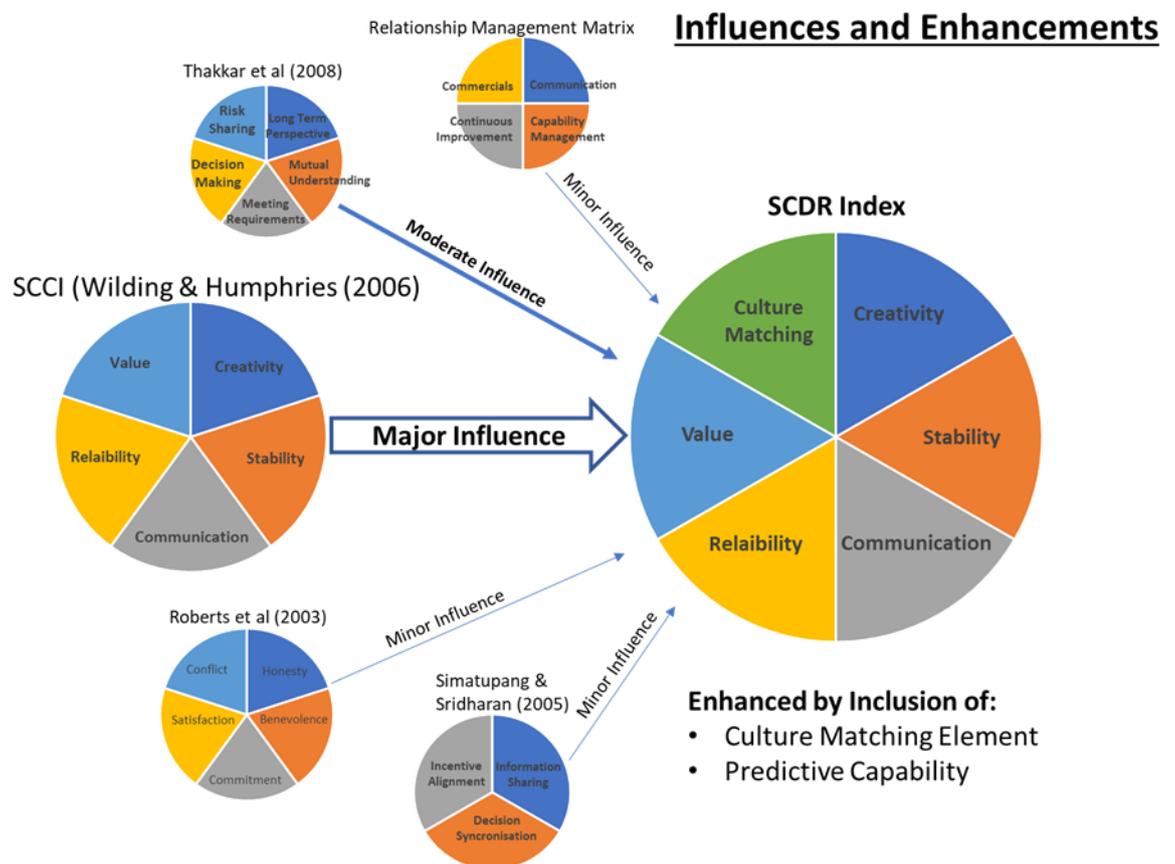


Figure 5.1 Influences and Enhancements to Existing Relationship Measurement Models

Secondly, having selected the SCDR elements from the literature these have been tested in the field via the use of an expert panel so that there is empirical support for the elements that

make up a supply chain dyadic relationship. This was then enhanced by the addition of the culture dimension from the expert panel input, which is new to SCDR assessment tools.

Thirdly, the addition of culture to the assessment tool required the creation of questions to discover the state of the cultural match (but not similarity) between the parties in the SCDR. The creation of these questions leads to a unique contribution to theory. By focussing on the practices within each organisation in the SCDR, which are seen as the important element in matching cultures (Van den Berg and Wilderom, 2004), five questions have been created which are new to SCDR assessment tools.

Fourth, the creation of a predictive self-assessment tool from various discrete models available in existing literature is new in its contribution. This focus on prediction of the dyadic relationships success rather than simply describing the current or historical state of the relationship was not present in the prior SCDR assessment tools. The addition of predictive capability is seen as essential for good management of relationship (Amsteus, 2011). The ability to predict the future state of the relationship was validated by follow up interviews with the participants to the SCDR assessment process.

Fifth, this research provides further support for the view that Transaction Cost Economics (TCE) and Social Exchange Theory (SET) are complementary as suggested by Ambrose et al. (2010). The SCDR assessment tool is based on the TCE perspective, coming from Williamson's relationship failure model (shown in Figure 2.3) (Wilding and Humphries, 2006a). However, the questions come from a more relational perspective. Combining the structure of TCE and the questions from SET has resulted in a new supply chain dyadic relationship assessment tool that is shown to predict the likely success of that SCDR.

Finally, in addition, this research makes a methodological contribution to the study of dyadic relationships. The revised SCDR elements with inclusion of 'culture matching' element with five items will facilitate the dyads to assess their relationship at the very outset of their relationship building. This study has enhanced the predictability of the dyadic relationship with inclusion of culture into the SCDR list. While many studies looked at the buyer-supplier relationship as unequal, for example the buyer may overpower the supplier (Wyld et al., 2012), this study considers both parties of mutual inter-dependence and the relationship success for win-win outcome.

5.4 Implications for policy and practice

The research also provides a number of benefits for policy and practice in the supply chain field. The existence of a predictive SCDR assessment tool will give confidence to policy makers that planned sourcing strategies will either be successful or be terminated before sunk costs become too high. Likewise having the ability to address areas of weakness in a putative relationship before they undermine the value and benefits the parties are seeking.

This research provides analytical support for the elements identified in theory that make up a SCDR. It shows that a predictive self-assessment tool can be created from theory, cross-checked via empirical research and implemented in the field. The process invented and piloted will allow researchers or managers to measure the impact on future relationships when introducing new supply chain frameworks, systems or approaches that might impact on dyadic relationships. For example, the introduction of a communications technology such as blockchain where the interaction between parties via traditional methods such as face-to-face, telephone or email is replaced by an arm's length approach. Any deterioration in the relationships could be detected by an assessment tool using the SCDR elements created by this research.

The SCDR measurement tool will make the contract governance systems simpler by ensuring the probability of success is maximised and that seeds of dissatisfaction are identified at a very early stage as recommended by Cadden et al. (2013). By adding a relationship measurement process, using the identified SCDR elements, to the governance process and specifically requiring the use of the tool in the contract would be an important step. As the number of SCDRs that have been assessed increases, some confidence in setting up minimum levels of performance could be considered.

5.4.1 Private and public sector managers

Private sector managers will be interested in a method that helps them reduce the cost of failed sourcing projects and enables them to work on mismatches at a disaggregated level. In private sector contracts it is not unusual for one of the parties to assign assets that are specifically allocated to that contract (Lui et al., 2009). These assets are often immobile and the party bringing them to the arrangement may find difficulty in using them elsewhere. The

party bringing these specific assets to the arrangement would find the ability to confirm the health of the future relationship as a very useful tool in making the asset allocation decision.

Both private and public sector managers are becoming aware that it is innovation rather than working with existing assets and the workforce harder that deliver value. The Nobel Prize winning economist Robert Solow calculated that innovation delivers 87% of economic growth (Solow, 1988). The relationship with SCDR partners must be healthy for innovation to flourish (Mitrega et al., 2017). Innovation requires there to be both commitment and creativity in the relationship, both of which are assessed by the enhanced tool in this research. Having the ability to assess the state of the dyadic relationship in the future as it relates to creativity and commitment and therefore innovation will assist managers to make the right sourcing decision as recommended by Cadden et al. (2013).

The public sector often has contract arrangements with service providers that extend over decades, for example Defence equipment sustainment programs which can run for 20 to 30 years. As such the risk of selecting the wrong partner is significant and costly (Oodot, 2010). The existence of a measurement tool that can predict SCDR success will be a very useful addition to the supplier selection process. It will also mean that potential SCDR problems can be identified and corrected at an early stage.

Public sector managers have transparency requirements that exceed those in the private sector. Following due process is one of the ways that bodies in the public sectors use for proof. Public sector contracts are also very heavily focused on duties and penalties for the supplier which can act to build an environment of distrust. By undertaking an assessment process at the beginning of the SCDR development process the public sector manager can determine whether the contract has acted as a tool for social cooperation (Macneil, 1968) or a cause of relationship failure. If a public sector contract is to be terminated having proof that the relationship has failed will also be of value.

While there was some doubt from the respondents from GovDiv and SpecialServiceCo that the assessment model could easily be applied to public sector procurement it is believed that the model still has a place in this sector. As noted earlier on Page 65 there is a limit to the number of close relationships an organisation can maintain. It would not be necessary or workable to apply to all arrangements; However, the public procurement sector is marked by

strong processes including strategic sourcing and risk management assessments, particularly for no-bid or sole-source arrangements. If the procurement process identifies the potential importance of the contract and the level of risk of failure, then the introduction of the assessment as a pre-condition for undertaking the no-bid or sole-source arrangement would be driven by the public sector governance processes. This would work to limit the unwillingness to undertake the assessment.

Finally, the use of the assessment tool developed in this research will provide managers access to a tool that adds culture matching to the list of SCDR elements that are measured. The inclusion of this element is supported by the existing literature with a number of researchers pointing to the importance of culture matching as a critical element in successful supply chain dyadic relationships (Cadden et al., 2013, Beugelsdijk et al., 2009). A mismatch in culture has been explicitly linked to failure of mergers and acquisitions (Gelfand et al., 2018). By using the five questions developed from the work of (Hofstede et al., 2010, Van den Berg and Wilderom, 2004) managers will gain an insight into the status of their cultural match and take action to address any gaps or exist the arrangement if gap closure is not feasible.

5.5 Conclusion

This chapter outlines the successful completion of the research aims that were set out in Chapters 1 and 2. In all cases the questions have been deemed to be answered and met and the implications of the research also covered; however, there are always opportunities to improve on research outcomes and the following chapter brings together the conclusions, limitations of the research and recommends future research directions

Chapter 6

Conclusion and Limitations

6.1 Introduction

This final chapter brings together the conclusions, limitations and an agenda for future research directions. In the conclusion section a brief overview of the research is provided. This includes the key influencing prior works, an overview of the gaps before moving to the conceptual framework and research methodology. While the research has met its aims and objectives, there is still room for improvement, and this is covered in the final sections on the limitations and future research agendas.

6.2 Research objectives, methodology, findings and contributions

This research started out with the aim to better understand supply chain dyadic relationships and whether it would be possible to define and then predict the success of these relationships. To help guide the research three research questions were developed. These were:

Research Question 1:

How can the list of known SCDR elements be improved by input from relevant practitioners?

Research Question 2:

What kind of assessment tool, using the improved list of elements, will enable prediction of future SCDR relationship success?

Research Question 3:

How can the results of an SCDR relationship assessment be validated at a later point in time?

Each question was supported by a number of research propositions which are detailed in Chapter 2.13.

The thesis in Chapter 2 the review of the existing literature identified a simple and suitable definition of supply chain dyadic relationship “*A relationship is defined as an interdependent process of continuous interaction and exchange between at least two actors in a business network context.*” (Holmlund and Törnroos, 1997), Page 305. This definition was then used

as the basis for describing SCDR success in the conceptual framework, which was that a successful SCDR would have a continuation of the relationship over ongoing business cycles.

From the perspective of TCE theory, the importance of SCDRs to economic performance has been highlighted and therefore the importance of managing these critical relationships remains crucial. This led into the discussion of the need for measurement of the relationship itself with SET providing a basis for the questions asked. It was also proposed that to be of real benefit to management the measurement should have predictive capability so that managers can take decisions based on expectations of future events (Amsteus, 2011) and avoid strategic surprises (Moussetis, 2011). Existing SCDR measurement systems were then reviewed to help identify what elements these researchers believed make up a dyadic relationship. These existing systems were found to either focus on a limited number of SCDR elements or they lack any predictive capability. This was one of the fundamental gaps in the existing knowledge base.

This input from the literature was then applied to the creation of the conceptual research framework. This framework proposes that the use of predictive measurement would prevent organisations from persisting with unsuccessful relationships and, if applied early enough, would limit the application of sunk costs into such a relationship. If the past investment of costs into the relationship are too high an organisation might persist with the relationship even though it might not be in their long term interest to do so (Roth et al., 2015).

Importantly the existence of a predictive measurement would allow participants in the SCDR to take corrective action to turn a potentially unsuccessful relationship into a successful one.

A series of research aims, questions and propositions were developed based on the identified research gaps from the literature. These were in summary to improve existing measurement methodologies by the inclusion of the culture matching dimension and providing a predictive capability. This would enable the measurement of the improved elements that make up a SCDR so that success of that SCDR can be predicted. The model was then applied with early stage SCDRs and finally to confirm longitudinally that the predictions were accurate.

The field research was carried out in a two-stage operation, firstly the engagement with an expert panel to qualify the list of SCDR elements using a storytelling approach. Secondly, the development of an online questionnaire that gathered participants' responses which could

be used to predict the success of their SCDR. This assessment tool was applied with four emerging SCDRs. Results were fed back to the participating SCDRs and comments gathered on the usefulness of the process from participants. Finally, a follow up interview was held after six months to confirm the predictions were accurate and the SCDRs were successful.

The research has successfully met its objectives with all research questions being answered and propositions having positive support. Of particular note is the creation of a list of elements that make up a SCDR from prior works in the literature. This list was then validated and enhanced by engagement with an expert panel of supply chain practitioners who added culture matching to the list. The SCDRs engaged in the measurement of their relationship found the process very valuable and useful in managing their SCDR. Finally, the predictions of success that came out of the measurement stage were borne out during the follow up interviews with all parties to the four SCDRs confirming their intent to continue to do business together.

6.3 Limitations and future research agenda

While having successfully met the research aims there are still opportunities for improvement for further research. Research into SCDRs is still emerging and the area of predictive measurement of such relationships is a fertile area of investigation. Outlined in the following sections are some limitations identified and ideas that are considered prime areas for further research.

6.3.1 Limitations to this research:

The following points summarise the limitations identified with this research. The points raised are then expanded in the following paragraphs:

- The research has a small sample size of dyads, partly by design in that the involvement in multi-stage research was akin to a case study and partly due to the challenge of finding willing participants at the right point in their relationship.
- The respondents within sample organisations were also small which limits the ability for averaging to smooth out extreme views.
- The sample organisations were not recruited in a random fashion, so it was a purposive sample.
- The sample organisations did not represent all possible conditions of SCDR with only successful SCDRs being found.

- The dyads involved in the research were all Australian based organisations.
- This exploratory study is not able to confirm the relative weight or importance of individual questions or relationship elements.

The number of dyads investigated in this research was small because finding willing participants to the research who would be happy to engage in both the assessment and the follow up interviews and who had an emerging SCDR that met the criteria for entry was a real challenge. None of the participating SCDRs were not in a good relationship. This meant that the ability for participants in the measurement process to use the results to identify the areas of weakness and to take countermeasures to move the relationship into the success quadrant (Figure 2.9 Relationship Success/Failure Model) was not tested (although some participants did make minor changes as a result of the process). As the number of SCDRs that undertake the assessment process are increased it is likely that relationships may not necessarily lie in the success quadrant may be discovered. As a further validation of the assessment tool, it would be worthwhile deliberately seeking out such relationships to confirm this aspect of the conceptual framework.

It may also be that the participants felt more positive and biased in favour of their relationship because of their involvement in the research. This impact sometimes called the Hawthorne Effect or more appropriately Research Participation Effect (RPE) (McCambridge et al., 2014). This effect proposes that the participants in a research survey will alter their responses to please the researchers. In this case the participants may have shifted their thinking about their SCDR so that it moved to and remained in the success quadrant. That is not to suggest that the prediction was erroneous but rather the engagement in the research caused participants to shift their thinking somewhat.

As well as the limited number of SCDRs engaged in the assessment process the researchers also found that the number of respondents within each organisation was small at two people in most cases. This was explained as being due to a limited number of people who are involved when a SCDR is in its earliest stages of development. This was most likely a procurement staff member and the internal customer, for example operations, for the buyer. For the seller it was the sales team member and a service delivery team member.

This research did not set out to be a quantitative study but was rather qualitative research which was a blend of measurement and case studies. The research was focused on confirming the state of the individual SCDRs so that this knowledge would help build the

understanding of similar relationships. As such the purposive sample approach did not negatively impact on the research outcomes.

6.3.2 Future Research Agendas:

There are a number of future research opportunities, some of which come from the limitations identified above and some which are logical extensions of this work. These are summarised in the bullet points below and then expanded upon in the following paragraphs:

- Complete a further longitudinal study to see if the impact of the measurement process which caused the parties to be biased in favour of their relationship reduces over time but before the nominated term of the contract.
- Correlate the results from this research by applying a further assessment using an existing measurement tool such as the SCCI (Wilding and Humphries, 2006a) to see whether similar ratings are delivered.
- Conduct research into whether involvement in the initial measurement process delivers a higher commitment to the SCDR and to the measurement process versus people that become involved in the SCDR later. These people will not have gone through the relationship forming process that the assessment provides to the organisations involved.
- Undertake similar studies involving non-Australia SCDRs to confirm the model works cross-culturally.
- Conduct studies to ascertain whether all questions or relationship elements are of equal weight.

The measured SCDRs were followed up after six months to undertake an interview. At this point all relationships remained in the success quadrant as predicted by the assessment tool used to survey the state of the relationship. A further longitudinal study would be of interest to see if there is an ongoing successful relationship or whether undertaking the assessment merely extends the stage two honeymoon period (Johnston and Hausman, 2006) (see Chapter 2.3) which predicts that all dyadic relationships go through a period where the parties are positive about the state of the relationship. This research might also include investigating whether the parties still used the assessment report to facilitate discussions.

Aligned with the above research it would also be worth considering whether it is possible to confirm the impact of Research Participation Effect (McCambridge et al., 2014) on the

assessment process. This might be either qualitative interviews or perhaps a statistical survey once the population of SCDRs that have completed the assessment has reached sufficient size. This will help generalising the findings of this research.

A later follow up where a re-assessment of the previously measured SCDR using one of the tools developed by other researchers would act as a source of correlation of the results obtained. For example the SCCI (Wilding and Humphries, 2006a) uses many of the same SCDR elements and questions without the predictive slant of the model developed in this research. There is a difference in the representation of results, but inferences could be drawn between the models. Undertaking this work would act to validate both models.

As noted in the results those undertaking the assessment process were more supportive of the assessment tool and the relationship with their SCDR partner than those who had not been engaged in the initial assessment. This might have been one individual's response or might point to a significant impact on SCDR measurement of success. A study of this aspect is another opportunity to grow the understanding of SCDR measurement and success. This could be allied with a study on whether the Research Participation Effect has a significant impact on results.

There is opportunity to conduct the same research on non-Australian dyads. This would confirm that the ability to measure and predict success is not confined to Australian SCDRs. It is likely that the results would be similar to those gained in Australia as much of the founding research and literature was sourced outside of Australia. The work by Hofstede et al (2010) on the impact of culture is particularly international in focus. It would also be of interest to see if recruiting participants is more or less difficult in different countries. Further, most Australian businesses are often engaged with suppliers and customers globally. So the future research involving Australian firms and overseas suppliers and customers in a dyad can reveal how the culture matching can help in the SCDR success.

Because of the exploratory nature of this research and the small sample size it has not been possible to confirm the relative weighting of each of the SCDR elements or of individual questions. Future research may be able to answer these questions perhaps by including it in any of the above research projects that make use of the same questionnaire. The SCDR assessment model developed as part of this research would also benefit from a larger sample of dyads to assist in the generalisation of results.

7.4 A Final Word

The emergence of dyadic relationships as a key contributor to supply chain success has occurred over the last few years but is not yet fully embedded in mainstream supply chain thought processes. Both practitioners and academia are yet to fully embrace the concept despite significant empirical studies having been undertaken. Some recommend an intensive approach of contract creation that generates a strong relationship through shared objectives and aligned incentives (Vitasek, 2016); whereas, others promote the use of ongoing measurement of the relationship to identify issues to be addressed (Wilding and Humphries, 2006a). This research has added the capability of predicting the success or identifying sources of failure in SCDRs at a very early stage of their creation. A greater understanding of the importance of culture matching will also aid in developing successful supply chain dyadic relationships in the future, hopefully both the academic and practitioner field will continue to raise the profile of supply chain relationships by using the range of tools highlighted by this thesis.

Appendix

Appendix A Questionnaire

Element	Question	Strongly Agree 4	Tend to Agree 3	Tend to Disagree 2	Strongly Disagree 1	Insufficient Knowledge 0
1. Creativity - encouraging innovation and high performance.						
	a					
	b					
	c					
	d					
	e					
	f					
	g					
	h					
2. Stability - creating a framework for successful business.						
	a					
	b					
	c					
	d					
	e					
	f					
3. Communication - transparency for business success.						
	a					
	b					

	c	We understand the information requirements of all participants in the supply chain from suppliers to customers					
	d	Exchange of information in this emerging relationship takes place frequently and informally - not just according to specific requests					
	e	Objective performance measurement appears to be an important part of this emerging relationship					
	f	We are aware of the performance requirements for all participants in the supply chain from suppliers to customers					
	g	The exchanges of information so far in this relationship provide clear forecasts and sufficient information for us to do our business					
4. Reliability - creating reliable business processes.							
	a	The quality of the documentation provided by the other party is of a high standard					
	b	The timeliness of the provision of documents and responses is entirely satisfactory					
	c	The emerging relationship is characterised by a continually improving product quality philosophy					
	d	Problems encountered so far are solved in a joint, open, constructive manner					
	e	Such is the goodwill in the emerging relationship, the other party would willingly put him/herself out to adapt to our changing requirements					
	f	We trust the other party to act in our best interests					
	g	The responsibility for making sure the relationship works is shared jointly					
	h	The other party provides us with useful cost reduction and quality improvement ideas					
	I	We have not detected any evidence that the other party is anything but open and honest with us					
	j	So far the other party always does what he says he will do					
5. Value - creating the incentive to work together.							
	a	The other party gives the impression that gains from this relationship would be equally shared between both parties					
	b	In the dealings with the other party so far we do not get a feeling that we could be 'imprisoned'/restricted within the resulting relationship					
	c	We are willing to invest more i.e. money, time, information, effort, in the emerging relationship					

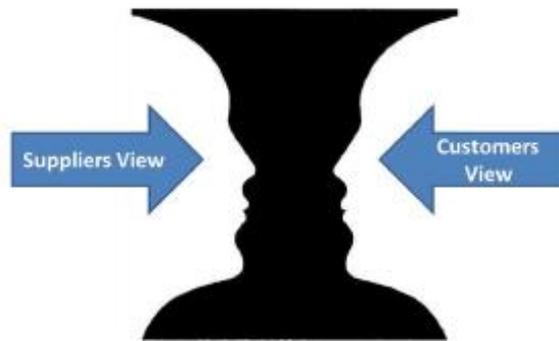
	d	We are happy that our future could be bound to the success of our relationship partner					
	e	We feel totally committed to this emerging relationship					
	f	In our dealings so far it appears the other party is genuinely concerned that our business succeeds					
	g	Both sides are working to improve this relationship					

6. Culture Matching

	a	We understand how they are organised					
	b	We understand how they make decisions					
	c	We are comfortable with their Organisations Culture					
	d	They are respectful of our Organisations Culture					
	e	They meet our needs for precision and flexibility well					



Two Worlds View



What Do You Think of The Relationship?

What Do You Think Your Partner Thinks of The Relationship?

BrickCo SuppliesCo Relationship Survey Report

Based on Research at Victoria University



Andrew Downard
Andrew.downard@adsupplychain.com.au

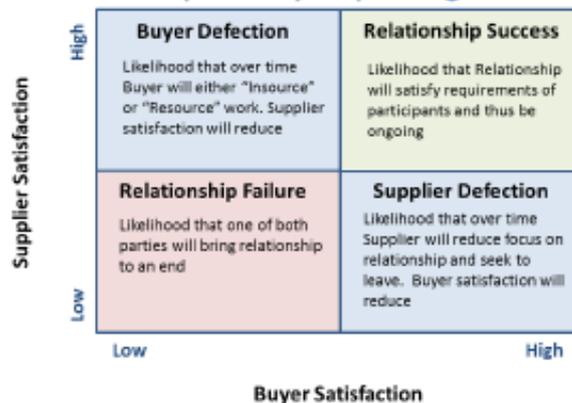


BrickCo SuppliesCo Relationship Survey Report

Overview of Survey

The Relationship Survey is built around research into how the success or failure of a Supply Chain or Business relationship might be predicted. The model is based around having participants to the survey answer questions from the perspective of their own business and also how they believe their partner might answer the same question. This then allows the results for both parties to the relationship to be plotted on a matrix. The matrix along with descriptions of the 4 quadrants are shown below:

Relationship Survey Reporting Matrix



Clearly where both parties to the relationship are highly satisfied then it can be expected that the relationship will be successful. Likewise if both buyer and supplier are dissatisfied then the relationship is unlikely to be successful. If one party is satisfied whereas the other is not then it is probable that the dissatisfied party will seek to defect from the relationship. This defection may mean leaving the relationship or it may mean that the dissatisfied party will try and provide the minimum level of service they can get away with. This would result over time in both parties ending up in the relationship failure quadrant.

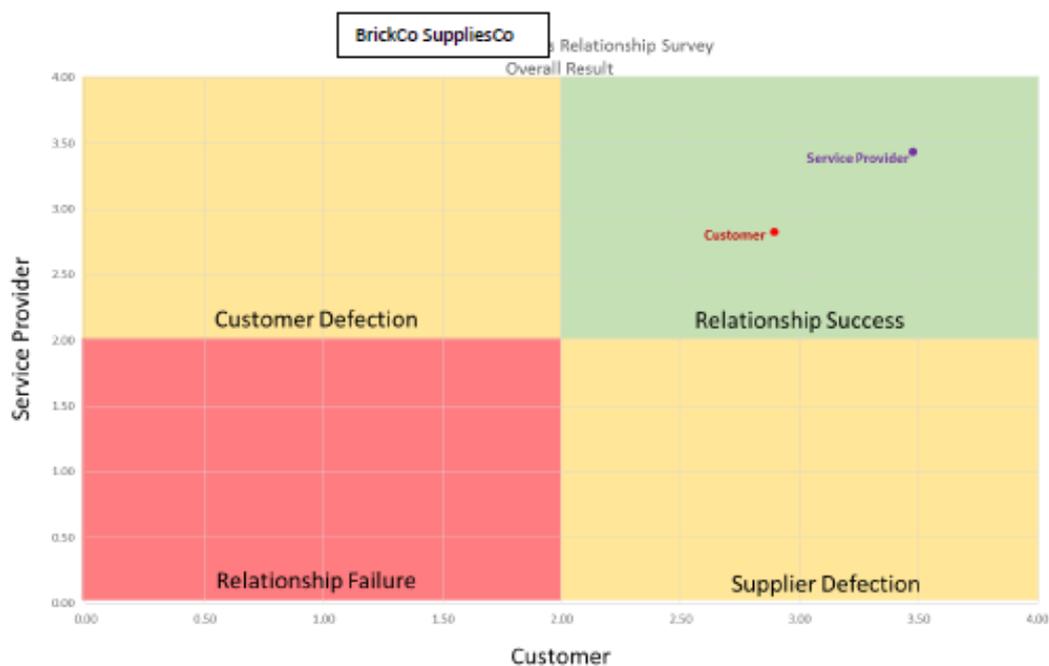
Also of interest would be if the points plotted for each parties results are significantly far apart. This would indicate, regardless of which quadrant the relationship is in, that the parties see the relationship somewhat differently. This is illustrated below:



BrickCo SuppliesCo Relationship Survey Results

The relationship survey report is broken down into 2 main sections. The 1st of these is the overall relationship result and the 2nd part is the individual scores for each of the relationship elements. As well as providing a graphical representation of status of the relationship some commentary regarding the results is also provided. This commentary may include recommendations for actions that can be taken to help improve the relationship or to make the relationship more robust. It is important to point out that any recommendations are based purely on the results of the survey and are intended to generate discussion between the parties so that a deeper understanding can be arrived at.

Overall Result



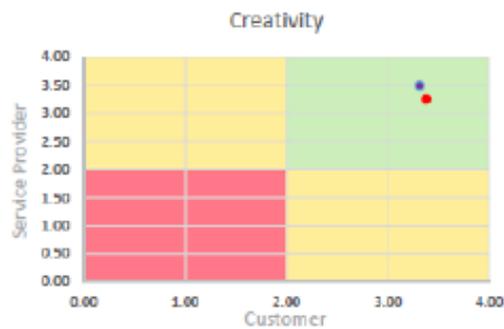
The key point in this assessment is that the parties are well inside the "Relationship Success" quadrant. Within that quadrant the Customer is slightly less satisfied with the current relationship than is the Service Provider. Throughout the assessment this pattern is repeated although it is recognised by the Customer that the relationship is in its early stages.

It would appear that there are a number of areas where operational matters are getting in the way of an improved relationship. These should be able to be resolved but if they are not addressed the relationship may suffer.

In most cases where the Customer is dissatisfied the Service Provider is aware of this as signalled by a reduction in the 'other party' score they provide. The one area where the Service Provider appears unaware of the concern is in the area of 'continuous improvement'.

An ongoing focus on developing the relationship should ensure that the parties remain in the 'Success Quadrant' and continue to move towards the top right-hand corner.

Relationship Elements Results



Creativity: encouraging innovation and high performance.

Comments:

The scores for creativity are very close with signs of mutual recognition of weaknesses in performance measurement and timeliness. The Service Provider shows awareness of the dissatisfaction felt by the Customer in the area of flexibility.



Stability - creating a framework for successful business.

Comments:

Again the scores are not significantly far apart; however an area of weakness highlighted on both sides of the relationship is a concern that the other parties' objectives may not be mutually/fully compatible. For example the positioning of inventory. There is also a low level concern that the relationship might not be able to facilitate the achievement of increasing rewards.



Communication - transparency for business success.

Comments:

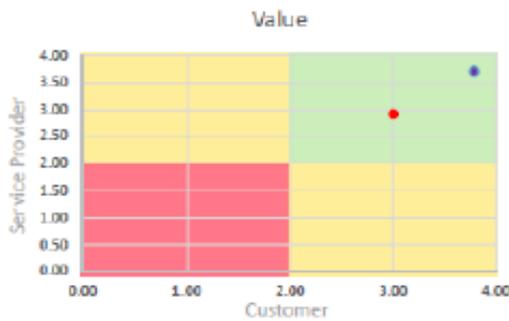
Both parties have concerns about proprietary information that could make the relationship more successful not being freely available from the other party. The issue of performance measurement was also raised again by the Service Provider. Finally both parties express dissatisfaction with the exchange of forecasts and other critical information that would facilitate business activities. A conversation around what is critical or needed information to operate the business would add value here.



Reliability - creating reliable business processes.

Comments:

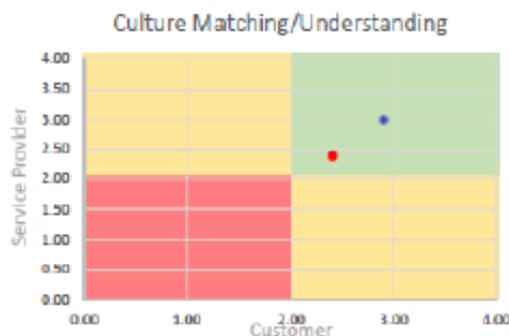
There are some concerns within the Customer regarding the timeliness and quality of documentation as well as overall continuous improvement activities. This finding is of particular concern because unlike previous areas of dissatisfaction there does not seem to be any recognition of the Customers perception by the Service Provider.



Value - creating the incentive to work together.

Comments:

The Generally the parties see the same picture in regard to getting Value from the relationship; however there may be some doubts within the Customer around the willingness of the parties to invest in the relationship. This feeling is echoed by the Service Provider who sees opportunity for the parties to do more to work on improving the relationship.



Culture Matching (& Understanding)

Comments:

The score for Culture Matching and Understanding shows some good opportunity for improvement. There is some lack of understanding on both sides regarding the other parties structure and decision making processes. A conversation about the other parties needs for Precision and Flexibility would also add value.

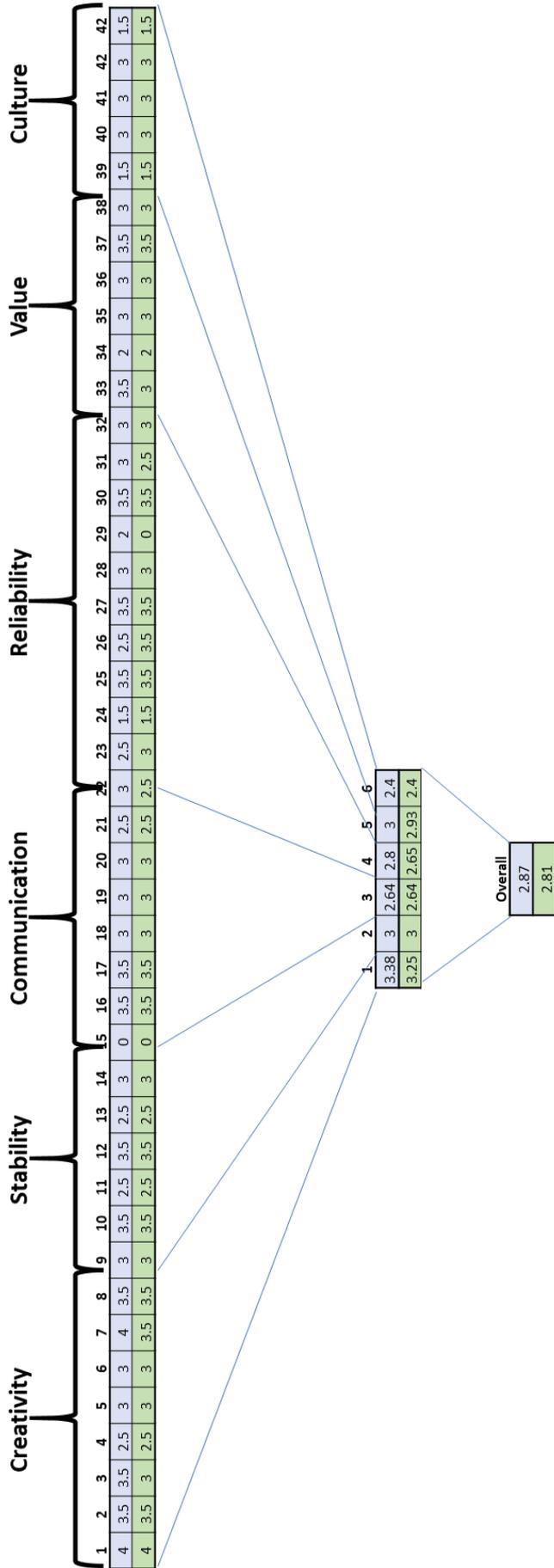
Thank you for your participation in this research. The researchers would be happy to discuss these results in more detail and to explain the basis for the model as well as the results contained within this report. Any questions can be forwarded to Andrew Downard via email andrew.downard@adsupplychain.com.au or via phone on 0419581705.

Appendix C Example Results Spreadsheet

Respondent 1	Respondent 2	Respondent 3	Respondent 4		Service Provider	Customer
4	3	4	4		56	54
4	3	4	4	Own Co	3.50	3.38
3	4	3	4		53	52
3	4	3	4	Other Co	3.31	3.25
3	4	3	4			
2	4	2	4			
3	3	2	3			
3	3	2	3			
3	4	3	3			
3	4	3	3			
3	4	3	3			
4	4	4	4			
3	4	3	4			
3	4	3	4			
2	4	3	4			
3	4	3	3		41	36
3	4	3	3	Own Co	3.42	3.00
3	4	3	4		41	36
3	4	3	4	Other Co	3.42	3.00
2	4	3	2			
2	4	3	2			
3	4	3	4			
3	4	3	4			
3	4	2	3			
3	4	2	3			
3	4	3	3			
3	4	3	3			
2	4	0	0		46	37
3	4	0	0	Own Co	3.29	2.64
3	4	3	4		46	37
2	4	3	4	Other Co	3.29	2.64
3	4	3	4			
3	4	3	4			
3	4	3	3			

3	4	3	3			
2	4	3	3			
2	4	3	3			
3	4	3	3			
3	4	3	3			
2	4	2	3			
2	4	2	3			
3	4	3	3		74	56
3	4	2	3	Own Co	3.70	2.80
3	4	3	2		73	53
3	4	3	3	Other Co	3.65	2.65
3	4	3	0			
3	4	3	0			
4	4	3	4			
4	4	3	4			
3	4	3	2			
2	4	3	4			
4	4	3	4			
4	4	3	4			
4	4	3	3			
4	4	3	3			
3	4	0	4			
3	4	0	0			
4	4	3	4			
4	4	3	4			
3	4	3	3			
3	4	2	3			
3	4	3	3		52	42
3	4	3	3	Own Co	3.71	3.00
3	4	3	4		53	41
3	4	3	3	Other Co	3.79	2.93
4	4	1	3			
4	4	1	3			
4	4	3	3			
4	4	3	3			
4	4	3	3			
4	4	3	3			
4	4	3	4			
4	4	3	4			
2	4	3	3			
3	4	3	3			
3	2	3	0		30	24

2	2	3	0	Own Co	3.00	2.40
3	2	3	3		29	24
3	2	3	3	Other Co	2.90	2.40
3	4	3	3			
3	4	3	3			
3	4	3	3			
3	3	3	0			
3	3	3	0			



Appendix D Interview Comments and Feedback- ‘BrickCo’ and ‘SuppliesCo’

The interview with the Supply Chain Leader and Purchasing Leader from SupplierCo

provided the following feedback:

Q No	Question	Response	Interviewers Comment
1	Were you personally involved in completing the relationship survey earlier this year?	SC Leader: Yes Purchasing Leader: No	Purchasing Leader confirmed he had read the report
2	Did you find the survey easy to complete, if you had any difficulties what were they?	SC Leader: No issues but a bit long	Did not have suggestions on what could be removed
3	Are you still doing business with the supplier/service provider with whom you conducted the relationship survey? If not why?	Both: Yes SC Leader: we think that they are a strategic supplier to us	
4	Has there been any change in the business that you are undertaking with the supplier/service provider, for example, increase business or decreased business? If so what are the reasons for the change?	Purchasing Leader: Probably increased slightly but unlikely to grow further. Not happy with how they support us on a day to day basis	Some concerns coming out about some aspects of service. Appear to be administrative annoyances rather than significant failures
5	Did the survey results that were reported back to you match your expectations regarding the state of your relationship?	SC Leader: There was a match and we knew there was a good fit between us Purchasing Leader: Some scores were maybe a little high	SC Leader much more supportive of SupplierCo
6	Were the results from your supplier/service provider as per your expectations or were there any results that were a surprise to you?	SC Leader: The scores seemed to reflect our relationship expectations, no surprises	SC Leader confirmed that she had been aware of SupplierCo from previous roles
7	Did you find the suggestions for improvement actions to be useful, did you undertake any action to implement these suggestions?	SC Leader: We discussed the report with the service provider and were on the same page on issues raised. Purchasing Leader: There are still issues with paperwork which was mentioned in the report so no change seen in behaviour	Again there was a distinct difference in attitude between SC and Purchasing Leader.
8	Did the elements that make up the relationship survey align with your experience of Supply Chain Relationships in the field?	SC Leader: Pretty much yes, some titles of elements took some getting used to.	Purchasing Leader has a very tactical view of the relationship whereas the

		Purchasing Leader: Could be too wide-ranging	SC Leader appears more strategic
9	Did you find the survey opened up communications about issues that might not have been covered under normal circumstances? If so which issues were raised?	SC Leader: It did create a conversation outside of the usual operational and performance issues	Purchasing Leader almost completely focused on operational and performance issues
10	Do you think undertaking the Relationship Survey helped or hindered in the development of the relationship? If so how?	SC Leader: It certainly helped by starting some conversations.	Purchasing Leader has not used the report in conversations with SupplierCo
11	Would you use the survey tool again in the future for important relationships?	SC Leader: Would certainly consider this Purchasing Leader: would need to understand more about cost and time but could be useful	Despite tactical view of Purchasing Leader there is good support for the assessment process
12	Would you recommend the Survey Tool to others if they need to measure an important emerging relationship?	SC Leader: If the subject came up would certainly recommend	

The interview with the Sales Leader from SupplierCo provided the following feedback:

Q No	Question	Response	Interviewers Comment
1	Were you personally involved in completing the relationship survey earlier this year?	Yes	
2	Did you find the survey easy to complete, if you had any difficulties what were they?	No issues, thinking from the customer's point of view is what we are supposed to do but it is actually difficult	Indications that Sales people don't have that good an idea of what the customer is actually thinking
3	Are you still doing business with the supplier/service provider with whom you conducted the relationship survey? If not why?	Yes, and seeking to grow further	BrickCo is one of the larger customers in town
4	Has there been any change in the business that you are undertaking with the supplier/service provider, for example increase business or decreased business? If so what are the reasons for the change?	Still a wide range of different items supplied, changes frequently based upon projects	SupplierCo has a better picture of demand than the customer
5	Did the survey results that were reported back to you match your expectations regarding the state of your relationship?	BrickCo are a very important customer and we work hard to satisfy their requirements so not surprised to see a good result	BrickCo ate a major focus for SupplierCo

6	Were the results from your supplier/service provider as per your expectations or were there any results that were a surprise to you?		Not answered, see the answer to Q5 above
7	Did you find the suggestions for improvement actions to be useful, did you undertake any action to implement these suggestions?	Anything that gives us an idea of what our customers are looking for is useful	Was aware of paperwork issues which usually come from Head Office
8	Did the elements that make up the relationship survey align with your experience of Supply Chain Relationships in the field?	Haven't been involved in anything like this before so didn't have any prior thoughts on elements. It does seem to be very comprehensive	
9	Did you find the survey opened up communications about issues that might not have been covered under normal circumstances? If so which issues were raised?		Not answered, see the answer to Q7 above
10	Do you think undertaking the Relationship Survey helped or hindered in the development of the relationship? If so how?	Certainly helped as we welcome any chance to have open discussions with Customers	
11	Would you use the survey tool again in the future for important relationships?	Only if the Customer raised the need	
12	Would you recommend the Survey Tool to others if they need to measure an important emerging relationship?	Probably	Again enthusiasm relates very strongly to what the customer asks for

Appendix Interview Responses and Comments ‘ChemCo’ and ‘TransportCo A’/ TransportCo B’

The interview with the Transport Leader at ChemCo covered both transport companies at the same time. Details as follows:

Q No	Question	Response	Interviewers Comment
1	Were you personally involved in completing the relationship survey earlier this year?	Yes	
2	Did you find the survey easy to complete, if you had any difficulties what were they?	Struggled with some questions but worked it out	Used the explanation document provided at the beginning of the survey
3	Are you still doing business with the supplier/service provider with whom you conducted the relationship survey? If not why?	Still working with both	The response was positive towards both providers
4	Has there been any change in the business that you are undertaking with the supplier/service provider, for example increase business or decreased business? If so what are the reasons for the change?	Some rearrangement of routes and transport lanes	
5	Did the survey results that were reported back to you match your expectations regarding the state of your relationship?	We figured that they were the right partners so no surprises	
6	Were the results from your supplier/service provider as per your expectations or were there any results that were a surprise to you?	Good results, we often get ‘sugar-coated’ feedback from suppliers	Main fear had been that the survey would embarrass the Buyer
7	Did you find the suggestions for improvement actions to be useful, did you undertake any action to implement these suggestions?	Nothing concrete done, but they understand our concerns, some continue to come up in our meetings	Appears to see this as a communication tool
8	Did the elements that make up the relationship survey align with your experience of Supply Chain Relationships in the field?	It was a good list and I really liked the focus on Culture which is often missed	Strong support for the added component that was added to the assessment as a result of the Stage 1 research
9	Did you find the survey opened up communications about issues that might not have been covered under normal circumstances? If so which issues were raised?	Not answered	
10	Do you think undertaking the Relationship Survey helped or hindered in the development of the relationship? If so how?	Brought us together a bit more than we might have been	Positive feedback about the shared experience

11	Would you use the survey tool again in the future for important relationships?	This set of relationships are our biggest so no immediate plans to use on others	Might consider a re-run of assessment a few years down the track
12	Would you recommend the Survey Tool to others if they need to measure an important emerging relationship?	Would be happy to support	

The interviews with the two transport service providers were brief and the interviewer did not get to ask all questions. The answers provided are combined in the table below:

Q No	Question	Response	Interviewers Comment
1	Were you personally involved in completing the relationship survey earlier this year?	TransportA: Yes TransportB: Yes	
2	Did you find the survey easy to complete, if you had any difficulties what were they?	TransportB: No issues	
3	Are you still doing business with the supplier/service provider with whom you conducted the relationship survey? If not why?	TransportA: Yes TransportB: Yes – still waiting to get full volume promised	
4	Has there been any change in the business that you are undertaking with the supplier/service provider, for example increase business or decreased business? If so what are the reasons for the change?	TransportA: no real change	See answer for Q3 for TransportB
5	Did the survey results that were reported back to you match your expectations regarding the state of your relationship?	TransportA: As we expected TransportB: we weren't surprised by the results	
6	Were the results from your supplier/service provider as per your expectations or were there any results that were a surprise to you?		
7	Did you find the suggestions for improvement actions to be useful, did you undertake any action to implement these suggestions?	TransportA: Had a number of conversations regarding their concerns TransportB: nothing much	
8	Did the elements that make up the relationship survey align with your experience of Supply Chain Relationships in the field?	TransportA: Not really my field	
9	Did you find the survey opened up communications about issues that might not have been covered under normal circumstances? If so which issues were raised?	TransportB: it formalised some discussions around performance expectations	
10	Do you think undertaking the Relationship Survey helped or hindered in the development of the relationship? If so how?	TransportA: Didn't do any harm TransportB: Was a good process	
11	Would you use the survey tool again in the future for important relationships?	TransportB: can't see any opportunity in our industry	
12	Would you recommend the Survey Tool to others if they need to	TransportA: Yes	

	measure an important emerging relationship?		
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1. Story Telling

Provide “war stories of good and bad relationships with supply chain partners

2. Identify Relationship Elements

Discuss the elements that make up a supply chain relationship (good or bad)

3. Review Relationship Elements in Proposed Model

Review the proposed elements that make up the relationship model

4. Review the Proposed Questionnaire

Provide feedback on the clarity of the questions proposed for the relationship questionnaire and their appropriateness for an emerging supply chain relationship

5. General Feedback on Importance of Supply Chain Relationships and Their Measurement

Appendix F Assessment Participant Introduction Letter

Thank you for agreeing to take part in our research project. At its core the concept we are seeking to prove is that supply chain relationships are important to business success and that the success or otherwise of these relationships can be measured and predicted. To identify whether this is the case, an on-line survey has been developed which we believe will deliver a result that is a good predictor of the potential success or failure of a supply chain relationship.

Participating organisations will receive a report on the state of their supply chain relationship. This will provide a measure on where the relationship currently sits and any risks or opportunities that have been found. If desired, a report-back session can be organised where questions can be answered and recommendations for making improvements based on the research can be provided.

The questionnaire contains questions that have two elements; firstly, participants are asked to respond from the perspective of their own organisation. The second part of the question is to answer the same question from the perspective of their partner organisation. In this second part we are asking participants to consider how personnel from the other organisation would answer the same question. The questions are posed in the form of statements that the participant is asked to agree or disagree with. Responses range from Strongly Agree, through Agree to Disagree, ending with Strongly Disagree. You will notice that there is no central measure (like 'unsure'); we have rather added a final option which is 'Insufficient Information'. Participants would use this when they don't believe they have the ability to agree or disagree with the statement, either as it relates to their own organisation or how their partner organisation might answer the question.

The reason the questions seek two perspectives is that we believe that supply chain relationships require a clear understanding of the other parties view of the relationship to be successful. Another aspect of the questionnaire is the provision of space to add your comments as to why you have applied a particular score to a question or to further elaborate on an aspect that you think is important. Finally, you will find that the questionnaire will not let you move on to the next page unless you have answered all questions (the comments however are optional).

To help you understand the way to answer the questions, the following example is provided. The question relates to the provision of biscuits and coffee at meetings. One organisation (A) provides these refreshments for meetings the other does not (B). Company A would answer on their own behalf that they Strongly Disagreed with the statement "Our partner provides coffee and biscuits for meetings." In answering the question from their partners' (B) perspective they would answer that they believed their partner would "Strongly Agree" with the statement.

Instructions for completing the survey

Question to be answered

Space for comments to expand on why you have provided a particular score

	One Response per Line					Any additional comments that will help explain your answer (No Limit) Comment
	Strongly Agree	Tend to Agree	Tend to Disagree	Strongly Disagree	Insufficient Information	
1. For Your Business or Organisation	<input type="radio"/>	<input type="text"/>				
2. For Your Partners Business or Organisation	<input type="radio"/>	<input type="text"/>				

Progress Through Survey

Next Page

- 1. First assign a score that indicates whether you Strongly Agree to Strongly Disagree with the statement from your own businesses point of view. If you don't have sufficient knowledge of the issue that choose the last option 'Insufficient Knowledge.'**
- 2. Secondly answer the same question with your view as to how your supply chain relationship partner would answer the question.**

Access to the questionnaire will be provided via a separate email. There is no requirement to complete the survey in one sitting. A closing date will be set for mid to late September for the survey. Should participants have any questions, they can contact me at andrew.downard@adsupplychain.com.au or 0419 581 705.

A final piece of administration is the attached letters. These have two purposes; firstly, to provide contact details at Victoria University should you have any concerns and secondly for you to sign confirming you consent to undertake the research. If you have any concerns about this consent, please do not hesitate to contact me or the nominated Victoria University contact.

Again, thank you for taking part in this research and I look forward to providing feedback on the state of your supply chain relationship.

Appendix G – Details of Participating SCDRs

BrickCo

In over 135 years of existence BrickCo has progressed from a small part time business having one employee under a single proprietor, to a large clay brick manufacturer with a staff of 90, which produces and markets 50 million bricks per year using two gas fired kilns. The original Hoffman kilns were refurbished in 1947, additional equipment installed, and the clay pit gradually enlarged. In 1955, the company introduced brick packaging and in 1962, the first tunnel kilns in Australia.

The business remains proudly privately owned by the BrickCo family and has built a reputation throughout the building and construction industry as a progressive, contemporary and trusted partner and supplier of high-quality products

From inception, the BrickCo business has been committed to the principles of craftsmanship, service, quality and innovation with these principles still holding true today. This has helped them to forge a position in the very quality conscious markets for brick in Asia including Japan

BrickCo is the largest privately-owned manufacturer of clay bricks in Australia.

SuppliesCo

SuppliesCo is a leading supplier of tools, safety gear, workwear and other industrial supplies to businesses of all sizes across Australia. SuppliesCo is the largest operating unit of the Industrial and Safety Group, a division of an Australian conglomerate which is an ASX listed company and one of the largest employers in Australia. As a full-service provider, SuppliesCo offers a wide range of product choices, supported by reliable advice and service, along with expert technical knowledge and solutions.

SuppliesCo operate a hub and spoke distribution model with large warehouses in capital cities and many smaller regional warehouses spread across all states. They operate a print and online catalogue which is seen as the bible for identifying industrial supplies needs. For larger customers they operate Vendor Managed Inventory (VMI) systems including on site vending machines where staff can access products 24/7 without a purchase order. These systems are automatically replenished from the nearest SuppliesCo warehouse.

ChemCo

ChemCo has around 115,000 employees globally who contribute to the success of their customers in nearly all industrial sectors and almost every country in the world. ChemCo's broad portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. In 2017, ChemCo posted sales of €64.5 billion and income from operations before special items of approximately €8.3 billion. ChemCo balance economic success with environmental protection and social responsibility. They believe research and innovation, will support customers in nearly every industry in meeting the current and future needs of society.

ChemCo posted sales of about €417 million in Australia and New Zealand in 2016, serving key industries in the agriculture, coatings, construction, manufacturing and mining sectors. The company had 493 employees and operated 13 production sites across the sub-region, manufacturing agricultural solutions, performance products and functional materials & solutions. ChemCo has been active in Australia for more than 90 years, and for about 60 years in New Zealand.

TransportCo A

TransportCo A specialises in the transport of dangerous goods and management of hazardous substances which are heavily regulated in Australia through federal and state government requirements.

TransportCo A have the specialist knowledge, understanding and create detailed documentation which is mandatory. While many carriers are exiting the hazardous goods market, TransportCo A are intensifying their commitment to serving this complex business segment. Over many years they have focused on research, investment, developing the experience and processes to create a hazardous goods transport solution that proactively addresses changing compliance laws.

TransportCo A are a division of a multi-national Third-Party Logistics business who provide TransportCo A with an extensive network, resources and sophisticated technology, They support via a global end to end supply chain services offering that covers international freight forwarding, customs brokerage, wharf cartage, nationwide transport and warehousing capabilities.

TransportCo A is able to offer is a premium service specialising in the safe transportation and handling of packaged chemicals and hazardous materials nationwide.

TransportCo B

The business was founded in 1990 and has a sole proprietor. TransportCo B is seen as a trusted national, full service, transport and logistics partner. They focus on courier services but have a wide range of capabilities. TransportCo B specialise in transporting anything from an envelope, to 22 tonnes of steel in four hours or less within metropolitan cities.

TransportCo B's online tracking technology, iLogix, is industry-leading and unique. It allows clients to easily track and control deliveries online in real-time – from booking right up to delivery. The system provides more control and efficiency, minimising clients transport expenditure. It enables clients to track a vehicle on a map in real time, reference historical events and deliver exception reporting.

Since TransportCo B was established in 1990, the business has continued to grow and expand successfully. They now have offices in Melbourne, Sydney, Brisbane, Perth and Adelaide, with over 1500 vehicles across Australia.

GovDiv

As of 30 June 2017, GovDiv had over 23,000 staff across 332 locations in Victoria. It had a running cost of approximately A\$2.78bn per year. The net assets base as at 30 June 2017 was \$1,432.79 million, comprising total assets of \$2,135.74 million and total liabilities of \$702.95 million. Property, plant and equipment represent 74 per cent (\$1,573.63 million) of the total assets. The organisation is structured with a Head Office and four Regions sitting under that.

SpecServiceCo

In Australia and New Zealand SpecServiceCo specialise in the delivery of Custodial Management Services for adult & youth justice, Police Support Services, Prisoner Transport, Court Management, Electronic Monitoring of offenders and Health Care Services, Security services and Electronic Security Systems. They employ more than 2000 people across

Australia. SpecServiceCo provides custodial and management services at Custody Centres for GovDiv. Responsibilities include managing the processing of incoming and outgoing prisoners, Court security and escorting of prisoners, related documentation and personal property, and ensuring the security, safety and welfare of prisoners whilst in custody. At all times, in all Centres, the focus is on maintaining a secure and safe environment for prisoners, staff and members of the public.

Globally SpecServiceCo is the leading global integrated security company, specialising in the provision of security products, services and solutions. With approximately 620,000 employees globally across 120 countries the organisation has been in existence for over 100 years.

AD Supply Chain

Presentation to 13th ANZAM Conference June 2015

Validating the Elements of a Supply Chain Dyadic Relationship: A Qualitative Review

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AD Supply Chain

Agenda

- Why are we concerned with Supply Chain Relationships?
- Aims & Significance of the Research
- Existing Models & a Putative List of Elements
- The Missing Piece
- The Expert Panel & Story Telling
- Findings
- Conclusion & Limitations



60 Supply Chain

Importance of Supply Chain Relationships

There is generally a poor understanding of the economic benefits of good supply chain relationships.

"relationship strength is significantly related to (Supply Chain) performance" Autry & Golicic (2010)

- Based upon a survey of 207 Australian Businesses (168 Product Related/68 Service Related) the following statement was made:

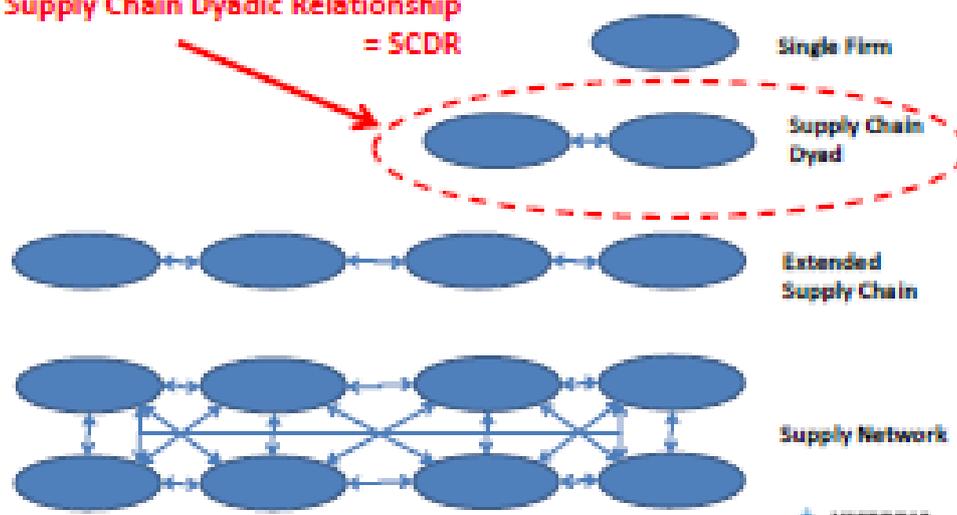
"Overall these results indicate that closer relationships with trading partners are associated with higher levels of performance" Boonyathan & Power (2007).



60 Supply Chain

What We Are Seeking To Understand

Supply Chain Dyadic Relationship = SCDR



The diagram shows four levels of supply chain complexity:

- Single Firm:** A single blue oval representing one company.
- Supply Chain Dyad:** Two blue ovals connected by a double-headed arrow, enclosed in a red dashed oval. A red arrow points from the text 'Supply Chain Dyadic Relationship = SCDR' to this level.
- Extended Supply Chain:** A horizontal chain of four blue ovals connected by double-headed arrows.
- Supply Network:** A grid of eight blue ovals (two rows of four) with multiple double-headed arrows connecting them in a complex network.



Aims of the Research

- The broad aim of the research was:
 - *To capture the elements that make up a Supply Chain Dyadic Relationship thereby assisting the development of more practical measurement tools by engaging and seeking expert opinion and inputs.*
- The research question being:
 - *Do Australian Supply Chain Practitioners share the same understanding of the elements that make up a SCDR as the literature*

Significance of the Research

- The concept that if something is important it must be managed and to be managed it must be measured is a key management concept – SCDR's are important
- If measurement tools are to be 'useful' then they must be relevant to practitioners in the field
- Tools that are developed by academia that are not used will lack the quantity of results that can provide better insight into the field
- By providing 'useful' tools academia will benefit from improved access to the field and practitioners will benefit from the results of more value adding research

Scott Dean

Existing SCDR Measurement Tools

Source #	ADD (UK Trade Association)	(Humphries, et al., 2007)	(Srinivasan & Griffin, 2005)	(Roberts, et al., 2008)	(Thallos, et al., 2008)	Vendor Outsourcing (Nylen, et al., 2013)
System Name	Relationship Management Matrix	Supply Chain Collaboration Index	Collaboration Index	Measuring Relationship Quality	Interpretive Structure Modelling	Capability and Trust Assessment (CaT)
High Level Relationship Objectives	1. Communication	Creativity	Information Sharing	Trust in Partners: Honesty	Business growth – long-term perspective	Focus
	2. Capability Management	Stability	Decision Synchronization	Trust in partners: benevolence	Mutual understanding and closeness	Team Orientation
	3. Continuous Improvement	Communication	Incentive Alignment	Affective Commitment	Meeting customer/ market requirements	Communication
	4. Commercial	Reliability		Satisfaction	Role in decision making	Innovation
	5.	Value		Affective Conflict	Risk/profit sharing	Trust

184
177
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Scott Dean

Existing SCDR Measurement Tools – Drill Down

Relationship Element	BMM	CCI	EM	CaT
Communication	✓	✓	✓	✓
Information Exchange	✓	✓		
Risk & Opportunity Sharing	✓	✓	✓	
Trust		✓		✓
Performance Management	✓	✓		
Process & Continuous Improvement	✓	✓		
Innovation	✓	✓		✓
Value	✓	✓		
Future Intentions/Strategic Alignment	✓	✓	✓	✓
Fairness/Justice		✓	✓	
Commercial Relationship	✓	✓		
Commitment		✓	✓	✓
Mutuality/Interdependence		✓	✓	
Responsiveness	✓	✓	✓	

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50 Team Dash

- Creativity
- Stability
- Communication
- Reliability
- Value
- Long Term Orientation
- Interdependence
- C³ Behavior → Collaboration
Cooperation
Coordination
- Trust
- Commitment
- Adaption
- Personal Relationships

Putative Elements of SCDR

These elements have been developed from literature (particularly Humphries & Wilding) for validation with "Expert Panel"



50 Team Dash

The Missing Piece

- None of the existing models appears to have 'qualified' the list of elements with practitioners prior to completing the model.
- Some mentioned showing the completed model to practitioners on a 'post hoc' basis.



The Expert Panel

- The use of an 'Expert Panel' is a common approach to gathering this input.... However:
 - There are challenges with the injection of researcher bias
 - With group panel activities (focus groups) there are issues of Strong Personalities, Contagion and Social Status which can impact outcomes (Landetta et al 2011)
- Therefore an Interview process was applied to gathering the Expert Panel's input

Story Telling

- To control the possibility of 'Leading the Witness' it was decided to use 'Story Telling' to draw out the practitioners input into SCDR
- Story Telling is recognised as a qualitative method that is useful in drawing out 'Tacit' knowledge (Wijetunge, 2012; Whyte & Classen, 2012).
- It will often provide a more insightful understanding into interviewee's input (Kall et al., 2010).

Story Telling

- The particular approach applied was a three stage interview:

Stage 1: Story telling

- The interviewee is requested to tell stories from their experience about supply chain relationships, both good and bad.

Stage 2: Identification of elements that make up supply chain relationships

- The interviewee is asked to give their opinion on what were the elements that make up a SCDR. Every effort is made to avoid giving guidance for this question.

Stage 3: Comment on chosen elements from literature review

- At this stage in the interview the researcher provides the chosen relationship elements and asks for comments from the interviewee.

Selection and Makeup of Expert Panel

Sources:

Researchers own contact database

Members of a Supply Chain Roundtable

Contacts via Victoria University (ISCL)

Seniority or Function	Number	Buy Side	Sell Side
General Manager	2	✓	✓
Purchasing	2	✓	
Supply Chain	4	✓	✓
Sales	2		✓

Slide Data

Summarising Output From Interviews

The recording and/or notes from interviews were reviewed and either exact matches to concepts or 'overlapping' terms were noted

SCDR Element	Number of Participants Using Exact Term	Number of Participants Using Overlapping Term	Total Count
Creativity	2	1	3
Stability		2	2
Communication	8	1	9
Reliability	1	4	5
Value	4	3	7
Long term Orientation		2	2
Interdependence		1	1
C3 Behaviour (cooperation, collaboration & Coordination)	3	4	7
Trust	10		10
Commitment	4	3	7
Adaption		1	1
Personal Relationships	3	6	9

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Slide Data

Summarising Output From Interviews

Sufficient support was gained from the 'stories', unguided input on SCDR elements and review of the putative list to move forward with that list PLUS the addition of *Culture!*

SCDR Element

- Creativity
- Stability
- Communication
- Reliability
- Value
- Long term Orientation
- **CULTURE**
- Interdependence
- C3 Behaviour (cooperation, collaboration & Coordination)
- Trust
- Commitment
- Adaption
- Personal Relationships

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Culture

- The concept of Culture was mentioned in a number of ways:
 - Culture
 - Culture Matching
 - Cultural Compatibility
- Verbatim Comments included:
 - "you have to understand who's who in the organisation and who can make decisions"
 - "you have to be comfortable with their culture".
- This element was no restricted to a level of seniority or 'Buy' or 'Sell' sides of the panel

Conclusions

- The aim of the research was to examine or quantify the elements that make up a SCDR
 - We found support for the putative list developed from the research
 - The issue of 'Culture' as a new element that makes up a SCDR was found
- Academia will be in a position to develop more relevant SCDR measurement tools
- Practitioners will have access to measurement tools that better reflect their beliefs around what makes up a SCDR

Faculty Chair

Limitations

- The make up of the Expert Panel was not statistically derived being a convenience sample
- The size of the Expert Panel could have been larger
- The coding of the interview outputs was not decided in advance
- Validity and Transferability are not strong
..However: the incorporation of the revised list of elements into a new SCDR measurement tool and the response to this tool will provide the real test of this work!



Faculty Chair

Questions?

Thank You!



Appendix I. Examples of Existing SCDR Assessment Questions

Relationship Quality (Roberts et al., 2003)

SCDR Element	SCDR Assessment Question
trust in partners honesty	<ol style="list-style-type: none"> 1. my service provider is honest about problems 2. my service provider has high integrity 3. my service provider is trustworthy
Trust in partners benevolence	<ol style="list-style-type: none"> 1. My service provider is concerned about my welfare 2. when I confide my problems to my service provider I know they will respond with understanding 3. I can count on my service provider considering how their actions affect me
Affective commitment	<ol style="list-style-type: none"> 1. I feel emotionally attached to my service provider 2. I continue to deal with my service provider because I like being associated with them 3. I continue to deal with my service provider because I genuinely enjoy my relationship with them
Satisfaction	<ol style="list-style-type: none"> 1. I am delighted with the performance of my service provider 2. I'm happy with my service providers performance 3. I am content with my service providers performance
Affective conflict	<ol style="list-style-type: none"> 1. I am angry with my service provider 2. I am frustrated with my service provider 3. I am annoyed with my service provider

Supply Chain Collaboration Index (SCCI) (Mena et al., 2009)

SCDR Element	SCDR Assessment Question
(1) Creativity – <i>encouraging innovation and high performance.</i>	<ol style="list-style-type: none"> 1. Performance measurement is used to raise standards. 2. Disputes and problems are resolved quickly. 3. Disputes and problems are resolved fairly. 4. The other party is reliable and consistent in dealing with us. 5. The other party is dedicated to making our business a success. 6. When an unexpected problem arises, both parties would rather work out a solution than hold each other to the original contract terms.
(2) Stability – creating a framework for successful business.	<ol style="list-style-type: none"> 1. The other party displays a sound, strategic understanding of our business. 2. The objectives of both parties are clearly stated. 3. The objectives of both parties are fully compatible. 4. Both parties co-operate wholeheartedly. 5. The relationship provides a dynamic business environment within which both parties can seek increasing rewards.

	<ol style="list-style-type: none"> 6. I have complete confidence in the intentions of the other party.
<p>(3) Communication – transparency for business success.</p>	<ol style="list-style-type: none"> 1. . Where the other party has proprietary information that could improve the performance of the joint business, it is freely available. 2. . We have a shared data “environment” where market, planning, technical and pricing information are made freely available. 3. . We understand the information requirements of all participants in the supply chain from suppliers to customers. 4. . Exchange of information in this relationship takes place frequently and informally – not just according to specified agreement. 5. . Objective performance measurement is an important part of this relationship. 6. . We are aware of the performance requirements for all participants in our supply chain from suppliers to customers 7. . We provide the other party with regular information including long-range up to date forecasts and market developments to enable him to do his business better
<p>(4) Reliability – creating reliable business processes.</p>	<ol style="list-style-type: none"> 1. The quality of the contract outputs, e.g. consistent product quality, fulfilled on-time orders, is entirely satisfactory. 2. The quality of service, e.g. billing, prompt payment, administration, delivery is entirely satisfactory. 3. The relationship is characterised by a continually improving product quality philosophy. 4. Problems are solved in a joint, open, constructive manner. 5. Such is the goodwill in the relationship, the other party would willingly put him/herself out to adapt to our changing requirements. 6. We trust the other party to act in our best interests. 7. The responsibility for making sure the relationship works is shared jointly. 8. The other party provides us with useful cost reduction and quality improvement ideas. 9. The other party is always totally open and honest with us. 10. The other party always does what he says he will do.
<p>(5) Value – creating the incentive to work together.</p>	<ol style="list-style-type: none"> 1. The gains from this relationship are equitably shared between both parties. 2. We do not feel “imprisoned” or restricted within the current relationship. 3. We are willing to invest more i.e. money, time, information, effort, in the current relationship. 4. We are happy that our future is bound to the success of our relationship partner.

	<ol style="list-style-type: none"> 5. We feel totally committed to this relationship. 6. The other party is genuinely concerned that our business succeeds. 7. Both sides are working to improve this relationship.
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Producer Segmentation Index (Boniface, 2012)

SCDR Element	SCDR Question
trust	<ol style="list-style-type: none"> 1. my buyer promises are reliable 2. I can trust my buyer 3. I have trust in my buyer's skill and expertise in the business 4. my buyer cares for my welfare
Satisfaction	<ol style="list-style-type: none"> 1. I feel satisfied doing business with my buyer 2. my buyer often meets my expectations 3. my buyer treats be fairly and equitably 4. my buyer is quick to handle by complaints
Relationship commitment	<ol style="list-style-type: none"> 1. our relationship is something that we are very committed to 2. I feel committed to my buyer 3. I want to maintain indefinitely our relationship 4. I want to improve my relationship in long-term 5. I have maximum effort to maintain our relationship
Loyalty	<ol style="list-style-type: none"> 1. if I have another alternative buyer I will remain with this buyer 2. I will continue to do more business with my current buyer in the next few years 3. I am loyal to my buyer 4. I will ask other dairy producer to seek assistance from my buyer

Dyadic Relationship Assessment (Beugelsdijk et al., 2009)

SCDR Element	SCDR Question
relationship performance direct and indirect	<ol style="list-style-type: none"> 1. with this partner we reach the full 100% of the goals we initially wanted to achieve 2. the cooperation with this partner is a financial success 3. our organisation learnt a lot from cooperation with this partner 4. by cooperating with this partner we considerably improved our competitiveness 5. by cooperating with this partner our organisation gained valuable contacts 6. the cooperation with this partner helps us in the achievement of innovations 7. the cooperation with this partner yields new clients

Partner importance	<ol style="list-style-type: none"> 1. this partner is very important for the continuity of our organisation 2. this partner is very important for the future development of our organisation 3. it would be very difficult for us to replace this partner adequately if the relationship would for some reason be ended
Commitment	<ol style="list-style-type: none"> 1. we are prepared to do something extra for this partner 2. in this relationship we are prepared to make investments that payoff only in the long run 3. in case of problems these are solved in close cooperation with this partner
Trust	<ol style="list-style-type: none"> 1. with this partner we exchange confidential information 2. this partner can be trusted 3. this partner does what he promises 4. we sometimes doubt the information this partner gives us is correct 5. we have a lot of confidence in the expertise of this partner
Cultural fit	<ol style="list-style-type: none"> 1. the organisation culture of this partner clearly differs from ours 2. this partner's way of working closely resembles our way of working
Communication	<ol style="list-style-type: none"> 1. we always react quickly when a partner needs us 2. we always give our partner clear and full information 3. it is not difficult for our partners to find the right person in our organisation 4. we inform our partners in time in case of problems 5. we systematically keep information of our most important partners 6. we organise collective activities for and with our partner 7. our organisation promotes informal contact between our employees and those of our partner

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