EVALUATING THE IMPACT OF SUPPLY CHAIN MEMBER RELATIONSHIPS ON ORGANISATIONAL PERFORMANCE IN THE VICTORIAN ORGANIC FRUIT AND VEGETABLE INDUSTRY – DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

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ABSTRACT

Supply chain (SC) relationships are considered one of the major means in enhancing supply chain performance. These relationships enable supply chain members to facilitate coordination within the supply chain which leads to increased performance. We examined several constructs that influence supply chain relationship success, namely trust, commitment, collaboration, satisfaction, dependence, information sharing and power. After a detailed literature review, a conceptual framework was developed which will later be tested empirically. Organic fruit and vegetable industry in Victoria is selected as context of this study due to its current importance owing to lack of availability and also the industry’s importance to the Victorian economy.

Key words: supply chain relationships, trust, commitment, power, information sharing

INTRODUCTION

Supply Chain Management (SCM) studies suggest that SC relationships among its members, and close coordination between them are required to sustain competitiveness. Although many researchers [1-3] agree that supply chain member relationships are important to enhance supply chain performance, other researchers [4-6] suggest that there are inconsistent findings on the degree of influence of supply chain member relationships on SC performance. Additionally, the influence of supply chain member relationships on SC performances varies to a large extent in different industries. The proposed study aims to investigate the impact of SC member relationships on the performance of organisations associated with the Victorian organic fruit and vegetable industry.

SC is a collection of individual firms aiming to provide a set of services to its customers. These services include making products available in a desired package, at best possible quality, at a preferable place, at the right time and at the lowest cost. Above all, SCs should provide these services more efficiently and effectively than their competitors do. As such, it is desirable that SC members build close relationships amongst them.
The relationships among members of SCs are important for several reasons. Firstly, many researchers argue that relationships among SC members assist in substantially lowering product costs, reducing lead times, improving quality, and ultimately enabling those firms to offer improved service standards to their customers [7-9]. Secondly, a more recent study suggests that strong relationships are significant in facing service difficulties in dealing with sophisticated consumers who demand improved service standards 24/7 than ever before [10].

Relationships among SC members take several forms varying from simple transaction relationships to strategic alliances. According to previous research, transaction relationships among SC members such as a spot buying relationship between a retailer and a wholesaler, are ineffective in meeting the demands and service requirements of customers [11]. Therefore, it seems that many SCs have evolved in creating strategic alliances among their members in order to improve service standards and competitiveness [12-15]. Confirming the above, more recent studies also demonstrate that, the focus of minimising transaction costs through SC in the early 1990s has shifted to creating value delivery networks in the 21st century by establishing strong relationships among SC members [16].

Researchers however, have different views about how the nature of relationships among SC members influences the performance and service standards. In particular Singh and Power [5] stress that organisations need to be thinking of complex SC relationships rather than dyadic relationships. On the contrary, some other researchers [e.g. 17, 18] suggest that dyadic relationships are more beneficial and feasible than collaborative relationships in food supply chains.

Intensity of relationships among the SC members is also an important aspect which impacts on the performance of the whole SC. Whipple and Frankel [12] find that strong SC member relationships benefit all its members in terms of increased individual profitability, and service standards. Later, in a study Kannan and Tan [19] add empirical evidence to the fact that cooperation among SC members is mutually beneficial rather than competition among them, and it increases the service standards of SC.

As noted at the beginning of this section, researchers however, have mixed views on how SC relationships influence firm performance and service standards of SCs in different industries. For example, in service oriented industries stronger relationships among suppliers are important to provide effective customer service [4]. In low cost industries such as retailing relationships among SC members are considered important in achieving competitive advantage [6], and in manufacturing industries collaborative relationships among SC members are important to achieve improved firm performance [5]. Accordingly, the relationships of SC members influence the SC performance differently in separate industries.

The fresh fruit and vegetable industry is a major player in the Australian economy [20, 21]. As an offshoot of this industry, the organic fruit and vegetable industry in Australia (which originated in the early 20th century) has gained considerable attention in the recent past, and is fast growing and worth nearly one billion dollars [22]. Mascitelli, Lobo and Chen [23] view that the Victorian organic fruit and vegetable industry is valued in excess of $500 million, and Henryks and Pearson [24] suggest that it is one of the fastest growing food sectors in Australia. One of the reasons for the growth of this industry can be attributable to increased number of health conscious consumers who look for healthier food habits through organic consumption [25].
However, it is apparent that, lack of availability, poor access, and high prices, all of which are related to SC performance, inhibit the growth of the Victorian organic fruit and vegetable industry. Hence, it is timely and relevant to explore, how relationships among SC members affect organisational performance of the Victorian organic fruit and vegetable industry and to identify the factors inhibiting the growth of that industry.

Building on the argument that an effective SC operation is dependent on SC member relationships, the proposed study aims to address the knowledge gap by developing a theoretically sound and empirically verified research model with a view to extending the existing understanding of the SC relationships in the Victorian organic fruit and vegetable industry and to evaluate how these relationships affect the overall supply chain performance.

**LITERATURE REVIEW**

Every commodity which reaches the retailer’s shelf is associated with a SC. The SC connects total flow of channel from the earliest supplier of raw materials to the final consumer, and also stretches and connects the disposal process [26]. This connectivity creates strategic importance to a SC, therefore its earlier perception of moving materials and goods from one place to another, has changed to a tool which can influence competitive advantage [27]. According to Shaffer, Dalton and Plucinski [28], competitive advantage is determined by quality of products, service standards, customisation, and faster delivery to all customers scattered in different places, and many of these are influenced by the SC. Therefore, SC becomes a very important part of any commodity to reach its customers, and provides the desired service standards to consumers.

SC consists of many members, and the purpose of this alliance is to provide services which include making products available in a desired package, at best possible quality, at a preferable place, and at the right time. Similarly Shaffer, Dalton and Plucinski [28] explain that in an effective and efficient SC, these services are provided at the lowest cost through collective effort of several members. In doing so the role played by SC members is of paramount importance as sophisticated consumers continue to demand improved service standards 24/7. Christopher [29] stresses that relationships among SC members are valuable to meet improved service standards of the consumer at lowest cost. Therefore it is imperative that a SC builds close relationships among all its members.

SC relationships evolve over the years. The transaction relationships which are mainly based on cost related decisions, improve and evolve to the level of a strategic alliance, where SC members work as a focussed team to provide ever demanding sophisticated consumer service standards. As Giunipero et al. [16] explain transaction cost based relationships of early 1990s, evolved and improved as value delivery networks in present day, through strong alliances among the SC members, as depicted in Figure 1 below.
Figure 1 Evolution of SC relationships [compiled from 16]

**Competition over other SCs**

SCs compete with other similar SCs, as a firm’s individual competition becomes ineffective in gaining competitive advantage in highly aggressive market places. The main reason for ineffectiveness is a firm’s inability to acquire variety of resources to compete with resource rich SCs. However, relationships among SC members help increase its competitiveness above other SCs. Confirming this, White [30] views that SC members need to cooperate among themselves to be more effective and efficient than other SCs. As such, Christopher and Towill [31] remark that a network of SC members that can create better structures, coordination and manage better relationships, can improve competitive advantage over other SCs, which possess weak SC relationships. Moreover, closer relationships among SC members create more service oriented SCs, that can conquer and maintain competitive advantage over other SCs [32, 33].

SCs continue to increase their competitive advantage by integrating resources and capabilities through closer SC relationships among their members. As Ganesan et al. [34] emphasise, SC members give more importance to SC itself than their individual firms to achieve competitive advantage over other SCs. Similarly, closer SC relationships among its members can influence the SC to achieve improved operational performance, and as a result it can provide greater service standards to consumers than its competitors [35-38]. Reaffirming the above argument, Brown et al. [39] confirm that efficient SCs can satisfy their customers’ needs, and grow their market shares through improved service standards, such as making available the right merchandise at the right place in right quantities and at the right time. More recently, Yew Wong and Karia [40] found that long term SC members plan and jointly execute them in order to achieve improved service standards for consumers, and it is nearly impossible to replace these long-term working relationships of SCs. Due to these reasons, it can be stated that SC relationships among its members are important and that they positively influence competitiveness of SCs.

**Cooperation and competition**

Competition and relationships among members of a single SC are widely discussed phenomena in the SC literature. Competition among SC members can be simply explained as,
the tendency of individual SC members in which they act on opportunism to obtain more profits than other members within the SC, and neglect competition from the outer SCs. Opportunism can exist regardless of a firm being a SC member or not, and more importantly, the intensity of the relationship among SC members decides otherwise. As explained by Ketchen and Hult [27], best value supply chains are addressing this issue by creating long term trusting relationships that benefit all participants of the chain.

However, competition among SC members within a chain negatively influences SC performance. The short term buying decisions that are made considering the transaction costs, are sometimes short lived due to lower quality of outsourced items as a result of opportunistic behaviour of short term suppliers [27]. These authors also view that these SC members tend to mistrust each other and as a result, relationships becomes short lived. The opportunistic behaviour also creates long term effects where short term suppliers are excluded from SCs unless the product they offer is unique and not substitutable.

Similarly, some researchers [e.g. 41, 42] explain that there is a considerable cost increment to SC members when they try to minimise negative effects of opportunism through controls such as audits, penalty contracts etc. As a result, competitiveness of the SC decreases due to higher product costs. Therefore, it can be stated that cooperation among the SC members is more beneficial than the competition among them in a SC.

**The influence of SC relationships on SC performance in different industries**

Researchers have mixed views on how the relationships among SC members influence the firm performances and service standards in SCs in different industries. Some scholars [e.g. 43] suggest that SC relationships among its members are the most important factors in determining success in retailing, computer and printer manufacturing industries. They explain that these industries need to possess constant communication and contacts with their customers, and that is one of the reasons for the SC to have strong relationships among its members. Similarly, in low cost industries such as retailing, relationships among SC members are considered important in achieving competitive advantage over other SCs [6]. On the other hand, Field and Meile [4] empirically found that overall performance including customer service, improves through stronger and long-term relationships among SC members in service oriented industries. The need for higher degree of customer interaction to solve the increased number of service related issues is one of the reasons which need stronger relationships among SC members in these industries. Singh and Power [5] suggest that collaborative relationships among SC members is important to achieve improved firm performance in the manufacturing industry. These authors emphasise that resource sharing among the members of manufacturing SCs is important in achieving competitiveness over other SCs. Accordingly the relationships of SC members influence the SC performance differently in separate industries.

On the other hand, Christopher, Peck and Towill [44] view that supply chain strategy has to be tailored to match the demand characteristics of products and to specific market conditions. They also emphasise that there is no single supply chain strategy which applies to all the products and markets. Reaffirming this view Hilletoft [45] suggests that SC members need to create a SC consisting of several solutions which are appropriate to each product and market conditions to generate competitiveness over other SCs.
According to Hobbs and Young [46], the preferences of fruit and vegetable buyers have changed over the years. They further emphasise that fruit and vegetable products have become differentiated due to change of buyer preference towards more heterogeneous products. However, as highlighted by Clements, Lazo and Martin [11], the product characteristics affect the selection of the type of relationship between supply chain partners. Characteristics such and perishability and fragility in fruits and vegetable industry, means that there are issues related to quality and reliability of supply, and this results in creating complex transactions between SC members. These complexities in transactions eventually lead to increase complexity of SC relationships among its members.

**Theoretical underpinning**

The main feature of a SC is the collection of many individual firms working together to achieve a set of goals. According to Halldorsson et al [41], SC is a meta-organisation with many independent SC members have established inter-organisational relationships, and it includes integrated business processes beyond borders of individual firms.

Although many scholars view SC as an integrative philosophy to manage flow of goods from supplier to ultimate user, Christopher [47] and Harland [48] suggest that SC involves management of an interconnected network to collectively provide products and services to end customer. Hence managing a SC is far more complex than managing a simple flow of goods due to complexity embedded within SC due to various actors and systems involved.

The theoretical foundation of SC is debatable as there are no specific theories owned by this discipline; however scholars have borrowed theories from other disciplines in order to describe their studies. As explained in above paragraphs, this was possible due to numerous activities that take place between SC members making SC a multidisciplinary concept [16]. Similarly, Halldorsson et al. [41] argue that there are many theories that can be used to explain SCs since they are complex and interconnected socio-economic institutions. We intend to leverage on three theories that have been used in SC studies previously, namely Resource Based View, Resource Dependency Theory and Transaction Cost Economies.

**Resource Based View (RBV)**

Although RBV has been applied and described in a single firm context and resources within, Lavie [49] describes its applicability and relevance in networked environment. Hence it is relevant to describe resources of SC using RBV. According to Lavie [49] firm partners can protect, co-develop and share resources from external imitations by isolation methods, and also the network can protect imperfect substitutability by working as a chain in competition with similar chains.

Resources can be pooled in SCs, and as a result its members have access to vast array of resources which may be impossible to acquire as an individual entity. This creates an opportunity for better resourced SC to be more efficient, effective and competitive among other SCs in same market. According to Barney [50] there are two fundamental assumptions to RBV, in that resources and capabilities in firms are heterogeneously distributed among them, and resources are imperfectly mobile.

However, in a SC, resources are heterogeneously distributed, and many of these resources are imperfectly mobile within the network and are tacit in nature [40]. Hence, there cannot be
any competition between SC members, as heterogeneity and imperfect mobility described in RBV, will not hold in networked environments [49]. This creates an opportunity to use RBV theory in SCs to explain how networks can achieve competitive advantage using pooled resources of SC members in order to compete with other homogeneous SCs.

According to Langley et al. [32], there are two major types of logistic service providers; The first one is called ‘asset heavy’ and the second is ‘asset light but knowledge based’. These firms create SCs to achieve competitiveness by pooling their individual resources towards a common course. RBV explains that firms acquire access to resources which are inimitable, rare, non-substitutable and valuable, and gain competitive advantage through these idiosyncratic resources [51].

However the management of resources in a SC is described as more important than possessing the resources in achieving competitive advantage [52, 53]. Many SCs possess enough resources to compete with other SCs, but intensity of competition differs depending on how efficiently they exploit these possessed resources.

Resource Dependency Theory (RDT)

As explained previously, SC members need to cooperate with each other for their existence, survival and success. These firms need to depend on other members of the SC or other members depend on these firms for required resources to succeed [54], as firms cannot be self-sufficient in resources due to its heterogeneous distribution and imperfect mobility [50]. Hence SC members share these resources among them as a vital part of their relationship [55]. According to Pfeffer and Salancik [56], these SC members try to achieve higher performances by creating long-term collaborative relationships between them.

However these resources can be two fold, tangible resources such as machines and warehouses or information sharing and use of SC member’s reputation which are categorised as intangible resources [57]. As Ramanathan and Gunasekaran [57] explain, basic assumption of RDT is that the SCs cannot be responsive to the demands without active support and cooperation from other SC members. Similarly, Ulrich and Barney [54] assert that dependency on other SC members is absolutely necessary to be competitive and also for long term sustainability. Hence, we consider that the RDT is applicable whilst investigating relationships between SC members of the organic fruit and vegetable industry in Victoria.

Transaction Cost Economies (TCE)

TCE theory comes into effect when a firm decides to buy a particular product from the outside market, or make it inside their boundaries based on cost involved [58]. These decisions sometimes can be costlier, or can turn customers to ones competitors indefinitely. As explained by Ketchen and Hult [27], best value SCs conquers these uncertainty by creating long term trusting relationships that benefit all SC members. These authors also suggest that short term buying decisions that are made considering transaction costs are sometimes short lived due to lower quality of outsourced items as a result of opportunistic behaviour of SC members.

Similarly, Geyskens, Steenkamp and Kumar [59] state that the TCE theory is based on a central assumption of whether the required transactions are efficiently performed within or outside the firm (by autonomous contractors). Although there are examples of success stories
in both the above mentioned scenarios, a priori TCE assumption is that outsourcing is more efficient than performing the task within the company, or in other words ‘market governance’ is efficient compared to ‘vertical integration’. In a SC context this phenomenon advocates that individual members are more efficient than the entire SCs.

Asset specificity is crucial in TCE, and this leads to the decision between vertical integration and autonomous contractors [60]. As highlighted by Geyskens, Steenkamp and Kumar [59], uncertainty is only problematic in presence of specific assets. These authors also view that uncertainty without transaction specific assets will favour outsourcing, and uncertainty with transaction specific assets will demand vertical integration (hierarchical governance).

TCE is considered as a tool to ensure minimum cost involved in any particular transaction. In a SC context members need to understand, select and work with correct set of partners in order to have efficiency, quality and lowest possible cost. Hence, there is a similarity between TCE concepts and the need for a SC to exist and operate. As concluded by Grover and Malhotra [42], it is relevant to use TCE in studying SCs.

**RESEARCH PROBLEM AND RESEARCH QUESTIONS**

As explained in the previous sections, with a view to extending the current theory, the proposed study investigates the SC member relationships and how these relationships influence the organisational performance of a SC. Hence the overarching research problem of this study is articulated as:

‘How do SC member relationships influence organisational performances of SCs in the organic fruit and vegetable industry in Victoria?’

This overarching research problem will be addressed by the following specific research questions

- How does information sharing influence SC relationship traits?
- How does information sharing influence SC relationship success?
- How does information sharing influence organisational performance?
- How does power influence SC relationship traits?
- How does power influence SC relationship success?
- How does power influence organisational performance?
- What is the relationship between trust, commitment, collaboration, satisfaction and dependence of SC members and SC relationship success?
- What is the relationship between SC relationship success and organisational performance?
DEVELOPMENT OF A CONCEPTUAL FRAMEWORK

Explanation of the constructs of the conceptual framework

Information sharing and power influence SC relationships. Nyaga et al. [3] empirically established that information sharing influence trust and commitment. Similarly, power imbalances between SC members influence dependence [61], commitment [62] and trust [63]. As highlighted by previous researchers [e.g. 3, 12, 19, 46, 62, 64, 65-70], relationship traits such as trust, commitment, collaboration, satisfaction and dependence are considered important in achieving closer SC relationships, and mutually beneficial outcomes to SC members. These researchers also stress that there can be limited success in expected results in absence of these traits. Hence, through these different traits, SC members try to achieve closer relationships than hands off relationships in order to increase their performance.

Information sharing

Information sharing has been highlighted as important in various SC studies, and it is also defined differently in previous studies. According to Monczka et al. [71], information sharing has two aspects and can be separated based on quantity and quality of sharing. The authors also view that quantity aspect of information sharing is the extent to which proprietary and critical information is communicated to one’s SC partner. Similarly, Mohr and Spekman [72] view that information sharing refers to the extent that critical information is shared with one’s SC partners. Sharing valuable information between SC partners will inform about each other’s business, and over time SC members are able to act independently in maintaining their relationship [72].

Also many authors have identified the importance of information sharing in supply chains in various contexts. As Lalonde [73] explains that information sharing is one of the important ingredient of creating sound SC relationships which enables SC members to work closely and...
strongly in overcoming competition. Information sharing in a SC is also important in trust-building process, as sharing of information develops an understanding between SC members which results in helping conflict resolution between them [67].

Similarly Lee [74] views that information sharing between SC members is the basic foundation for collaboration (and coordination) among them. Additionally information sharing between SC members provides links to synchronise activities across supply chain [75]. Confirming these views, Childerhouse and Towill [76] empirically find that making information visible to all SC members, and streamlining its flow are key factors in achieving effective and integrated SC. On the other hand information sharing between SC members reduces the uncertainty which improves the level of trust and commitment in a relationship [77]. These authors also found that information sharing encourages SC members to commit towards the relationship that they have formed. Hence many previous studies suggest that there is a positive relationship between information sharing and organisational performance.

Hence it is hypothesised that:

H1: Information sharing has a positive significant impact on relationship traits (H1a), SC relationship success (H1b) and organisational performance (H1c).

Power

Power is a multi-dimensional construct, and widespread in many disciplines. El-Ansary and Stern [78] view power as a dispositional concept which creates an ability of one member of relationship to control behaviour of the other. According to researchers, power between relationship partners act as an important tool to achieve focussed results. As such, Dwyer, Schurr and Oh [79], and Kumar [80] view that power is vital for relationships in giving it a purpose, order and a direction, and takes it out of the realm of chance.

According to French and Raven [81], there are six different sources of power, namely coercive, reward, referent, legitimate, expert and information. These different sources influence the decisions of the other relationship member using resources available to them. As clearly outlined by Belaya, Gabalyuk and Hanf [82], over the years, these different sources of power have been classified according to varieties of measurement criteria. The most common classification among them is coercive and non-coercive [83, 84], based on their nature of aggressiveness.

Coercive power (Aggressive power)

This source of power is based on one party’s perception that the other party impose punishment if requests of latter party are not compiled with [78, 85]. The exercising of this source of power involve aggressive, forceful and suppressive behaviour, and as a result other party in relationships tend to do things that they wouldn’t have done otherwise [86]. As a result of this unwilling engagement, it is most likely to escalate tension and frustration between SC members, because one party might perform actions that the other party disapproves, might not have resources to carry out or might feel offended by [86, 87]. This situation will result in disagreements between SC members, and as explained by Lusch [84] this will intensify clashes rather than resolve them.
Hence it is hypothesised that:

**H2**: Coercive power has a negative significant impact on relationship traits (H2a), SC relationship success (H2b) and organisational performance (H2c).

**Non coercive power (Non-aggressive power)**

Non-coercive power is derived from five basic sources of power, namely reward, legitimate, referent, expert and information [78, 85, 88]. Contradict to coercive power; the non-coercive power does not include aggressive actions which will adversely affect SC member relationships. Instead, it cultivates relatively high level of agreement between SC members [88]. These authors also suggest that the main reason for relationship building in association with non-coercive power is due to SC members’ desirability of performing certain actions.

Hence it is hypothesised that:

**H3**: Non coercive power has a positive significant impact on relationship traits (H3a), SC relationship success (H3b) and organisational performance (H3c).

**Trust**

Trust is an important tool in any business organisation, and in many industries trust acts as a major ingredient of success. As Lindgreen [89] suggests when trust between a company and its business partners are high, they collectively achieve more successful performance than competitors. Similarly, as Zuurbier [90] explains monitoring and controlling activity is a tedious process in any firm, and trust can replace management difficulties as a result of close SC relationships.

There are many prerequisites in achieving and maintaining trust between SC members, and as Lindgreen [89] sees production know-how, capable and knowledgeable workforce, general reliability, timely deliveries on required specifications, sharing valuable information, and fair prices are important means in this process. Matopoulos et al. [63] view that trust is the most important factor of deciding the depth and width of collaboration between firms, and also considers this as one of the critical elements affecting the establishment and maintenance of SC member relationships.

In the fresh produce industry SCs trust can be considered as an important factor, and Zuurbier [90] concludes that trust is one of the major component in achieving coordination among SC members. Trust and personal relationships between SC members are of utmost importance in fruit and vegetable industry in order to have better functioning of the entire SC [91, 92].

**Commitment**

Development of an efficient SC, and work as a committed network to withstand competition is difficult but achievable. Commitment among SC members is considered as a non-separable part of SC relationships if not central to relationship success (Morgan and Hunt 1994; Ganesan 1994; Bennett 1996). The length of relationships helps in increasing commitment to higher levels, and as White [30] explains larger volumes are traded during the mature stage of relationship, and commitment at that point will be at the highest level.
**Collaboration**

As highlighted by Matopoulos et al. [63] collaboration has become a requirement in present day SCs and not an option as thought earlier. Similarly, Min et al [93] explain that collaboration is the main force in achieving effective SCs and can also be considered as the ultimate core competency that a firm should possess. Moreover, collaborative relationships among SC members is a differentiating tool, and is considered as a strategic weapon to conquer and maintain competitive advantage [32].

Since collaboration is a result of two or more parties working together for their mutual benefit, Batt [91] views that SC members’ desire to corporate and collaborate will improve when they start sharing sensitive market information. It can be viewed as a concept which goes beyond the normal commercial relationships, and is initiated when organisations and enterprises start working together [63].

**Satisfaction**

As Parasuraman, Zeithaml and Berry [94] explain, satisfaction is closely connected to the disconfirmation paradigm. This paradigm postulates that satisfaction emanates as result of comparison between perceived performance and comparison standards (example: expectations). If the performance exceeds the expected, then the customer is happy (positive disconfirmation), and when the result is below expectation, the customer is dissatisfied or negative disconfirmation [70].

On the other hand, Dwyer [95] views that satisfaction is the difference between costs and rewards that a member receives, which is measured in terms of financial and social exchanges between engaged parties. Similarly, Ruekert and Churchill Jr [96] and Selnes [97] view that satisfaction is based on past evaluation outcomes, which can be rewarding or frustrating. Long term satisfaction leads to trust between the exchange members and can be longer lasting [98].

**Dependence**

As Frazier [99] explains, dependence occurs when a firm needs to create and maintain an exchange relationship with another firm to achieve its desired goals. However the degree of dependence varies based on three critical factors, i.e. importance of the particular resource, the extent to which the interested party has discretion over it, and the extent to which there are alternatives [56].

In a SC context there can be increased dependence if a particular SC member is the only party capable of providing the intended service or a product [68]. When this happens, a powerful SC member can exploit the depending member who has less leverage in terms of negotiations [100]. However, if SC members perceive that they have strategic benefits of being corporative, then the powerful party may not choose to exploit the position of power over powerless SC member [101, 102]. But, according to Handfield and Bechtel [68], dependence on one another largely depends on benefits that the relationship provides.

Hence it is hypothesised that:

**H4**: Relationship traits have a positive significant impact on SC relationship success (H4a).
SC relationship success

As mentioned earlier, relationships among SC members are important, and today it is a necessity rather than a requirement to meet improved service standards of sophisticated consumers. Researchers view the influence of SC relationships differently. Rinehart et al [7] explain that relationships among SC members assist in substantially lowering product costs, reducing lead times, and improving quality. Few other researchers [e.g. 93, 103, 104] argue that speed, reliability, cost reduction, improved quality, and flexibility can be achieved through closer relationships among SC members. Similarly, a more recent study finds that strong relationships are significant in facing service difficulties in dealing with sophisticated consumers[10]. Therefore, SC relationships among its members are important factor of SC performance.

In this study the researchers intend to distinguish and measure two outcomes of SC relationships. As explained by Kannan and Tan [19], it is difficult to identify these two outcomes namely, the outcomes of relationship itself and the broader firm level outcomes. Firm performance can be identified as improvements of quality and lead time, reduction of costs, financial and market related performances [19].

However, the efforts that a SC member makes to engage with other SC members in creating a conducive environment to relationship success, positively and directly influences the relationship success [19]. In this respect this study looks at organic growers’ perceptions of how SC member relationships influence the performance.

Hence it is hypothesised that: 
**H5**: SC relationship success has a positive significant impact on organisational performance (H5a).

Organisational performance

Although there are three major areas of performance namely, marketing, financial and operational, this study focuses only on operational performance. As viewed by researchers, SC relationships are linked to performance gains through cost [e.g. 105, 106, 107], lead time [e.g. 108, 109], quality [e.g. 105, 109], product availability and market coverage [110, 111]. Hence it is expected that operational performance can be achieved through improvements in product cost, lead time, quality, availability and market coverage.

PROPOSED METHODOLOGICAL APPROACH

The proposed study aims to employ a mixed method design which incorporates both quantitative and qualitative approaches. Mixed method research is described as a type of research in which the researcher integrates both quantitative and qualitative approaches to research in a single study [112, 113].

The method adopted for this study is parallel mixed methodology. As explained by Saunders, Lewis and Thornhill [114], parallel mixed methodology allows researchers to minimise the ‘method effect’, which is common in single method studies. Also researchers can confirm the results of a first study through a second study, thus making the research findings strongly validated [115].
Although there is a lower percentage of previous mixed method SC studies [115], in present times, there is a growing trend of using mixed methods for SC related studies. As explained by many previous researchers [112, 116, 117], mixed methodology allows to effectively answer a wide variety of supply chain research questions, and also it provides strong and robust results for SC studies. Therefore, it is appropriate and relevant to use the mixed methodology for this research, since this study intends to explore the influence of complex SC relationships and their effects on organisational performance.

As mentioned earlier, two methods of data collection will be employed in this study, a survey and Semi-structured in-depth interviews.

**The on-line Survey** - An on-line survey will be conducted in Australia with organic fruit and vegetable growers. We intend to use publicly available databases of organic fruit and vegetable growers of Australia from organisations such as VOICe (Victorian Organic Industry Committee), USDA (United States Department of Agriculture), NASAA (National Association for Sustainable Agriculture, Australia) and ACO (Australian Certified Organic). The sampling frame will be drawn up using the grower’s organisation name and its email address. Care will be taken to include a proportionate number of fruit and/or vegetable growers in Australia.

**Semi-structured in-depth Interviews** - Semi-structured In-depth interviews will be conducted with Australian fruit and vegetable growers. Essentially these interviews are intended to further explore the determinants which affect the SC relationships between its members, and we intend to use publicly available databases from organisations such as VOICe, USDA, NASAA and ACO to identify the interviewees.

Importantly, by adopting parallel mixed methodology for this research, we intend to achieve four main outcomes. Firstly, to minimise the ‘method effect’ which is a weakness emanating from a single method research [114]. Secondly, the purpose of semi-structured in-depth interviews is to confirm the results of the main study done using a survey instrument. Thirdly, we intend to develop a thorough understanding of the highly complex SC member relationships. Finally, by applying these two elements, we intend to collect in-depth views of SC relationships which may not be possible by applying a single methodological approach.

**INTENDED CONTRIBUTION OF THE STUDY**

This study is significant from both theoretical and practical standpoints as it examines how SC member relationships influence performance of the organic fruit and vegetable industry in Victoria.

**Theoretical Contribution**

The study aims to examine the forms of relationships that exist among the SC members of organic fruit and vegetable industry. Then, these relationships will be compared with that of the SC relationships of the other industries that have already been documented in the literature. More specifically the study will examine how these ways of forming relationships in organic fruit and vegetable industry differ from the other industries as highlighted by
earlier researchers [e.g. 4, 5, 6]. The SC relationship forms identified by previous researchers, are categorised into two groups based on number of members in a SC [5, 17, 18], and then according to the intensity of relationship [11, 13, 16] However, these findings do not effective assisting in describing the SC relationships in different industries. Therefore, this study will extend the current theory by identifying the specific SC relationship forms and intensity of them in the Victorian organic fruit and vegetable industry.

**Contribution to Industry**

This study aims to explore the key success factors that affect SC relationships among its members. Hence, the study will add value practically by exploring various effective ways to create SC relationships and also to operationalise them in a long term. These findings will also save considerable money for SC members, as they continue to face increased costs as a result of transaction costs involved in monitoring their short term SC members to avoid opportunism [41, 42].

The study focuses on identifying how SC relationships influence SC performance in the Victorian organic fruit and vegetable industry. This will help the SC members of this trade to focus their relationships building process in their future dealings with one another. The industry will also benefit directly in identifying ways to improve availability through closer and longer SC member relationships, since there are issues of availability in the trade as identified earlier in this paper.

**CONCLUSION**

The current study investigates the impact of relationships among SC members on organisational performance in the Victorian organic fruit and vegetable industry. It also specifically identifies the effects of relationship traits on SC relationship success and then on organisational performance of this industry. Our proposed conceptual framework identifies relationship traits such as trust, commitment, collaboration, satisfaction, dependence, information sharing and power, which possibly influence SC relationship success and this in turn might influence overall organisational performance. In this study power emanates from two main sources, coercive (aggressive power) and non-coercive power (non-aggressive power). Previous studies related to SC relationships suggest that power and information sharing influence organisational performance in different contexts. Hence, we intend to explore how these constructs influence the Victorian organic fruit and vegetable industry.

With increasing consumer trends relating to healthier dietary habits, consumption of organic foods has shown exponential growth in Victoria. However availability issues, high prices and poor access negatively influence this drift. It was also explained that this negative influence is related to SC performance of the industry. Hence, this study is important as it focuses on a timely issue, and also enhances the field of knowledge by exploring the effects of SC member relationships on organisational performance in the Victorian organic fruit and vegetable industry.

**References**

21. Rowley, S., *Fighting back: The industry remains a vital part of the supply chain despite wholesale bypass, fruit and Vegetable Wholesaling in Australia.* 2012, Canberra, Australia: IBISWorld Pty Ltd.


