

# **EXPLANATORY POWER OF FACTORS INFLUENCING INTER-FIRM RELATIONSHIPS IN THE AUSTRALIAN ROAD FREIGHT INDUSTRY**

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## **Abstract**

Organisations are increasingly looking beyond their organisational boundaries to evaluate how resources can be utilised to survive and grow the business. Different inter-organisational relationships have emerged as important resources in supply chains. There is a need for firms to successfully manage a range of relationships and to understand the capabilities they need to benefit from relationships. There has been little empirical work done that has enabled organisations to predict what type of relationship they are ready to enter into, this research reports some early findings from an Australian study. The road transport sector is critical to all supply chains. This paper reports on a survey of road transport operators in Australia engaged in inter-firm relationships and examines the factors that influence the formation and nature of relationships. Initial findings indicate that, in less mature inter-firm relationships, the dominant type of relational factors are sharing and interdependency. It is also demonstrated that the importance that freight managers place on power does not encourage engagement in cooperative relationships.

**Key Words:** Supply chain, Inter-firm relationships, Power, Sharing, Interdependency

## **1. Introduction**

The emergence of new economies, political boundary changes, new trading blocks and trade organisations, along with advances in communications and computer technologies are all facilitating the growth of world trade at a rapid rate. This involves many businesses coordinating a large global network for the flow of goods, which demands appropriate structures to ensure their seamless end-to-end movement [1]. In this type of increasingly globalised market place freight plays a vital role for both the economy and business, as an efficient and effective transport system facilitates the movement of goods and services,

thereby increasing economic efficiency through gains of trade and specialization. In developed economies such as Australia, road freight businesses play a significant role as products need to be moved across long distances because of the size of the country (7,686,850 sq km) and the dispersion of its raw materials, production and consumption centres. To maintain an effective cost structure organisations are increasingly required to work closely with their suppliers (upstream), customers (downstream) and other participants in the supply chain in order to strategically compete and integrate the logistical practices [2].

Supply chains exist on the basis that the participants actively engage in managing them rather than allowing external forces to direct their actions [3]. Furthermore, supply chain frameworks involve not only physical and technical but also behavioural elements [4]. The behavioural elements encompass the power and leadership structures, trust building processes, risk and reward structures and organisational culture. Risk, reward and power affect an organisation's commitment to cooperate with other supply chain members, whereas corporate culture determines the compatibility between members of the different types of relationships i.e. partnerships. Supply chain researchers have tried to put forward different relationship taxonomies. Lambert [4] proposed three types of partnerships based on the level of integration between partners and length of the relationship while Mentzer et al. [5] and Golcic [6] argued that inter-firm relationships tend to follow a continuum. Moving along the continuum firms can take advantage of relationships that are characterised by long-term orientation, repeated transactions and more collaborative partnerships. Thus, organisations need to better understand the management of supply chain relationships and how these can influence the functioning of their businesses.

The key objective of this study is to explore the influence of business relationships' factors on inter-organisational relationships in the Australian road freight transport industry. The research question in particular is: Does the nature of relationship factors influence the type of relationships road freight transport firms engage in and what are the factors that have the most significant influence on relationships?

## **2. Literature review**

The Australian road freight transport industry has never been without challenges. While in the past many of the challenges were physical and related to the harsh environment, current challenges relate to the changing and harsh nature of the business environment. It is an industry that is extraordinarily complex and vital to the economy and has on its own an enabling role in the supply chain. Achieving breakthrough improvements in supply chain performance requires a different approach to manage working arrangement. In today's freight industry, creating this different way of doing business may be, in some cases, a matter of survival. In other cases, different approaches to relationships have been adopted to build sustainable competitive advantage, maximise asset utilisation, and increase profitability. Participants in the supply chain, such as road freight service providers, need to realise the importance of understanding the factors such as power, sharing, interdependency, that influence the establishment of inter-firm relationships to leverage the complementary strengths of other firms within their supply chain and function efficiently.

### **2.1. The notion of power**

Power, from one perspective, [7] can be described as the influence of one party over the other. French and Raven [7] suggest that there are aspects of control and coercion of the parties' power which enable the participants to maintain order and authority but its abuse is a problem to be limited. They also identified five sources of power which they refer to as: reward power, coercive power, expert power, referent power, and legitimate power. Although Raven [8] included a sixth source of power, this has been assumed as a characteristic of expert power [9]. Expert power refers to the ability of a party in a relationship to hold and control distinctive knowledge, information and skills that are valuable to the other party; whereas referent power concerns a party's desire to be associated with another out of admiration for them [7]. Whilst reward power refers to the ability of one party in the relationship to mediate tangible or intangible rewards to the other party, coercive power concerns the ability to mediate punishment and take disciplinary measures over partners. For instance, in the freight transport industry a party can exercise expert power over the other by holding market, process or regulation knowledge, and consequently, the other party may give up control, believing such knowledge could lead to better performance and profitable contracts. Likewise, participants in the freight industry could exercise reward power over the shippers by offering lower prices, shorter delivery times or improved material handling technology. Conversely, shippers might offer more long-term contracts or extended loading and unloading times, exercising reward power over the freight service provider. Finally, French and Raven [7] refer to legitimate power as the recognition of the right to hold authority over the others which originates from perceived standing or status and is present if one of the parties believe the other retains the natural privilege to such power.

The notion of power imbalance is considered one of the greatest discouragements and negative influences to maintaining long-term oriented relationships [10]. Research has identified power as a deterrent to trust [11]. Although the work of Hingley [12] discusses that earlier research [13] has presented a different point of view, not all relationships are based on mutual trust. For instance, Japanese automotive industry relationships are highly regarded as being long-term oriented and highly collaborative relationships. But research indicates that it does not mean that Japanese car manufacturers' relationships with suppliers are primarily relying upon trust [14]. Cox [14] suggests that there are indications that Japanese car makers often create hierarchies of structural dominance with their suppliers, in which, although the latter regards the relationships as a win-win, the car makers keep effective control over the supplier relationship wherever possible. Furthermore, Dapiran and Hogarth-Scott [9] empirically found that the presence of power does not always inhibit close relationships. The author indicates that the existence of reward and coercive power in relationships leads to capitulation and desire to exit the relationship whereas referent and expert power leads to cooperation and trust building.

The research channel literature increasingly asserts that relationships that tend to have power unbalanced are often less stable than balanced ones such that parties comfortable with the balance are less likely to seek alternative partnerships [15]. Nevertheless, it is not always feasible to maintain an ideal power balance in inter-firm relationships and, in many cases, weaker parties are happy to stay in the relationships to keep the business profitable or at least cash-flow positive [16]. For example, for a small, regional trucking firm survivability could be challenged by the closure of markets such that in order to stay in business the freight company is happy to accept the conditions the remaining firms in the region make until it works out how to rebalance power either changing the nature of the relationship or seeking alternatives. This suggests that organisations should not ignore the

diversity of relationships [17,18] which are not always initially influenced by trust but also by other factors such as power, sharing and dependency. So we propose that; *the importance freight managers place on power influences the nature of inter-firm relationships in which they are involved*.

## **2.2. The role of dependency**

Power and dependence are related. The seminal work on power by Emerson [19] posits that the extent of dependence between the participants in a relationship gives an indication of their relative power. Although the Australian road freight industry is increasingly moving towards rationalisation which allows the larger organisations to maintain a relatively lopsided power advantage over small owner drivers, not all relationships in the freight transport industry can be simply explained by a straightforward power motivation. Rather, one can argue that freight companies need to simultaneously pursue adversarial/competitive and co-operative and partnering/network approaches although this implies becoming not only dependant but also interdependent.

Research indicates that becoming dependant brings some advantages to the parties involved in a relationship such as specialised supplier networks and integration into value chains [20]. It is the extent to which supply chain relationship participants see each other as essential to attain their goals and succeed that indicates that a supply chain member is dependent on another [21]. Furthermore, it is suggested that a firm's cooperative efforts are based on whether an organisation perceives the relationship as likely to provide benefits over and above the costs of organisational autonomy: expenditures of resources and/or concessions of organisational power and authority [22]. Likewise, asset specificity increases dependency - it helps to increase one party's value to the other, which makes the latter dependant and minimises opportunistic behaviour [23]. However, excessive investment on specific assets leads to higher levels of vulnerability of the party that deploys the more specific resources. Partners' vulnerability involves loss of control over critical resources, reduction of freedom of choice and increases the costs of seeking alternative partners.

Criticality of a resource and the concept of switching cost are fundamental blocks in interdependency and are well explained by the resource dependence theory [22] and transaction cost theory [24]. Existence of critical alternative sources or partners has been early regarded in the theory as a factor that will establish the cost of substitutability [25]. Spekman, Kamauff and Myhr [21] posit that "criticality is based on the notion of high recognized interdependence" as supply chain members will not act in their own best interest to the disadvantage of the supply chain. Moreover, a member can possess a critical resource to the supply chain regardless of what proportion of the total input it represents. For example, an interrupted provision of freight service from remote plantations to distribution centres can cause problems to the farm business and to the supermarkets. Further, as companies increase cooperation they will become equally dependant upon each other. The switching costs will increase and autonomy will decrease. In addition, parties that are involved in highly interdependent relationships are expected to face high switching costs which are associated with overcoming the barriers to old work arrangements and the non-recurring expenses of setting up new relationships. Parties involved in more collaborative arrangements progressively adapt resources and processes to fulfil the needs of that relationship, thereby mutually raising the exit barriers and switching costs.

This research addresses the notion of mutual dependence or interdependence for supply chain relationships in which criticality, substitutability and switching cost are key determinants. Interdependent relationships are enhanced by sharing of key resources, engaging in joint planning and long-term orientation [26,3]. Managing supply chain relationships in today's competitive markets involves participants seeking close, long-term, working relationships with one or two partners (competitors, suppliers and customers) who depend on one another for much of their business; developing interactive relationships with partners who share information freely, working together when trying to solve common problems and when designing new products. Also jointly planning for the future, and making their success interdependent on other parties [27]. Based on this we propose that: *the level of interdependency will influence the nature and type of inter-firm relationships.*

### **2.3. The importance of sharing**

It is increasingly argued that organisations need to view themselves as members of a supply chain that depend one upon the other to be competitive and survive [28]. So in a competitive environment, the success of businesses depends on their ability to manage and share resources such as information and assets, costs and risk within their networks of associates [29].

Sharing information concerns the degree to which information is communicated between supply chain partners and the nature and type of information. Sharing operational information is easier than sharing tactical or strategic information. [30]. Some of the benefits organisations can obtain from sharing relevant and accurate information includes increased system responsiveness, reduced lead-time, improved forecasts, reduced bullwhip effect, minimised supply chain costs and improved customer service [31]. Organisations can share information at several levels including strategic, operational and tactical depending on the type of relationships in which they are participating [5]. Strategic type information is expected to be shared in more close long-term orientated relationships – collaboration, partnerships [18]. This type of information assists businesses in making decisions about strategic issues such as supplier selection, product introduction and location of facilities [32]. Tactical level information is usually shared in more cooperative work arrangements [18] and helps firms in foreseeing demand. Tactical information includes operating costs, inventory costs and aggregate demand. Finally, sharing operational level of information encompasses communicating weekly production, delivery schedules and order replenishment [32] among supply chain member participating in cooperative or arm's length types of relationships [18].

Sharing information in relationships involves cost and risk, which in many cases can outweigh the benefits of sharing information [31]. Thereby, it is argued that organisations need to understand the costs associated with sharing information in different types of work arrangements. For instance, some researchers found that alliances are characterised by faster task coordination and execution and less asymmetrically held information, transaction costs are negligible which leads to the effective deployment of the resources brought to the alliance and transaction costs are kept to a minimum. Conversely, in relationships at arm's length the transaction costs associated with balancing information asymmetry might not be as low as desired and can lead to low flexibility and coordination between the participants in the relationship. Risks are also associated with sharing information as partners have the possibility of abusing information and diminishing the benefits of sharing [33,33]. Examples of abuse of shared information encompass: voluntary

disclosure of confidential information to competitors, loss of competitive knowledge, loss of data privacy and data integrity. This suggests that as more detailed information is shared the lower the transaction costs but the higher the risk.

Organisations enter relationships such as collaboration and alliances to share coordination costs [34,35] and resources. The rationale for establishing relationships involves an understanding of finding ways to make the relationship efficient, the extent to which coordinating the costs offsets the benefits of the relationship. For instance, an organisation with a just-in-time production process can be negatively impacted by a road freight service provider that decides to cut costs by decreasing the frequency of deliveries. The organisation needs to work with the trucking company to avoid an increase in the landed costs by transferring the expertise it has developed in its journey towards just-in-time and find potential improvements – cost coordination – for the freight company. Researchers have explained the extent of coordination costs by using a taxonomy of interdependencies which include pooled, sequential and reciprocal interdependencies [35]. Their work indicates that pooled interdependence, in which partner organisations deploy resources into a pool and each of them uses them from the shared pool, has the least coordination costs due to the low coordination requirements. On the other hand, reciprocal interdependence – partner organisations pool resources in which outputs are highly connected to the inputs of each other –this has the highest coordination costs as continuous mutual adjustments are required to fulfil the needs of the parties. So we propose that: *the level of importance freight managers place on sharing, will influence the nature and type of inter-firm relationships.*

## **2.4 Trust does matter**

It is asserted that effective supply chains rely on shared information and trust among partners and that trust is an essential requirement for successful supply chain relationships. La Londe [36] supports this by stating that "issues of trust and risk can be significantly more important in supply chain relationships, because supply chain relationships often involve a higher degree of interdependency between competitors". Trust can be best defined as to the extent to which a party fulfils an agreement, meets the expected professional obligations and can be viewed as not behaving opportunistically [35,37]. Although there has been some empirical research suggesting that there are unexpected high trust levels in early stages of interactions between the parties [38], it is asserted that trust is a behavioural attitude that evolves over time [39,39].

The literature provides insights into three interconnected roles that trust plays in inter-organisational exchanges. First, trust is, in many cases, an effective means of allowing a firm to minimise the risks of opportunistic behaviour as it is expected that parties will forgo short-term individual gains in favour of the long-term interests of the inter-organisational exchange [40]. Secondly, trust can be a source of competitive advantage in inter-organisational relationships formed by parties that behave trustworthily and do not act against values, standards and principles of behaviour [41]. Sako [42] found that high quality (source of competitive advantage) can be consistently maintained in high-trust production systems. Thirdly, trust might influence performance by reducing transaction costs, encouraging investment with future returns and motivating continuous improvement and learning [37].

The literature offers several classifications of types of trust. For example, Sako [37] measured three types of trust: 'contractual trust', 'competence trust', and 'goodwill

trust'. More recent studies present two dimensions of trust: credibility or competence and benevolence [43]. This research is based on the categorisation made by Sako [37] which has reported trust as a relationship-oriented variable, influencing the formations of inter-firm relationships. For instance, the notion of trust among supply chain partners was found as a vital ingredient for success in more long-term orientated inter-firm relationships such as collaborative arrangements and alliances in which firms make great commitments. They demand joint processes supported by a high degree of goodwill type trust to smoothly ease conflicts when they arise [44]. Goodwill trust motivates participants in closer and mature inter-firm relationships to work interdependently, with a shared mission, vision, seamless planning, seeking synergies [45] and undertaking, if needed, activities that were not agreed [37].

### **3. Research methodology**

This research is undertaken with an exploratory purpose as the problem of inter-firm relationships among freight businesses has had little previous empirical academic investigation. According to Sekaran [46] exploratory study is undertaken when there is a lack of understanding of the problem which leads to an unstructured problem design. Quantitative data were gathered through a self administered mail questionnaire of inter-organisational relationships operating in the Australian road freight transport industry. Inferential and descriptive analysis of quantitative data will enable the researchers to examine the nature of the relationship between different independent variables and the dependent variable of interest. Using the surveys research technique facilitates gathering information from a selected group of people by using questionnaires as an instrument to ask questions and record answers [47]. Some of the advantages in administering mail questionnaires are: its relatively low cost, wide geographical coverage, the possibility of distribution of visual aids, respondents have the time and opportunity to consider the issues involved, and, interview bias is reduced since the interviewer is not in direct contact with the respondents of the survey questionnaire [46].

Road freight transport was chosen as the research setting to examine inter-organisational relationships since this is an industry in which inter-firm relationships, in many cases, are exhibiting competitive patterns but face problems of survivability because profit margins are becoming much tighter over time. A sample of 1000 trucking firms was identified. The sampling frame is composed of providers of road freight transport services. Presently, there is no database that contains the names and addresses of all Australian trucking firms that have established inter-company relationships, so the population frame is unknown. Therefore, a population frame was created from a comprehensive list of trucking organisations that have subscribed to The Freight & Transport Services Directory for each of the states of Australia. Who goes where? Publishing company, publishers of The Freight & Transport Services Directory for each of the states of Australia, provided a random sample of 1000 Australian road freight organisations. The researcher proceeded to contact these organisations to create a database with the appropriate person to be contacted (e.g., Freight manager, Logistics manager, Operations manager, Managing director), email address, mailing address and position title. The research was designed to aim at subject respondents with knowledge about inter-firm relationships. This demanded that the managers, managing directors or chief executive officers complete the survey. Respondents were asked to respond to a series of questions related to factors that promote or inhibit inter-firm relationships. Demographic information about the company or division and the respondent were collected. This study examines inter-organisational interdependency

which occurs when parties recognise that they have the abilities to mutually affect each other's outcomes [48] and see each other as essential to stay in the relationship. Based on previous studies [25,21], Likert-type scales were adapted to measure the extent that road freight transport businesses and their supply chain partners depend on each other.

The main purpose of the study was to explore the relationships between relationship factors and the type of inter-firm relationship. The first step in the data analysis was to perform a factor analysis to reduce the dimensionality and to identify the most important clusters – set of items that group together – while at the same time eliminating the items that are less representative. The emerging factors –clusters– were named by using the previous knowledge about the theory. Next, Cronbach alpha coefficients of the emergent factors were calculated and were used to assess convergent validity. Correlation coefficients were computed to assess the strength and direction of the relationships between the variables and the types of inter-firm relationships.

#### **4. Results and analysis**

Of the 1000 managing directors, managers and chief executive officers, 132 responded, yielding a 13.2 percent response rate. It was acknowledged that response rate and turn around are issues with mail questionnaires. Therefore, this study minimised these limitations by also using a drop-off and pick-up technique that enabled the researcher to visit a purposive sample of respondents to gain their commitment to complete the questionnaire. This increased the response rate by 71.4 % to 13.2 % and the turnaround by 5 days faster than the mail questionnaire with telephone follow-up technique. All the responses to the questionnaire came directly from individuals involved in the managing of their inter-firm relationships: 40 percent came from managing directors, 24 percent from chief executive officers, 20 percent from general managers and 16 % from depot managers and branch managers. The study acknowledges that the responses might not be representative of the trucking industry as a whole but of the general freight service providers as 48 % of the responses come from that type of trucking organisation.

A factor analysis was performed using the maximum likelihood extraction method and oblique rotation method which allows the factors to be correlated. During the factor analysis process, three factors emerged. Hair et al [49] argue that in order to ensure a power level of 80 percent, a factor loading of 0.55 is significant if the sample size is at least 100 observations at a significant level ( $\alpha$ ) of 0.05. Thus, only factor loadings of at least 0.55 have been considered. The solution resulted in a Kaizer-Meyer-Olkin (KMO) value of 0.577 with three factors accounting for 40% of the cumulative variance, indicating a satisfactory solution. The variables loaded on the expected factors. Table 1 contains the rotated factor matrix with their respective significant loadings and examples of the variables.



Factor	Variable	Loading	alpha if deleted
<b>Factor 1</b>	We share tactical information such as sales data with our supply chain partners	0.59	0.937
	Our business has the technical capability to help other businesses we work with to improve their processes and services	0.64	0.937
	Our business dedicates assets that help supply chain partners to improve their service	0.73	0.934
	Our business performs joint cost-reduction programs with its supply chain partners	0.68	0.936
<b>Factor 2</b>	Because of their position, our supply chain partners have the right to influence our organisational decisions	0.58	0.807
	Our business supply chain partners cannot harm our business if we do not do as they suggest	0.69	0.801
	Our business supply chain partners' expertise makes them more likely to be correct	0.74	0.808
	Our business supply chain partners can withhold services or information from us if we do not do as they ask.	0.63	0.809
<b>Factor 3</b>	Our supply chain partners would find it difficult to recoup their investments in us if our relationship were to end	0.61	0.734
	If our business discontinued relationships with its supply chain partners, they would have difficulty in replacing our business	0.62	0.751
	Our business and its supply chain partners make plans not only for the terms of current agreements, but also for the continuance of the relationship	0.74	0.715

Table 1 Inter-firm Relationships Factors, Factor Loadings and Cronbach Alphas

Factor 1 contains statements relating to allocating, distributing and adjusting information; assets, costs, capability and risk. This factor was named 'Sharing' as it relates closely to the road freight firms' willingness to share resources with members of their supply chains. In addition, Factor 2 can be seen to relate to the exercise of control, authority and influence by trucking companies particularly due to their experience, expertise, knowledge and position in the supply chain. Thus, Factor 2 was been named 'Power'. Likewise, the items in Factor 3 mostly relate to the criticality, and replaceability of partners in road freight transport relationships. A closer revision of the wording of some other items indicates that they relate to the expected length of the relationship and fit adequately with the others items of this factor. Factor three has therefore been named 'Interdependency'. It is important to notice that although some trust related scales were used, they did not cluster to form a Trust factor.

The emerging factors exhibited good internal consistency as well. Cronbach Alphas were calculated for the three emerging factors to measure internal consistency. Table 1 lists examples of the Cronbach Alphas for the three emerging factors and the Cronbach alphas item deleted.

Correlation analysis was conducted to identify whether a relationship existed between the emergent factors and the four types of relationships that exist in an Inter-organisational relationship continuum - Arm's length, Cooperation, Collaboration and Alliances [18].

Pearson Product Moment Correlation		Correlations		
		Sharing	Power	Interdepend.
ArmsLength	Pearson Correlation	0.23	0.03	0.26
	Sig. (2-tailed)	0.01	0.76	0.00
	N	120.00	120.00	120.00
CooperativeR	Pearson Correlation	0.00	-0.21	0.20
	Sig. (2-tailed)	0.96	0.02	0.03
	N	120.00	120.00	120.00
CollaborativeR	Pearson Correlation	0.04	0.01	0.01
	Sig. (2-tailed)	0.65	0.94	0.90
	N	120.00	120.00	120.00
Alliance	Pearson Correlation	0.14	-0.04	0.03
	Sig. (2-tailed)	0.12	0.67	0.75
	N	120.00	120.00	120.00

Table 2 Correlation Matrix of Sharing, Power, Interdependency and Inter-organisational Relationships

A general inspection of the correlation matrix appears to support some of the propositions put forward. That is there is a relatively high, significant correlation between the factors the theory suggests as influencing different types of Inter-organisational relationships. The factor 'Power' was correlated with cooperative relationships. This correlation is negative and statistically significant ( $r = -0.23$ ,  $p < 0.05$ ). This means that the more road freight businesses place importance on power imbalance, the less they will cooperate. Conversely, the positive coefficient associated with Sharing and Arm's Length ( $r = 0.23$ ,  $p < 0.05$ ) as well as Interdependency and Arm's Length relationships ( $r = 0.26$ ,  $p < 0.01$ ) shows that the more freight businesses interpreted the Sharing and Interdependency factor as being important, the more they are likely to engage in relationships of the type "Arm's Length". Likewise, the factor 'Interdependency' was positively correlated with Cooperative relationships at a highly significant level ( $r = 0.20$ ,  $p < 0.05$ ). Interestingly, these two factors were not highly correlated with more close and long-term orientated relationships such as collaboration, as the theory suggests. The significant relationship merely indicates that the two variables vary.

## 5. Discussions and conclusions

Understanding relational factors such as Power, Interdependency, Sharing and Trust that influence inter-firm work arrangements has generated considerable academic interest. In spite of the general consensus about the importance of empirically researching these factors, existing literature results have not shown how these factors can predict the engagement in different types of relationships. While there have been many positive statements in a number of articles in academic journals regarding the importance of the existence of trust elements in inter-firm relationships, trucking firms nevertheless perceive that this is not a factor that determines engagement in inter-firm working arrangements.

This study aimed to identify the relational factors that explained engagement, by looking at the nature of road freight transport industry inter-firm work arrangements. It was hoped that the underlying characteristics for the differences in inter-firm relationships could be identified through inferential analysis of responses from questionnaire items regarding a number of supply chain relationships' statements. The study was able to identify three prominent relational factors that typify inter-firm relationships in the Australian road freight

transport industry. They are Sharing, Power and Interdependency. In general terms, relationships in the trucking industry can be characterised as being more power and interdependence oriented. In particular, managers of trucking organisations consider that to engage in cooperative arrangements it is important to approach the relationships as beneficial until it impacts on the organisation's autonomy [21]. This type of approach leads to interdependency. Interestingly, respondents in road freight transport regard interdependency as a relational factor that explains the engagement in relationships at arm's length. Conceivably, this is explained by the interest that trucking firms such as small to mid size operators have in surviving in the industry. Survival in a country the size of Australia and of the nature of the industry can be guaranteed by providing service to organisations that can secure significant contracts due to their bargaining power but that do not find it operationally feasible to dedicate a fleet to cover remote areas.

When looking at the explanatory power of the factor 'Sharing' an interesting finding is evident. The literature suggests that greater sharing of risks, costs and information is a characteristic of more complex and long-term orientated relationships [24]. Nevertheless, the values of correlations between sharing and the four suggested types of work arrangements do not reinforce the theory. The findings rather show that in the researched industry, placing importance on sharing is critical to engage in relationships in which actions are primarily regulated by contracts [37]. The characteristic of this industry prompts the participants to sign agreements that enable them to share assets, i.e. depot and warehouse spaces and information systems, in order to have a greater geographical coverage. The latter supports the findings about interdependency and ensures provision of the service in remote areas for the large to mid size operators and in capital cities for the small operators. The results also suggest that freight operators see the notion of power as discouraging the involvement in cooperative relationships. This supports what has been theorised about the influence of unbalanced power on work arrangements that are not contract oriented [11]. This also generally indicates that trucking firms with power are not enforcing their power through any means as this harms their relationships. For instance, it might be the case that participants in this industry do not approve reward/penalty-driven performance. However, if they exist, they may not be utilised to offer some improvement in their working relationships. An unwanted withdrawal of reward/penalty might be perceived as harmful to the duration of the relationship.

This paper provides some indication of the factors that explain the engagement in different work arrangements within the Australian road freight transport industry. It demonstrated that in less mature inter-firm relationships, the dominant type of relational factors are sharing and interdependency. It is also demonstrated that the importance that freight managers place on power does not encourage the engagement in cooperative relationships. Therefore, trucking firm managers need to acknowledge that sharing and interdependency influence their relationships and they need to improve their understanding of how these relational factors influence the operational effectiveness of their individual businesses. The evidence of the influence of the negative relationships between power and cooperative relationships establishes the need for further research to explore what type of power has that kind of influence.

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