Relational Signalling in Governance Mechanisms and Trust Building

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ABSTRACT

'Thick' trust is required for the exchange of tacit knowledge in inter-organisational innovation collaborations. Management accounting researchers suggest that when governance mechanisms can provide sufficient mitigations to the relational risks, trusting relationships among the collaborating partners can be developed. However, the question that remains unanswered is why do some collaborative relationships with proper governance structure not lead to the establishment of trust? This study seeks to identify the relational signals in formal governance mechanisms which can foster the development of 'thick' trust that is crucial for effective knowledge exchange. Based on the resource-based view (RBV), transaction cost economics theory (TCE), and relational signalling theory, this study proposes a conceptual framework that identifies the relational signalling elements in formal governance mechanisms that can foster 'thick' trust among partners. It contributes to the literature by distinguishing specific elements of conventional formal governance mechanisms as relational signalling elements for the effective development of trust among collaborating partners.

Keywords: Relational signalling; trust; inter-organisational collaboration; formal contract; management control system; knowledge exchange; innovation.

INTRODUCTION

In the current fast-changing, increasingly complex, uncertain, and intensely competitive environment, the ability of business enterprises to survive and stay competitive is greatly dependent on their capabilities to innovate new products and services. It has always been the continuous interest of researchers and practitioners to understand what enhances innovation capabilities and performance. Past studies have shown that inter-organisational relationships provide the key resources for innovation activities (Syson & Perks, 2004; Eisingerich et al., 2009; Rusanen et al.,2014;Yami & Nemeh, 2014).

Innovation is a knowledge-intensive activity that requires the exchange of tacit knowledge embedded in collaborative networks (Cao & Zhang, 2011). Innovation collaboration is a relationship between firms with other firms for the purpose of accessing external resources to complement or supplement the internal resources for their innovation endeavours (Brink, 2017). Resource-based view (RBV) states that a firm's ability to achieve above average and sustainable profits stems from the resources and capabilities controlled by the firm (Roos, 2005). RBV initially focused on resources within the firms (Barney, 1991), but by introducing the concept of network resources, it was later extended to include other resources that are beyond the boundaries of the firm (Gulati, 1999). Studies often cite information, knowledge, and technology as major resources that facilitate enhancement in innovation performance (Holste & Fields, 2010; Zanini & Musante, 2013; Zheng & Zhao, 2013). However, the non-codifiability of tacit knowledge restricts the exchange of tacit knowledge between organisations (Vaara et al., 2012). Therefore, identifying what makes a partnership successful in innovation activities that requires the essential, yet challenging, tacit knowledge exchange among collaborating parties, has become a research interest.

In a qualitative study, Rusanen et al. (2014) correlated the type of resources that companies seek with resource access strategies and found that strong relationships are required when the focal firm wishes to access tacit and ambiguous resources. Rusanen et al. (2014) found that accessing specific resources necessitate different levels of relationships. For example, the acquisition of ready-made resources requires an arm's length relation but the sharing of tacit knowledge requires a relationship with a high level trust (Rusanen et al., 2014). The exchange of tacit knowledge is a primary object of innovation relationships in which 'thick' trust or goodwill trust is needed for effective inter-organisational exchange (Hardwick et al., 2013). Hoejmose et al. (2012) indicate that trust is a catalyst that facilitates strategic business interactions and knowledge sharing among collaborating partners. Collaborative relationships based on trust can transmit critical and richer information, which is crucial for the success of innovation activities (Krackhardt & Hanson, 1993).

Despite the plethora of literature that provides descriptions of different types of trust (McAllister, 1995; Nooteboom & Six, 2003; Şengün, 2010), not many literature has touched on how trust is formed, developed, and maintained in innovation collaborations (Hardwick et al., 2013). Meira et al. (2010) similarly share that the process of trust development has not been given full attention and more research is warranted. This is especially so when examining the accounting, trust, and contract nexus as most inter-organisational exchanges are based on formal contractual agreements (Meira et al., 2010).

The transaction cost economics (TCE) theory suggests that the appropriation concerns within collaboration can be managed through a complex governance structure that specifies detailed long-term commitments and sanctions for short-

term opportunism. Management accounting researchers suggest that trust among the partners can be developed when the relational governance can provide sufficient mitigations to the risks which are inherent in inter-organisational exchanges between different partners who may have different motives and interests (Van der Meer-Kooistra & Scapens, 2008). However, the question that remains unanswered is why do some collaborative relationships with proper governance structure not lead to the establishment of trust?

This study adopts the notion that trust is the cornerstone of innovation collaboration, and the presence of formal governance mechanisms is a necessary but not a sufficient condition for trust to arise between collaborating partners in innovation activities (Neumann, 2010). Rousseau et al. (1998, p. 395) define trust as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another". Neumann (2010) states that 'thin' trust is created simply through formal governance mechanisms, which reduce or minimise uncertainties and negative expectations about future behaviour. However, 'thick' trust is developed by using and applying formal control mechanisms in ongoing interactions between collaborating partners to create positive expectations regarding the future behaviour of partners.

Relational signalling theory argues that in order to build 'thick' trust, it is important for the collaborating partners to signal their trustworthiness to each other (Van der Meer-Kooistra & Scapens, 2008; Minnaar et al., 2010). Therefore, this study seeks to examine the relational signalling elements in the formal governance mechanism and their effects on the development of 'thick' trust in collaborative innovation relationships.

This study aims to address the challenges in enhancing the innovation performance of firms through inter-organisational collaborations by identifying relational signals in the formal governance mechanisms which can foster the development of 'thick' trust as a crucial component for effective knowledge sharing. This study is based on the premise that firms are increasingly relying on inter-organisational collaborations to improve their innovation performance by sharing and utilising their network resources. It seeks to analyse how relational signals in formal governance mechanisms can foster the development of 'thick' trust which is crucial for effective knowledge sharing. Based on the resource-based view (RBV), transaction cost economics theory (TCE), and relational signalling theory, a theoretical framework is proposed depicting the relationship between relational signals in formal governance and the building of 'thick' trust in relationships.

Formal governance mechanisms consist primarily of some forms of formal agreements and management control systems. In this study, we identified shared responsibility and risk as well as contract flexibility as two important components that are incorporated into an ex-ante formal contract design, whereas information disclosure and transparency, including the sharing of accounting and management control information and the interactive use of management control systems, are the main manifestations of relational signalling. These are important when building a higher level of trust. Trust and control together lead to positive expectations, thus ensuring the durability and stability of inter-organisational collaborations.

This study endeavours to contribute to the existing literature by delineating the complex relationships among formal governance mechanisms and the building of 'thick' trust. This study distinguishes specific elements from conventional formal governance mechanisms as relational signalling elements for the effective development of trust among collaborating partners.

Caglio and Ditillo (2008) reported that most of the inter-organisational relationship studies on governance mechanisms have focused primarily on supply-chain, outsourcing, and joint-venture collaborations. This study enriches the related literature by focusing on the need to incorporate relational signalling elements in the governance mechanisms crucial for the development of 'thick' trust to facilitate knowledge exchange for innovation activities. This study assesses the elements that may be incorporated in an ex-ante contract design and ex-post management control systems to foster the building of 'thick' trust in inter-organisational collaborations.

The remainder of the paper is organised as follows. The next section provides a brief review of the literature on collaborative innovation and its transaction characteristics, governance mechanisms and the building of trust, the relationships between trust and knowledge exchange, and innovation performance. With them are the underpinning theories for the conceptual paper. This is followed by an outline of the theoretical framework and the propositions developed for this study. The paper ends with a conclusion for this study and recommendations for future research.

LITERATURE REVIEW

The ability to innovate is viewed as a key competitive advantage for a firm trying sustain its performance in the current highly competitive business environment (Subramaniam & Youndt, 2005; Dumay et al., 2013; Laosirihongthong et al., 2013). In the current environment of increasing technological complexity and market dynamics, it is impractical for firms to rely solely on their internal resources for innovation activities. Complex innovation processes lead firms to increasingly interact with external partners, such as competitors, customers, suppliers, and research institutions. The relationships may enable the firms to access knowledge from external sources with complementary competencies (Bullinger et al., 2004).

Innovation is frequently cited as a knowledge intensive activity. In addition, the resources or knowledge underlying innovation is often tacit and context-specific. The assumption of the imperfectly mobile nature of strategic

resources in the resources-based view (RBV) (Barney, 1991) implies that knowledge assets will not be acquired easily and freely through normal market transactions. Therefore, the ability of firms to access knowledge resources and capabilities from its partners in collaborative relationships is crucial for innovation activities. However, an important question arises as to what makes partners in collaborative relationships willing to invest and also share resources that will benefit the other actors in the network?

Past studies have found that trust positively affects knowledge sharing between different organisations (Connelly & Kelloway, 2003; Staples & Webster, 2008). The existence of a trusting relationship is a pre-requisite for any transmission of critical and rich knowledge between collaborating partners of innovation activities (Krackhardt & Hanson, 1993).

The potential leakage of valuable knowledge is a major obstacle to inter-organisational knowledge sharing (Sarpong & Teirlinck, 2017). Dekker (2016) indicates that managers and employees who are assigned to the collaborative relationship are meant to serve the interests of multiple firms. Unfortunately, their interests are generally not fully aligned (Dekker, 2016). Trust helps to overcome this obstacle by establishing the belief that the partner will not use the exchanged knowledge at the focal firm's expense. According to Day et al. (2013), a firm's confidence to act decisively and its willingness to take risk promote openness that helps a network to sense and communicate opportunities and threats, which in turn promotes knowledge exchange and innovativeness. Therefore, trust is viewed as an increasingly important factor in the contemporary knowledge economy due to the fact that knowledge-based production systems or innovation processes require greater sharing of critical information or resources between collaborating partners (Lane & Bachmann, 1998; Zanini & Musante, 2013).

Even though the importance of trust is well recognised in a collaborative relationship and there is a plethora of literature providing descriptions of different types of trust, each emphasising the importance of trust in inter-organisational relationships (McAllister, 1995; Nooteboom & Six, 2003; Şengün, 2010), the literature has not touched much on how trust is built and maintained in inter-organisational innovation collaboration (Hardwick et al., 2013).

There are management accounting studies that argue that formal governance systems build trust (Langfield-Smith, 2008; Neumann, 2010). For example, Vélez et al. (2008) indicate that formal controls can foster conditions that favour trust building. Van der Meer-Kooistra and Scapens (2008) and Minnaar et al. (2017) suggest that when formal governance mechanisms can mitigate the risks in inter-organisational exchanges, trust among the collaborating partners can be developed. Such mechanisms include contractual agreements and formal organisational control mechanisms that specify responsibilities, behaviours and outcomes of the collaborations. Although there has been some attempts to identify antecedents for trust building in management accounting literature, few studies have considered why some relationships lead to the development of trust between the collaborating partners, while others, despite having the proper governance mechanisms in place, do not.

In this study, we adopt the definition of trust provided by Rousseau et al. (1998, p. 395), which states that trust is "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another." The definition implies two core characteristics of trust, namely 'vulnerability' and 'positive expectations'. The trust building process involves the acceptance of vulnerability. This posts a huge challenge as decision-makers are strongly averse to being vulnerable (McCarter & Northcraft, 2007).

Positive expectations allow a partner to act as if uncertainty has been reduced. According to Vosselman and Van der Meer-Kooistra (2009), positive expectations about the ability, the benevolence, and the integrity of the other party leads to a willingness to accept vulnerability and to take risks in a collaborative effort. Therefore, it is argued that to build 'thick' trust, the presence of positive expectations among collaborating partners is essential (Langfield-Smith, 2008; Vosselman & Van der Meer-Kooistra, 2009; Neumann, 2010).

Vosselman and Van der Meer-Kooistra (2009) theorise that the absence of negative behaviour expectations and the presence of positive behaviour expectations are necessary conditions in developing 'thick' trust in inter-organisational relationships. In collaborative relationships, appropriation concerns produce negative expectations about future behaviour, in which anyone placed in a specific situation will violate certain explicit or implicit promises made in the relationship when the promise is "blatantly against his self-interest" (Lindenberg, 2000). Vosselman and Van der Meer-Kooistra (2009) argue that an effective governance structure helps to compensate for negative behavioural expectations.

While compensating negative behavioural expectations with formal management control mechanisms, there is an additional need for the building of trust through which positive behaviour expectations of the other party can be nurtured (Vosselman & Van der Meer-Kooistra, 2009). 'Thick' trust creates positive expectations of the ability, benevolence, and integrity of the other party in inter-organisational collaborative relationships.

RELATIONAL SIGNALLING THEORY

Trust is a perception in which one party believes that the other party in the business relationship will take care of its interest and not opportunistically exploit its vulnerabilities, even when such exploitation will not be detected (Dyer & Chu, 2000; Villena et al., 2011; Stuart et al., 2012). Therefore, relational signalling theory assumes that in order to build trust, it is important for partners to signal to each other their trustworthiness and an intention to behave cooperatively or to forgo

opportunistic behaviour at the expense of short term interests. Trustworthiness of a party becomes manifested through relational signals (Minnaar et al., 2010).

Six et al. (2010) define relational signal as the signs that trustors are looking for in the behaviour of trustees indicating whether the trustee is keen to maintain a long-term relationship. Relational signalling theory implies that trust can be generated between collaborating partners if the partners regularly perform actions that is perceived by others as sending positive relational signals (Six et al., 2010). Through voluntary relational signalling, partners reveal their commitment to the collaboration and express that they can be trusted. Therefore, relational signalling produces 'thick' trust when partners are interested in the maintaining relationship and to attend to the interests of the other party (Vosselman & Van der Meer-Kooistra, 2009; Six et al., 2010). Lindenberg (2000) identified five types of situations when relational signals are particularly expected, namely the common good situation, the sharing situation, the need situation, the breach situation, and the mishap situation.

Lindenberg (2000) and Uzzi (1997) indicate that profitability for each is seen as a common good which can be achieved through extra voluntary effort, reciprocation, and extensive communication. In the sharing situation, a party will only take its 'fair share' of unexpected benefit, even though it is the one who divided such benefits (Lindenberg, 2000). The need situation is demonstrated when a partner decides to help the other party in times of need. Refraining from hurting a partner in order to sustain the relationship, even at one's expense, demonstrates the breach situation (Lindenberg, 2000). A mishap situation is one in which circumstances turn out against the expectations of solidarity behaviour even though the intention of the act is done out of solidarity. Therefore in the mishap situation, the party will feel sorry about the mishap and will express its willingness to compensate for the damage (Minnaar et al., 2010).

Based on the relational signalling theory discussed above, we will review the relationship between the necessary behaviours and actions in governance structure and trust building from a wide range of trust and management accounting literature. In formal collaborative agreements, the elements of shared responsibility and risk as well as contract flexibility are identified as main trust building behaviours and actions that reflects positive relational signalling. On the other hand, management control information sharing and interactive use of management control system are identified as main trust building actions for the management control system in inter-organisational relationships.

CONTRACTUAL AGREEMENTS

Contracts reduce risk, and risk reduction strengthens relationships (Laeequddin et al., 2012). Jiang et al. (2010) indicate that trust can develop with increasing reliance on each other. Mouzas et al. (2007) reported that contractual liability encourages inter-organisational exchange through the manifestations of consent. In other words, contractual terms in an exchange agreement anticipated by the specific needs of a focal firm which can, to a certain degree, be fulfilled reliably by its partners may enhance trust between the partners.

Managers may intend to behave in a rational way while forming collaborative relationships and drafting transaction contracts. However, they are limited by behavioural and environmental uncertainties (Nooteboom, 1999). Behavioural uncertainties refer to the difficulty in anticipating the intentions and actions of collaborating partners, whereas environmental uncertainties arise from the conditions that are outside of the control of collaboration yet may affect the execution and results of the cooperation (Langfield-Smith, 2008). Both types of uncertainties imply that the use of contracts to govern collaborations are not fool-proof and partners may take advantage of any loopholes in the contracts for their self-interest. Therefore, Mouzas and Ford (2012) suggest that a different architecture of inter-organisational contracting is required for the purpose of leveraging the resources of others. They propose a contracting landscape that is "open-textured and capable of integrating complex, dispersed and incomplete knowledge on a continuing basis" (Mouzas & Ford, 2012).

In this study, we review the actions and processes that are able to provide positive relational signals to the other partners under the context of formal collaborative agreements.

SHARED RESPONSIBILITY AND RISK

In inter-organisational collaborations, the difficulty in measuring individual contributions is a key challenge to relationships. Actors enter into collaborative innovation relationships with the belief that there are gains from collaboration and knowledge sharing. However, the difficulty of measuring individual contributions to collaborative outputs creates incentives for opportunism in which partners are tempted to free-ride and commit appropriation (Coletti et al., 2005). The free riding problem not only allows a party to draw considerable short-term value from the inter-organisational relationship, it can also expose the future of the relationship to high risk. The risk of free riding is particularly critical in innovation collaborations because innovation activities involve extensive exchange of intangible assets. This may make the situation more complex when it comes to measuring individual contributions. Appropriation concerns and performance measurement difficulties are normally viewed as exchange hazards when it comes to inter-organisational collaborations.

To cover most of the contingencies and have a fair distribution of proceeds, high negotiation costs are incurred among partners, which also signals a lack of trust thus possibly greatly limiting both partners' flexibility (Dekker, 2004). Therefore, there is a limit to what the formal agreements can control when it comes to inter-organisational exchanges, especially for collaboration or innovation activities. In this situation, partners must negotiate in a way that lead to the discovery of common interests, the development of a shared vision, and the increase in commitment to the activities undertaken by the collaboration (Emsley & Kidon, 2007).

In a case-based study, Langfield-Smith (2008) found that through incorporating and structuring the elements of mutual collaboration, shared responsibility and risk, and processes designed for risk mitigation into the collaborative agreements, goodwill trust can be developed among alliance members.

Traditional transaction contracts generally address specific responsibilities and risk for each collaborating party and legal consequences are imposed on the partners that fail to deliver their contractual obligations. The collaborating partners in Langfield-Smith's (2008) study agreed to assume collective responsibility for delivering the project, where all ownership of risks and opportunities associated with the project were taken collectively. The risks were shared jointly by the collaborating members and were not transferred to any individual members. This approach was significantly different from the traditional exchange contract designs in which obligations with the consequences are linked directly to individual party in the collaboration.

The partners also shared the 'pain' and 'gain' of all the project outcomes. The collective rewards and penalties to the partners should be based on the achievement of financial and non-financial targets. Ross (2003, p. 7) argues that when the outcome of the collaboration is such that "everyone wins or everyone loses together", collaborating partners will work as an integrated team to eliminate and mitigate the risks that so that no single party can manage effectively on its own. In effect, transaction contract design allows inter-organisational collaboration to offer the possibilities of the sharing of responsibility and risk, thus developing a trusting relationship.

In a shared responsibility and risk situation, partners believe that the other will not act in self-interest at the one's expense. They are more willing to pool their best resources because they know they will not lose. Even if there is inequity in the current transaction, they trust that it will be corrected and compensated in future transactions (Dyer, 2002).

According to Langfield-Smith (2008), another important principle to building trust in collaborative relationships is the resolution of any disputes between the partners by waiving their common law rights of bringing each other to court in relation to the subject matter. The sharing of risk and the voluntary relinquishment of the legal right to sue greatly reduces the transaction costs and it can be likened to a mutual hostage situation comparable to an equity collaboration setting (Langfield-Smith, 2008).

It is argued that by incorporating shared responsibility and risk into collaborating agreements, all five "solidarity situations" are fulfilled that makes partners decide to provide relational signalling (Lindenberg, 2000).

CONTRACT FLEXIBILITY

Schoenherr et al. (2015, p. 402) define contract flexibility as "the ability to accommodate changes in the relationship with respect to needs and rewards, and is considered as an exchange relationship aspect due to its ability to dynamically respond to unexpected events that arise during the relationship". Van der Meer-Kooistra and Scapens (2008) found that minimal structures are needed to regulate collaborative relationships. The structures should allow flexibility for the partners to manoeuvre should new situations arise. Innovation involves high uncertainties and continuous changes. Therefore, rigid or less flexible contracts could impose a constrained environment that is unable to accommodate evolving needs and anticipated rewards, which would, in turn, prevent the development of trust between the partners in the innovation collaboration.

From the TCE perspective, a contract is a favourable institutional framework in governing inter-organisational collaborations (Williamson, 1979). However, in trying to mitigate uncertainties, ex-ante contracts may not be able to always precisely define every requirement and scope of the engagement (Goo et al., 2007). In this 'need situation' (Lindenberg, 2000), contract flexibility is able minimise an ex-post need for negotiation and allows partners to accommodate to the changes as they emerge in the relationship. Along with this, contract flexibility enables collaborating partners to cope with uncertainties should they arise in the relationship. Subsequently, goodwill or a higher level of trust can be developed through these actions.

According to Schoenherr et al. (2015), contract flexibility can be a relational signal of the positive expectations and the partners' benevolence toward each other. Contract flexibility can be manifested, for example, when a collaborating party is willing to forgo certain contractual penalties for late deliveries or is willing to renegotiate the payment terms, should certain economic conditions change (Schoenherr et al., 2015). When both parties are willing to adjust the enforceability of the contract based on changing needs, which demonstrates their consideration for the other, positive behavioural expectations are developed, thus creating an environment that is less likely to induce opportunistic behaviour (Dyer & Chu, 2000).

On the other hand, adapting the contract based on substantiated events can be seen as a signal or indication of a commitment to understanding, respect, and appreciation of each other's needs (Butler, 1995). In an inter-organisational

case-based study between two airlines, Neumann (2010) found that both partners intentionally left the contract incomplete to make it possible for them to react to uncertainties and the changing environment.

In addition, it is not uncommon for partners in a relationship to accommodate contract adaptations, especially if they anticipate favourable future reciprocation. Therefore, a party can expect reciprocity by not strictly penalising every single contract violation, and goodwill trust can be created through this calculated behaviour (Schoenherr et al., 2015). This scenario also applies in mishap situations when the outcome of good intentions are not to the benefit of the solidarity of the collaboration (Lindenberg, 2000).

In summary, contract flexibility entails making adjustments to the contract based on changing environments. It encourages reciprocity and cultivates a fair environment for trust to be built.

MANAGEMENT CONTROL SYSTEMS (MCS)

Management control is defined as the processes of regulation and monitoring by which organisations govern their activities so they can continuously achieve the objectives set by them (Emmanuel et al., 1990). Management control mechanisms are important since risks of coordination and cooperation cannot be completely foreseen and mitigated ex-ante through contracting. Management control is based upon a formal power base that is "designed, negotiated, and established" at the inter-organisational exchange relationship level (Vosselman & Van der Meer-Kooistra, 2009, p. 270).

Accounting control can be viewed as a form of formal management control device or a formal incentive system, which can take the forms of performance measurement, open book accounting, and a financial incentive system (Dekker, 2004; Vosselman & Van der Meer-Kooistra, 2009). Accounting control can be used to safeguard against risks of appropriation and to also promote coordination requirements. In any stage of collaboration, opportunistic behaviour may occur when a party seeks self-interest. This usually happens at the expense of the other partners. In this case, formal accounting practices entail monitoring, sanctions and incentives to align interest between partners, and limiting the range of a partner's actions (Vosselman & Van der Meer-Kooistra, 2009).

Past studies support the view that management control systems, such as accounting information, build trust among collaborating partners. For example, Håkansson and Lind (2004) indicate that a flexible and systematic combination of accounting supports a favourable relationship because the knowledge about a partner's activities and resources are important when coordinating activities between highly integrated but independent partners. Emsley and Kidon (2007) indicate that control information is likely to be used by the party to evaluate how much trust can be extended to the other partner.

Despite the fact that some studies have established a nexus between management controls and trust building in inter-organisational relationships, there has not been much focus on how management controls and collaborative processes enhance levels of trust, which is able to reduce perceived appropriation risks and promote coordination among collaborating partners (Langfield-Smith, 2008). The following sections review how management control mechanisms can facilitate the development of positive expectations of the other through the sharing of management control and accounting information (Lindenberg, 2000; Vélez et al., 2008; Vosselman & Van der Meer-Kooistra, 2009) and through the interactive use of management control system (Chenhall et al., 2010; Neumann, 2010).

SHARING OF ACCOUNTING INFORMATION

Traditional management control systems (MCS) have provided the platform for sharing of predetermined and highly structured form of knowledge, however, that is generally insufficient for innovation activities or adaptation to the changing circumstances (Van der Meer-Kooistra & Scapens, 2008). Traditional MSC may constrain the autonomy of partners, thereby inhibiting the creation of trust. Furthermore, traditional MCS, which was designed largely to monitor and control the internal business operations of an organisation, may not be able to govern and foster collaborative relationships. Therefore, other complementary governance practices are needed to enable partners to govern their collaborative activities based on the relational signals of these governance practices (Van der Meer-Kooistra & Scapens, 2008).

The desire to have clear or firm governance practices often acts in contradictory to the need for flexibility in a collaborative relationship. According to Van der Meer-Kooistra and Scapens (2008), while traditional MCS is able to seek ways to remove contradictions and resolve governance practices, the real challenge is to understand how managers cope with the seemingly paradoxical nature of business relationships. A collaborative business relationship is seen as paradoxical as it requires firmness yet flexibility. Vosselman and Van der Meer-Kooistra (2009) suggest that accounting information is a form of relational signalling device that can help in reaching positive expectations about the other party's ability, benevolence, and integrity.

Neumann (2010) views that application of control mechanisms implies management information sharing, and compliance with formal governance mechanisms signals partners' trustworthiness and their intention to behave cooperatively, which will eventually lead to the building of trust among partners. Anderson et al. (2017) found that sharing of management control information behaviour influences trust building between collaborating partners. Neumann (2010)

found that monitoring mechanisms reduce information asymmetry by allowing collaborating partners to constantly check the actual performance of the collaboration and to avoid misrepresentation of important information.

Key performance indices (KPI) and service level agreement controls, which are introduced as part of the collaborative agreement, can serve as both behaviour and output controls. During the collaborative period, reporting on costs tracking and non-financial key performance indicators against estimated risks and milestones achievement tend to lead to the building of trust (Langfield-Smith, 2008). Sharing of management control information produces meaningful goodwill-related information for the collaborating partners (Emsley & Kidon, 2007). Neumann (2010) argues that compliance with control systems by providing correct information signals trustworthiness and an intention to behave cooperatively at the expense of short term interests, which then positively affects trust.

Lindenberg (2000) indicates that demonstrating a willingness to continue to be committed and be cooperative involves relational signalling in which a party deliberately shows their intention to behave cooperatively and signals such an ability. Consequently, the trustworthiness of a party is signalled and trust is built in the relationship. According to Vosselman and Van der Meer-Kooistra (2009), 'thick' trust is the result of voluntary local decisions to show commitment to the inter-organisational relationships. Trust makes partners take more risks in the collaborative relationships. The disclosure of more accounting information is considered to be risky behaviour and a signal of trustworthiness, which raises the trust level among partners (Vélez et al., 2008). Therefore, formal control mechanisms can facilitate the development of positive expectations of the other, its abilities and benevolence, thereby building goodwill trust among the partners.

INTERACTIVE USE OF MANAGEMENT ACCOUNTING SYSTEMS

Interactive control system refers to the way managers use formal practices to involve themselves personally and consistently in the decision-making activities with other partners by way of close face-to-face interactions (Chenhall et al., 2010). In this approach, the formal practices are used to motivate information sharing outside routine channels to help identify strategic uncertainties and emerging strategies (Simon, 1995).

Trust is built through repeated interactions between the partners and the setting of shared goals in the relationship (Hsu & Chang, 2014). Mouritsen and Thrane (2006) indicate that the ideology of inter-organisational collaboration consists of cooperation, direct interaction based on trust, and fast communication. Neumann (2010) found that applying formal governance and controls mechanisms in inter-organisational business collaboration always implies social interactions between individuals. Social interactions consist of a series of meetings, workshops, and various activities that are designed to cultivate a collaborative culture, and to promote commitment to the collaborative goals.

Trust is rooted in relationships where the partners have care and concern for each other, value the intrinsic virtue of the relationships, and believe that these sentiments are reciprocated (McAllister, 1995). Interpersonal relationships such as friendships encourage the exchange of personal and complex knowledge through face-to-face interaction (Epstein, 2000). It is suggested that the willingness to share tacit knowledge is heavily influenced by goodwill-based connections (Holste & Fields, 2010).

Innovation processes are complex social processes with non-linear interactions and knowledge sharing which involves a number of individuals, groups, and organisations (Fitjar et al., 2013). Trust is developed through extensive social interactions between the partners in the network. Social interaction ties refer to the strength of personal relationship, time spent and the frequency of communication among the members within a collaborative relationship (Chiu et al., 2006; Minnaar et al., 2010). Emsley and Kidon (2007) found that if the frequency of interaction between collaborating partners is low, goodwill trust is developed slowly. Paulraj et al. (2008) found that long-term relationship orientation has the strongest path to inter-organisational communication. It is recognised that communication increases that level of trust by reducing the risk of uncertainty between partners in the business relationship, since individuals can better predict the future actions of others based on past interaction (Panteli & Sockalingam, 2005).

In interactive management control processes, firms interact, discuss, and establish common goals, which strengthens a partner's belief that the other party is acting in their interests, thereby increasing goodwill trust (Vélez et al., 2008). Håkansson and Lind (2004) indicate that a flexible and systematic combination of accounting supports a favourable relationship, because the knowledge about a partner's activities and resources are important when coordinating activities between highly integrated but independent partners.

Seal et al. (1999) found that when cost data are shared and understood by collaborating partners in an open book accounting agreement (OBA), trust is fostered between partners. Johansson and Siverbo (2011) found that the exchange of relevant accounting information and the participation of the other's budgeting processes enhance trust, which is reflected in the increase of positive behaviour expectations among collaborating partners. Chenhall et al. (2010) indicate that a more interactive use of management control system can be embedded within a bureaucratic approach to control. When management controls are designed and implemented with enabling capability rather than coercive capability, they can assist in providing more flexible adaptive control cultures, which is consistent with informal controls (Adler & Borys, 1996; Ahrens & Chapman, 2004).

By actively participating in management control activities, common values and beliefs between the collaborating partners can also be developed. Trusting relationship develops over time as accounting information flows between the partners (Emsley & Kidon, 2007). Through extensive interactions and even debates with each other, trust is being built via strong working relationships.

FRAMEWORK DEVELOPMENT

For a knowledge intensive activity, innovation requires the exchange of tacit knowledge between collaborating partners in inter-organisational relationship (Cao & Zhang, 2011). Knowledge underlying innovation capacity is generally firm-specific and tacit in nature, which makes it challenging to codify and articulate (Zander & Kogut, 1995). A party investing specific assets to the alliance, bear the risk of opportunistic expropriation.

Trust is identified as a key factor to facilitate inter-organisational knowledge exchange. A number of earlier studies argue that the presence and the compliance of formal effective governance systems create trust. Trust is formulated under uncertain conditions when a party is not sure what the other will do, but has good reasons to be confident that his/her interest will be taken care by the other party (Vollan, 2011; Tejpal et al., 2013). With the presence of trust, a firm believes that its partner possesses credibility, and such a firm is willing to collaborate with the partner even though there may be risks (Yeung et al., 2009).

This study intends to analyse the relationships between the individual relational signalling elements in governance mechanisms and the development of trust for effective inter-organisational knowledge exchange. The study adopts the perspective proposed by Lindenberg (2000), where formal governance is a necessary but not a sufficient condition to build and maintain a stable and durable relationship. To build 'thick' trust, relational signalling theory assumes it is important for parties to signal each other their trustworthiness and their intention to behave cooperatively, even at the expense of their short-term interests.

Formal governance system consists of two main components, namely ex-ante contracting and ex-post management control systems. In this study, we identify shared responsibility and risk and contract flexibility as two important actions that signal parties' willingness to behave cooperatively. On the other hand, sharing of management control information and interactive use of management control systems are identified as crucial demonstrations of positive relational signals in the management control system.

To understand relational signals within governance mechanisms that influences the building of trust, and subsequently, their impact on the effectiveness of inter-organisational knowledge exchange and firms' innovation performance, we use the resource-based view (RBV), transaction cost economics theory (TCE), and relational signalling theory as the theoretical foundation for the proposed research framework of this study. RBV is used to explain the importance of knowledge exchange in enhancing innovation performance, while the TCE explains the need for governance mechanisms to curb opportunistic behaviour in collaborations. The relational signalling theory explains the role of elements in formal governance mechanisms for trust-building.

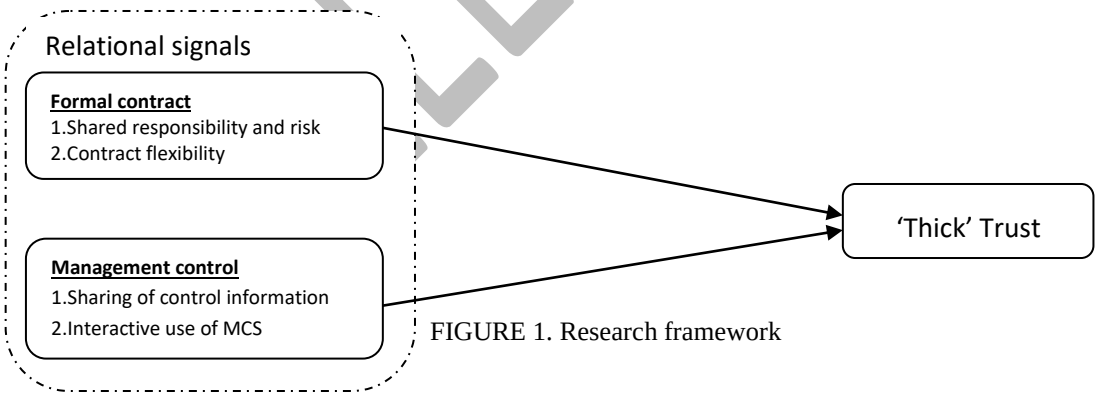

FIGURE 1. Research framework

FORMAL CONTRACT AS ANTECEDENT OF TRUST

Vosselman and Van der Meer-Kooistra (2009) argue that the presence of formal governance serves only to reduce negative expectations about the future behaviour of a collaborating partner. To build 'thick' trust, there is an additional need to create positive expectations about the ability, benevolence, and integrity of the parties in inter-organisational collaborative relationships. We therefore argue that as key elements of relational signalling in contracts, shared responsibility and risk, and contract flexibility should be incorporated into a contract design for trust building.

Langfield-Smith (2008) suggests that through incorporating the elements of mutual collaboration and shared responsibility and risk into the alliance agreements, 'thick' trust can be developed among collaborating members. Similarly, Emsley and Kidon (2007) found that by incorporating common interest and by developing shared visions in the

contract design, trust can be established through the development of commitment to the collaboration. Shared objectives allow partners to act freely and hence, develop 'thick' trust (Vélez et al., 2008).

In this approach, a "genuine" common goal is created for the development of trust that promotes the sharing of a greater level of tacit knowledge (Li et al., 2010). In certain cases, this approach have led to partnering parties resolving disputes among themselves and waiving their common law right to sue each other due to breaches in the agreement (Langfield-Smith, 2008).

When problems arises in an inter-organisational innovation activity, a more extensive level of knowledge exchange and interactions between the parties is required to discover mutually agreeable integrative solutions (Dore, 1983). We argued earlier that innovation activities involve a high level of uncertainty, and it is impossible for firms to forecast all the problems to be included in the contract so that the end results perfect. Therefore, a high level of trust allows collaborating partners to make extra efforts beyond the formal agreements to help each other solve problems, rather than assigning blame or questioning each other's motives (Dyer & Chu, 2003). In these circumstances, a 'need situation' arises when relational signalling is highly expected. Hence, partners can cope with uncertainties better with a flexible contract, which will eventually lead to the creation of goodwill or a higher level of trust (Schoenherr et al., 2015).

In some cases, collaborating partners may want to detail all contingencies and outline a fair distribution of proceeds in the contract, however, Dekker (2004) argues that the high transaction cost involved signals a lack of trust. Butler (1995) views that by adapting contract based on the changes of circumstances, it may signal a party's appreciation, respect, and understanding for the needs of the other. In addition, being laxed to penalise contracting parties due to changing economic environment leads to reciprocity, and such a practice can create goodwill trust if ever they are faced with a 'mishap situation' (Lindenberg, 2000; Schoenherr et al., 2015).

From the above arguments, we propose that:

P_1: The existence of relational signalling elements in the formal contract will enhance the level of trust among collaborating partners.

The sub-propositions are:

P_{1a}: The existence of the element shared responsibility and risk in the contract enhances the level of trust among collaborating partners.

P_{1b}: Contract flexibility enhances the level of trust among collaborating partners.

MANAGEMENT CONTROLS AS ANTECENDENT OF TRUST

Vosselman and Van der Meer-Kooistra (2009) believe that management control information related to collaborative relationships can serve as a form of relational signalling device that helps in reaching positive expectations. Neumann (2010) argues that by complying to formal governance and control mechanisms, a party signals their trustworthiness and their intention to behave cooperatively, thus affecting trust positively. Past research reveals that trust and positive behaviour expectations increase as a result of exchanging relevant management control information and participating in the partner's management control practices such as budgeting processes (Johansson & Siverbo, 2011).

Emsley and Kidon (2007) argue that trust building is difficult because of the lack of goodwill-related information, especially from output and behavioural controls. Seal et al. (1999) found that trust is developed when cost data are shared and understood by collaborating partners in an open book accounting agreement. According to Emsley and Kidon (2007), accounting and other management control information constitutes goodwill-related information and sharing of the information builds trust. In addition, Vélez et al., (2008) asserts that the disclosure of more accounting and other management control information is considered to be a risky behaviour as it exposes the disclosing party and puts the party in a vulnerable position. Therefore it signals trustworthiness and enhances trust among partners (Vélez et al., 2008).

Panteli and Sockalingam (2005) found that frequent communication reduces perceived uncertainty risk as it allows a partner to better predict the future actions of the other party, which eventually leads to the development of 'thick' trust. In interactive management accounting and control processes, extensive social interactions will eventually establish a shared vision and lead to a common good situation between the partners as is described by Lindenberg (2000) as one of the 'solidarity situations' that relational signalling is highly expected. Vélez et al. (2008) found that goodwill trust is built through this positive signal, which strengthens a party's perceptions that the other party is acting in their interest. The presence of shared goals motivates parties to go the extra mile to help each other, share with each other, perform tasks together, and adapt to changes beyond those stated in the collaborative arrangements (Kankanhalli et al., 2005; Hsu & Chang, 2014).

Due to the highly uncertain nature of these transactions, this common good situation is particularly important in the context of knowledge exchange and promoting innovation collaborations (Lindenberg, 2000). The presence of shared goals reduces opportunistic behaviour and thereafter, affects trust positively (Hsu & Chang, 2014). Collaborating partners can use accounting and other management control information to deliberately signal their intention to behave cooperatively and commit themselves to the collaboration. Formal control mechanisms with voluntary local decisions to

show commitment can facilitate the development of positive expectation about the other's future behaviour and goodwill trust among the parties.

In summary, as a result of relational signalling, accounting, and other management control information that flows between parties and extensive interactions in the interactive management control processes, 'thick' trust is fostered. Therefore, we posit that:

P_2: The existence of relational signalling elements in the management control system will enhance the level of trust among collaborating partners.

The sub-propositions are:

P_{2a}: The sharing of management control information enhances the level of trust among collaborating partners.

P_{2b}: The interactive use of management control system enhances the level of trust among collaborating partners.

CONCLUSION AND RECOMMENDATIONS

Past literature has indicated that network or inter-organisational collaboration is a key source of knowledge resources for innovation activities. Although engaging in such a collaboration provides access to external resources through inter-organisational collaborations, the failure rate of such collaborations remains high. This is mainly due to the high level of risk involved in inter-organisational collaborations. Management accounting scholars (Speklé, 2001; Langfield-Smith & Smith, 2003; Dekker, 2004), argue that an appropriate and properly designed management control system is crucial for successful innovation collaborations.

As innovation-facilitating resources are generally tacit in nature, the indeterminate and continually evolving nature of knowledge required for innovation activities poses a huge challenge for collaborating firms (Mouzas & Ford, 2012). In this context, the presence of 'thick' trust among collaborating partners is deemed crucial to facilitate the exchange of critical and richer knowledge, where trusting partners tend to believe their counterparts will not act opportunistically. Therefore, it is important to understand why certain collaborations lead to the development of trust but some do not.

From the review of the literature on governance mechanisms in inter-organisational collaboration and the relational signalling theory on how several formal governance elements act as signalling devices to generate positive expectation and 'thick' trust among collaborating partners, a conceptual model for effective knowledge exchange to enhance innovation performance was developed in this study. To build 'thick' trust, relational signalling theory asserts that it is important for collaborating partners to signal to each other their trustworthiness or their lack of desire to exploit opportunistically. Therefore, relational signalling elements in formal governance mechanisms foster the building of 'thick' trust is crucial for effective inter-organisational knowledge exchange. The framework presents that the existence of relational elements in formal contract and management control system foster the building of 'thick' trust.

This study contributes to the literature by incorporating relationship signalling elements into the formal governance mechanisms to ensure the development of 'thick' trust between collaborating partners to accomplish effective knowledge exchange. Formal governance mechanisms consist of two main components: the ex-ante contract agreement and the ex-post management control system. Shared responsibility and risk as well as contract flexibility, which are positive relational signals in the formal collaboration contract, are able to foster trust between collaborating partners. The positive relational signals in the management control system are identified as sharing of management control information and interactive use of management control system.

This analysis also contributes to the literature on the relationship between trust and control. Traditionally, the debate of the relationship between trust and control mainly focuses on whether they are substitutive or complementary. The analysis in this study supports the view of Vosselman and Van der Meer-Kooistra (2009) and Minnaar et al. (2016) that control and trust are not merely substitutive or complementary as their interaction entails strong and durable inter-organisational relationship.

Most of the past management accounting research studies on control and trust were largely case-based and are qualitative in nature. For example, Emsley and Kidon (2007) raised doubts on whether their findings in the airline industry is applicable to other industries. The conceptual model developed in this study provides a potential avenue for a quantitative survey-based research by conducting a larger scale evidence on the management control practices that collaborating partners use.

Further research should be carried out in different organisational settings to examine whether companies with different backgrounds, such as company size or cultural setting, will react to collaboration arrangements differently. Similarly, religious differences can also impact the research findings. It is recommended that future research be extended to examine the influence of religion on the development of 'thick' trust. Future theory building and testing can also focus on exploring additional relational factors that can lead to positive expectations and 'thick' trust between collaborating partners.

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