Building trust between partners through performance measurement systems

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Abstract

In asymmetrical partnerships, the leader firm defines the strategy and tries to influence their partner’s actions to fall in line with its own expectations. Performance measurement systems (PMS) are frequently recommended for facilitating strategy implementation and enhancing IORs performance. Thus, the leader could use PMS to monitor its strategy and processes, i.e., decision-control use, expecting that partners use it also to manage their activities, i.e., decision-management use.

In these contexts, interorganizational trust is critical and has been widely used in the relational governance of partnerships. Trust is important whenever firms engage in situations that demand collaborative effort, even in asymmetrical and mature partnerships where trust has been developed over time forming partner bonding. Prior studies show that PMS and trust are interrelated, demanding that both need to be managed together.

This paper focuses on the effect of PMS use on trust in situations of asymmetric dependence between a leader firm and its partners. We develop a theoretical model allocating the decision-control use to the leader firm’s side and the decision-management use to the partners’ side. Both parties were asked about their own use and about their perception of the other’s use of PMS, providing an opportunity to develop a more comprehensive understanding of the effects of PMS usages on existing trust. From both parties’ perspective, this model was empirically tested with survey data obtained from a chemical distribution channel, in which the manufacturer had developed a new PMS to manage the marketing channel.

**KEY WORDS:** Performance measurement systems uses; trust; interorganizational relationship.
Performance measurement systems (PMS) are frequently recommended for facilitating strategy implementation and enhancing interorganizational relationships (IORs) performance (e.g., Gunasekaran et al., 2001; Mahama, 2006; Cousins et al., 2008; Lehtinen and Ahola, 2010). Prior studies have shown that PMS has a positive impact on IORs performance, with significant support for the effect of non-financial measures, multi-criteria key performance indicators or balanced scorecards (Mahama, 2006; Cousins et al., 2008), among others. Accepting the importance of its design issues, the literature suggests that the effectiveness of any PMS is also dependent on the use of the information generated (e.g. Bisbe and Otley, 2004). In fact, a significant stream of research has emerged to study the different uses of PMS (e.g., Sprinkle, 2003; Bisbe and Otley, 2004; Velez et al., 2008). In this line, some studies take into account that PMS provide information for (1) decision-control use, that is, use by the leader firm to control partners’ behaviors; and (2) decision-management use, that is, the use by partners to manage their own day-to-day activities (Abernethy and Vagnoni, 2004; Sanchez et al., 2012). An important avenue for research arises in the study about how firms manage these collaborative relationships through the use of PMS and the development of social networks (Cousins et al., 2008). Although many authors have established PMS’ utility and efficiency within and between organizations their actual consequences still remain in the shadow (Lee and Yang, 2011), especially on IORs (Franco-Santos et al., 2012). Thakkar (2012) identifies certain lacunae in the present body of knowledge, calling for research about the concerns of various entities in an IOR, and the identification of the performance measurement as a two-way process, which enables members to develop both sufficient trust and proper rewards, planning data and information, profit maximization strategies, etc.

The design and development of PMS is part of the control function (Simons, 2000). Prior studies have shown that formal control systems and trust simultaneously serve as key regulators of IORs (Das and Teng, 1998). Empirical research has provided evidence about how the association between control systems and trust, as complements or alternatives, might partly depend on its design (e.g., Van der Meer-Kooistra and Vosselman, 2000; Tomkins, 2001) and its use (e.g., Tomkins, 2001; Sanchez et al., 2012). But, there is still a need for studying how a better understanding of the association between specific control tools’ uses and trust can be highly relevant in the current business environment (Sanchez et al., 2012).
According to Moorman et al. (1992), we can define trust as the willingness to rely on an exchange partner in whom one has confidence. Following Das and Teng (2001) or Nooteboom (1996) arguments, we can differentiate two trust’s precursors: (1) competence, which is based on the extent to which the trustor believes that the trustee’s part has the required expertise to perform the job effectively; and (2) benevolence, which is based on the extent to which the trustor believes that the trustee has intentions and motives beneficial to the trustor when new conditions arise, conditions for which a commitment was not made. These precursors are based upon one’s subjective perception of that other party’s behaviours (Schoorman et al., 2007) and both enhance one’s trust on that other party (Free, 2007).

Depicting these arguments, this paper provides empirical evidence about the effect of PMS uses on an asymmetric relationship trust through its effect on both trustor’s valuation of trustee’s skills and competence, and trustor’s attribution of trustee’s qualities and intentions. Assuming that each party makes a different use of PMS, we argue that both the trustor’s own PMS use and its perception about how the trustee use this PMS impact on trust through its subjective perception about trustee’s competence and benevolence. Widening prior research about the consequences of PMS development we contribute to existent literature in several ways. First, departing from the arguments proposed by Abernethy and Vagnoni (2004), we analyse simultaneously both, decision-control and decision-management, uses of PMS. Furthermore, we considerate each party own use and its perception about other party’s use. This research defends that PMS are relevant for IOR management to the extent that it is used by the leader firm, noticed by the evaluated party, and vice versa. Thus, PMS provide some utility to both parties involved, aspects of it that are rarely taken into account in empirical studies.

Second, this paper contributes to the related literature contemplating the effect of PMS’s on trust mediated by competence valuations and benevolence attributions of each party. Deepening in prior studies focusing on direct effects, this allows us to verify if different PMS uses could have different indirect effects on trust in an asymmetrical relationship where the leader firm uses PMS to manage the IOR.

Third, although prior literature was mainly focused on leader PMS’ use effects on partners’ trust, our study enlarges this view taking into account the leader firm point of view. We develop and tested a theoretical model to offer empirical evidence about
how perceptions about both own-use and other party use affect trust, from both perspectives: leader firm and partners.

The proposed model was tested using survey data obtained from members of a chemical marketing channel: 107 distributors and 91 manufacturer managers. In the relationship under study the manufacturer had developed a PMS to manage their channel. This natural setting furnishes the opportunity to study what happened after the PMS implementation by the manufacturer. Our results show, from both IOR sides, that multidimensional PMS used by leader firm to decision control and by partner to decision management have positive effects on each other competence’s perception and benevolence’s attribution, evidencing that PMS could reinforce the established trust.

The remainder of this paper proceeds as follows. We first outline our theoretical background in order to develop the conceptual model and rationale for each of the hypothesised relationships. The research strategy adopted is described, and the results of the structural equation model (SEM) discussed. We then summarize the findings and implications for the literature and managers. Suggestions for further research are also proposed.

**Theoretical background**

*Performance measurement system uses*

According to Ittner et al. (2003, p. 715) PMS “provide the information [financial as well as nonfinancial] that allows the firm to identify the strategies offering the highest potential for achieving the firm’s objectives, and aligns management processes, such as target setting, decision-making, and performance evaluation, with the achievement of the chosen strategic objectives”. Since 90’s, a number of authors have argued on the changes needed in PMS for supporting the management of IORs (e.g., Cooper and Slagmulder, 1999; Gunasekaran et al., 2001). Measurement and especially interorganizational performance management are becoming of crucial importance in dynamic and global environments (Valos and Vocino, 2006; Alfaro et al., 2007). These settings press companies toward the establishment and use of PMS to monitor the deployment of their strategy, not only within the organization (among individuals, teams, or business units) but also beyond the organization (e.g., among buyers and suppliers, retailers and distributors) (Thakkar, 2012). The logic of any PMS is to supply
feedback information that intends to increase the organization's probabilities to accomplish their goals in an effective and efficient manner.

But any PMS deploys more functions, such as strategy formulation, clarification and communication, support for decision-making and prioritising, coordination of activities, alignment, motivation and learning, among others. For example, PMS are being increasingly developed to coordinate their day-to-day shared activities, assessing the health of their IORs (Gunasekaran et al., 2004; Cousins et al., 2008; Velez et al., 2008; Lehtinen and Ahola, 2010). A significant stream of control literature has emerged to study the different uses of PMS information (e.g., Abernethy and Vagnoni, 2004; Bisbe and Otley, 2004; Velez et al., 2008). This literature suggests that the effectiveness of any PMS is dependent on both the technical sophistication of the system and the use of the information generated (e.g. Bisbe and Otley, 2004), developing different taxonomies and labels.

We adopt a well-established taxonomy distinguishing two broad uses: 1. Decision-control, as an informative role to monitor and influence on subordinates' behaviours; 2. Decision-management, as an informative role to facilitate the decision making process (Abernethy and Vagnoni, 2004). *Decision control* is the traditional top-down function that put the emphasis in centralization and pre-planning, monitoring, and performance evaluation and reward. Also labelled as the evaluative, decision-influencing role (Sprinkle, 2003; Dossi and Patelli, 2008), performance evaluation (Mahama, 2006) or as the motivational use of information (Baiman, 1982). It refers to the use of PMS information by controlling managers to evaluate the performance of subordinate units or employees. Thus, it is allocated to top managers (Abernethy and Vagnoni, 2004) or leader firms (Velez et al., 2008). PMS are developed and used by the leader firm to increase the probability that partners will behave in a manner that will enable IOR goals to be achieved efficiently and effectively. Its objective is to change partners' behaviours or influence their actions to minimize the potential for goal incongruence and dysfunctional behaviours, providing warning signals and by aligning incentives, due to the assumption that they do not always act in the best organizational behalf (Abernethy and Vagnoni, 2004).

*Decision management* is the recognition that PMS contend information for decision making (Baiman, 1982). In this sense, Malina and Selto (2004) defend that PMS proper attributes must be informative, a communication device, and supportive of improved decisions. Lower and middle-level employees and managers could consider a PMS as
something that supports them, that they can use for their own purposes to assess how things are going, identify problems, prioritize issues, develop ideas for improvement, engineer solutions for concrete problems, or make decisions (Wouters and Wilderom, 2008). Also labelled as informative, socialization (Mahama, 2006) or decision-facilitating role (Sprinkle, 2003), it refers to the provision of information to decision makers in order to ex-ante mitigate uncertainties in decision making process (Abernethy and Vagnoni, 2004). Two sub-functions can be distinguished: 1) an attention-directing sub-function, in which PMS are used to make controlled managers aware of certain events or situations; and 2) decision-making sub-function, in which PMS contribute information about how to deal with this event or situation. Therefore, PMS information facilitates the problem solving with an better informed effort (Ahrens and Chapman, 2004), support the formulation and implementation of strategies, communicating common objectives, reducing divergences, upgrading knowledge, promoting learning, and improving the coordination (Abernethy and Brownell, 1999; Abernethy and Vagnoni, 2004). In IORs, while leader firm managers use the information to supervise their partners’ performance, we could expect that these controlled firms recognize the value of this information, assimilate it and apply in their own management (Velez et al., 2008). This is particularly significant for IORs in which tasks have to be continuously geared to each other and in which partners’ decision making is required (Gulati and Singh, 1998).

Theoretical frameworks assume that PMS can be employed for different uses, however there is a lack of empirical research examining simultaneously both uses of PMS (Dossi and Patelli, 2008), because most previous empirical work has analysed them separately (Sprinkle, 2003).

Interorganizational trust in asymmetrical IORs

Trust between organizations is an important variable in IOR research. Many advantages are attributed to trust: i.e., trust encourages the disclosure of truthful information and lowers monitoring costs. Although different definitions of trust abound in the literature and agreement on an exact definition of trust is seldom found, most authors seem to agree that positive expectations and the willingness to become vulnerable are critical elements to define trust (Bijlsma-Frankema and Costa, 2005). Trust should be viewed as dynamic rather than static (Inkpen and Curral, 2004), and its evolution should depend on perceptions about distinct trustee characteristics (Mayer
et al., 1995). Accordingly we can distinguish two trustee features that will generate trust (e.g., Moorman et al., 1992; Ganesan, 1994; Mayer, et al 1995):

– Competence is the group of skills, abilities and characteristics with permit a party to have influence within some domain. It can be divided into technological, economic, and partnering competencies (Sako, 1992). According to Kumar et al. (1998) satisfaction with the relationship, reaching acceptable levels of results, the professionalism of the counterpart and the ability to perform of the partner firm (Doney and Cannon, 1997) are factors that could improve competence valuations, among others.

– Benevolence focuses on the motives and intentions of the exchange partner. It includes the qualities, intentions, and characteristics attributed to the partner rather than its specific behaviours (Ganesan, 1994). In IORs it means, the extent to which one partner believes that the other has intention and motives beneficial to him when new conditions arise, conditions for which a previous agreement was not made. Firms could reinforce other party’s benevolence perceptions about themselves through the establishment of mutual objectives and interests (Das and Teng, 2001); a common system of values and norms, together with ties of friendship (Sako, 1992); willingness to provide complementary services and support (Anderson and Weitz, 1989); and participation in decision-making (Dwyer et al., 1987), etc.

**Theoretical model**

Figure 1 summarizes the theoretical model and hypotheses from both perspectives. Our model suggests that trust are based on judgments about another side’s competence and benevolence, and because both parties use the same PMS but in different ways, PMS influence in their perception of each other as competent and benevolent. Thus, and taking for grant that competence and benevolence will generate trust, we propose that the effect of PMS uses, and their perceptions, on trust will be mediated by each competence valuation and benevolence attribution about the other party.

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*Figure 1 about here*

**PMS Decision control use, competence valuation and benevolence attribution**
From partners’ point of view, PMS decision control use can increase their perception of the leader’s ability to behave more competently, increasing their feelings of efficacy and objectivity. Translating Mayer and Davis (1999) arguments, when the leader firm establishes objectives and monitors the going on of the IOR demonstrates strong competence to the partner. The discussion and development of objectives based on PMS indicators could demonstrate that the leader firm has important managerial skills needed to manage the IOR (Velez et al., 2008). And since PMS engage the strategy and related it with key performance indicators (Langfield-Smith, 2008), its use for decision-control purposes transmits the image of knowledge about how to compete in this market. Thus, PMS that accurately and objectively evaluate, measure and reward performance, make leader firm’s competence to have a salient impact, and should enhance the partners’ perception of leader firm’s skills.

But in other way, Das and Teng (2001) suggest that the employment of rules and objectives will throw benevolence in doubt. PMS decision control use transfers risk to partners (Donada and Nogatchewsky, 2006), and it could offend the partners’ sense of autonomy, resulting in negative reactions, harming their perceptions about how the leader is acting on their interest. Assuming the contract irony effect (Neu, 1991), PMS decision control use might be perceived as a leader’s doubt about their behaviours and results decreasing, in turn, their benevolence perception of the leader. A unilateral design and a compulsory development process makes the leader’s decision-control use could make that this traditional top-down use look like a device to force partners’ compliance, seeming to signal a lack of benevolence (Sanchez et al., 2012). Depicting these arguments,

**H.1a: Partners’ perception of leader firm’s PMS decision control use has a positive effect on partners’ valuation about leader’s competence and a negative effect on partners’ attribution of leader’s benevolence.**

From the leader’s perspective, a multidimensional PMS use for decision control purposes enlarges the scope to establish proper objectives, and to evaluate partners’ behaviours and results (Langfield-Smith, 2008). In their franchising study, Dahlstrom and Nygaard (1995) found that norms and procedures get better perceptions in their partner firms. According to these authors, the formalization regulates the interactions among partnering, standing out the specific expectations and fostering that it will be reached. By evaluations, the leader firm encourages partners into the execution of the
commended obligations; but also understands and knows happened deviations and
the strong and weak points in the partners’ capability; and when the leader corrects
the deviations’ causes, qualifies them. Similarly to Woolthuis et al. (2005) arguments
about contracts, a detailed PMS when is used to decision control, can help to
understand better the going on of the relation and detect external causes of deviations
(e.g., competence actions, macroeconomic reasons, etc.). In turn, and according to
Whorter (2003), this use facilitates to evaluate and to know more different aspects
from partners’ performance, widening and improving the leader firm’s perception
about partners’ capabilities.

Also, the perception of about partners’ benevolence could be positively affected by
the decision control use of multidimensional PMS. PMS allow to negotiate and to
establish new and broader scope objectives widening partners’ possibilities to signal
that they take care about the leader firm interests. Furthermore, as Hartmann and
Slapničar (2009) explore, superior’s use of PMS may enhance subordinate’s
perceptions about the quality of performance feedback. This better available
information makes easier and quicker to detect potential partners’ opportunisms,
increasing leaders’ perception of partners’ benevolence. Consequently, the former
negative effect is not expected to occur from the leader’s perspective, who perceived
additional benefits from its own decision control use. Taking into account these
arguments, we deploy the following hypothesis

H.1b: The PMS decision control use by leader firm has a positive effect on leader’s
valuation about partners’ competence and attribution of partners’ benevolence.

PMS Decision management use, competence valuation and benevolence attribution
From partners’ side, when the information included in PMS is view as necessary for
own-purposes and for activities management, it can be used to make most efficient
the operations (Johansson and Baldvinsdottir, 2003). Consequently, when partners use
the multidimensional information included in PMS and find in this information the
necessary tools to improve their daily management, they recognize the leader’s skill in
understand the join business and resolve issues that are important for partners.

According to Ring and Van de Ven (1992), ever when trust exists, whether the
leader firm shares information with its partners, partners will see it as a sign of
dependence, seeing to the leader as more reliable. In this way, partners’ perception of
leader’s benevolence should be positively affected by their decision management use
of PMS, that contained strategic information, because partners can able to interpret it as a sign that the leader firm tries to work next to them (Velez et al., 2008). Also, the more decision management use of PMS will favour the integration of partners in the IOR management and it could be interpreted as a leader firm bigger commitment (Sako and Helper, 1998). Dwyer et al. (1987) defend that when the leader firm formalizes the IOR, and stimulates the participation in the decision making process, it has a positive effect on partners’ perceived leader’s benevolence. Consequently,

**H.2a:** Partners’ PMS decision-management use has a positive effect on partners’ valuation of leader’s competence and attribution of leader’s benevolence.

According to Sako (1992) or Cooper and Yoshikawa, (1994), firms could reinforce their competence perceptions of their partners through investments that allow them to transfer their knowledge and technology to them. Taken these arguments into consideration, sharing the PMS information the leader hopes to increase partners’ management competences and their use for decision management is a signal that partners have assimilated the abilities transferred (Velez et al., 2008). In similar way, the level of PMS decision management use demonstrate partner professionalism to the leader and in this way, according with Doney and Cannon (1997) increase leader’s perception of partners’ competence.

In similar way, if the leader perceives that partners are using its PMS information to improve their daily management increases its perception on partner benevolence (Velez et al., 2008). Partners’ management use of PMS can be received as a signal that partners cares about leader interest and in this way increased the perception that partners want to do good to the relationship. Decision-management use allows the convergence of members’ perceptions, thus, also for this perspective partner’s benevolence can be attributed as a consequence of the bigger mutual knowledge (Langfield-Smith and Smith, 2003). Consequently, their decision-management use may be seen by leader as a higher commitment of partners. Depicting these arguments,

**H.2b:** The leader’s perception of partners’ PMS decision management use has a positive effect on leader’s valuation of partners’ competence and attribution of partners’ benevolence.

3. DATA COLLECTION
This paper forms part of a wider body of research where data was collected in a successful marketing channel of a manufacturing firm, leader in its branch of the Spanish chemical industry. This chemical sector is characterized by a relatively stable market, in which five large companies share most of the world market. This marketing channel was selected as the research site for the empirical study, by several reasons: (1) The manufacturer is acting as the leader of its outsourced marketing channel for more than 19 years. It is a big manufacturer founded in the late nineteenth century, having more than 1,000 employees, 30 production factories and commercialization centres. This manufacturer has an important marketing expertise and maintaining the responsibility to the clients. Although the manufacturer bills the clients directly, it sells its products (a) directly to major clients and (b) to a large number of small and medium clients via its marketing channel, which generates more than 75% of sales and caters to 90% of manufacturer’s clients, and generates a manufacturer’s ROI 3.4 times higher than do direct sales. (2) Collectively, the marketing channel is formed by 178 industrial distributors that are independent nano-firms (physical people or firms with 1–4 workers) who had a long and successful relationship with the manufacturer. They receive the chemical products on consignment for distribution and sale. By contract, there is no internal competition; each partner acts exclusively in a given geographical area and receives commissions on the manufacturer’s invoicing. This commission system and the market stability enable partners to obtain high and stable profits. In addition, most of these partners also carried other industrial products (non-competitors) from other manufacturers, and because of the synergy between businesses, large-scale investments are not necessary to join the channel. (3) The marketing network is in a mature stage (according to Dwyer et al., 1987), because 97% of the channel partners have been distributors for more than 5 years. We want to highlight that this IOR is successful. In fact, these positive loops (Doz, 1996; Ariño and de la Torre, 1998) encourage the partners to cooperate further, demanding, in turn, new control tools and greater levels of trust to support cooperation (Velez et al., 2008). Encouraged by the favourable results, the activities associated with mature IORs can increase or change in character; members can invest more resources; and their interdependence level can be affected.

The manufacturing firm developed a new PMS for the mature marketing channel. This new distributor evaluation system comprises 37 indicators that evaluate all the channel activities (warehousing, delivery, administration, and commercialization),
using objective and subjective, and financial and nonfinancial information sources. It allows them to establish objectives, to measure and to reward the performance of each one of partners, identifying partners who require more assistance, enhancing strong points and eliminating weak ones, implementing the pertinent objectives. Weighting these indicators, and establishing the desired levels of development, the manufacturer also obtains a ranking of its partners every year in order to reward best performances.

The questionnaire items, shown in Table 1, were adapted from existing scales (Abernethy and Vagnoni, 2004; Bisbe, 2002; Ganesan, 1994; Sanchez et al., 2012) using Likert scales. Several academic researchers in the fields of management and control were then employed as expert judges to assess the face validity of the items selected. Subsequently, the questionnaire was submitted to extensive pretesting and refinement through personal interviews with manufacturer and distributor managers in order to ensure content validity.

Table 1 about here

Two symmetric questionnaires were sent two years after PMS deployment. On one hand, a questionnaire was mailed to the whole distributors’ population. The marketing channel has a total population of 178 distributors, varying in their dedication and legal form. Given the reduced size of distributors, the questionnaires were directed by postcard to their owners or general managers. Respondents were asked to respond on changes on their trust towards the manufacturing firm after the PMS’s introduction, along with measures of the own usage (decision-management) and perceived use of the other party (decision-control). The respondent ratio was of 61.23%, with 109 received questionnaires (useful 107). Likewise, the survey sent, by e-mail, to the manufacturer firm was addressed to employees responsible for managing relationships with the marketing network (boundary employees). With a population of 140 boundary employees, we obtained a useful sample of 91 questionnaires (65%). In this case, respondents were asked to respond on changes on their trust towards their partners’ network, as a whole, after the PMS’s introduction, along with measures of the own usage (decision-control) and perceived use of the other party (decision-management). Along the lines suggested by Armstrong and Overton (1977), non-response bias was ascertained by comparing whether there were differences between
early and late respondents. Non-significant results were obtained, suggesting no
differences in the response patterns of early and late respondents; given that late
respondents are traditionally used as a proxy for non-respondents (Diamantopoulos
and Souchon, 1999).

4. RESULTS
Data were analysed using Structural Equations Models (SEM) and the software EQS
6.1. We followed the two-steps approach recommended by Anderson and Gerbing,
(1988). In the first step we have tested measures for reliability, convergent and
discriminant validity. Exploratory and Confirmatory Factor Analysis (CFA) were
performed to test the psychometric properties of the scales as well as its convergent
and discriminant validity (Fornell and Larcker, 1981). We have treated samples jointly,
using multigroup analysis to test the measurement model for distributors and
manufacturer’s perspectives. Standardized loading factors, correlations, compose
reliability, and AVE for each construct across samples are shown in Table 2. All factors
presented adequate reliability. Convergent validity, shown in the values of the AVE and
standardized loading factors can be considered acceptable (Bagozzi and Yi, 2012).

Table 2 about here

Discriminant validity was tested using two different approaches (Bagozzi, 1994;
Bagozzi and Yi, 2012). First, we calculated the confidence intervals for correlations
using their standard errors (in brackets in Table 2). None of the intervals included the
value 1. Additionally, we ran one second measurement model constraining
correlations equal to 1 for each group. The results of the Lagrange multiplier (LM) test
showed the need to relax these constraints. We continue testing differences in terms
of model fit between the unconstrained (see model fit in Table 2) and the constrained
model (Model fit: $\chi^2=1710.985$; d.f.=568; Satorra-Bentler $\chi^2=1297.6911$). Applying the
Satorra Bentler scaled difference for non-normality (Satorra and Bentler, 2011)
differences in model fit were significant: Satorra-Bentler Scaled Difference = 882.52; df
= 20; Chi Square probability = 0.00. Consequently, we can conclude that concepts
included in the model present discriminant validity.

Once the measurement model had been evaluated, we continue showing the
results for the hypothesis posited. The results are summarized at Table 3. Results
highlight consistence across samples. In the multi-group analysis we have maintained the metric invariance constraints imposed. In addition, relationships among the concepts under analysis have been constrained equal across samples. Lagrange Multiplier test (LMTest) showed no necessity for relaxing these parameters (betas in Table 3) consequently results present the same beta values across samples. As expected, the effects of benevolence and competence on trust were positive and significant and the direct effects of decision control use and decision management use on trust non-significant, showing how competence and benevolence purely mediate the effect of PMS on trust.

Most of the proposed relationships between factors described in the hypothesis have been supported. The exception is the Hypothesis 1a. The discrepancy arises in the effect of partners’ perception of leader’s decision control use on partners’ attribution of leader’s benevolence. Contrary to expectations this effect is positive and cannot be considered different from the same relationship studied from the leader firm’s perspective. Indeed this positive effect deserves special attention and will be discussed in the following section. But in part, hypothesis 1a is supported in the extent to PMS decision control (used by the leader or perceived by the partner) presents positive effects on competence and benevolence from both perspectives (providing support for Hypothesis 1b too). As we proposed in Hypothesis 2, results show positive effects -equal across perspectives described in hypothesis 2a and 2b-, for the effects of PMS decision management use on competence and benevolence.

| Table 3 about here |

**Discussion and conclusion**

Some research have been focused in the study of multidimensional PMS for supervision, monitoring, but also for decision making, prioritizing issues, or developing improvement ideas, among others, in order to improve the organizational performance and the effectiveness of it (Malina and Selto, 2004). Most of these emphasize the role of multidimensional performance measures in directing managers’ attention to the longer-term consequences of their actions (Lee and Yang, 2011; Franco-Santos et al., 2012). In an asymmetrical IOR, where controlled firms’ behaviours are monitored, influenced, or managed (either explicitly or implicitly) by the leader firm, that firm must be proactive in its pursuit of better relationships based on trust.
However, relatively scarce is our knowledge about its social consequences (Thakkar, 2012). Bearing in mind that the same PMS information that the leader firm uses to control its partners, can be used by partners to manage their daily activities, this study shows how this twofold use positive affects each other competence’s valuation and benevolence’s attribution in an asymmetrical IOR. We provide empirical evidence on the full mediation effect on the associations between PMS uses and trust increasing our understanding about how PMS could build trust between partnering in an IOR.

Overall, the results show that trust is enhanced by PMS uses (decision control and decision management) from both perspectives, leader firm and partners. While we have proposed a negative effect from decision control use on benevolence attributions from partner’s perspective, we found only positive mediating effects of PMS uses on trust. In fact, multigroup SEM analysis shows only one overall result, maintaining consistence across samples and the metric invariance constraints imposed. From both samples, these effects appear fully mediated by perceived trustee characteristics and are common for the IOR as a whole. In our opinion, this result demands more research interest to study mutual trust from both perspectives.

Regarding the traditional top-down use, decision control, the results confirm that when leader firm uses PMS to evaluate, measure and reward partner performance, this own uses increases its trust in partners, through its perception about partners’ competence and benevolence. PMS decision control use, allowing a broader scope and objective way to evaluate, provides signals and motivates improvement in crucial activities to the leader firm, enabling partners to demonstrate strong performance in a variety of areas. In turn, it increases the leader firm’s perception about partners’ competence. Our results also suggest that this use enhances the likelihood/feeling that all relevant dimensions are “under control” (Velez et al., 2008) refraining from opportunism, and increasing the leader attribution of partners’ benevolence.

Likewise, we evidence that, when partners notice that they are controlled by the leader with a multidimensional PMS, not only increase their perception of leader’s competences but also enhance their attribution of leader’s benevolence. According to Mayer and Davis (1999) arguments for intraorganizational settings, the use of PMS indicators facilitates partners’ perception about leader firm managerial skills, highlighting a better knowledge to compete in this market. Our proposed model anticipated a negative effect of PMS uses, only from decision control to perceived benevolence, from partners’ perspective. However, contrarily, the perceived leader’s
decision control use presents a positive effect on how partners perceive the leaders’ benevolence. In spite of the arguments that establish that when partners perceive that the leader uses PMS for define targets and influence behaviours, they find their autonomy constrained (Inkpen and Curral, 2004) and they tend to see the leader’s acts with suspicion (Sitkin, 1995), the positive effect seems show that in the extent that partners perceive this use, it enhances their feeling that the manufacturer is on their side. In this sense, our study’s results are consistent with previous literature on superior and subordinate trust that argued that multidimensional PMS can be associated with safeguard against unfair reward sharing, and as tool to the recognition of employees work (e.g., Mayer and Davis, 1999). Hartmann and Slapničar (2009) found that when superiors use formal PMS to explicate performance targets, measure performance by a set of clear metrics, and give rewards based on clear allocation rules the subordinates perceive higher procedural justice and quality of feedback and this result in higher trust. Our results seem support these arguments in an asymmetric IOR.

This above mentioned analysis is in consonance with prior studies mainly focused on the effect between the traditional top down decision control use by the superior on subordinate’s trust. Advancing on it, the related literature is now contemplating the decision management use. Our study evidences that when a PMS is implanted by the leader firm and used for decision management by partners, it increases mutual trust between them. From both samples, these effects appear fully mediated by perceived competence and benevolence for the IOR as a whole.

Our results corroborate the proposed theoretical model for the partners’ perspective, about their own use, showing that in the extent that they use the PMS information to identify flaws to improve, make decision, trace the cause of their weak point or simply improve the coordination with the leader, this use both improves the perceived leader’s competence in the joint business and also increases their perception on leader benevolence, feeling that the leader firm tries to work next to them and resolve issues that are important for partners and in this way increases their trust in the leader (Ganesan, 1994).

Likewise, from the leader’s perspective, we found the leader reinforces its partners’ competence and benevolence valuation through their perception about partners’ PMS use. It supports the arguments that this use, on the one hand, makes visible some key success aspects to the common business increasing their perception about partners’ capabilities to accomplish the joint business; and, on the other hand, the greater
partners use is received as an engagement gesture, as a commitment and a signal the partners want to do the best.

The results and the constraints of this study suggest avenues for further research. First, it focuses on a successful and mature IOR. According to Ariño and de la Torre (1998) and Coletti et al. (2005) conclusions, positive feedback loops are critical in the evolution of alliances, and that control systems are critical from the start in fostering a climate for positive reinforcement and building trust. In our study, the great success and the vertical nature of this marketing channel could limit the generalizability of the results, which might not be applicable to other non-vertical relationships and/or networks in early stages. Second, the data come from a single industry and a single network; input from other industries and other distribution networks would be needed to further validate the results presented here. Third, the study uses surveys, and the data obtained were self-reported and cross-sectional. The study includes several steps to limit any survey bias; nevertheless, it would be of great interest to study the evolution of trust with longitudinal self-reported data.

References

Cooper, R. and Slagmulder, R. (1999), Supply chain management for lean enterprises: interorganizational cost management. IMA


Figure 1. Theoretical Model

Partners’ perspective

H1a: Partners’ perception of leader’s decision control use

H2a: Decision use by partners

Δ Trust

Leader’s valuation of leader’s competence

Partners’ attribution of leader’s benevolence

Leader firm’s perspective

H1b: Decision control use by leader firm

H2b: Leader’s perception of partners’ decision management use

Δ Trust

Leader’s valuation of partners’ competence

Leader’s attribution of partners’ benevolence
Table 1. Adapted Items (e.g. from the distributors’ perspective)

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Adapted Items</th>
</tr>
</thead>
</table>
| Abernethy and Vagnoni  | **DECISION-MANAGEMENT**  
                          | Since the introduction of PMS, you use the information provided to...  
                          | 1- Identify flaws to improve your management  
                          | 2- Make decisions to improve your relationship with clients  
                          | 3- Trace the cause of your weak points  
                          | 4- Improve in your administrative, warehouse, and distribution management  
                          | 5- Improve your coordination with the manufacturer  
| Bisbe (2002)           | **DECISION-CONTROL**  
                          | In your opinion, after the introduction of PMS, you think the manufacturer uses it to...  
                          | 1- Influence you through this information  
                          | 2- Make you personally accountable for variances occurring in your geographical area  
                          | 3- Develop incentives and rewards over reached targets  
                          | 4- Specify and clarify what the manufacturer wants from you  
| Ganesan (1994)         | **Competence**  
                          | Since the introduction of PMS, you perceive that:  
                          | 1- The manufacturer has more knowledge about its products  
                          | 2- Even this way, the manufacturer has problems to respond or to solve our questions (R)  
                          | 3- The utility of the advice that the manufacturer gives us has increased  
                          | 4- The manufacturer has more knowledge about its clients  
                          | 5- The manufacturer has more relational abilities with you  
                          | 6- The manufacturer has more relational abilities with its clients  
| Ganesan (1994)         | **Benevolence**  
                          | Since the introduction of PMS, you perceive that:  
                          | 1- The manufacturer is sacrificed more for us than in the past  
                          | 2- The manufacturer takes care more than us and of our business  
                          | 3- The manufacturer, when there are problems, he takes a risk more for us  
                          | 4- I sit down that the manufacturer is as a friend, as a partner of our business  
                          | 5- We feel that the manufacturer is on our side  
| Sanchez et al. (2012)  | **Trust**  
                          | Since the introduction of PMS, you perceive that...  
                          | 1- The manufacturer has been frank in dealing with us  
                          | 2- Promises made by the manufacturer are reliable  
                          | 3- The manufacturer does not make false claims  
                          | 4- The manufacturer is open in dealing with us  
                          | 5- If problems arise, the manufacturer is honest about the problems  

Table 2. Confirmatory Factor Analysis.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Item</th>
<th>Distributors' Perspective</th>
<th>Manufacturer's Perspective</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Standardized loadings' factors</td>
<td>Standardized loadings' factors</td>
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<tr>
<td>Decision-Management (DM)</td>
<td>DM1</td>
<td>.797</td>
<td>.789</td>
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<tr>
<td></td>
<td>DM2</td>
<td>.820</td>
<td>.810</td>
</tr>
<tr>
<td></td>
<td>DM3</td>
<td>.848</td>
<td>.842</td>
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<tr>
<td></td>
<td>DM4</td>
<td>.680</td>
<td>.756</td>
</tr>
<tr>
<td></td>
<td>DM5</td>
<td>.613</td>
<td>.774</td>
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<tr>
<td>Decision-Control (DC)</td>
<td>DC1</td>
<td>.696</td>
<td>.779</td>
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<tr>
<td></td>
<td>DC2</td>
<td>.572</td>
<td>.615</td>
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<tr>
<td></td>
<td>DC3</td>
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<td>.742</td>
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<td>DC4</td>
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<td>.759</td>
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<tr>
<td>Competence</td>
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<td>.728</td>
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<td></td>
<td>COMP2</td>
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<td>.780</td>
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<td></td>
<td>COMP3</td>
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<td>.689</td>
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<td>COMP5</td>
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<td>COMP6</td>
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<td>.734</td>
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<td>Trust</td>
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<td>.850</td>
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<td></td>
<td>TRUST2</td>
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<td>TRUST3</td>
<td>.811</td>
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<td>TRUST4</td>
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<td></td>
<td>TRUST5</td>
<td>.766</td>
<td>.911</td>
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<tr>
<td>Benevolence</td>
<td>BENEV1</td>
<td>.714</td>
<td>.883</td>
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<td></td>
<td>BENEV2</td>
<td>.747</td>
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<td></td>
<td>BENEV3</td>
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<td>BENEV4</td>
<td>.695</td>
<td>.790</td>
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<td></td>
<td>BENEV5</td>
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</table>

NOTE: All loadings factor were significant at 5%.

#### AVE and correlations (Standard Errors)

<table>
<thead>
<tr>
<th></th>
<th>C.R.d</th>
<th>C.R.f</th>
<th>DM</th>
<th>DC</th>
<th>Competence</th>
<th>Benevolence</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM</td>
<td>.87</td>
<td>.90</td>
<td>.57(.63)</td>
<td>.690(.073)</td>
<td>.470(.094)</td>
<td>.403(.110)</td>
<td>.322(.118)</td>
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<tr>
<td>DC</td>
<td>.70</td>
<td>.82</td>
<td>.703(.077)</td>
<td>.37(.53)</td>
<td>.581(.085)</td>
<td>.528(.107)</td>
<td>.457(.107)</td>
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<td>Competence</td>
<td>.84</td>
<td>.89</td>
<td>.724(.057)</td>
<td>.770(.054)</td>
<td>.47(.58)</td>
<td>.764(.058)</td>
<td>.673(.070)</td>
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<tr>
<td>Trust</td>
<td>.91</td>
<td>.92</td>
<td>.646(.067)</td>
<td>.626(.081)</td>
<td>.795(.051)</td>
<td>.67(.70)</td>
<td>753(.066)</td>
</tr>
<tr>
<td>Benevolence</td>
<td>.87</td>
<td>.94</td>
<td>.571(.080)</td>
<td>.531(.100)</td>
<td>.696(.074)</td>
<td>.842(.035)</td>
<td>.57(.76)</td>
</tr>
</tbody>
</table>

NOTE: Composite Reliability (C.R.) for distributors (d) and focal firm (f)

*AVE (in the diagonal) and correlations for the distributors’ sample are in the upper side in each case;

*AVE (in the diagonal) and correlations for Manufacturer’s sample are in the lower side in each case;  
Model fit Indices: Chi-Squared=976.721; d.f.=548 (p<.000); Satorra-Bentler Chi-square=730.888; p=.000.; Robust NFI=.749;  
Robust NNFI=.913; Robust CFI=.921; Robust IFI=.923 ; Robust RMSEA=.058;
Table 3. Results

<table>
<thead>
<tr>
<th>Dependent</th>
<th>Independent</th>
<th>Beta(^a) (t-value)</th>
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<tbody>
<tr>
<td>Competence</td>
<td>DM</td>
<td>.241 (4.707)*****</td>
</tr>
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<td></td>
<td>DC</td>
<td>.429 (6.448)*****</td>
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<tr>
<td>Benevolence</td>
<td>DM</td>
<td>.230 (2.719)*****</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>.480 (5.134)*****</td>
</tr>
<tr>
<td>Trust</td>
<td>DM</td>
<td>.030 (.399)</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>-.013 (.111)</td>
</tr>
<tr>
<td></td>
<td>Competence</td>
<td>.230 (2.719)*****</td>
</tr>
<tr>
<td></td>
<td>Benevolence</td>
<td>.480 (5.134)*****</td>
</tr>
</tbody>
</table>

\(^a\)Non standardized loading factors for both perspectives.

Betas factors were constrained equal across samples.

*** Significant at 1%

Model fit Indices: Chi-Squared= 1094.090; d.f.= 560 (p<.000);
Satorra-Bentler Chi-square= 833.0539; p=.000; Robust NFI=.714;
Robust NNFI=.873; Robust CFI=.882; Robust IFI=.884; Robust
RMSEA=.071