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The impact of inter-organizational management control systems on performance: A retrospective case study of an automotive supplier relationship

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ABSTRACT

This study investigates whether appropriate management control system (MCS) design of supplier relationships is associated with good performance. Although MCSs are found to be contingent on situational characteristics, it remains unclear whether this contingency fit contributes to performance. To illustrate the validity and dynamics of the fit–performance association, we perform a retrospective case study of an exemplary automotive manufacturer–supplier relationship that changed considerably during the course of production. Case findings show that a MCS contingency misfit is associated with poor performance. This misfit is only temporal, however, as the manufacturer can adapt the MCS to fit the changed supplier relationship and regain performance. Furthermore, our case demonstrates the importance of informal control on supplier management, as formal controls appeared unable to overcome operational difficulties. In this respect, the case also shows the manufacturer's active role in establishing trust building and social pressure by choosing a suitable supplier plant manager. The resulting leap of trust indicates that trust does not always need to be built gradually. Finally, our case reveals that relying on informal controls – in particular trust building – requires the manufacturer to be well aware of its use. Otherwise, the importance of increasing informal control will be underestimated when risks increase or trust is damaged, and valuable time will be lost.

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1. Introduction

Management control systems (MCS) influence decision making to attain (strategic) objectives (Nixon and Burns, 2005). In an inter-organizational relationship (IOR), this implies creating bilateral incentives to pursue mutual goals, for which formal and informal control techniques exist (Langfield-Smith and Smith, 2003). Formal controls are established explicitly to coordinate the IOR and include both outcome and behaviour controls. Informal controls are not designed outright, but instead originate from shared norms and values (Merchant, 1998) and include trust building (e.g., Dekker, 2004) and clan control (Ouchi, 1979).¹

This study investigates whether the design of appropriate MCS for supplier relationships is associated with good performance. In this study's context, 'appropriate' is defined as contingent on situational characteristics, whereas 'design' is defined as consisting

of particular control techniques. The MCS fit–performance association remains under-explored, contrary to the contingency fit between MCS design and situational characteristics, which has been studied thoroughly both within and between organizations (Chenhall, 2003; Dekker, 2004). Nevertheless, the association between appropriate design and performance forms contingency theory's main interest, because it explains the fit association (Donaldson, 2001). Despite this interest, previous contingency studies on inter-organizational management control only assume – either explicitly (e.g., Dekker, 2004) or implicitly (e.g., Cooper and Slagmulder, 2004) – that an appropriate MCS design contributes to performance. Following calls for more attention to inter-organizational MCS (van der Meer-Kooistra and Vosselman, 2006), this study aims to test the validity and dynamics of this assumption in practice.

For this purpose, we propose a contingency framework from the buyer's position. On the one hand, this framework visualizes the association between the contingency variables of supplier relationships that influence risks and management control techniques governing these risks (cf. Das and Teng, 2001; Dekker, 2004). On the other hand, the framework includes the association between the degree of MCS fit on contingencies and risks, and performance. With

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¹ More information on management control techniques is provided in the second part of this paper, which describes the contingency framework.

respect to this association, we propose that (1) a misfitted MCS is associated with poor performance, (2) a misfitted MCS only temporarily aggravates performance, until the MCS is changed to a design that fits the changed contingencies and risks and therefore contributes to performance (Dekker, 2004; Kamminga and van der Meer-Kooistra, 2007; van Veen-Dirks, 2006). Corresponding to calls for this kind of research in the intra-organizational production environment (van Veen-Dirks, 2006) and inter-organizational joint ventures (Kamminga and van der Meer-Kooistra, 2007), we argue that investigating these propositions for supplier relationships in the manufacturing phase of the supply chain is worthwhile (Cooper and Slagmulder, 2004; Langfield-Smith and Smith, 2003).²

More specifically, this paper presents an in-depth retrospective case study of a manufacturer–supplier relationship (MSR) between Volvo Cars Gent (VCG) and one of its high value-added, just-in-sequence (JIS) module suppliers (SAG). We propose that the case study research method is strong for investigating the association between MCS fit and performance because it allows studying an extensive MCS of individual supplier controls (Ittner et al., 1999; Dekker, 2004). Similar to previous research (e.g., Doran et al., 2007; Kajüter and Kulmala, 2005; Schmitz and Platts, 2004; Wong and Boon-itt, 2008), the trend-setting automotive industry (cf. Warnecke and Hüser, 1995; Womack et al., 1990) suits this case research because high levels of component outsourcing and extreme competitive pressure characterize this industry. Manufacturers thus initiate continuous improvement projects with suppliers, which require appropriate MCSs to organize and manage the relationships (Alford et al., 2000; Carr and Ng, 1995; Scannell et al., 2000). Because the fit-performance association is only visible in relationships as they change over time, we specifically investigate a MSR that was subject to considerable change. To structure and interpret the retrospective data in relation to our contingency framework, we use the research methods of temporal bracketing and variance (Rowe et al., 2008).

Findings from this analysis confirm our research propositions and illustrate how the fit-performance association changed over time. After starting module production and delivery for two new Volvo models, SAG struggled to perform. Because VCG's MCS no longer fitted SAG's increased contingencies and risks, the MCS actually aggravated operational difficulties. The MCS was subsequently changed toward a more appropriate design. After three attempts, the new MCS fitted the changed level of risks and contributed to regaining performance (Kamminga and van der Meer-Kooistra, 2007; van Veen-Dirks, 2006). Besides illustrating the course of events leading to the new fit-performance association, our case shows the importance of informally controlling SAG management (Sako, 1992; Speklé, 2001) and the active role VCG played in establishing this control by choosing SAG managers.

The remainder of this paper is organized as follows. In Section 2, we provide an in-depth literature review that explains and motivates the research questions and case research design and describes our contingency framework and propositions. In Section 3, we briefly discuss the details of the case methodology. Section 4 features the actual case study and presents the selected MSR. We describe this relationship's characteristics and performance through time and indicate how the governing MCS changed during periods of fluctuating performance. In Section 5, we discuss our findings. In Section 6, we conclude by summarizing the main findings and highlighting avenues for further research.

² This study abstracts from earlier supply chain phases of procurement (involving the make-or-buy decision, selecting a partner, contract design, etc.) and research and development (R&D), which prior MCS research has addressed. In terms of research methodology, we study a relationship between a manufacturer and supplier facility that only deals with manufacturing, while procurement and R&D are handled by their respective mother companies.

2. Literature review

2.1. Research topic

The contingency theory aims to explain the structure of organizations based on particular circumstances (Lawrence and Lorsch, 1967). The theory has been adopted and further developed to explain the design of MCSs in organizations (Chenhall, 2003; Fisher, 1998; Luft and Shields, 2003). Contingency theory is also used frequently in inter-organizational studies, although some authors have not always explicitly mentioned using it (e.g., Dekker, 2004; Kamminga and van der Meer-Kooistra, 2007; Thun and Hoening, 2011). Consequently, these studies reveal several situational characteristics influencing the MCS design of inter-organizational relationships, such as strategic alliances (e.g., Narasimhan and Nair, 2005), joint ventures (e.g., Kamminga and van der Meer-Kooistra, 2007), inter-organizational cost management relations (e.g., Cooper and Yoshikawa, 1994), outsourcing relations (e.g., Mclvor, 2009), and networks (e.g., Kulmala et al., 2002).

It remains unclear, however, whether the contingency fit between the MCS and situational characteristics found in these studies is associated with performance. For example, the service outsourcing cases of van der Meer-Kooistra and Vosselman (2000) and Langfield-Smith and Smith (2003) do not indicate the MCS's impact on performance. On the contrary, Kajüter and Kulmala (2005) explicitly incorporated performance as an outcome variable in a contingency framework, explaining the use of open-book accounting in networks. Yet, they do not provide evidence on the performance impact of open-book accounting, as this impact appears too difficult to assess precisely (Kajüter and Kulmala, 2005). Comparably, Dekker (2004) acknowledged that in the strategic alliance between a supplier of railway safety system components and the Dutch Railways, “no assessment could be made of the performance consequences of the alliance and in particular of its governance structure” (Dekker, 2004, p. 47).

Nevertheless, performance forms the central variable in the contingency theory of organizations, which aims to explain organizational success or failure by three core elements (Donaldson, 2001). Applied to MSR management control, these core elements are the following. First, certain contingencies such as task uncertainty and environmental uncertainty are associated with MCS design. Second, these contingencies determine MCS design because changing contingencies actually cause the manufacturer to change the MCS design. Third, and most important, the fit between the MCS design and the influencing contingency variables benefits operational performance, whereas a misfit decreases performance. Undoubtedly, this third association forms the underlying assumption of studies that have investigated the contingency associations of inter-organizational MCSs (Dekker, 2004; Kamminga and van der Meer-Kooistra, 2007). Still, empirical evidence on the validity of this assumption is limited.³

2.2. Prior research

To our knowledge, only Ittner et al. (1999) and Anderson and Dekker (2005) quantitatively studied the MCS fit-performance association.⁴ In particular, Ittner et al. (1999) investigated whether

³ The impact of contingency fit on performance has been studied in other management accounting research fields, such as activity based costing (e.g., Askarany et al., 2010). In the field of production research, a recent study by Merschmann and Thonemann (2011) on the performance effect of a fit between environmental uncertainty and supply chain flexibility is exemplary.

⁴ Leiblein et al. (2002) and Sampson (2004) also studied the MCS fit-performance association, albeit from a more high-level strategic orientation and without looking into the actual MCS of the IOR.

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