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Getting to Know You: Trust Formation in New Interfirm Relationships and the Consequences for Investments in Management Control and the Collaboration*

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Abstract

Trust is often posited to substitute for management control in interfirm transactions. However, this raises questions of how trust arises in new relationships, and whether trust that is not based on prior experience transacting together is sufficient to persuade managers to forgo investments in management controls. We use an experiment to test whether two features of the early stage of an interfirm relationship influence a buyer's initial trust in a supplier and have consequences for subsequent investments in management controls and in the collaboration. These two features are the autonomy of the buyer's manager to choose a supplier (i.e., delegation of decision-making authority) and the supplier's willingness to share information with the buyer. We find that the buyer manager's initial trust in the supplier is associated positively with both the autonomy to choose the supplier and the supplier's willingness to share information. Information content and supplier characteristics are held constant, so these results are novel and distinct from prior studies of the antecedents of trust. We find that higher initial trust is associated with reduced expenditures for management controls and increased investments in the collaboration. Thus, we conclude that delegation of decision-making authority and supplier information-sharing behavior in the early stages of a relationship influence the formation of initial trust, which has real consequences for investments in management control and in the collaboration.

Keywords: supplier selection, decentralization, autonomy, experiment
JEL descriptors: M41

1. Introduction

Studies on the role of management control in mitigating the risks of interfirm relationships have focused on "trust" as a mechanism that attenuates risk and diminishes the need for controls (Sako 1992; Gulati 1995; Tomkins 2001; Dekker 2008). These studies presume that trust is built over time as transacting parties gain experience working together (hereafter "transacting experience"), but are silent about how trust is established at the outset of a relationship (what has been termed "initial trust" by McKnight, Cummings, and Chervany 1998). This is an important omission because initial trust is a natural starting point for the increasingly important practices of temporary work groups and interfirm projects in which individuals and firms collaborate with unfamiliar parties (e.g., Laan, Noorderhaven, Voordijk, and Dewulf 2011; Johansen, Selart, and Gronhaug 2013). Indeed, initial trust has been shown to affect critical decisions and task performance during the relationship-formation phase, subsequent trust between transacting parties, and the long-term success of relationships (e.g., McKnight and Chervany 2006; Langfield-Smith 2008). This study extends the management control literature by examining whether two important features of relationship formation: (i) delegation of autonomy to select suppliers, and (ii) information-sharing behavior, influence initial trust formation, and whether initial trust subsequently influences investments in management controls and interfirm collaboration. Although interfirm relationships take a variety of forms (Anderson and Sedatole 2003), the focus of this study is the common setting of nonequity, contract-based relationships in which dyads of buyers and suppliers collaborate to obtain a shared return in uncertain projects (see also Masschelein, Cardinaels, and Van den Abbeele 2012).

An important precursor to the formation of interfirm relationships is the selection of transaction partners. In the case of buyer-supplier relationships, partner selection may be centralized (e.g., with business units required to buy from company-designated suppliers), or decentralized (e.g., with business units given the autonomy to select a supplier) (McCabe 1987; Sieweke, Birkner, and Mohe 2012; Pemer, Werr, and Bianchi 2014).[1] We use motivated reasoning

[1] Some empirical purchasing and procurement studies find that about half of the firms delegate purchasing decisions to divisional managers, while the other half retain these decisions in centralized functions (e.g., Plank and Kijewski 1991; Sieweke et al. 2012). These findings can also apply broadly to the delegation of autonomy to select suppliers/partners in collaborative interfirm relationships. Further, although Plank and Kijewski and Sieweke et al. examine extreme forms of decentralized supplier selection processes, many firms lie on the continuum (e.g., allowing managers to participate in the selection process). The extent of decentralization varies with factors such as firm size, environmental uncertainty, and the complexity, novelty or importance of products (e.g., McCabe 1987; Lau, Goh, and Phua 1999).

theory (Kunda 1990) to hypothesize that having the autonomy to select suppliers will have a positive effect on the buyer's initial trust, all else equal. The transacting partners' information-sharing behavior during relationship formation is also likely to be influential in developing initial trust since the firms have no transacting experience. This study focuses on the act of sharing information rather than the content of information shared between transacting parties. Although due diligence processes and interactions with a partner during relationship formation can reveal useful information about a partner's trustworthiness (e.g., van der Meer-Kooistra and Vosselman 2000), we use attribution theory to predict that a supplier's willingness to share information will in itself be viewed as a signal of trustworthiness and increase the buyer's initial trust in the supplier (e.g., Rennie, Kopp, and Lemon 2010). We isolate the supplier's information-sharing behavior from the information content in order to test this hypothesis.

Turning to the consequences of initial trust, we hypothesize that greater initial trust of the buyer is associated with reduced investment in management control and increased investment in the buyer-supplier collaboration. By mitigating perceived risk, initial trust allows the buyer to economize on controls for a given investment in the collaboration, or, at the other extreme, to maintain the same level of control while investing more heavily in the collaboration.[2] If the effects of trust are not confined to reductions in management controls, but also influence investments in the collaboration, then a failure to consider both provides an incomplete picture of the role trust plays in overcoming the risks inherent in interfirm transactions. In the research setting, the investment in controls precedes the investment in the collaboration, thus we hypothesize that a given investment in controls is associated positively with subsequent investment in the collaboration. To our knowledge, this study is the first that examines investments in both management controls and in the collaboration.

The results show that both the autonomy to select the supplier and the supplier's willingness to share information increase a buyer manager's initial trust in the supplier; however, there is no interaction effect. Higher initial trust is found to be associated with lower expenditures on management controls and higher investments in the collaboration. Further, initial trust mediates the relations between each feature of relationship formation and the buyer manager's control and investment decisions, respectively. That is, a manager who selects a supplier has higher initial trust, and hence spends less on controls and more on the collaboration than one assigned a

[2] We focus on the real consequences of trust rather than the "optimal" (i.e., lowest total cost) level of trust that balances the costs of control loss against the costs of control investments (Anderson, Dekker, and Van den Abbeele 2015).

supplier. Similarly, a manager whose supplier willingly shares (decision-irrelevant) information has higher initial trust and thus spends less on controls and more on the collaboration than one whose supplier refuses to share extraneous information and who instead obtains the information from other sources.

Prior research has established that trust has two components: competence trust, which is defined as the belief that the partner has the capability to complete the transaction, and goodwill trust, which is the belief that the partner will act with integrity and benevolence in completing the transaction (Sako 1992; Das and Teng 2001; Dekker 2004). When we decompose the measure of trust into these two components we find that both the autonomy to select suppliers and suppliers' information-sharing behavior significantly increase competence and goodwill trust. However, the association between information-sharing behavior and competence trust is weaker than that for goodwill trust. These findings highlight the importance of understanding the specific mechanisms of trust formation—mechanisms that appear to differ for different components of trust. We find that competence trust reduces spending on controls and increases investment in the collaboration. In contrast, goodwill trust reduces spending on controls but has no effect on investment in the collaboration.

This study makes three distinctive contributions to the literature. First, it extends the literature on trust and management controls in interfirm settings to the special case of *initial trust* (i.e., trust that is not based on transacting experience). Research on the use of controls to mitigate interfirm transaction risk has been criticized for almost exclusively relying on theory "grounded in economics" (Arino and Ring 2010, 1054). In using behavioral theories to examine antecedents of initial trust, we contribute evidence on the microfoundations of trust formation and extend prior research on management controls (i.e., delegation of decision-making authority) as antecedents of trust. While extant studies focus on selecting the "right" partner to enhance trust (van der Meer-Kooistra and Vosselman 2000; Phua, Abernethy, and Lillis 2011), this paper contributes evidence that delegating the right to select suppliers gives rise to a cognitive state that affects subsequent decisions. Similarly, prior studies focus on the *content* of information shared between collaborative partners as the basis of building (or destroying) trust (Tomkins 2001; Vosselman and van der Meer-Kooistra 2009). We find that suppliers' information-sharing *behavior* also affects initial trust, holding constant information content. Misleading or misinterpreted behavioral signals may prompt buyers to invest less in controls and more in the collaboration than transaction risks warrant. By investigating mechanisms that give rise to initial trust that are both theoretically and

practically important, we address a common critique, that the development of trust is theorized but has limited empirical support (van der Werff and Buckley 2014).

A second contribution is the joint consideration of the risk-mitigating effect of initial trust on investments in both management controls and the collaboration. Inkpen and Currall (2004) and Langfield-Smith (2008) examine how trust in the relationship-formation stage affects control choices. The research design of this study admits the possibility that risk mitigation is met with increased investment in the collaboration in addition to or instead of reductions in management control investments. Thus we provide a more complete picture of the effects of initial trust.

Finally, to the best of our knowledge, this study is the first to decompose trust into its two components to examine whether their antecedents differ and whether they have differing influences on spending on controls and on the collaboration. The preliminary findings suggest that this approach is a promising avenue for understanding mechanisms by which trust mitigates risk. While the autonomy to select suppliers affects both components of trust, we find that the suppliers' information-sharing behavior has a stronger association with goodwill trust than with competence trust. Moreover, we find that goodwill and competence trust induce responses of differing intensity. Specifically, goodwill trust has a muted effect on investments in the collaboration as compared to competence trust. These preliminary findings suggest that different forms of trust correspond to different responses and, potentially, to different management controls, a proposition that merits further research.

The remainder of the paper is organized as follows: Section 2 reviews relevant literature on trust in interfirm relationships and develops the research hypotheses. Section 3 describes the experiment and the variable measures. Section 4 presents and discusses the results of the experiment, and section 5 concludes with a brief summary of results.

2. Background and hypotheses development

Trust in interfirm relationships

Following conventions of prior studies, "interfirm trust" is defined as: (i) a firm having positive expectations about its partner (e.g., belief in the partner's abilities or that the partner will not act against the firm's interest); and (ii) a firm being willing to be vulnerable to the actions of its partner (see Rousseau, Sitkin, Burt, and Camerer 1998; Tomkins 2001; Vosselman and van der Meer-Kooistra 2009). Interfirm trust includes beliefs that a transaction partner has the requisite skills (ability), is honest and committed to keeping its word (integrity), and is concerned about and has positive intentions toward the firm's interests (benevolence) (Mayer, Davis, and Schoorman 1995; Nicolaou, Sedatole, and Lankton 2011). Interfirm trust can exist at multiple levels between

individuals and/or firms (Tomkins 2001; Velez, Sanchez, and Alvarez-Dardet 2008). This study examines an individual's (i.e., a buyer manager's) trust in a supplying firm and its employees.

Early research on interfirm trust posits that trust diminishes the need for formal controls as it reduces behavioral uncertainty and perceived risk (Das and Teng 2001; Vosselman and van der Meer-Kooistra 2009), induces and extends the scope of cooperation (Das and Teng 1998; Velez et al. 2008), and enhances performance and stability of the relationship (Zaheer, McEvily, and Perrone 1998). Empirical tests of these propositions adopt different trust measures. In one approach, trust is measured indirectly by assuming that it is present between firms that interact repeatedly, but absent (or markedly diminished) in new partnerships without prior transacting experience (e.g., Gulati 1995). Other studies, like this one, use validated scales to directly measure trust on a continuous scale (Nicolaou and McKnight 2006; Nicolaou et al. 2011). Whether it is measured directly or indirectly, embedded in most studies is the assumption that trust is gained through transacting experience.

A number of studies challenge this assumption, arguing that trust may exist at the outset of a relationship, or may emerge early in relationship formation before transactions begin (e.g., McKnight et al. 1998; Christ, Sedatole, and Towry 2012; van der Werff and Buckley 2014). Even without firsthand transacting experience, "initial trust" develops based on dispositional, institutional, and cognitive factors. Whether initial trust is stable (i.e., robust) or prone to change (i.e., fragile) depends on antecedent conditions, such as public reputation, first impressions based on the other party's willingness to share information, and an individual's disposition to trust (McKnight et al. 1998). Initial trust is important because it leaves "strong imprints on the development of [collaborative] relationships in later stages of development" (Vlaar, Van den Bosch, and Volberda 2007, 409). Initial perceptions of a partner's trustworthiness may have long-term effects because cognitive processes promote the maintenance of beliefs (e.g., McKnight and Chervany 2006; van der Werff and Buckley 2014). Inkpen and Currall (2004) and Langfield-Smith (2008) highlight the importance of studying actions and events that affect trust during the relationship-formation stage. If there is minimal trust at the outset of a relationship, then perceived transaction risks can be mitigated by spending more on management controls.[3] In contrast, if trust

[3] Initial trust is particularly valuable if control costs entail fixed costs that are "sunk" in future periods as well as variable costs. In this case, the benefit of trust gained through transacting is limited to savings associated with eliminating or reducing variable control costs. Dye (1995) notes that it is common for theoretical studies to assume such a cost structure (e.g., a fixed cost of contracting per contingency or risk).

exists prior to transacting, partners may diminish spending on management controls and invest more in the collaboration.

This paper investigates antecedent conditions that influence initial trust in interfirm relationships; specifically, the influence of two features of relationship formation—the delegation of autonomy to select suppliers and suppliers' information-sharing behavior—on a buyer manager's initial trust in a supplier. We further examine the consequences of initial trust on subsequent spending on management controls and on the collaboration. Figure 1 presents a schematic of the model. To shed light on the mechanisms of trust formation and potentially differing effects on subsequent investments, initial trust is decomposed into its two components: competence trust and goodwill trust. The following sections develop the research hypotheses about the effects of delegation of autonomy to select suppliers and suppliers' information-sharing behavior on buyers' initial trust.

[INSERT FIGURE 1 HERE]

Delegation of autonomy to select suppliers and initial trust

Management controls are designed to align organizational structure (i.e., the delegation of decision-making authority, performance measurement systems, and incentive schemes) with strategy to deliver superior performance (Jensen and Meckling 1995). In considering factors that influence a buyer manager's initial trust in a supplier, we focus on the delegation of a specific decision-making authority—the selection of a supplier—to an employee who is charged with managing the buyer-supplier relationship. In an experimental study, Slonim and Garbarino (2008) find that participants who are allowed to specify age and gender characteristics of their partners are more attracted to, and have greater initial trust in, their partners compared to those allowed no input. They also speculate that, independent of partner characteristics, the act of participating in partner selection affects trust through a "behavioral effect." Similarly, McKnight et al. (1998) theorize that one's perception of having some control in an uncertain situation facilitates the formation of initial trust.

Prior studies find that selecting a partner with the "right" characteristics enhances trust (van der Meer-Kooistra and Vosselman 2000; Phua et al. 2011). If initial trust in a partner is driven only by partner characteristics, then all else equal, a buyer manager's initial trust in his supplier should be the same regardless of whether the supplier is chosen by him or his superior. In contrast, we draw on the theory of cognitive dissonance (Festinger 1957) and related research on motivated reasoning (Kunda 1990) to hypothesize that the mere act of choosing a supplier can by itself increase a buyer manager's trust. Cognitive dissonance theory suggests that individuals who have

made a difficult decision experience post-decision dissonance (i.e., psychological discomfort arising from the concern that the decision may not be optimal). Kunda extends this argument, positing that dissonance motivates individuals to mentally restructure available information to support the belief that their decision is correct and to avoid feeling foolish or inept. For example, one may focus on advantages (disadvantages) of the chosen (rejected) option. The tendency to evaluate information in ways that are consistent with preferences is known as "motivated reasoning" (Kunda 1990).

We posit that a buyer manager with the autonomy to choose a supplier is motivated in the manner described by Kunda to believe that the supplier has the ability to succeed in the collaboration (i.e., competence trust) and the intentions to act with integrity and benevolence (i.e., goodwill trust). Hence, holding supplier information constant, we hypothesize that a manager who is given the right to select a supplier is more likely to perceive that supplier as trustworthy and to bestow both competence trust and goodwill trust upon the supplier than a manager with no decision autonomy.

HYPOTHESIS 1. *The buyer manager's initial trust in a supplier is higher when he has autonomy to select the supplier than when he does not have autonomy to select the supplier.*

Information-sharing behavior and initial trust

During the uncertain early stages of relationship formation, firms actively search for information and are attuned to cues about potential partners. Information that sheds light on partners' relevant skills, experience, and values can increase trust by reducing information asymmetry and uncertainty (Tomkins 2001; Vosselman and van der Meer-Kooistra 2009). Trust can also be built when partners signal commitment to the relationship, intention to cooperate, and (hence) trustworthiness by providing information that puts them in a vulnerable position. For example, the provision of sensitive cost information in open-book accounting can build trust (Dekker 2003). However, in willingly sharing sensitive information, the influences of information content and of the signal provided by this action are confounded. The communications literature finds that both information content and behavior of a speaker influence perceptions of trustworthiness (Whitener, Brodt, Korsgaard, and Werner 1998).

These findings prompt us to ask whether a supplier's information-sharing *behavior* signals trustworthiness and increases a buyer manager's initial trust when the content of the information being shared does not indicate the supplier's trustworthiness. Intuitively, the supplier's

information-sharing behavior could have no bearing on the manager's initial trust in the supplier if he recognizes that the information content shared is irrelevant to the collaboration and does not shed light on the supplier's trustworthiness. Similarly, because the supplier does not benefit from withholding innocuous information, the refusal to share such information may not reduce initial trust. However, attribution theory provides guidance in understanding how an act of sharing even irrelevant information influences initial trust.

Attribution theory posits that individuals continually interpret other people's behaviors in an effort to establish their motivations (Wagner and Gooding 1997). Observers tend to attribute observed behavior to dispositional factors (i.e., an actor's personality) rather than to external situational factors, and they often draw on their own behavioral repertoire to explain others' behaviors. Thus, the attribution process is influenced by prior beliefs and experience about what constitutes reasonable causality (Gilbert and Malone 1995). Prior studies posit that trust is a result of an attribution process. Rennie et al. (2010) find that auditors attribute trustworthiness to clients who communicate openly. In this vein, attribution theory suggests that a buyer manager will attribute a supplier's information-sharing behavior to the latter's trustworthiness independent of information content. The manager interprets the act of sharing information as evidence of integrity and benevolence, which engenders goodwill trust. A supplier's willingness to share information may be interpreted as the supplier having nothing to hide (e.g., any prior failures or evidence of incompetence). Thus, competence trust may increase. A tendency to think positively of the supplier and his ability to do the job may also stem from the manager's goodwill trust in the supplier. Conversely, the refusal to share information may be a behavioral cue that the supplier is lacking in goodwill and/or wishes to hide incompetence. The above arguments are summarized as follows:

HYPOTHESIS 2. *The buyer manager's initial trust in the supplier is higher when the supplier is willing to share information about his firm than when he refuses to share information.*

Delegation of autonomy to select suppliers, information-sharing behavior, and initial trust

Research on motivated reasoning bias and cognitive dissonance suggests that past decisions affect how new information is interpreted. Cognitive dissonance theory posits that individuals experience increased cognitive dissonance when they receive information that is inconsistent with a prior decision. In response, they downplay the significance of this information (Festinger 1957;

Aronson 1995). Thus we expect that autonomy to select suppliers will cause a buyer manager to downplay the significance of his chosen supplier's refusal to share information. In contrast, a buyer manager who did not select his supplier will not feel a psychological need to justify a prior choice, nor is he likely to hold a strong prior belief about the assigned supplier. As such, his initial trust in the supplier will be reduced by the discovery that the supplier refuses to share information. This suggests an interaction effect where the decrease in initial trust that accompanies a supplier's refusal to share information is less for a buyer manager who selects the supplier than for one who is assigned the supplier.

There are, however, two reasons why we may not observe an interaction effect. First, motivated reasoning theory broadly posits that even in the absence of cognitive dissonance, individuals are motivated to construct beliefs and interpret new information to support their preferred conclusion (Kunda 1987, 1990). Thus, a buyer manager with autonomy to select suppliers will prefer to conclude that the supplier he chose is trustworthy. He may engage in motivated reasoning and interpret *any* new information about the supplier more favorably to support this preference, even if the new information does not threaten his prior decision (Kunda 1987). Accordingly, he may more strongly attribute a willingness to share information to a supplier's trustworthiness and downplay a supplier's refusal to share information as compared to a manager who is assigned a supplier. If this is the case, autonomy to select a supplier will increase a buyer manager's initial trust in his supplier under both types of information-sharing behavior. Second, motivated reasoning bias is constrained by an individual's ability to construct a rationalization. Very strong counterevidence will force an individual to accept an undesirable conclusion (Kunda 1990). Similarly, Kiesler (1971) argues that cognitive dissonance-induced self-justification behavior is mitigated by very strong negative feedback that forces an individual to abandon a decision commitment. Neither theory makes clear what constitutes "very strong" counterevidence. However, if a supplier's refusal to share innocuous information is seen as a very strong negative behavioral signal, then a buyer manager with autonomy to select suppliers may lower his assessment of the supplier's trustworthiness despite a desire to conclude that his supplier choice was correct. Based on the above discussion, we pose the following research question:

RESEARCH QUESTION: *Does the effect that the supplier's information-sharing behavior have on the buyer manager's initial trust differ depending on whether or not he has the autonomy to select the supplier?*

The effect of initial trust on investment in management control and in the collaboration

The extant empirical literature on interfirm management controls focuses almost exclusively on the risk-mitigating role of trust and its impact on the design of management control systems (Gulati 1995; Coletti, Sedatole, and Towry 2005; Christ et al. 2012). An equally important but little explored path by which trust may influence interfirm collaboration is the effect it has on the real activities of collaboration. Although the risk-mitigating effects of trust may reduce management control investments with no change in the real activities of collaboration, it is equally plausible that trust makes possible greater investments in the collaboration with no changes to management controls (Anderson, Christ, Dekker, and Sedatole 2014).

Consider first the relation between initial trust and spending on controls, holding investments in the collaboration equal to what they would be in the absence of initial trust. Higher levels of trust reduce perceived risk in a relationship, and thus reduce the need for controls (Groot and Merchant 2000; Das and Teng 2001).[4] We predict that, on average, a buyer manager with greater initial trust in the supplier will spend less on management controls to avoid incurring unnecessary costs:

HYPOTHESIS 3a. *The buyer manager's initial trust in the supplier is negatively associated with his spending on controls.*

Next, consider the relation between initial trust and investments in the collaboration, holding expenditures on controls equal to what they would be in the absence of initial trust. Common risks of interfirm transactions include the potential for partners to behave opportunistically (i.e., relational risk) and for the collaboration to fail to achieve desired outcomes due to partner incompetence and factors other than noncooperative behavior (i.e., performance risks) (Das and Teng 2001). A buyer manager who has high initial trust in a supplier has greater confidence in the supplier's competence and goodwill, and perceives less relational and performance risk in the collaboration. All else equal, if a buyer expects higher returns from the collaboration (i.e., risk of failure is decreased), he will invest more in the collaboration. Thus we predict:

HYPOTHESIS 3b. *The buyer manager's initial trust in the supplier is positively associated with his investment in the collaboration.*

[4] Some management accounting studies observe that formal controls and trust are complements (e.g., Coletti et al. 2005; Velez et al. 2008). However, the association between trust and formal controls depends on the stage of collaboration and the role of controls (Tomkins 2001; Velez et al. 2008). We study initial trust formation which precedes control investment decisions and, hence, predict a negative relationship between control and trust.

Together, H3a and H3b anticipate that the risk-mitigating effects of trust have consequences for *both* investments in management controls and in the collaboration; that is, initial trust prompts a mix of investments that lies on a continuum.

If trust is used in combination with management controls to mitigate risk (Das and Teng 2001), then investment in the collaboration will be influenced by *both* the level of trust and the level of control. Representing controls as a balanced portfolio is common in seminal management control frameworks (e.g., Ouchi 1979; Jensen and Meckling 1995) and trust is commonly treated as part of the control portfolio (van der Meer-Kooistra and Vosselman 2000). The possibility that trust acts in conjunction with controls to mitigate risk necessitates consideration of an association between investments in controls and in the collaboration. That is, other than directly increasing investment in the collaboration by mitigating risk (see H3a), trust can act *through* control investments to mitigate risk and to promote investment in the collaboration. Therefore, holding the level of trust constant, we predict that investments in controls are positively associated with investments in the collaboration. We allow for this possibility with[5]:

HYPOTHESIS 4. *The buyer manager's investment in the collaboration is positively associated with prior spending on controls.*

3. Research design and variable measures

Overview of the experimental task

We conduct a 2×2 between-subjects, computer-based experiment (developed using the z-Tree software (Fischbacher 2007)) with 132 participants recruited from an advanced management accounting undergraduate course in a large Australian university. The two independent variables are the buyer manager's autonomy to select suppliers (autonomy versus no-autonomy) and the supplier's information-sharing behavior (willing to share information versus refuses to share information). Upon arrival at the computer lab, participants are randomly assigned to one of the four treatments. They then assume the role of a research and development (R&D) manager in a

[5] Alternatively we may consider investments in controls and in the collaboration as joint decisions (i.e., they covary). However, in practice these decisions are often made sequentially over a period of time during which new information becomes available and adjustment costs often make it suboptimal to revisit prior decisions. As a result, earlier investments in controls may not fully anticipate subsequent investment decisions about the collaboration. Das and Teng (1998) and Colletti et al. (2005) similarly predict that more extensive control induces greater subsequent investment in the collaboration.

medical technology firm that recently invented a medical device which it plans to develop and produce in collaboration with a supplier. Participants are told that the joint project's success, on which their own payout depends, is determined by: (i) the amount they spend on monitoring the supplier ($0–$30,000); (ii) the amount they invest in the project ($0–$50,000); (iii) the state of the economy (recession/normal/high growth); and (iv) the effort that the supplier exerts (low/average/high). All participants choose the amounts to spend on monitoring and to invest in the project. Participants in the autonomy treatment also choose one of three suppliers. The level of supplier effort and the state of the economy are unknown at the time that these choices are made. Participants are told that the marginal returns-to-effort for each supplier "type" increases with monitoring except for a supplier that already exerts high effort, and that the three economic states are equally likely.[6] Upon completing the experiment, participants receive a payout based on the profit or loss of the joint project and unused funds that are not invested in either the project or controls.[7] Figure 2 summarizes the steps of the experiment which are detailed below.

[INSERT FIGURE 2 HERE]

The computer task begins by illustrating how the R&D division's performance is determined. To ensure that participants understand how their performance payoff is calculated, they must correctly answer several questions about the calculation of the division's performance before proceeding. Qualified participants then read descriptions of three potential suppliers. Each supplier has two positive attributes and one negative attribute (Figure 3). Participants are expected to weigh these attributes during selection, which ensures that they subsequently experience cognitive dissonance. Participants learn from a reliable source that (absent monitoring) the suppliers differ in the effort that they will exert in the joint project (the suppliers include a low, average, and high performer); however, ex ante, each supplier's effort is unknown.[8] At this point, participants in the autonomy condition choose a supplier, while those in the no-autonomy condition are told which supplier the CEO has selected based on the same information (i.e., no private information).

[6] The state of economy is included to indicate that the investment project involves some degree of uncertainty and is not risk-free. It represents performance risk that is outside the participant's control.

[7] Unused funds are included in the division's performance calculation to allow participants to internalize the true cost of investment, and to encourage them to carefully consider their investment decisions.

[8] The supplier descriptions do not include statements that directly indicate the supplier's willingness to exert effort in the joint project. We conducted a pilot test with ten students and three accounting faculty members to verify the comparable desirability of suppliers. Another eight accounting faculty members and students reviewed the modified descriptions and additional changes made to further balance the supplier attributes.

[INSERT FIGURE 3 HERE]

Next, participants receive additional information about the selected or assigned supplier as follows: the supplier had some initial installation problems with its payroll system but the problems have been resolved by an IT firm; and the supplier conducts annual strategic planning retreats for its employees. Specifically, participants learn that the supplier's CEO has either freely shared or refused to share additional information about the supplier (i.e., the information-sharing behavior manipulation). In the "refuses to share" condition, participants are given the same additional information and told that it was obtained through other sources, ensuring that information content is common to all participants. Because our focus is on the supplier's information-sharing behavior rather than information content, the additional information is not directly relevant to the joint project.[9] The participants then answer two questions to verify their understanding that each supplier performs at a different level and that they recall the identity of the supplier that they are working with.

Participants next answer questions that measure their initial trust in the supplier, and then determine the amounts to spend on monitoring and on the joint project. Participants are told that, on average, increasing the level of monitoring increases the supplier's effort, but supplier effort is capped at the level that corresponds to the effort of a high-effort supplier in the absence of monitoring.[10] Thus, monitoring only improves performance for low-effort or average-effort suppliers. Also, funds are not fungible; funds spent or unspent on management controls do not diminish or augment funds available for the project, and vice versa.[11]

After making these decisions, participants respond to two manipulation check questions before learning the R&D division's post-investment performance, the supplier's effort, the state of the

[9] In follow-up questions, all pilot test participants indicate that they do not consider this information relevant to their assessment of the supplier.

[10] If the supplier is not a high performer, a risk-neutral participant should first spend on controls to ensure that the supplier is exerting high effort and then invest all additional funds in the collaboration.

[11] A research design that permits the unconstrained allocation of investment funds between controls and the collaborative project has the same effect as combining both funds and allowing participants to apportion the total amount between controls and the project. This corresponds to a scenario in which both decisions are simultaneous (i.e., allocating more funds to controls necessitates allocating less to the project). We opted for sequential decisions with constraints on the fungibility of funds to mirror the evolution of decisions and "sunk" costs that characterize investments in interfirm management controls (see Anderson and Dekker 2005; Phua et al. 2011). This research design, which permits sequential decisions, is appropriate for testing H4 which predicts that investment in the collaboration is influenced by the preceding amount spent on controls.

economy, and their own cash payout. The first manipulation check asks participants whether they chose the supplier or the CEO assigned the supplier; and the second asks whether the additional supplier information was voluntarily shared by the supplier or they came across the information by chance. Unless otherwise stated, results reported in this paper are based on a sample of 94, which is obtained after excluding 36 participants who failed one or both manipulation checks and two outlier cases.[12] Final payouts for the 30-minute task ranged from A$11.50 to A$25.50, with an average of A$16.45 per participant. Figure 2 provides a sample calculation of divisional performance.

Independent variables

Autonomy to Select Suppliers: The autonomy to select a supplier is manipulated at two levels. Participants are either free to choose one of three suppliers (autonomy condition), or are assigned a supplier by their CEO (no-autonomy condition). To guard against participants inferring that the CEO has private knowledge about supplier effort, they are told that he is unfamiliar with the suppliers and does not provide a reason for his choice.

Information-sharing Behavior: The information-sharing behavior of the supplier is manipulated at two levels. Participants are either given additional information about the supplier and told that the supplier's CEO was willing to share it (willing to share condition), or told that the supplier's CEO refuses to share additional information (refuses to share condition). In the latter condition, the participants are given identical additional information and told that they came across it by chance.

Dependent variables

The three dependent variables are the buyer manager's initial trust in the supplier (Initial Trust), spending on management control (Control Spending), and investment in the project (Project Investment).

Initial Trust: Initial trust is measured using a six-item scale based on Mayer et al. (1995) and adapted to the interfirm setting (McKnight, Codhury, and Kacmar 2002; Nicolaou et al. 2011).

[12] Fifty-three percent of manipulation check errors are caused by participants in the no-autonomy condition incorrectly reporting that they chose a supplier. Before answering the manipulation check questions, these participants answered a hypothetical choice question about whether, if given a choice, they would choose the same supplier as the one assigned. We speculate that the high error rate may be due to participants misinterpreting this question as asking them to choose a supplier. In addition, we exclude two outlier cases where the selected investments ($33 and $3,500 respectively) are more than three standard deviations below the mean (Cousineau and Chartier 2010; Kline 2010). See the robustness tests performed using the full sample and incorporating outliers under"Additional robustness tests" in the Results section.

Table 1 provides the wording of the six items and descriptive statistics on participant responses. All items are measured on a seven-point Likert scale (1 = "strongly disagree" and 7 = "strongly agree"). We derive the measure of initial trust from an exploratory principal axis factor analysis (which does not require normally distributed data) with direct oblimin rotation (which allows factors to be correlated). Although all items load on one factor, item 2 has a very low factor loading of 0.58. For sample sizes of 85 and 100, factor loadings greater than 0.60 and 0.55, respectively, are significant (Hair, Black, Babin, Anderson, and Tatham 2006); thus for our sample of 94 respondents, item 2 is somewhat troubling. Because we are adapting a validated scale to the novel setting of buyer-supplier relationships, we err on the side of caution and repeat the factor analysis after dropping the potentially problematic item 2. The remaining five items have high internal reliability (Cronbach alpha = 0.87) and load on one factor that explains 67 percent of item variance, with loadings ranging from 0.63 to 0.90 (Table 1) and an eigenvalue of 3.36. The factor scores are used to compute the composite measure of initial trust for conducting ANOVA analyses[13], and these five items are also adopted as measures of the initial trust latent variable.

[INSERT TABLE 1 HERE]

Control Spending: Controls are defined in relation to investments in monitoring mechanisms that are used to motivate suppliers to exert effort in the collaboration. Control spending measures the amount that a participant spends on monitoring supplier effort ($0–$30,000).

Project Investment: The amount a participant invests in the joint project ($0–$50,000).

4. Results

With the exception of H4, the correlations presented in Table 2 provide preliminary support for the hypotheses. Each independent variable has a significant positive association within initial trust, and initial trust has a significant negative association with control spending and a significant positive association with project investment. The hypotheses are tested in two stages of analysis. First, we perform a two-way ANOVA to test the main and interaction effects of the buyer manager's autonomy to select suppliers and the supplier's information-sharing behavior on initial trust (H1, H2, and the research question). Next, we use structural equation modelling (SEM) software SPSS Amos 20.0 to estimate the model depicted in Figure 1 (Kline 2010) and to test H3a, H3b, and H4. The SEM results also provide estimates of the indirect effects of selection autonomy

[13] As a sensitivity analysis, we perform confirmatory factor analyses and compare the unconstrained measurement model to an alternative model in which all factor loadings and error variances are constrained to be equal. The results of a chi-square difference test show that the unconstrained model has a significantly better fit (χ^2_{diff}=52.00, df=8, p<0.001). Therefore, we reject the use of an equally weighted measure of initial trust.

and information-sharing behavior (acting through initial trust) on control spending and project investment, as well as additional support for the ANOVA tests of H1 and H2.

[INSERT TABLE 2 HERE]

ANOVA analyses: Testing H1, H2, and Research Question

H1 predicts that a buyer manager with the autonomy to choose a supplier has a higher level of initial trust than one who is assigned a supplier. The descriptive statistics reported in Table 3 panel A show that the level of initial trust is higher for participants in the autonomy condition than those in the no-autonomy condition[14] (5.80 versus 4.89). Table 3 panel B also shows that this difference (the main effect of the autonomy to select suppliers) is significant (F=20.47, $p<0.01$).[15] Thus, H1 is supported.

Two further tests show that, holding supplier description constant, the act of choosing a supplier influences trust. First, we divide participants into three groups based on supplier preferences and conduct one-way ANOVA tests for each group to assess whether initial trust differs between the two treatments. We select only participants in the no-autonomy treatment who indicated that they would have chosen the supplier assigned by the CEO. By matching these with participants in the autonomy treatment who chose the same supplier, we control between treatments for differences in initial trust that are associated with the suppliers' descriptions. The resulting three groups with different preferred suppliers are of unequal sizes (n = 13, 11, and 35). For the largest group, the initial trust associated with the autonomy treatment (5.79) is significantly higher (F=7.08, p=0.01) than the no-autonomy treatment (4.98), as expected. The results for the two smaller groups are not significantly different, which is unsurprising given the small sample sizes. As a second test, we combine all three groups and incorporate "supplier name" as a covariate to re-examine the relation between autonomy to select suppliers and initial trust. As expected, the initial trust associated with the autonomy treatment (5.80) is still significantly higher (F=9.02, $p<0.01$) than the no-autonomy treatment (5.05), and there is no significant relation

[14] We also ask participants with assigned suppliers to indicate (i) if they would have chosen the same supplier as that assigned by the CEO, and (ii) the extent to which they believe that the CEO can choose a better-performing supplier than themselves ("confidence in the CEO"). A one-way ANOVA test shows no significant difference between the initial trust of participants who prefer the assigned suppliers and those who prefer other suppliers. The correlation between initial trust and confidence in the CEO is also not significantly different from zero. We therefore exclude both variables from subsequent analyses.

[15] Unless otherwise indicated, we report two-tailed p-values for all our F-tests and Chi-square tests, and one-tailed p-values for tests of path coefficients.

between the covariate and initial trust. These results indicate that the behavioral effect of selection on initial trust exists after controlling for supplier characteristics.

[INSERT TABLE 3 HERE]

Consistent with H2, Table 3, panel A shows that initial trust is higher when the supplier is very willing to share additional (decision-irrelevant) information as compared to when a supplier refuses to share additional information that subsequently becomes available (5.55 versus 5.12). The ANOVA result shows that this difference is significant (F=4.01, p=0.05), which supports H2. Thus, even when the content of the irrelevant information is held constant, the supplier's information-sharing behavior has a positive impact on initial trust.

We next turn to the research question of whether the influence of the supplier's information-sharing behavior on initial trust differs with the buyer manager's autonomy to select the supplier. The ANOVA results inform this research question by showing that the interaction effect is not significant (F=0.08, p=0.78). Thus, there is no conclusive evidence that autonomy to select a supplier differentially affects the buyer manager's response to the supplier's information-sharing behavior.[16]

SEM analyses: Testing H3a, H3b, and H4

H3a and H3b predict that greater initial trust is associated with lower spending on controls and higher investment in the project, respectively. We also posit that initial trust mediates the relations between the independent and dependent variables to yield indirect effects of each independent variable on subsequent control and project investment decisions, respectively. Table 4 presents the results of testing the partially latent model of Figure 1.[17] Consistent with the ANOVA analysis, the results show that the autonomy to select suppliers (H1: β=0.77, p<0.01) and the supplier's willingness to share information (H2: β=0.30, p=0.04), respectively, have a positive effect on initial trust.

[INSERT TABLE 4 AND FIGURE 4 HERE]

[16] Prior literature recognizes that an individual's disposition to trust will affect initial trust (e.g., McKnight et al. 1998). We measure "disposition to trust" and incorporate it in the two-way ANOVA as a covariate before rerunning the analyses. Although a positive and significant relation between disposition to trust and initial trust (F=4.52, p=0.04) emerges, the inferences from the reported results are unchanged.

[17] As a sensitivity test, we replace the initial trust latent variable with its composite measure used in ANOVA tests and conduct a path analysis. The model fit statistics and path coefficients remain substantially unchanged.

The "Initial Trust Model" exhibits a good fit with the data (χ^2=28.93, p=0.31, GFI=0.94, CFI=0.99, TLI=0.99, RMSEA=0.04).[18] Figure 4 presents the standardized path coefficients, and Table 4 presents the unstandardized path coefficients and p-values of significance tests. Table 4, panel A indicates that all coefficients of the direct paths exhibit the predicted associations and, with the exception of the path between control and project investments (H4), are statistically significant.

In line with H3a and H3b, initial trust is negatively associated with expenditures on controls (β=−1,999.44, p=0.01), and positively associated with investment in the project (β=2,038.34, p=0.02). However, we recognize the need to consider extreme situations in which *all* of the effects of trust are concentrated in *either* decreased spending on controls (H3a) *or* increased investment in the collaboration (H3b). Specifically, at one end of a continuum, a higher level of initial trust may cause a buyer to reduce the amount he spends on controls *without* adjusting investment in the collaboration. At the other end, a higher level of initial trust may cause a buyer to increase investment in the collaboration *without* adjusting spending on controls. To demonstrate that higher initial trust affects both control and project investment decisions, we must show that the unconstrained model, in which both path coefficients are free to vary, is superior to two alternative models in which one of the path coefficients is constrained to zero (i.e., when only one decision is affected). The chi-square difference tests that compare the unconstrained model, respectively, to models with the path coefficient (i) from initial trust to control constrained to zero (χ^2_{diff}=5.32, df=1, p=0.02) or (ii) from initial trust to project investment constrained to zero (χ^2_{diff}=4.61, df=1, p=0.03), indicate that the unconstrained model provides a superior fit to the data. Thus we conclude that greater initial trust is associated with reduced spending on controls and increased project investment.

We turn next to the question of whether the mediating relation posited, in which spending on controls and project investments are influenced by the autonomy to select suppliers and the supplier's information-sharing behavior via initial trust, is the correct model specification. Following scholars who observe that Baron and Kenny's (1986) requirement to ascertain that a significant total effect exists prior to establishing mediation is unnecessary, we conduct Sobel tests directly to assess whether the indirect effects are significant (e.g., Zhao, Lynch, and Chen 2010;

[18] Models have acceptable fit when χ^2 is non-significant with p-values exceeding 0.2; GFI, CFI, and TLI values are equal to or greater than 0.9; and RMSEA is less than or equal to 0.08 (Hair et al. 2006).

Kenny and Judd 2014).[19] The results show that the indirect path from the autonomy to select suppliers to control spending via initial trust is negative and significant (β=−1,541.57, p=0.02); and the indirect path from that autonomy to project investment via initial trust is positive and significant (β=1,571.56, p=0.03). Similarly, the indirect paths from the supplier manager's information-sharing behavior to (i) control spending (β=−607.83, p=0.08) and (ii) project investment (β=619.66, p=0.09) are negative and positive, respectively, and are both marginally significant. Thus, both the autonomy to select suppliers and suppliers' willingness to share information increases the buyer manager's initial trust, which subsequently reduces control spending and increases project investment.

Additional analyses

Differential effects of positive, negative, and neutral supplier information-sharing behavior

This experiment anchors information-sharing behavior with two extreme ends of a continuum, in which the supplier is described to participants as either very willing to share additional information (a strong positive behavioral signal), or refuses to share additional information (a strong negative behavioral signal). The results for H2 could therefore be interpreted as a buyer manager's initial trust being increased by a strong positive behavioral signal and decreased by a strong negative behavioral signal. To investigate this further, we collected additional data subsequent to the original experiment for a more "neutral" information-sharing behavior, in which participants are informed that the supplier does not provide additional information (i.e., without the behavioral signal of refusal). This allows us to test the relative influence of positive and negative behavioral signals on initial trust.

We recruited 48 new participants and collected data for two additional cells (26 participants were assigned a supplier and 22 selected a supplier).[20] Participants were informed that the supplier "did not provide additional information about their company." Untabulated results of a one-way ANOVA show that the effect of autonomy to choose a supplier on initial trust remains significant (F=8.58, p<0.01). Also, as expected, the average level of initial trust for participants in the "does

[19] A common explanation for why a significant total effect may not exist despite a significant mediated effect is that the power of the test of the mediated effect is greater than the power of the test of the total effect (Zhao et al. 2010; Kenny and Judd 2014; O'Rourke and MacKinnon 2015). Undocumented results obtained using the *R* package program, PowMedR, provide support for this explanation (see Kenny and Judd 2014).

[20] The participant pool is comparable to the main experiment, comprising undergraduate accounting students enrolled in either an intermediate or advanced management accounting course. We initially recruited 58 participants, but 10 participants failed the manipulation test and are excluded from our further analysis sample.

not provide additional information" condition (5.42) falls between those of the "very willing to share" condition (5.55) and the "refuses to share" condition (5.12).[21] Comparisons show that initial trust in the "does not provide additional information" condition is significantly different from that in the "refuses to share" condition (t=1.41, p=0.08, one-tailed), but is not significantly different from the "very willing to share" condition (t=0.62, p=0.27, one-tailed). These results suggest that initial trust is more sensitive to a strong negative behavioral signal than a strong positive behavioral signal. The findings also suggest that while a manager's initial trust assessment is negatively influenced by a supplier's refusal to share information, positive information-sharing behavior has a much smaller effect on initial trust.

The results are comparable to psychology studies that find that negative stimuli has greater psychological impact, is more persuasive, and is seen as more diagnostic of a person's character than positive stimuli (e.g., Lupfer, Weeks, and Dupuis 2000; Rozin and Royzman 2001; Hilbig 2009). This literature suggests that individuals hold internal representations of how a person should typically behave. Negative behaviors are more influential because they are atypical and are considered more diagnostic of a person's character (Fiske 1980). During initial trust formation, a buyer manager may have a preconception that a typical supplier is willing to share information, and thus adjusts his initial trust only when the supplier refuses to do so. The results of this study suggest that the valence of a behavioral signal, rather its presence or absence, may be more useful for understanding initial trust formation.

Additional robustness tests

We rerun the ANOVA and SEM analyses using (i) the full sample (n=132) and (ii) including the two outliers (n=96). The results are inferentially unchanged with two exceptions—the significance of H2 is slightly weaker (F=2.83, p<0.10) for the full sample, and the results for H4 become significant (full sample: β=0.37, p<0.01; sample with outliers: β =0.26, p=0.02). Excluding both outliers from the main analyses is a conservative approach, since H4 is supported only with the inclusion of outliers.

In addition, two alternative models are tested. First, the direct path between control and collaboration is replaced by a covariance of error term to address the possibility that exogeneous omitted factors directly influence both decisions. Second, direct effects between each independent variable and control spending and project investment are introduced. Hypothesized results remain

[21] We compute the "initial trust" score using the exploratory factor analysis (EFA) weights from the original analysis to enhance comparability. We also conducted additional sensitivity tests using different weights (average, or EFA weights based on the full sample including the two additional cells), and the results are inferentially unchanged.

inferentially the same in both models, and the newly introduced covariance and direct paths are all insignificant. A chi-square difference test indicates that the second alternative model is not an improvement over the hypothesized model (χ^2diff=1.95, *df*=4, *p*=0.75).

Components of trust

The management literature on trust is well-established and the measurement scale has been developed and tested in a variety of settings. Thus, we measure the components of trust as is prescribed to investigate whether the model of Figure 1 exhibits any meaningful difference for competence trust and goodwill trust. This inquiry sheds light on the mechanisms of initial trust formation; specifically, whether assessments of these two components of trust have a disproportionate influence on the consequences of trust. In Table 1, four items in the original trust-measurement scale reflect the participant's goodwill trust in the supplier, and two items reflect competence trust. In untabulated analysis we are unable, using confirmatory factor analysis, to establish that initial trust is a second-order construct with the two formative first-order constructs of goodwill trust and competence trust. This is not unusual in light of the modest sample size and the small number of items in the established scale. Nonetheless, the factor loadings of Table 1 indicate some distinction between the two theoretical components.

We re-estimate the structural model substituting for the initial trust latent variable, first goodwill trust (measured by items one, three, and four) and then competence trust (measured by items five and six) latent variables.[22] Considering first the model of competence trust (Table 4), some paths are less significant than in the original model. Although the supplier's information-sharing behavior has a significant association with initial trust, the significance of the relation is diminished for competence trust (β=0.30, *p*=0.09). As a result, the indirect paths from supplier's information-sharing behavior to spending on controls (β=−444.51, *p*=0.13) and to project investment (β=546.10, *p*=0.12) via competence trust become insignificant in relation to a *p*-value < 0.10 confidence level. The marginally significant relation between the supplier's willingness to share information and the buyer manager's competence trust in the supplier may be due to participants viewing the supplier's willingness to share information as a weaker signal of competence than anticipated. However, this result may also stem from some participants' desire to be consistent when answering questions that measure trust. Indeed, it is not competence trust, but

[22] We perform EFA with principal axis factor extraction and direct oblimin rotation on the items measuring competence trust and goodwill trust. The two items measuring competence trust load on one factor (eigenvalue=1.81, variance explained=90%, Cronbach alpha=0.89), and the three items for goodwill trust also load on one factor (eigenvalue=2.04, variance explained= 68%, Cronbach alpha=0.76).

rather goodwill trust (i.e., belief in the supplier's benevolence and integrity) that follows from the supplier's willingness to share information that is associated with a decision to decrease spending on controls. Comparing the results of the goodwill trust model to those of the original model, certain paths are again less significant.[23] Although the relation between initial trust and project investment is significant, the relation between goodwill trust and project investment is not (β=986.75, p>0.10). Again, following from this result, the indirect paths from the autonomy to select suppliers (β=761.77, p>0.10) and the supplier's information-sharing behavior (β=482.52, p>0.10), respectively, to project investment via goodwill trust are insignificant.

Taken together, these results suggest that the buyer manager's investment in the project is driven by his competence trust in the supplier but not by his goodwill trust, and that the competence trust that affects project investment is derived primarily from the manager's autonomy to select suppliers. Whether the components of trust have different antecedents and consequences for management control and project investment is important; however, the limitations of this study mean that we must be cautious in interpreting these results. Nonetheless, this exploratory analysis suggests that the antecedents and consequences may differ, a proposition that warrants further study.

5. Summary and directions for future research

This study examines the antecedents and consequences of initial trust that arises during the early stages of interfirm relationships. Prior research shows that the trust that emerges from transacting experience influences firms' investments in interfirm management controls. The study contributes novel evidence that actions in the relationship-formation phase, namely the delegation of autonomy to select suppliers and the information-sharing behavior of suppliers, influence initial trust, and that initial trust has consequences for investments in both management control and the subsequent collaboration. Prior research finds that selecting the "right" supplier is associated with greater trust and transaction performance. The results of this study show that aside from supplier characteristics, a buyer has greater initial trust in a supplier when he selects the supplier. Similarly, prior studies suggest that it is the content of information being shared during relationship formation that builds trust. We find that aside from information content, the supplier's act of

[23] We conduct additional sensitivity analyses for the goodwill trust model by replacing the extant latent variable with (i) one measured by all four items (one to four); and (ii) a composite measure of goodwill trust computed by averaging all four items (i.e., resulting in a path model). Fit statistics for first alternative model reveal a poor model-data fit (χ^2=55.18, p<0.01, GFI=0.89, CFI=0.72, TLI=0.61, RMSEA=0.14). Nonetheless, the results of all hypothesized paths are inferentially the same across all three models.

sharing or refusing to share information influences initial trust. Greater initial trust in turn is associated with reduced spending on monitoring and increased investments in the collaboration. We do not find an interaction effect of the autonomy to select a supplier and the supplier's information-sharing behavior on initial trust.

The study extends the literature in several important ways. First, we investigate initial trust rather than trust that results from transacting experience, and show that initial trust affects decision making and gives rise to real consequences. By allowing for the possibility that trust exists prior to expenditures on management controls or transacting, we present an opportunity by which firms may economize on both fixed and variable costs of control. Prior studies that assume that trust is strictly experiential suggest that only the variable costs of control may be "saved" in trusting relationships and that fixed costs of control incurred at the start of a relationship are unavoidable. Our results suggest that initial trust influences both control and project investment decisions. Thus as long as trust is warranted, it is an avenue for both economizing on the costs of control and directing more resources toward the value-added work of the collaboration.

A second contribution of the study is the investigation of the antecedents of initial trust. We consider how both the autonomy to select a supplier within the buying firm and the information-sharing behavior of the supplier influence the buyer's initial trust. Unlike many interfirm studies that draw on economic theories, we motivate the analysis using theory from cognitive psychology. Prior studies that examine the effect of partner selection or information sharing on trust explicitly or implicitly suggest that information content is of paramount importance. Most studies of the effect of partner selection focus on partner characteristics or aspects of the selection process which allow transacting parties to obtain relevant information about their partners (e.g., Dekker 2008; Phua et al. 2011). We extend the literature by providing evidence that partner selection also has a "behavioral effect" that is distinct from partner characteristics. We further show that, independent of information content, the supplier's information-sharing behavior influences trust. After controlling for the amount and content of information, participants still attribute the supplier's information-sharing behavior to trustworthiness. The implication is that a supplier that refuses to share innocuous information (e.g., if they believe it is not useful to share such information), may inadvertently send a negative behavioral signal. This study shows that delegation of decision-making authority and information-sharing behavior are critical to interfirm partnerships in part because they influence initial trust.

Finding that trust influences *both* spending on controls and investment in the collaboration is another contribution of the study. Prior research focuses exclusively on consequences trust has on

management control. This study considers the possibility that trust also directly affects investment in the collaboration. We find that, on average, trusting participants both decrease spending on controls and increase spending on the project. In considering both decisions, this study provides a more complete picture of the consequences of initial trust. Future research could evaluate whether this result holds in a similar setting in which funds are fungible or for experiential trust, whether it changes dynamically as partners gain experience, and whether the nature of the experience (positive versus negative project outcomes) influence the allocation of resources between controls and the collaboration.

Finally, the study contributes an exploratory analysis of whether the model of the antecedents and consequences of initial trust hold for two theoretically distinct components of trust: goodwill trust and competence trust. Preliminary evidence suggests that the antecedents and consequences are somewhat different. For example, we find that the antecedent—supplier's willingness to share information—has a much stronger effect on goodwill trust than competence trust. This suggests that the participants were cognizant of the inconsequential nature of the content and interpret the act of sharing information mostly as a signal of honesty and commitment to the relationship (i.e., goodwill). Since the information did not inform about supplier competence, participants did not view the sharing of such information as indicative of the supplier's ability to perform its tasks. Therefore, the act of sharing information in itself is less likely to affect the buyer manager's competence trust. A consequence of greater competence trust is greater project investment, but the same cannot be said for greater goodwill trust. Perhaps this is because an investment decision that is largely based on beliefs about the other party's competence is more defensible than a decision based on beliefs about goodwill. Limitations of the sample size and variable measures warrant caution in interpreting these results. However, exploring more fully whether and how the antecedents and consequences of trust differ for the components of trust is a fruitful path for inquiry.

In addition to the limitations raised earlier, the results of this study should also be interpreted in light of its bounded scope. We focus on a subset of control mechanisms, which include only formal controls for monitoring supplier performance once transactions commence. Future research should extend the investigation to informal controls and to other forms of formal controls, as well as to controls that play a different role. For example, Velez et al. (2008) find that formal controls build trust in a mature, evolving relationship because they are particularly useful for coordinating action. An interesting question is whether initial trust prompts a greater reliance on informal rather than formal controls, and for coordination rather than monitoring purposes. This study is limited to

examining two features of relationship formation, and there are undoubtedly others that deserve consideration. Moreover, we have not addressed the longitudinal trajectory of trust, as initial trust is augmented by experience. An experimental design that incorporates multiple transaction periods could test explicitly the consequences for spending on controls, and how initial trust influences a firm's opportunity to economize on upfront fixed costs as well as ongoing variable costs of control. Finally, although the buyer-supplier transaction poses hazards to both parties, we do not consider the supplier's initial trust or its investments in management controls and in the collaboration. Addressing how both parties address transaction hazards and how the anticipated investments of one party influences the other's is a more complex dynamic problem that is worthy of study. In sum, interfirm trust, and initial trust in particular, is a fruitful area for further research.

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TABLE 1

Descriptive statistics for dependent variables and measurement of the initial trust construct

	Mean (n = 94)	Standard deviation	Min	Max	Factor loadings[a]
Initial Trust Indicators (Component Trust)					
1. I believe that if I require help, the supplier I chose (am working with) would do its best to help me. (Goodwill Trust)	5.11	1.32	1	7	0.67
2. I believe that the supplier I chose (am working with) is interested in my well-being, not just its own. (Goodwill Trust)	4.81	1.46	1	7	NA
3. I believe that the supplier I chose (am working with) is honest. (Goodwill Trust)	4.81	1.54	1	7	0.63
4. I believe that the supplier I chose (am working with) would keep its commitments. (Goodwill Trust)	5.36	1.22	2	7	0.80
5. I believe that the supplier I chose (am working with) would perform its role in the joint project very well. (Competence Trust)	5.44	1.31	1	7	0.84
6. Overall, I believe that the supplier I chose (am working with) is a capable and valuable member of this joint project. (Competence Trust)	5.47	1.15	2	7	0.90
Control Spending					
Please enter the amount you wish to invest in monitoring the supplier.	$14,804.26[b]	7,080.47	0	$25,500	
Project Investment					
Please enter the amount you wish to invest in the joint project.	$34,397.87[c]	7,463.16	$20,000	$50,000	

[a] The KMO measure of sampling adequacy is 0.81 and Barlett's test of sphericity is significant (p<0.01).

[b] The average amounts invested in monitoring the supplier across the treatment conditions are $16,520.00 (no-autonomy and refuses to share information), $15,260.87 (no-autonomy and very willing to share information), $11,672.73 (autonomy and refuses to share information), and $15,450.00 (autonomy and very willing to share information).

[c] The average amounts invested in the joint project across the treatment conditions are $33,520.00 (no- autonomy and refuses to share information), $33,739.13 (no- autonomy and very willing to share information), $34,700.00 (autonomy and refuses to share information), and $35, 666.67 (autonomy and very willing to share information).

TABLE 2

Pearson correlations

	Autonomy to Select Suppliers	Supplier's Information-sharing Behavior	Initial Trust	Control Spending	Project Investment
Autonomy to Select Suppliers	1.00				
Supplier's Information–sharing Behavior	0.04	1.00			
Initial Trust	0.43**	0.20*	1.00		
Control Spending	−0.16	0.08	−0.24*	1.00	
Project Investment	0.11	0.04	0.19	0.02	1.00

*, ** indicates two-tailed significance at *p*-value < 0.05 and 0.01 levels respectively.

TABLE 3

Descriptive statistics and ANOVA results

(Dependent variable = Buyer manager's level of initial trust)

Panel A: Descriptive statistics

Autonomy to Select Suppliers	**Supplier's Information-sharing Behavior**		**Row Total**
	Refuses to Share	Very Willing to Share	
Mean (Standard Deviation)			
No-autonomy	4.73 (1.41) *n* = 25	5.07 (0.81) *n* = 23	4.89 (1.16) *n* = 48
Autonomy	5.57 (0.80) *n* = 22	6.01 (0.50) *n* = 24	5.80 (0.69) *n* = 46
Column Total	5.12 (1.23) *n* = 47	5.55 (0.82) *n* = 47	5.34 (1.06) *n* = 94

Panel B: ANOVA tests of between-subjects effects

Source	***Df***	**Mean Square**	***F*-statistic**	***P*-values (two-tailed)**
Autonomy to Select Suppliers	1	18.55	20.47	<0.01
Supplier's Information-sharing Behavior	1	3.64	4.01	0.05
Autonomy to Select Suppliers × Supplier's Information-sharing Behavior	1	0.07	0.08	0.78
Error	90	0.91		

TABLE 4

Results of structural equations modelling for initial trust, competence trust, and goodwill trust

			Initial Trust Model[a]		Competence Trust Model[b]		Goodwill Trust Model[b]	
			Unstd. Beta	*P*-values (one-tail)	Unstd. Beta	*P*-values (one-tail)	Unstd. Beta	*P*-values (one-tail)
Panel A: Direct paths								
Autonomy[c] →	Trust	H1 (+)	0.77	<0.01	1.01	<0.01	0.77	<0.01
Info-share[c] →	Trust	H2 (+)	0.30	0.04	0.30	0. 09	0.49	<0.01
Trust →	Control Spending	H3a (-)	−1,999.44	0.01	−1,471.88	0.01	−1,841.06	0.03
Trust →	Project Investment	H3b (+)	2,038.34	0.02	1,808.26	<0.01	986.75	>0.10
Control Spending →	Project Investment	H4 (+)	0.08	>0.10	0.09	>0.10	0.05	>0.10
Panel B: Indirect effects								
Autonomy → Trust →	Control Spending	(-)	−1,541.57	0.02	−1,479.24	0.02	−1,421.30	0.04
Autonomy → Trust →	Project Investment	(+)	1,571.56	0.03	1,817.30	0.02	761.77	>0.10
Info-share → Trust →	Control Spending	(-)	−607.83	0.08	−444.51	>0.10	−900.28	0.06

Info-share → Trust →	Project Investment	(+)	619.66	0.09	546.10	>0.10	482.52	>0.10

[a] For the Initial Trust Model, the squared multiple correlation (R^2) for Initial Trust is 0.23, Control Spending is 0.06, and Project Investment is 0.05.

[b] The fit statistics for the Competence Trust Model (χ^2=3.65, p=0.89, GFI=0.99, CFI=1.00, TLI=1.07, RMSEA=0.00) and the Goodwill Trust Model (χ^2=5.21, p=0.97, GFI=0.99, CFI=1.00, TLI=1.15, RMSEA=0.00) indicate acceptable fit.

[c] These are the two independent variables. "Autonomy" represents the autonomy to select suppliers, and "Info-share" represents supplier's information-sharing behavior.

Figure 1 Schematic of model and research hypotheses

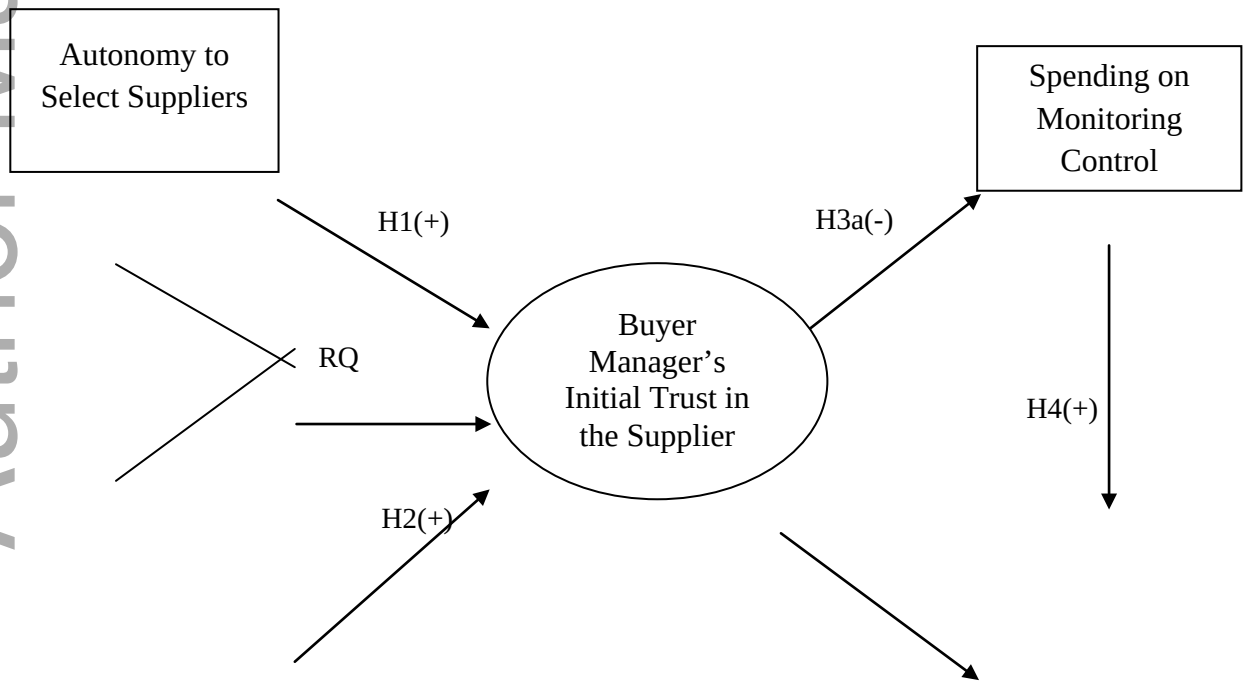
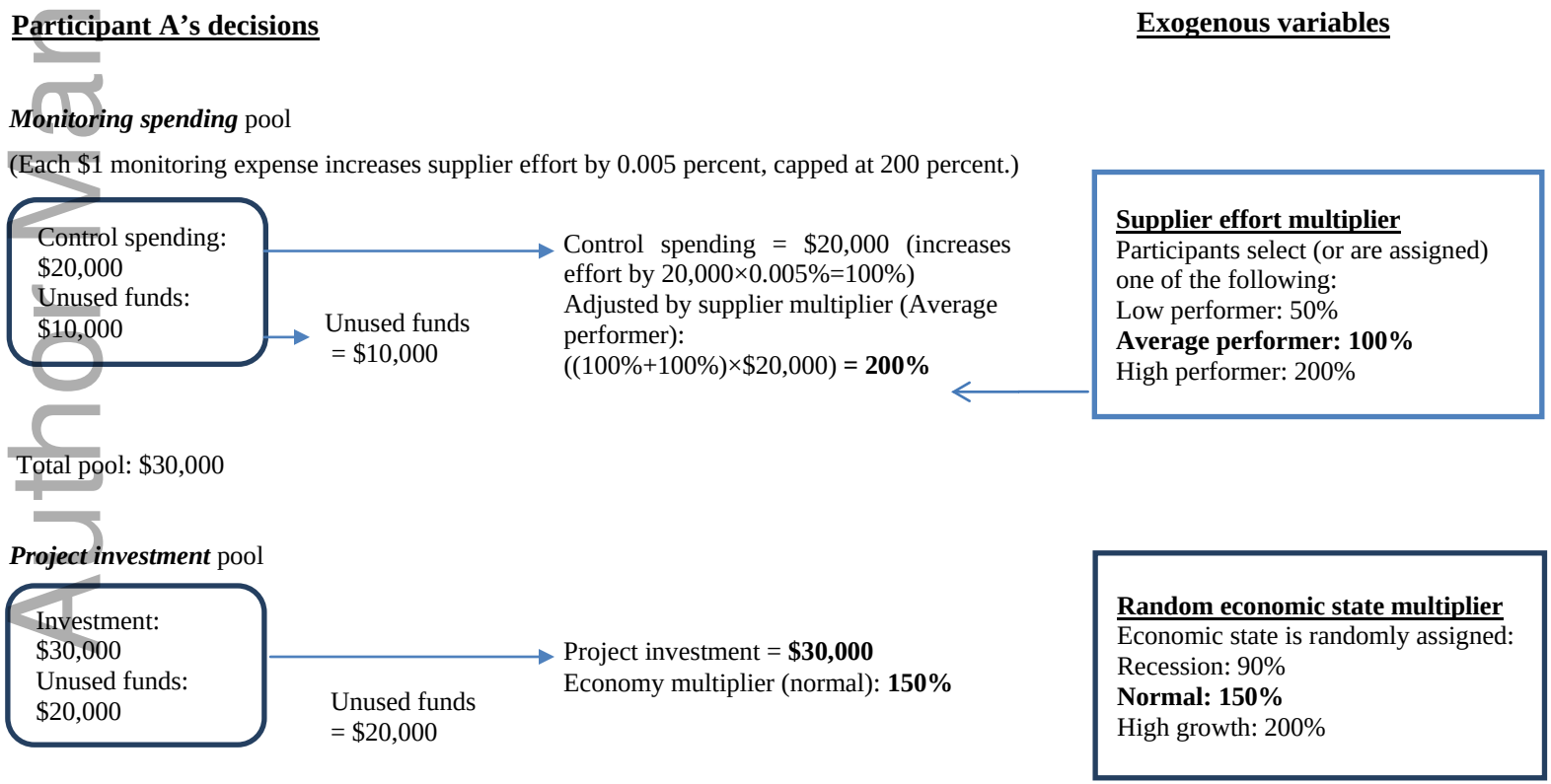


Figure 2 A diagrammatic summary of the calculation of the R&D division's performance

Each participant makes two decisions: (i) control spending, and (ii) project investment. For *control spending*, the participant can spend up to $30,000. Any amount not spent is retained by the participant as unused funds. Every $1 spent on monitoring increases supplier effort by 0.005 percent (with the supplier multiplier capped at 200 percent). For *project investment*, the participant can invest up to $50,000. Any amount not invested is retained by the participant as unused funds. The division's performance = project investment × supplier-effort multiplier × economic-state multiplier. The following diagram presents an example of a participant, A, who has decided to spend $20,000 on monitoring and to invest $30,000 in the project, and who has a supplier who is an average performer in a normal economy.



Total pool: $50,000

Total unused funds:
$10,000 + $20,000
= $30,000

Divisional performance:
$30,000 × 200% ×150%
= $90, 000

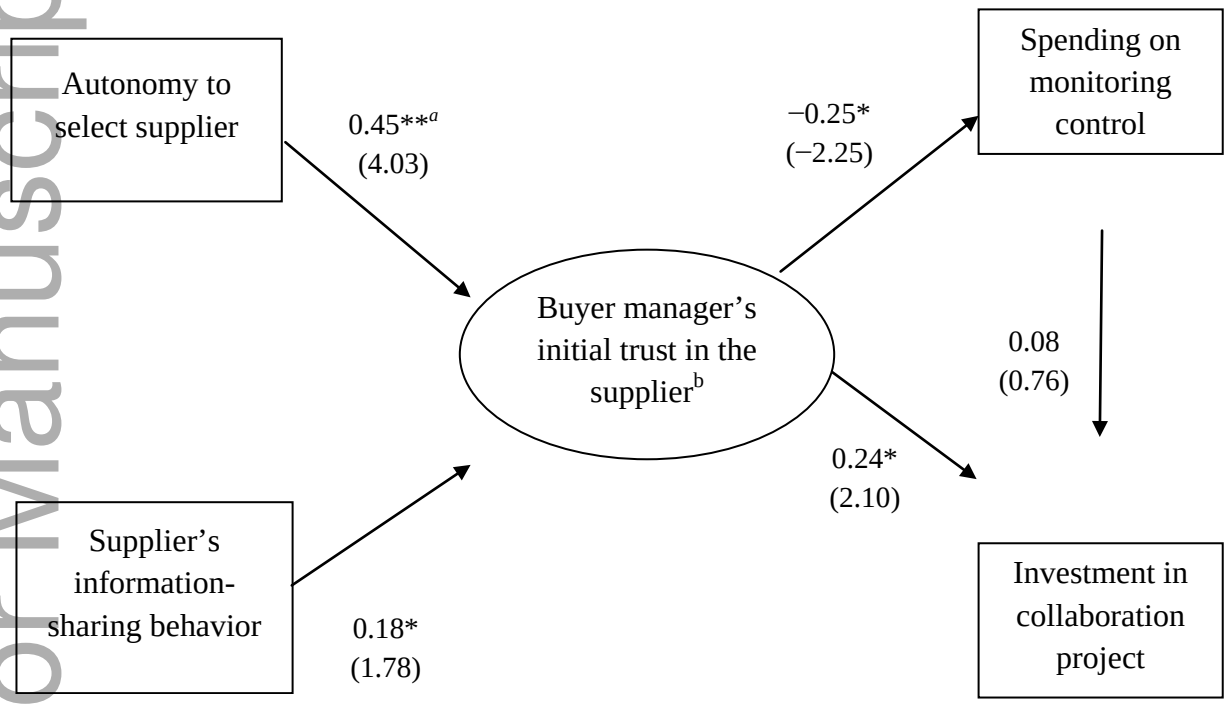
Total payout for the participant:
$30,000+$90,000
= $120,000

Figure 3 Descriptions of suppliers

Supplier One[a]	Supplier Two	Supplier Three
One of the largest electronic manufacturing companies, and is dedicated to providing outstanding post-sale services to customers	One of the oldest electronic manufacturing companies, and has long-term relationships with some customers	A small but fast growing company that is very innovative
Spends heavily on marketing their products to develop and maintain a strong brand name	A responsible corporate citizen and adopts a very proactive approach to reduce the firm's carbon footprint	Invests heavily in training their employees and developing a creative corporate culture
One of the company's factories was fined for discharging untreated waste and chemicals into nearby lakes, polluting the water	Frequently lags behind the other two suppliers in getting new products out to market	Has outsourced their call center services to India to cut costs despite possible reductions in customer service quality

[a] The names of the suppliers were periodically changed in order to reduce the effects of communication between participants and the leakage of experiment materials. However, the supplier descriptions remained the same for all treatments throughout all experiment sessions.

Figure 4 Empirical results of structural equations modelling



*, ** indicates two-tailed significance at *p*-value < 0.05 and 0.01 levels respectively.

[a] Displayed are standardized coefficient values and their t-values in brackets. Goodness-of-fit statistics (n = 94): χ^2=28.93, p=0.31, GFI=0.94, CFI=0.99, TLI=0.99, RMSEA=0.04.

[b] The buyer manager's initial trust in the supplier is a latent variable measured by five items (see Table 1 for more details).

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