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Partner-based opportunism, interface structure, and performance efficiency in upstream and downstream alliance activities contexts

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ABSTRACT

Few alliance studies have theorized that opportunism's effect on performance efficiency is contingent on other factors. Our study posits that alliance partner size and no end-point serve as interface structure mechanisms that condition the efficiency outcomes of partner-based opportunism in alliances. We argue that the direct effect of partner-based opportunism, and the moderation effects of alliance partner size and no end-point, differ according to the alliance activities context (i.e., upstream vs. downstream). Our hypotheses were tested using a survey of 361 alliances. We observe that partner-based opportunism is indeed associated with performance inefficiencies. Further, while alliance partner size has a nonsignificant moderating effect, no end-point has a positive moderating effect, on the relationship between partner-based opportunism and efficiency; that is, the negative link becomes less negative for no end-point alliances. We find that the negative performance relevance of partner-based opportunism remains significant among upstream alliances, but drops to nonsignificance for downstream ones. We show that alliance partner size has a negative moderating effect on the link partner-based opportunism to performance efficiency among downstream, but not upstream, alliances. Lastly, we find that the positive moderating effect of no end-point is significant among upstream, but not downstream, alliances. Our results generate important implications for managers' efforts to design and govern alliances.

1. INTRODUCTION

Firms increasingly form alliances to engage in upstream activities of the value chain, such as manufacturing and technology development, and in downstream activities, such as commercialization and services (Lavie & Rosenkopf, 2006; Lavie, Kang, & Rosenkopf, 2011). Yet the requirement to share unique resources in these activities, under an (inevitably) incomplete contract for the alliance, makes the partners vulnerable to appropriation hazards (Capron & Mitchell, 2017). Many alliance studies have highlighted the dangers of opportunism and strategies for preventing such behavior (e.g., Heide, Wathne, & Rokkan, 2007; Krishnan, Geyskens, & Steenkamp, 2016; Sheng et al., 2018). Although governance scholars have noted the importance of applying control mechanisms, alliances continue to yield disappointing results due to unexpected opportunistic learning (Khanna, Gulati, & Nohria, 1998; Kretschmer & Vanneste, 2017).

In the alliances and partnerships literature, transaction cost economics (TCE) is the prevailing perspective used to explain performance implications of partner-based opportunism; conceptualized here as a focal firm's perception of its counterpart's opportunistic behavior (e.g., Katsikeas, Skarmeas, & Bello, 2009; Morgan, Kaleka, & Gooner, 2007; Skarmeas, Katsikeas, & Schlegelmilch, 2002). TCE views alliances as temporary and a partner's opportunism as both unavoidable and detrimental to work efficiency, via increased governance costs (e.g., bargaining and contracting). Specifically, TCE deems that under certain structural contingencies the costs of attenuating partner-based opportunism can undermine the efficiency of alliance work (Rindfleisch & Heide, 1997). Indeed, the business press has often reported the detrimental impact of partner-based opportunism on the efficiency of alliance work (e.g., perceived violation of obligations dampening productivity in the Volkswagen–Suzuki alliance (Soble, 2011)).

Despite substantial work, the literature is mixed on the role of partner-based opportunism and systems to attenuate such behavior in alliances (Crosno & Dahlstrom, 2008; Rindfleisch & Heide, 1997). Indeed, our review of opportunism–performance studies (Table 1) reveals contrasting findings. Such mixed evidence calls for more work examining the opportunism–efficiency relationship under a novel contingency lens, so as to inform alliance managers about conditions under which partner-based opportunism is especially damaging to work efficiency. Given that opportunism occurs in alliances and, yet, alliances continue to be prevalent in industry, it stands to reason that opportunism's effect on performance is contingent on other factors (Seggie, Griffith, & Jap, 2013; Zhang, Li, & Huang, 2017).

While one set of opportunism–performance studies deployed explanations based solely on the transaction costs of opportunism (Lado, Dant, & Tekleab, 2008; Seggie et al., 2013), another synthetized TCE with complementary theories (e.g., social capital theory) to overcome specified limitations (e.g., TCE's omission of the social side of partners' interactions) (Katsikeas et al., 2009; Lancaster & Lages, 2006; Skarmeas et al., 2002). It is surprising that such attempts to extend TCE's explanatory power have, with one or two notable exceptions (Zhang, Li, & Huang, 2017), overlooked whether opportunism's effect on performance is contingent on factors falling outside TCE's traditional purview.

Limited research has examined how an alliance's interface structure, pertaining to features of the partners (e.g., large vs. small alliance partner size) or of the alliance's design (e.g., no end-point vs. fixed end-point) that dictate and drive structural rigidities, facilitate or undermine alliance management and the achievement of desired outcomes (Li, 2008; Saxton, 1997; Sytch, Wohlgezogen, & Zajac, 2018). Indeed, TCE scholars have paid inadequate attention to whether and how facets of the alliance's interface determine structural conditions, by which a partner's opportunistic behavior becomes detrimental to work efficiency.

Partner-based opportunism has a context-sensitive nature, insofar as it is intricate, unstable, and easily influenced by changes in alliance circumstances (Chang, Bai, & Li, 2015; Rindfleisch et al., 2010). Nevertheless, alliance scholars with single-/ multi-industry samples of equity and/ or nonequity alliances have examined the damaging effects of opportunism, without theorizing contextual effects (Trada & Goyal, 2017; Wang et al., 2013). In particular, the activities context has been neglected in empirical governance research to date, despite occasional observations that the upstream and/ or downstream functional (value) domain of the alliance could play a key role in shaping the partners' interface and outcomes (Kogut, 1988; Hess & Rothaermel, 2011; Rothaermel & Deeds, 2004). The literature lacks an understanding of whether and how upstream and/ or downstream alliance contexts shape the way a partner's opportunistic behavior unfolds and dampens performance outcomes.

In response to the above gaps in the literature, we address the following research questions. Does the alliance interface structure moderate the relationship between partner-based opportunism and performance efficiency? Is the performance impact of partner-based opportunism, and moderating effect of the alliance interface structure, contingent on the alliance activities context? We answer these questions using a survey of 361 alliances.

Our study advances alliance knowledge in three main ways. First, we cross-fertilize TCE work on the efficiency outcomes of opportunism, with insights from evolutionary theory linked to the moderation role of facets of the alliance interface structure (Doz, 1996). Specifically, we offer a novel and systematic account of how alliance partner size and no end-point alliances,[1] allow, or otherwise, firms to learn how to overcome a partner's opportunism and make the alliance more efficient. The results show that while alliance partner size has a

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[1] Alliance partner size reflects the number of full-time employees of the alliance partner in question. The number of full-time employees discriminates between small/ flexible/ decentralized and large/ rigid/ centralized partners. As partner size can be linked to bureaucratic or adhocratic structuring of the alliance (Doz, 1996), this size measure is applicable to the current theoretical context. No end-point alliances simply lack a contracted end-point. Alliances with this design still have the characteristic of being relatively enduring cooperative strategies as they involve the partial pooling of partners' resources.

nonsignificant moderation effect, no end-point has a positive moderating effect on the link between partner-based opportunism and performance efficiency.

Second, we argue for the first time that partner-based opportunism affects the efficiency of alliance work differently according to whether alliance partners engage in upstream or downstream activities of the value chain. Interestingly, our results show that the negative direct effect of partner-based opportunism on performance efficiency is significant among upstream alliances, but drops to nonsignificance among downstream ones. We also observe that alliance partner size has a negative moderating effect on the partner-based opportunism to performance efficiency link among downstream, but not upstream, alliances. Lastly, we show that the positive moderating effect of no end-point remains significant among upstream, but not downstream, alliances. Taken together, our moderation findings extend a TCE-driven literature stream that has, in effect, downplayed the conditionality of opportunism's effect on performance in alliance partnerships (Zhang et al., 2017).

Third, our study extends pragmatic understanding of conditions under which opportunism is particularly powerful at undermining firms' efforts to ensure that alliance resources are used efficiently. It is important that alliance governance and control decisions taken to safeguard alliance work from opportunism, heed whether firms are engaged in upstream or downstream activities of the supply chain, the alliance partner's size, and the existence, or not, of a pre-specified termination point. Indeed, these factors intersect in a complex way. For upstream alliances, specifically, we show that partner-based opportunism is damaging for alliances with a fixed end-point, but does not appear harmful for those with no end-point. For downstream alliances, partner-based opportunism is more damaging for alliances with large alliance partner size than for those with small partner size.

2. THEORY AND HYPOTHESES DEVELOPMENT

Alliances may be defined as arrangements between independent firms committed to sharing unique knowledge and information to execute upstream and/ or downstream activities of the value chain and achieve mutual benefits (Lavie, Haunschild, & Khanna, 2012; Pedada, Arunachalam, & Dass, 2019). For example, Ford and Toyota formed an upstream alliance to develop a hybrid powertrain for light trucks, whereas Nike and Apple used a downstream alliance to offer customers fitness trackers built into sports clothing to record workout data.

Sharing knowledge in a cooperative mode offers opportunities for joint-profit maximization; opportunities that are often unrealized because of partners' self-serving and destructive behaviors (e.g., Bello, Katsikeas, & Robson, 2010). Such opportunistic behavior can take two forms in alliances, passive and active (Wathne & Heide, 2000). The passive form manifests in shirking and/ or refusal to adapt to new circumstances; the active form manifests in violation of obligations and/ or forced renegotiation (Wathne & Heide, 2000). Both forms, often driven by economic and relational forces, undermine performance in the short- and/ or long-term by not only increasing transaction costs (Wathne & Heide, 2000), but also reducing trust between partners (Barnes et al., 2010). As a result, alliance scholars have long debated the most adequate safeguarding mechanisms (formal and/ or relational) to reduce opportunism and enhance the efficient deployment of alliance resources (e.g., Jap & Anderson, 2003; Wang et al., 2013; Wathne & Heide, 2000; Zhou et al., 2015).

Irrespective of alliance partners' best efforts to erect control mechanisms that eradicate opportunism, its detrimental effects persist. Table 1 depicts that opportunism has harmful effects on relationship extendedness (Chang, Bai, & Li, 2015), financial outcomes (Wang et al., 2013; Wang & Yang, 2013), partner/ relationship performance (Judge & Doodley, 2006; Lui, Wong, & Liu, 2009), governance costs (Luo et al., 2015; Trada & Goyal, 2017), franchise system performance and franchisee satisfaction (Gassenheimer, Baucus, & Baucus, 1996), cooperation (Lancastre & Lages, 2006), and in terms of

relationship termination (Li & Ng, 2002). Still, opportunism may have nonsignificant effects and, thus, prove less than harmful (Seggie, Griffith, & Jap, 2013; Zhang et al., 2017).

Insert Table 1 here

A fundamental premise of TCE is that opportunism (i.e., self-interest seeking with guile) will continue to exist despite alliance firms' best efforts to prevent it (Jap & Anderson, 2003; Williamson, 1991). While TCE-based alliance studies have been clear on the need to identify governance forms and mechanisms that arrest opportunism in alliances, they are largely silent on the need to uncover circumstances wherein opportunism is especially damaging to the efficiency of alliance work (see Table 1). To address this lacuna in research, we theorize conditional effects for the link between partner-based opportunism and performance efficiency by drawing on two affiliated theories of the efficiency of alliance work. We draw on TCE (Williamson, 1991) to advance the baseline argument that partner-based opportunism has a harmful impact on performance efficiency. We extend our baseline argument by drawing on the evolutionary perspective of strategic alliances (Doz, 1996).

In line with TCE, the evolutionary perspective views alliances as temporary arrangements subject to unavoidable opportunistic learning that hinders the efficiency of alliance work. Still, unlike TCE, the evolutionary perspective highlights the crucial role of the alliance's interface structure; that is, characteristics of the partners that affect routines at the interface (e.g., large vs. small alliance partner size) or of the alliance's design itself (e.g., use of no end-point vs. fixed end-point), which determine structural rigidities that facilitate mutual or unilateral learning (Faems et al., 2008). It is the structural conditions underscoring learning that allow the partners to start to monitor and correct any alliance efficiency issues (Doz, 1996). In essence, this perspective attributes a partner's opportunistic behavior and performance to facets of the partners' or the alliance's organization designs. Accordingly, the

interface structure is expected to play a crucial role in determining the conditions by which a partner's opportunistic behavior unfolds and is especially detrimental to alliance work.

The conceptual model depicted in Figure 1 summarizes our arguments that: (a) alliance partner size and no end-point can serve as boundary conditions to the link between partner-based opportunism and performance efficiency; and (b) the performance impact of partner-based opportunism and associated moderating effects of alliance partner size and no end-point, are contingent on the alliance (value) activities context.

Insert Figure 1 here

Large-sized alliance partners are likely to project rigid, strict, and formal procedures and routines onto the partnership, via the interface, giving rise to a bureaucratic alliance structure. In contrast, small-sized alliance partners are likely to bring into the alliance more flexible, adaptable, and informal procedures and routines that together determine an adhocratic alliance structure (Robson, Katsikeas, & Bello, 2008). Further, at the outset of alliances, partner firms design a contractual agreement to configure their work. Such a contractual agreement may or may not include a fixed end-point for the duration of the relationship, or specific mechanisms for termination. Open-ended alliances with no designated time-boundedness are characterized by bilateral decision-making and expectations of continuity, whereas projects with fixed end-points are characterized by unilateral decision-making and few guarantees of continuity (Heide, 1994).

We also posit that the transaction costs differ when managing exchanges in upstream or downstream activities of the value chain. Here, we build upon mixed prior research. On the one hand, Kogut (1988) reported that extensive downstream activities erode the performance of international joint ventures. Alliances that focus on exploiting existing resources to expand the partners' market penetration may face great uncertainty in terms of anticipating demand in volatile markets (Heide & Stump, 1995). An inability to predict demand can increase

transaction costs related to ongoing adaptations of coordination processes to respond to changes in market conditions (Robson & Dunk, 1999). On the other hand, upstream alliance contexts have the added managerial complexity of balancing the need for knowledge development and safeguarding against the detrimental effects of opportunistic knowledge appropriation (Dickson, Weaver, & Hoy, 2006; Stettner & Lavie, 2014). The implementation of upstream activities of the value chain necessitates access to partners' unique knowhow, to develop knowledge beyond that currently held (Stettner & Lavie, 2014). Firms may worry about losing their unique knowledge, due to an inability to predict the other's behavior. Such uncertainty can give rise to transaction costs concerning not only the crafting of rigid safeguarding systems, but also the evaluation of performance and slowdown of productivity growth (Rindfleisch and Heide, 1997).

2.1 Partner-based opportunism and performance efficiency

Performance efficiency refers to the ratio of the partners' alliance performance outcomes to the resource inputs and efforts needed to attain these (Robson et al., 2008). We predict that partner-based opportunism will dampen the efficiency of alliance work, based on two logics that stem from the TCE tradition (Williamson, 1991). First, a focal firm that perceives that the counterpart is engaging in opportunistic behaviors, such as distortion or withholding of useful information, is likely to take the view that this damages their credibility and reliability in the partnership moving forwards. The focal firm would retaliate by reducing its work commitments and the exchange of valuable information with the unreliable partner. The exchange becomes more effortful, which has dramatic consequences for the efficiency of the alliance work. Second, the focal firm may perceive that the counterpart is not fulfilling contractual obligations and breaches agreements to its own benefit, only if the chances of getting caught are low. Accordingly, the focal firm may invest, to a greater extent, in protective mechanisms and strategies that impose rigid and cost-inefficient, formalized

hierarchical control over the counterpart's behavior. Due to increased management costs, the exchange process would become sub-optimal. Based on these premises, we predict:

Hypothesis 1: Partner-based opportunism is negatively related to performance efficiency.

2.2 Moderating roles of alliance interface structure and alliance activities context

2.2.1 Partner-based opportunism, performance, and alliance partner size

We predict that the performance efficiency relevance of partner-based opportunism is conditional on alliance partner size. Alliance partner size can be linked to either bureaucratic or adhocratic structuring (Doz, 1996). Large alliance partner size is likely to bring into the alliance formalized and centralized routines and processes to regulate the partners' interface. Formalization and centralization increase the complexity of coordinating interactions between the alliance partners (Park & Ungson, 1997; Robson et al., 2008). Bureaucratically connected alliance partners are less likely to coordinate work on the basis of relational and informal systems; instead, they use formal and rigid control mechanisms, which could be viewed as distrustful, intrusive, and destructive (Ishida & Brown, 2011). Such negative perceptions serve to increase the focal firm's expectation that the counterpart plans ways to take advantage of opportunities in terms of unfair appropriation via a larger share of the value created by the alliance. Against this backdrop, when it suspects the partner's opportunism, the focal firm would take the view that they are unreliable and limit the integration of knowledge flows, and would redouble its efforts to bring in cost-inefficient protective mechanisms that reduce appropriation risks.

By contrast, small alliance partner size is likely to project onto the alliance interface, flexible, adaptable, and informal procedures and routines to organize the shared work (Doz, 1996). Informal communication and trust between the alliance partners are more likely to flourish within such adhocratic structures. Because of its resource constraints, the future viability of a small alliance partner could be linked inextricably to the alliance's success.

Such a lock-in situation would encourage a small-sized alliance partner to be ready to increase its integrative work efforts so that alliance tasks are executed efficiently. Even in cases where partner-based opportunism is perceived, the focal firm's level of confidence in the counterpart's credibility and reliability can be maintained, with it relying on cost-efficient informal and relational mechanisms to control the partner's behavior and safeguard performance. We thus expect:

Hypothesis 2a: Alliance partner size negatively moderates the partner-based opportunism to performance efficiency relationship, such that the negative relationship is stronger when alliance partner size is large (i.e., rather than small).

2.2.2 Partner-based opportunism, performance, and no end-point

We expect that the partner-based opportunism to performance efficiency relationship is contingent on the presence, or otherwise, of a pre-specified end-point for the alliance. Open-ended alliances without any clear sense of time-boundedness, are likely to be characterized by bilateral decision-making and governance mechanisms, as well as expectations of continuity (Heide, 1994). Bilateral decision-making and alliance partners' expectations of cooperative future exchanges, can curb negative effects of opportunistic knowledge flows in the present (Heide & John, 1990; Heide & Miner, 1992). Specifically, the normative influence of bilateral decision-making would encourage a firm to hold off from reacting to its partner's opportunism by imposing protective mechanisms or other management costs. Further, expectations of continuity can increase the firm's perception that while partner-based opportunism may take advantage of shared and/ or newly developed capabilities in the short-term, the larger collaborative opportunity to increase the size of the pie together remains. The possibility of the partner coming good in the future should support the focal firm's efforts to maintain its commitment to collaborative information exchange and an efficient interface. Despite the lack of a termination point to sharpen the partners' sense of urgency, the alliance

work would be galvanized insofar as expectations of continuity encourage the partners to avoid hold-out situations and allied tensions that delay the implementation of alliance tasks.

Project-based alliances with a fixed end-point for the duration of the relationship, or specific mechanisms for termination, are expected to feature unilateral decision-making and low expectations of continuity (Heide, 1994). Unilateral decision-making entails partner firms imposing alliance routines and procedures to influence and control the counterpart's behavior. Such authoritative decision-making can undermine work efficiency, because it hinders the sense of autonomy in the alliance entity (Ouchi, 1979). Against the backdrop of unilateral decision-making showing a base lack of confidence in the counterpart (Ghoshal & Moran, 1996), a focal firm's perceptions of partner-based opportunism are likely to result, straightforwardly, in the imposition of cost-inefficient behavioral controls. Further, without a shadow of the future within which to re-establish cooperative routines with an opportunistic partner, negative perceptions of the partner's reliability would intensify and undermine the focal firm's openness to sharing capabilities and information; to the detriment of alliance performance efficiency. Although it is possible that the presence of a fixed end-point will motivate the alliance partners to work more productively, deadlines and milestones also promote anxiety, stress, and concerns about achieving set goals in challenging alliance settings. Anxiety over failing to achieve goals within a finite timeframe can divert the focus away from cooperating efficiently toward appropriating as much as possible before the alliance ends. This emphasis on pie-appropriation would ultimately undermine the efficiency of alliance work. We thus hypothesize:

Hypothesis 2b: No end-point positively moderates the partner-based opportunism to performance efficiency relationship, such that the negative relationship is weaker for no end-point alliances (i.e., than it is for fixed end-point alliances).

2.2.3 Partner-based opportunism, performance, and upstream (downstream) activities

We posit that the performance efficiency relevance of partner-based opportunism is contingent on the alliance activities context. Upstream alliance partnerships (e.g., with a functional emphasis on manufacturing, technology, and development) tend to be involved in the exchange, use, and control of tacit knowledge to develop new resources and capabilities (Lavie & Rosenkopf, 2006; Rowley, Behrens, & Krackhardt, 2000). Upstream alliances commonly rely on the combination of tacit knowledge, as this type of knowledge creates the conditions for alliance partners to explore, experiment with, evaluate, and learn new insights that contribute to the development of new knowhow over time (Lavie & Rosenkopf, 2006; March 1991). Potential benefits stemming from the combination of tacit knowledge take a long time to materialize. Indeed, the wait for these distant returns, together with the potentially high value of the generated knowledge, can create suspicions that knowledge exchanges in the alliance are inefficient, due to: the fact that resource inputs have not yet led to outputs; and vulnerability to the partner's efforts to interpret and acquire the valuable encoded knowledge. Indeed, the nature of tacit knowledge can drive exchange partners' focus toward its appropriation, and away from the key task of co-creating new capabilities. To reduce the effects of opportunistic knowledge flows in upstream alliances, the focal firm may lessen its commitment to open knowledge exchange or stay fully committed but impose control mechanisms that undermine the efficient use of the knowledge shared in the alliance.

Downstream alliance partnerships (e.g., with a functional focus on marketing, services, and retailing) tend to be involved in the exchange, use, and control of explicit knowledge to leverage partners' existing capabilities (Lavie & Rosenkopf, 2006; Rowley et al., 2000). The nature and scope of downstream alliances drive alliance partners' attention toward combining existing resources and capabilities to enhance the commercialization of their products and services (Rothaermel & Deeds, 2004). Downstream alliances generally involve the combination of explicit knowhow as this type of knowledge allows partners to

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complement, refine, and leverage established resources and capabilities so as to execute given alliance tasks more efficiently (Lavie & Rosenkopf, 2006; March, 1991). Since potential pay-offs from combining explicit knowledge to leverage existing capabilities are relatively proximate and the explicit knowledge itself is less valuable than tacit knowledge, the focal firm can presume that shared knowledge is being used efficiently and the counterpart is not taking unfair advantage of it. Here, the firm perceiving opportunism would remain committed to the exchange of valuable inputs and seek to coordinate alliance activities on the basis of cost-efficient, informal/ relational systems. Taking the above arguments together, we posit:

Hypothesis 3: Upstream activities negatively moderates the partner-based opportunism to performance efficiency relationship, such that the negative relationship is stronger for upstream activities alliances (i.e., than it is for downstream activities alliances).

2.2.4 Moderating role of alliance partner size given upstream (downstream) activities

We expect that the moderation effect of alliance partner size on the link between partner-based opportunism and performance efficiency is itself contingent on whether the alliance partners are engaging in upstream or downstream activities of the value chain. Specifically, we argue that the negative effect of partner-based opportunism on performance efficiency becomes stronger as the size of alliance partner increases, among downstream rather than upstream alliances.

Firms form downstream alliances to combine and leverage existing resources and capabilities (Rothaermel & Deeds, 2004). The nature and scope of downstream alliances give partner firms a level of autonomy and self-determination with respect to the use of, and control over, their own capabilities as well as newly gathered marketplace data. Downstream alliances offer sizeable opportunities to learn more about consumers; for instance, in co-marketing alliances (e.g., Airbnb with Flipboard), firms combine their existing capabilities to enhance the commercialization of their offerings and improve their market reach. But they learn while retaining some individual control over what is shared and gained in the alliance.

A downstream activities climate that involves autonomous resource use would not easily gel with a large alliance partner's tendency to impose bureaucratic, intrusive, and distrustful procedures to influence how capabilities and valuable information should be shared, used, and safeguarded. When a partner projects authoritative behavior onto the alliance interface, and this conflicts with the self-deterministic nature and scope of downstream alliances' work, it would heighten perceptions that they are selfishly influencing operations so as to control, use, or withhold valuable capabilities and information. A focal firm that suspects the partner's opportunism would seem certain to take the view that they are unreliable and limit the integration of knowledge flows, and redouble its efforts to bring in cost-inefficient protective mechanisms that reduce appropriation risks (Heide et al., 2007; Wathne & Heide, 2000). In contrast, small alliance partner size is more likely to beget flexible, informal, and relational procedures to regulate the partners' interface and the exchange of capabilities and information. Such an adhocratic alliance management style does not conflict with the levels of autonomy and self-determination and control over own capabilities afforded by downstream alliances. Suspicions of partner-based opportunism can more easily be kept in check so as not to hamper cooperation and the efficient use of alliance resources, in small downstream alliances.

We expect no such moderation for upstream alliances as the nature and scope of upstream alliances create synergistic dependencies between the partners rather than self-determined autonomy. Firms form upstream alliances to access each other's unique knowhow, which is likely to be unavailable outside of the alliance (Das, Sen, & Sengupta, 1998). This condition of dependency assures the focal firm that the counterpart will collaborate to achieve greater benefits that would otherwise be unavailable to the partners. Such a working environment can attenuate the focal firm's concerns that a large alliance partner is imposing bureaucratic procedures to have control over, and access to, the unique

resources shared. Under these conditions, when it suspects the partner's opportunism, the

focal firm will not be so quick to take the view that they are unreliable and limit the

integration of knowledge flows, while bringing in cost-inefficient protective mechanisms that

reduce appropriation risks. Large versus small partner size would no longer shape the partner-

based opportunism to performance efficiency link. Based on the above premises, we expect:

Hypothesis 4: Alliance partner size negatively moderates the partner-based opportunism to performance efficiency relationship, such that the negative relationship is stronger when alliance partner size is large (i.e., rather than small), for downstream not upstream alliances.

2.2.5 Moderating role of no end-point given upstream (downstream) activities

We predict that the moderation effect of no end-point on the path from partner-based

opportunism to performance efficiency is contingent on whether alliance partners are

involved in upstream or downstream activities of the value chain. In particular, we argue that

the negative effect of partner-based opportunism on performance efficiency weakens for

alliances with no end-point that are also upstream, rather than downstream.

The work of upstream alliances to co-develop new capabilities demands that partner

firms focus on long-term interactions to mutually benefit from the alliance. Upstream alliance

partners place emphasis on ongoing exchanges and distant, but uncertain, gains (Ganesan,

1994). It stands to reason that upstream alliances with an unspecified, open-ended duration,

involve partners with particularly strong expectations of long-term, partner interactions. Such

a long-term oriented partner would be unlikely to suspect that its counterpart is deliberately

taking unfair advantage of the unique knowledge exchanged (Ganesan, 1994). Instead, the

focal firm's long-term perspective would boost its willingness to share unique knowhow and

increase its efforts to ascertain a cost-efficient use of shared resources in the implementation

of given alliance tasks. Under these conditions, no-end point weakens the negative efficiency

effect of partner-based opportunism. For upstream alliances with no-end point, the valuable

collaborative opportunity to increase the size of the pie together would remain despite the

suspected opportunism. Both the likelihood and importance of the partner's cooperation in future interactions should support the focal firm's endeavor to maintain its commitment to the exchange of valuable inputs and an efficient interface.

By contrast, upstream alliances with a fixed end-point for the duration of the relationship, or specific mechanisms for termination, would undermine expectations of future interactions between the partners. The possibility of the work being finite would pose a real problem for upstream activities, given that partners in these alliances need longer-term interactions to mutually benefit from the alliance. Indeed, an alliance partner may become short-term oriented, and thus concentrate on proximate and more certain and opportunistic returns at the expense of greater, but more distant, pay-offs (Ganesan, 1994). When a focal firm perceives its partner is being opportunistic, it is expected to put this into the context of them taking unfair advantage of the unique knowledge shared and newly developed before the alliance terminates. Such negative perceptions would induce the focal firm to limit the exchange of unique knowhow until rigid, cost-inefficient control systems are in place.

Finally, we argue that no end-point does not play a role in shaping the partner-based opportunism to performance efficiency relationship, for downstream alliances. Downstream alliance partners combine existing knowledge to achieve more proximate returns from collaboration (Rothaermel & Deeds, 2004); for instance, to commercialize products and services in new markets. Unlike in upstream alliances, the focal firm would lack a long-term emphasis arising from the nature of the alliance inputs and outcomes. This short-termism would reduce no end-point's ability to dampen the focal firm's reactions to its belief that the partner is being opportunistic. It is also unlikely that a pre-specified termination point for the alliance will exacerbate orientation toward short-term gains, and concerns about future interactions, when downstream alliances already involve more immediate payoffs. In light of the above arguments, we posit:

Hypothesis 5: No end-point positively moderates the partner-based opportunism to performance efficiency relationship, such that the negative relationship is weaker for no end-point alliances (i.e., than it is for fixed end-point alliances), for upstream not downstream alliances.

3. METHOD

3.1 Research setting, sample, and data collection

Our study is based on a multi-industry sample of alliances between two partners derived from two sources: Department of Industry International Business News and FAME. We tested the hypotheses using a cross-sectional survey, focusing on the perspective of a focal partner firm. We invited informants to think about a familiar alliance and give answers on their counterpart's behaviour and alliance performance, among other things. We reached suitable informants (e.g., alliance directors and executives) via email/ telephone to confirm their involvement in alliance management, generate interest, and ask them to partake in our study. Those that agreed to participate were emailed a link to the online survey and a cover letter that illustrated the purpose of the project. We also sent two reminders.

In line with best research practice (Hofer, Niehoff-Hoeckner, & Totzek, 2019), we checked the questionnaires gathered for missing data and ran a competency test to assess informants' (1) knowledge of all the areas covered in the survey, (2) familiarity with the behavior taken in this alliance, (3) responsibility for taking alliance decisions, and (4) confidence in answering the questions in this survey. As a result of this process, we discarded 22 questionnaires that were unfinished and four more that had low informant competency, as the mean score on the above-stated items was lower than four on a seven-point rating scale. In total, we gathered 361 useable questionnaires, which, in line with recent alliance work (e.g., Wu & Zhou, 2018), represents a satisfactory sample size.

We captured all constructs utilizing established multi-item, Likert-type (i.e., 1 = strongly disagree, 7 = strongly agree) scales that we adjusted to our study's context. Indeed, we consulted several senior academics and alliance executives to validate the measurement

scales adopted, examine the conceptual model, and revise the questionnaire. No major issues were reported concerning the interpretation of items deployed to tap the study's constructs, conceptual model, or questionnaire design. Further, the pre-test of the questionnaire raised no concerns with clarity of instructions, item ambiguity, or questionnaire length.

3.2 Dependent, independent, and control variables

We tapped performance efficiency using five items adapted from Robson et al. (2008) and Sarkar et al. (2001). Partner-based opportunism was measured based on five items modified from the work of Katsikeas et al. (2009). Alliance partner size was captured by asking informants to indicate the number of full-time employees of the alliance partner in question. To reduce variance, a natural logarithmic transformation was executed. In line with prior alliance work that estimated moderating effects by using binary variables (Lavie et al., 2011), we utilized a dummy variable to tap no end-point alliances versus finite, project-based ones.

We tapped the alliance activities context using a single item adapted from Lavie and Rosenkopf (2006), which used the value chain function of the alliance to distinguish upstream activities from downstream ones. In this, we followed Lavie and colleagues' (e.g., 2011) distinction between alliances formed to develop new capabilities versus those formed to leverage existing capabilities. Based on this distinction, we denoted upstream alliances as those predominantly involved in manufacturing, technology, and development (coded 1 in our dummy variable). Firms engaging in such upstream activities of the value chain partake in the exploration of novel avenues that can lead to the development of new and innovative capabilities (Lavie et al., 2011; Lavie & Rosenkopf, 2006). We denoted downstream alliances as those primarily involved in executing marketing, services, and retailing activities (coded 0). Firms engaging in such downstream activities of the value chain combine and exploit existing knowhow to refine and leverage partners' established capabilities (Lavie et al., 2011; Lavie & Rosenkopf, 2006). Both contexts were well reflected in the final sample.

We included five control variables to address additional determinants of performance efficiency. The internationality of alliance partners can constrain knowledge access (Ju, Jin, & Zhou, 2018; Zhang et al., 2010), which undermines performance efficiency. National alliance was represented in the performance model as a dummy variable (0 = international, 1 = national). Likewise, nonequity alliances were controlled for in the performance model as a dummy variable (0 = equity, 1 = nonequity). Asset specificity can cause safeguarding issues that undermine performance efficiency (Heide, 1994). It was tapped using three items taken from Lui, Wong, and Liu (2009). Alliance size can increase structural complexity to the detriment of performance efficiency (Robson et al., 2008). We measured alliance size by asking informants to indicate the number of full-time employees in the alliance (Robson et al., 2008). Lastly, we controlled for alliance duration as alliances can improve their coordination processes and enhance efficiency over time (Bello et al., 2010). We measured alliance duration by asking informants to indicate the duration of the alliance.

4. ANALYSIS AND RESULTS
4.1 Measure validation

We applied Anderson and Gerbing's (1988) guidelines to determine construct validity and reliability. Cronbach's alpha reliability scores for the multi-item constructs were acceptable, as these exceeded 0.73. Average variance extracted (AVE) for each construct was higher than the cut-off of 0.50 (Fornell & Larcker, 1981). We show reliability scores, descriptive statistics, and correlations among the study constructs and control variables in Table 2.

Insert Table 2 here

We then conducted a confirmatory factor analysis in EQS—based on the elliptical reweighted least-squares (ERLS) estimation procedure—for the main study constructs. ERLS permits unbiased estimates for normal and non-normal data (Sharma, Durvasula, & Dillon, 1989). We report the results in Table 3. The goodness-of-fit indices exhibit a satisfactory fit

to the data: Chi-Square statistic = 186.27 (df = 74), p = 0.00; Comparative Fit Index (CFI) = 0.97; Incremental Fit Index (IFI) = 0.97; Non-Normed Fit Index (NNFI) = 0.96; Standardized Root Mean Square Residual (SRMR) = 0.05; and Root Mean Squared Error of Approximation (RMSEA) = 0.06. Factor loadings for the study constructs exceed 0.62 and are significant at $p < .01$. These results suggest that the measurement scales have satisfactory convergent validity. Further, we determined discriminant validity by evaluating whether the AVE for each construct was greater than its highest shared variance with the other constructs (Fornell & Larcker, 1981). The results of this test raised no concerns (see Table 2).

Insert Table 3 here

We followed MacKenzie and Podsakoff's (2012) guidelines to reduce common method bias (CMB) in the data. First, we took steps to guarantee that informants were experienced with the topic and assured their anonymity. We also reverse-coded some items, and avoided complex and abstract questions. Further, we used the correlation-based, marker variable technique to ascertain the presence of CMB (Podsakoff, MacKenzie, & Podsakoff, 2012). In doing so, a marker-variable (i.e., partner's power) taken from the work of Ramaseshan and Loo (1998), that is expected to be unrelated to at least one of the study constructs (i.e., partner-based opportunism), was deployed. The presence of CMB can be determined by assessing the correlation value(s) between the marker variable and the theoretically unrelated variable(s). The correlation matrix (see Table 1) depicts low shared variance of the marker variable with the theoretically unrelated variable in the model (r = 0.01). This correlation was employed to estimate a CMB-corrected matrix (Malhotra, Kim, & Patil, 2006). Based on the corrected matrix, we calculated a marker measurement model and ran a Chi-Square difference test between this model and our original model. Since no deterioration in fit was detected, CMB does not appear to explain the study findings.

4.2 Hypothesis testing

To test our hypotheses, we used hierarchical regression analysis. Following best practice (Sharma, Durand, & Gur-Arie, 1981), we entered the variables included in the conceptual model in three steps to assess the incremental contributions of sets of independent variables. In the first step (Model 1), we entered just the control variables. In the second (Model 2), we included control variables, study variables (i.e., partner-based opportunism, alliance partner size, no end-point, and alliance activities context), and hypothesized two-way interaction terms (i.e., partner-based opportunism × alliance partner size, partner-based opportunism × no end-point, and partner-based opportunism × alliance activities context). In the third step (Model 3), we entered control variables, study variables, all two-way interaction terms, and three-way interaction terms (i.e., partner-based opportunism × alliance partner size × alliance activities context and partner-based opportunism × no end-point × alliance activities context). The results (see Table 4) show that partner-based opportunism is negatively related to efficiency (b = -0.26, t = -3.16, p = 0.00), as per H1. We observe that while alliance partner size has a nonsignificant moderation effect (b = -0.05, t = -1.14, p = 0.26) on the relationship of partner-based opportunism and efficiency, no end-point has a positive moderation impact here (b = 0.27, t = 2.26, p = 0.02). These results do not uphold H2a, but support H2b.

The results also show that alliance activities context negatively moderates (b = -0.32, t = -2.05, p = 0.04) the partner-based opportunism to performance efficiency link. A floodlight conditional process analysis, using Hayes' (2013) process procedure for SPSS, demonstrates that the negative relationship of partner-based opportunism and efficiency remains significant among upstream alliances (b = -0.28, t = -2.75, p = 0.01), but drops to nonsignificance among downstream ones (b = 0.03, t = 0.09, p = 0.93). The results provide support for H3. We also observe that the interaction term of partner-based opportunism, alliance partner size, and alliance activities context relates (marginally) to performance efficiency (b = -0.10, t = -1.74, p = 0.08). A subsequent conditional process analysis, conducted to assess the conditional role

of the alliance activities context, reveals that partner-based opportunism × alliance partner size does not link to efficiency for upstream alliances (b = 0.05, t = 0.79, p = 0.43), but is linked (marginally) with efficiency for downstream ones (b = -0.07, t = -1.69, p = 0.09). These results support our H4. Finally, we show that the interaction term of partner-based opportunism, no end-point, and alliance activities context relates positively (b = 0.22, t = 2.29, p = 0.02) to performance efficiency. In the ensuing conditional process analysis, we observe that partner-based opportunism × no end-point is positively associated with performance efficiency for upstream alliances (b = 0.32 t = 2.37, p = 0.02), and is unrelated to efficiency among downstream ones (b = 0.09, t = 0.85, p = 0.40). These results support H5.

Insert Table 4 here

The results reveal nonsignificant direct effects of alliance activities context (b = 0.51, t = 1.15, p = 0.25) and alliance partner size (b = 0.05, t = 0.80, p = 0.42) on performance efficiency; as well as a marginally significant (b = -0.36, t = -1.79, p = 0.07) direct effect of no end-point on efficiency. We also observe nonsignificant moderation effects of alliance partner size × alliance activities context (b = 0.25, t = -1.41, p = 0.16) and no end-point × alliance activities context (b = -0.16, t = -0.30, p = 0.76) on efficiency. None of the control variables relates significantly to performance efficiency: national alliance (b = 0.15, t = 1.35, p = 0.18); nonequity (b = 0.11, t = 1.04, p = 0.30); asset specificity (b = 0.02, t = 0.89, p = 0.37); alliance size (b = 0.01, t = 0.22, p = 0.83); and alliance duration (b = -0.01, t = -0.85, p = 0.40). The study results are not sensitive to the inclusion or exclusion of these controls.

We plotted the moderation effects in Figure 2. Plot A shows that a stronger negative performance effect of partner-based opportunism is associated with the fixed end-point, rather than no end-point, condition. Plot B reveals that the negative performance relevance of partner-based opportunism holds for upstream alliances, but not for downstream ones. Plot C depicts that among downstream alliances, a stronger negative performance effect of partner-

based opportunism is related to the large, not small, alliance partner size condition. Finally, plot D shows that the negative link of partner-based opportunism to performance efficiency for fixed end-point alliances not only is less negative, but rather it becomes positive for no end-point alliances in the upstream condition.

Insert Figure 2 here

As the full sample consists of sizeable groups of upstream (n = 152) and downstream (n = 209) alliances, we reran the analysis for these subsamples. We observe that the negative effect of partner-based opportunism on performance efficiency is significant among upstream alliances (b = -0.68, t = -4.03, p = 0.00), but drops to nonsignificance among downstream ones (b = 0.02, t = 0.15, p = 0.88). We also find that partner-based opportunism × alliance partner size is not related to performance efficiency for upstream alliances (b = 0.03 t = 0.69, p = 0.49), but is associated (marginally) with efficiency for downstream alliances (b = -0.09, t = -1.86, p = 0.06). Lastly, we observe that partner-based opportunism × no end-point is related positively with efficiency among upstream alliances (b = 0.33 t = 2.50, p = 0.01), and is not associated with efficiency among downstream ones (b = 0.05, t = 0.41, p = 0.68). These findings are consistent with, and increase the robustness of, our hypothesis testing.

5. DISCUSSION

The current study theorizes two facets of the alliance interface structure—alliance partner size and no end-point—and two alliance activities contexts—upstream and downstream—that together, give rise to conditions under which partner-based opportunism is more or less detrimental to the efficiency of alliance work. Our findings contribute to the strategic alliance governance literature in specific ways.

Prior alliance governance research has extensively examined forms, antecedents, and consequences of opportunism, drawing predominantly on TCE (Hawkins, Wittmann, & Beyerlein, 2008; Lado et al., 2008; Seggie et al., 2013). We posit that such a focus has

diverted alliance scholars' attention away from examining factors that fall outside TCE's confines, which nonetheless condition the performance effects of opportunism. Here, we take the novel approach of synthesizing TCE with evolutionary theory (Doz, 1996) to assert that facets of the alliance's interface structure (i.e., alliance partner size and no end-point) create conditions upon which partner firms are more or less exposed to the detrimental effects of opportunism. In contrast to studies that have found size shapes the performance relevance of low-trust alliance behaviors (Robson et al., 2008), we observe that alliance partner size has no straightforward significant impact on the efficiency effect of partner-based opportunism. We do find that no end-point has a positive moderating effect here. Alliances with no pre-specified end-point raise expectations of future interactions that divert the focus away from partner-based opportunism, toward gaining greater pay-offs from ongoing cooperation. This result augments the premise in the alliance literature that expectations of contractual continuity drive an efficient focus on ongoing, cooperative interactions and distant, positive returns from these (Heide & John, 1990; Heide & Miner, 1992).

Previous empirical work has provided evidence of the importance of making an upstream versus downstream distinction when researching alliances (Hess & Rothaermel, 2011; Lavie & Rosenkopf, 2006; Park, Chen, & Gallagher, 2002). However, past alliance research on opportunism has not accounted for value-chain activity circumstances wherein a partner's opportunistic behavior is more or less damaging to performance. We provide new insights by showing that the negative partner-based opportunism to efficiency relationship remains significant among upstream alliances, but drops to nonsignificance for downstream ones. These findings add to previous studies that have argued that upstream alliances increase managerial complexity, linked to actions of the partners to extend their existing knowledge base in important new directions and safeguard against possible detrimental effects of opportunistic tacit knowledge flows (Dickson et al., 2006; Stettner & Lavie, 2014).

Further, we show that the moderating effect of alliance partner size on the relationship between partner-based opportunism and performance efficiency remains nonsignificant in upstream alliances. The upstream alliance activities context can boost the sense of symmetric dependence between the partners, which neutralizes the focal firm's suspicions that its large partner is willing to impose bureaucratic procedures to have control over the unique resources shared, and dampens its motivation to take cost-inefficient protective steps as a result of perceived opportunism. Contrastingly, the moderation effect of partner size on the partner-based opportunism to efficiency link becomes negative for downstream alliances. In these alliances, the partners usually retain a level of autonomy with respect to their use of capabilities and insights learnt. When a large partner projects authoritative behavior onto the alliance interface, it goes against this autonomy and creates the perception that it is selfishly influencing operations to control valuable capabilities and information. The focal firm would protect itself at the expense of efficiency. This new finding extends previous alliance work that has asserted that size can affect partners' willingness and ability to dictate how alliance resources and pay-offs should be accessed, shared, and used (Hitt et al., 2004).

The moderation effect of no end-point remains positive among upstream alliances, specifically. Our results suggest not only that the efficiency impact of partner-based opportunism is less detrimental in upstream no end-point (vs. fixed end-point) alliances, but also that some partner opportunism could be productive (Figure 2, Plot D). This finding is in line with logic that the nature of open-ended alliances boosts partner firms' orientation toward finding ways to maintain and strengthen their relationship (Hess & Rothaermel, 2011); which is a critical condition for combining unique knowhow to co-create new capabilities successfully in the upstream situation. Expectations of continuity motivate a firm to refrain from reacting negatively to its partner's opportunism via the imposition of protective mechanisms or other governance costs (Heide & Miner, 1992). The firm might

even react positively to ensconce greater connectivity and efficiency. Finally, we observe that the moderation effect of no end-point drops to nonsignificance for downstream alliances. Such an activities context encourages a focus on exploiting shared capabilities to leverage existing assets in the short-run (Rothaermel & Deeds, 2004), rather than on exploring potential benefits stemming from expectations of repeated interactions with the partner. Taken together, our complex two- and three-way moderation findings extend TCE by deepening understanding of opportunism's context-sensitive effect on alliance outcomes.

6. IMPLICATIONS AND LIMITATIONS
6.1 Managerial implications

This study generates key insights for alliance design and management. Specifically, our findings enhance managerial understanding of conditions under which partner-based opportunism is more or less detrimental to efforts to efficiently translate alliance inputs into outputs. We recommend that firms take alliance governance decisions according to whether the alliance engages in upstream or downstream activities of the value chain, the size of the alliance partner, and the existence, or not, of a contracted end-point. Indeed, these factors come together in a complex way.

It is important for alliance managers to be aware that detrimental effects of partner-based opportunism are generally stronger for upstream, not downstream, alliances, Still, executives engaged in the management of upstream alliances should know that opportunism is highly damaging among alliances with a fixed end-point, whereas the negative effect of partner-based opportunism disappears (at the very least) among upstream alliances with no end-point. Upstream alliances involve valuable combinations of tacit knowledge, but the partners require long-term interactions to mutually benefit from these. Thus, short-run opportunism can be especially damaging. Practitioners involved in the management of upstream alliances with a fixed end-point would need to think very carefully about the blend

of unilateral and bilateral governance used. Proximate unilateral governance, based on explicit agreements that include sanctions for breaching, and compensation for complying with, the contract, tends to be cost-inefficient, even if it can incentivize a partner adhering to rules on knowledge and capabilities appropriation until the end of the contract. We would recommend that more efficient, bilateral governance, based on mutual respect and reciprocation, is deployed as soon as specific collaborative behaviors to co-create new knowledge are socially mandated in the alliance. Still, this will not be straightforward to achieve without an obvious shadow of the future within the current alliance contract.

Alliance executives involved in the management of downstream alliances should be aware that partner-based opportunism is particularly detrimental for alliances involving a large alliance partner, and is damaging, but less so, among alliances with small partners. A large partner is likely to impose extra bureaucracy on the partnership and this conflicts with the sense of autonomy and self-determination partners usually have in downstream alliances that are close to the marketplace. Here, the partners should strive to retain the flexible and informal procedures of an adhocratic alliance structure. Part of doing so could involve sufficient use of bilateral governance. This said, some unilateral governance focusing on protecting specialized competences and resources might discourage an alliance partner from acting opportunistically and having their reputation tarnished in the proximate marketplace.

6.2 Limitations and directions for future studies

The cross-sectional aspect of the current study limits our ability to make causal inferences. Longitudinal data are needed to capture long-term effects of opportunism on performance efficiency and dynamics of the mechanisms conditioning the link. Despite the difficulty of collecting longitudinal data from senior alliance decision-makers, opportunism to performance research could greatly benefit from future work using such a research design. Our study is also limited in that it examined one-side's views on the alliance relationship. It

would be valuable for alliance scholars to examine opportunism dynamics and outcomes across partners. Further, efforts to replicate the study in other empirical settings (e.g., specific industry groups) could increase the robustness and generalizability of our findings.

Another fertile area of future research is to examine conditional effects of other facets of the alliance interface structure (e.g., prior affiliation and number of alliance partners) to build cumulatively upon the current study's moderation findings. Considering that alliance partner size may be a relative concept, further work could fruitfully consider a partner's size relative to both the size of the alliance and that of the focal partner. These relativities could shape the partner firm's ability to impose its preferred design features on the alliance interface. As such, scholars should take other three-way effects into account to re-evaluate the contingent role of partner size and the nonsignificant two-way effect we observed.

Our review of the pertinent literature (Table 1) shows that scant research has studied how the direct effect of partner opportunism on performance efficiency is achieved through the intervening role of other variables. In this regard, a worthwhile avenue for future research could stem from examining not only the conditions under which, but also the processes through which, partner-based opportunism affects alliance efficiency. Since an alliance can be efficient but also ineffective, it also would be beneficial if future work takes a holistic view and examines effects of opportunism on two or more theoretically anchored referents of performance, concurrently. A final area of research opportunity is the cross-fertilization of TCE work on determinants of partner-based opportunism, with insights from complementary theories (e.g., personality trait theory). Synthetizing TCE with other perspectives can lead to the identification, conceptualization, and testing of theoretically anchored, but currently unknown, drivers of partners' dispositions to breach alliance agreements to their benefit.

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Table 1: Empirical research on the relationship between opportunism and performance in alliances and partnerships

Study	Study Context	Theoretical Perspective	Opportunism Aspect(s)	Explanatory Mechanism(s)		Outcome Variable(s)	Study Findings
				Moderator(s)	Mediator(s)		
Gassenheimer, Baucus, & Baucus, 1996	Survey of 162 U.S.-based franchisees–franchisor cooperative arrangements in the fast food industry	Transaction cost economics; Relational exchange theory	Franchisor's opportunism	Participative communication	N/T	Franchisee satisfaction in terms of overall satisfaction with cooperation and met expectations; Franchise system performance in terms of marketing efforts, physical distribution and product innovation	• Direct effect (- / -) is moderated by participative communication (ns / +)
Dahlstrom & Nygaard, 1999	Survey of 216 dyadic Norway-based franchisor–franchisee relationships in the oil industry	Transaction cost economics	Franchisor's opportunism	N/T	N/T	Transaction costs in terms of bargaining, monitoring, and maladaptation costs	• Direct effect (+)
Li & Ng, 2002	Survey of 179 China–foreign (North America or Western Europe) importer–exporter relationships in diverse manufacturing industries	Transaction cost economics; Relational exchange theory; Resource-based view	Channel partners' opportunism	N/T	N/T	Relationship termination	• Direct effect (+)
White & Liu, 2005	Survey of 231 Hong Kong-based architect–contractor alliances in the construction industry	Transaction cost economics	Contractor's opportunism	N/T	N/T	Cooperation costs in terms of time and effort to coordinate with the alliance partner	• Direct effect (+)
Judge & Dooley, 2006	Survey of 91 U.S.-based strategic alliances in the healthcare industry	Transaction cost economics	Alliance partner's opportunism	N/T	N/T	Alliance outcomes in terms of met financial and non-financial objectives	• Direct effect (-)
Lancastre & Lages, 2006	Survey of 395 Portuguese-based buyer–supplier cooperative relationships primarily in industrial and services sectors	Commitment–trust theory	Supplier's opportunism	N/T	Inter-partner trust	Partners' cooperation in terms of regular interactive communication activities	• Indirect effect (-) via inter-partner trust
Luo, 2007	Survey of 188 Chinese–foreign (EU, Asia, North America) joint ventures primarily in telecommunications, pharmaceuticals, and electric equipment industries	Transaction cost economics; Information-processing theory	Partners' opportunism	N/T	N/T	Performance, in terms of financial return, sales growth, and overall satisfaction	• Direct effect (-)
Morgan, Kaleka, & Gooner, 2007	Survey of 73 U.K.-based supplier–retailer relationships in the supermarket industry	Transaction cost economics; Agency theory; Network theory	Supplier's opportunism	N/T	N/T	Retailer performance in terms of how well the category results met set objectives	• Direct effect (-)
Wu et al., 2007	Survey of 142 U.S.–foreign manufacturer–distributor relationships primarily in heavy equipment and machinery, appliances, medical equipment, and electronics industries	Resource-based view	Distributor's opportunism	N/T	N/T	Manufacturer competiveness in the export market in terms of distributor's contribution in making the manufacturer more profitable and responsive to customers, changing conditions and market opportunities	• Direct effect (-)
Lado, Dant, & Tekleab, 2008	Longitudinal survey of 409 U.S.-based principal–distributor relationships primarily in grocery, pharmacy, and hardware sectors	Transaction cost economics	Principal's opportunism	N/T	N/T	Performance in terms of sales growth, profit growth, and overall profitability	• Direct effect (-)
Lui, Wong, & Liu, 2009	Survey of 311 Hong Kong–Chinese trader–supplier relationships in garment and toy industries	Transaction cost economics; Relational exchange theory	Partner's opportunism	N/T	N/T	Partnership performance in terms of perceived relationship satisfaction, achievement of relationship's goals, and whether the relationship added to their capabilities and competitiveness	• Direct effect (-)

Study	Study Context	Theoretical Perspective	Opportunism Aspect(s)	Explanatory Mechanism(s)		Outcome Variable(s)	Study Findings
				Moderator(s)	Mediator(s)		
Luo, Liu, & Xue, 2009	Survey of 216 dyadic China-based distributor–manufacturer partnerships in the appliance industry	Economic sociology perspective	Distributor's opportunism	N/T	N/T	Dyadic performance in terms of mutual satisfaction with economic performance, market position, customer traffic, effectiveness, and quality of operations and logistics support	• Direct effect (-)
Seggie, Griffith, & Jap, 2013	Survey of 154 dyadic U.S.-based buyer–seller relationships in various manufacturing industries	Transaction cost economics	Active opportunism; Passive opportunism	N/T	Transaction costs	Satisfaction with relationship performance in terms of relationship success, overall satisfaction, and met expectations	• Direct effect (ns) is mediated (+) by transaction costs; • Direct effect (-) is mediated (-) by transaction costs
Wang et al., 2013	Survey of 400 Chinese–foreign buyer–supplier relationships primarily in manufacturing of electronic components, computer equipment, chemicals, and chemicals	Transaction cost economics; Social capital theory	Partner's opportunism	N/T	N/T	Focal firm's evaluation of partner's performance in terms of product quality, timeliness of delivery, cost control, after-sales support, and total value received; Focal firm's transaction costs in terms of bargaining, monitoring, and maladaption costs; Focal firm's income level	• Direct effect (- / + / -)
Chen, Kou & Shang, 2014	Case study based on distribution channel practices in Cisco China	Not applicable	Partner's opportunism	N/T	N/T	Channel performance in terms of customer loyalty and attraction to new customers	• Direct effect (-)
Chang, Bai, & Li, 2015	Survey of 392 Chinese–foreign international joint ventures (IJVs) in diverse manufacturing industries	Institutional theory	IJV's foreign partner's opportunism	N/T	N/T	IJV's relationship extendedness in terms of whether the cooperative relationship would continue in the future to an indeterminate end-point	• Direct effect (-)
Luo et al., 2015	Survey of 225 dyadic China-based manufacturer–distributor relationships in the home appliance industry	Social exchange theory	Strong form opportunism; Weak form opportunism	N/T	N/T	Governance costs in terms of perceived time spent monitoring, coordination expenditures, and ease of agreement and negotiation; Relationship performance in terms of market position, sales volume, efficiency, quality of sales support, and relationship duration	• Direct effects (+ / +); • Direct effects (- / -)
Chowdhury, Gruber, & Zolkiewski, 2016	Multiple case studies based on Bangladesh-based dyadic agency–client, and triadic agency–client–common network partner, relationships in the advertising service industry	Not applicable	Weak form opportunism	N/T	N/T	Value co-creation in terms of assessment of value-creating interactions	• Direct effect (-)
Trada & Goyal, 2017	Survey of 247 India-based supplier–distributor relationships in the pharmaceutical industry	Transaction cost economics; Justice theory	Distributor's opportunism	N/T	N/T	Relationship performance in terms of achieving dominant market position, increasing sales volume, and improving work efficiency; Governance costs in terms of monitoring, coordination, and negotiation	• Direct effects (- / +)
Zhang, Li, & Huang, 2017	Survey of 304 China-based buyer–supplier relationships operating mainly in food, chemical, machinery, electronic equipment, and metal manufacturing industries	Transaction cost economics; Relational exchange theory	Supplier's opportunism	Formalization; Socialization	N/T	Relationship continuity in terms of increased relational commitment and importance of the supplier	• Direct effect (ns) is moderated by formalization (ns) and socialization (+)
Our study	**Survey of 361 strategic alliances**	**Transaction cost economics; Evolutionary perspective**	**Partner-based opportunism**	**Alliance partner size; No end-point alliances; Alliance activities context**	**N/T**	**Performance efficiency**	• **Direct effect (-) is moderated by alliance partner size (ns) and no end-point (+);** • **Direct effect (-) is moderated by alliance partner size (ns) and no end-point (+) among upstream alliances;** • **Direct effect (ns) is moderated by alliance partner size (-) and no end-point (ns) in downstream alliances**

Note: the table provides an overview of the performance effects of partner-based opportunism at the largest possible scope of inter-firm relationships. We then narrowed the empirical context and focus of the investigation to concentrate specifically on alliances so to reduce variances; N/T = Not tested; (+) = Positive relationship, (-) = Negative relationship, (ns) = Nonsignificant relationship;
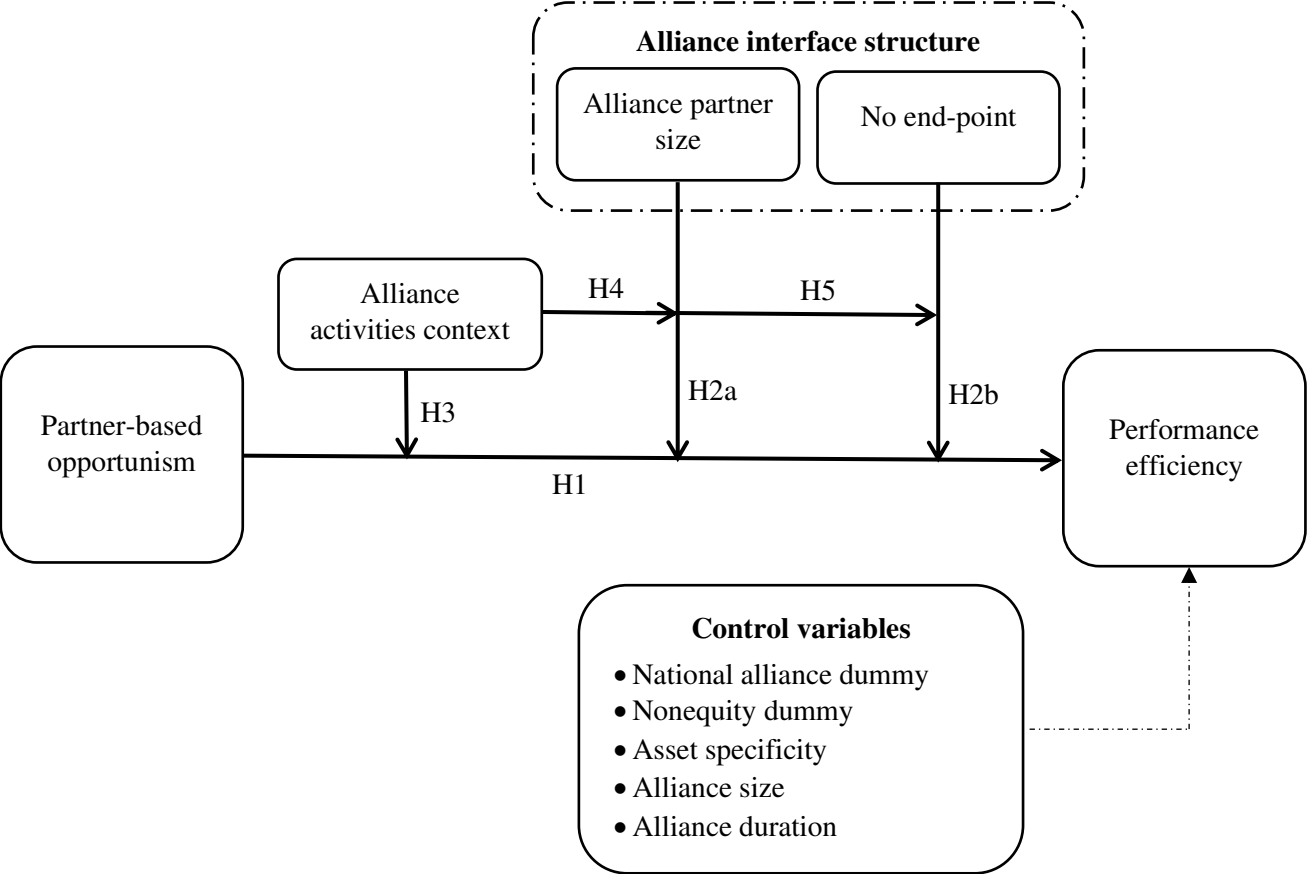
Figure 1: Conceptual model

Table 2: Correlations, descriptive statistics, and reliability measures

Variables	Mean	S.D.	α	AVE	1	2	3	4	5	6	7	8	9	10
1 Partner-based opportunism	2.76	1.37	0.89	0.79	1									
2 Performance efficiency	4.43	1.19	0.88	0.79	-0.33**	1								
3 Alliance partner size[a]	3.18	1.34	—	—	-0.01	-0.01	1							
4 No end-point[b]	0.63	0.33	—	—	0.09	0.05	0.10*	1						
5 Alliance activities context[b]	0.42	0.45	—	—	0.04	-0.02	0.30**	0.01	1					
6 National alliance dummy	0.52	0.50	—	—	-0.07	0.11*	0.05	-0.02	0.03	1				
7 Nonequity dummy	0.59	0.31	—	—	-0.04	0.15**	-0.01	0.21**	0.10*	0.25**	1			
8 Asset specificity	3.94	1.13	0.81	0.78	0.21**	-0.03	-0.04	0.01	-0.68	-0.08	-0.11*	1		
9 Alliance size	33.92	25.96	—	—	0.06	-0.01	0.46**	-0.06	0.13**	-0.02	0.04	-0.01	1	
10 Alliance duration	3.21	2.88	—	—	-0.01	-0.06	-0.12*	0.02	-0.05	0.01	-0.04	-0.03	0.02	1
11 Partner's power[c]	4.98	1.22	0.74	—	0.07	0.11*	0.07	-0.01	0.06	-0.04	0.01	-0.01	0.03	0.01

Note: ** Correlation significant at the .01 level (two-tailed); * Correlation significant at the .05 level (two-tailed); [a] Logarithm; [b] Dummy variable; [c] Marker variable for method bias procedures; — = Not estimated

Table 3: Measurement model results

Factor and Items	S.L.	t-Value
Partner-based opportunism		
In this alliance, the partner firm exaggerates its needs to get what it desires	0.75	14.41
In this alliance, the partner firm breaches formal or informal agreements to its benefits	0.84	17.05
In this alliance, the partner firm slightly alters facts to get what it wants	0.89	18.64
In this alliance, the partner firm tries to take unfair advantage of my firm to further its own interests	0.89	18.71
The partner firm has benefited from the alliance to my firm's detriment	0.80	15.99
Performance efficiency		
In this alliance, my firm's resources are deployed efficiently	0.80	15.67
In this alliance, procedures and mechanisms for alliance resource utilisation are cost-efficient	0.87	17.72
In this alliance, my firm efficiently converts resource inputs into alliance outputs	0.86	17.41
My firm perceives that alliance tasks are efficiently carried out by the partner firm	0.70	12.98
My firm efficiently carries out alliance tasks	0.63	11.44
Alliance partner size		
Please indicate the approximately number of full-time employees of the alliance partner in question	—	—
No end-point		
At the time it was launched, was there an intended duration for the alliance in question pre-specified?	—	—
Alliance activities context		
Please specify the predominant functional scope of the alliance in question	—	—
Fit Index: Chi-Sq. = 186.27 (df = 74), p = .00; CFI = 0.97; IFI = 0.97; NNFI = 0.96; SRMR = 0.06; RMSEA= 0.06		

Note: S.L. = Standardized loading; — = Not estimated

Table 4: Regression analysis results

Variables	Model 1[a]	Model 2[a]	Model 3[a]
Control variable effects			
National alliance dummy	0.19 (1.83) *0.07*	0.17 (1.68) *0.09*	0.15 (1.35) *0.18*
Nonequity dummy	0.21 (1.57) *0.12*	0.10 (0.76) *0.45*	0.11 (1.04) *0.30*
Asset specificity	-0.03 (-0.95) *0.34*	0.04 (1.04) *0.30*	0.02 (0.89) *0.37*
Alliance size	0.04 (0.62) *0.54*	0.03 (0.14) *0.89*	0.01 (0.22) *0.83*
Alliance duration	-0.01 (-0.87) *0.38*	-0.04 (-0.15) *0.88*	-0.01 (-0.85) *0.40*
Direct effects			
Partner-based opportunism		-0.24 (-3.96) *0.00*	-0.26 (-3.16) *0.00*
Alliance partner size[b]		0.08 (0.96) *0.34*	0.05 (0.80) *0.42*
No end-point[c]		-0.47 (-1.46) *0.15*	-0.36 (-1.79) *0.07*
Alliance activities context[c]		0.48 (1.04) *0.30*	0.51 (1.15) *0.25*
Two-way interaction effects			
Partner-based opportunism × Alliance partner size		-0.04 (-0.89) *0.37*	-0.05 (-1.14) *0.26*
Partner-based opportunism × No end-point		0.20 (2.18) *0.03*	0.27 (2.26) *0.02*
Partner-based opportunism × Alliance activities context		-0.42 (-2.08) *0.04*	-0.32 (-2.05) *0.04*
Alliance partner size × Alliance activities context			-0.25 (-1.41) *0.16*
No end-point × Alliance activities context			-0.16 (-0.30) *0.76*
Three-way interaction effects			
Partner-based opportunism × Alliance partner size × Alliance activities context			-0.10 (-1.74) *0.08*
Partner-based opportunism × No end-point × Alliance activities context			0.22 (2.29) *0.02*
F-statistic	1.34	7.58	7.31
R²	0.06	0.17	0.21

Note: n = 361; [a] Standardized β coefficient, with t-value in parentheses and p-value in italics (two-tailed); [b] Logarithm; [c] Dummy variable
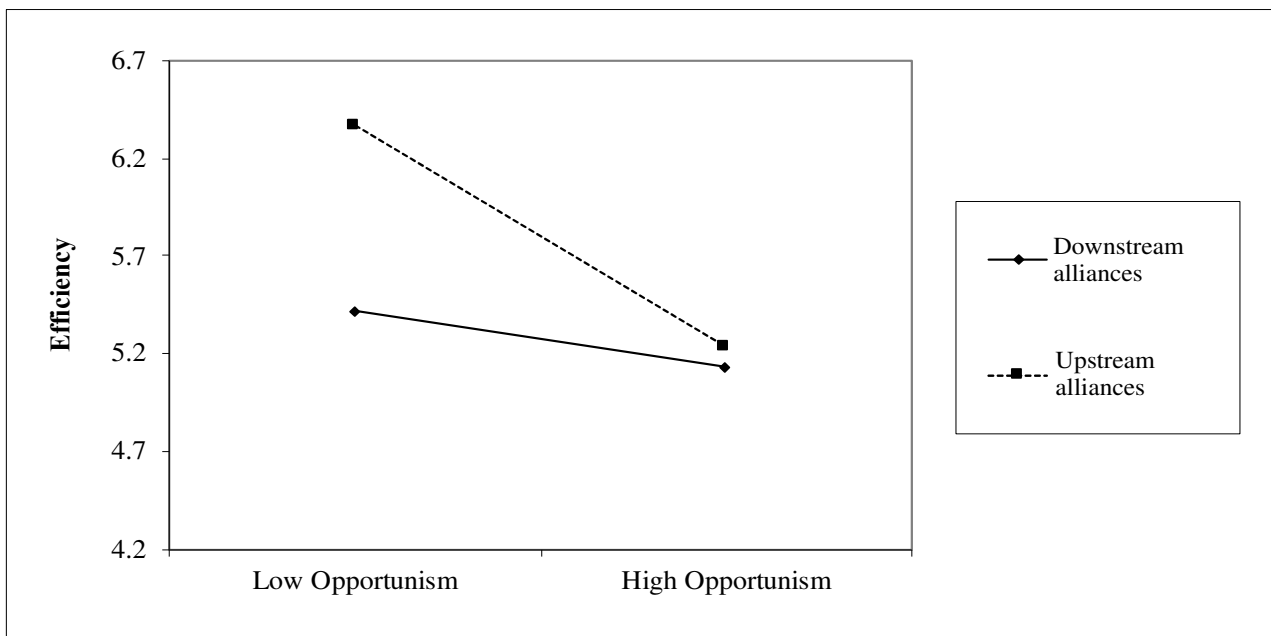
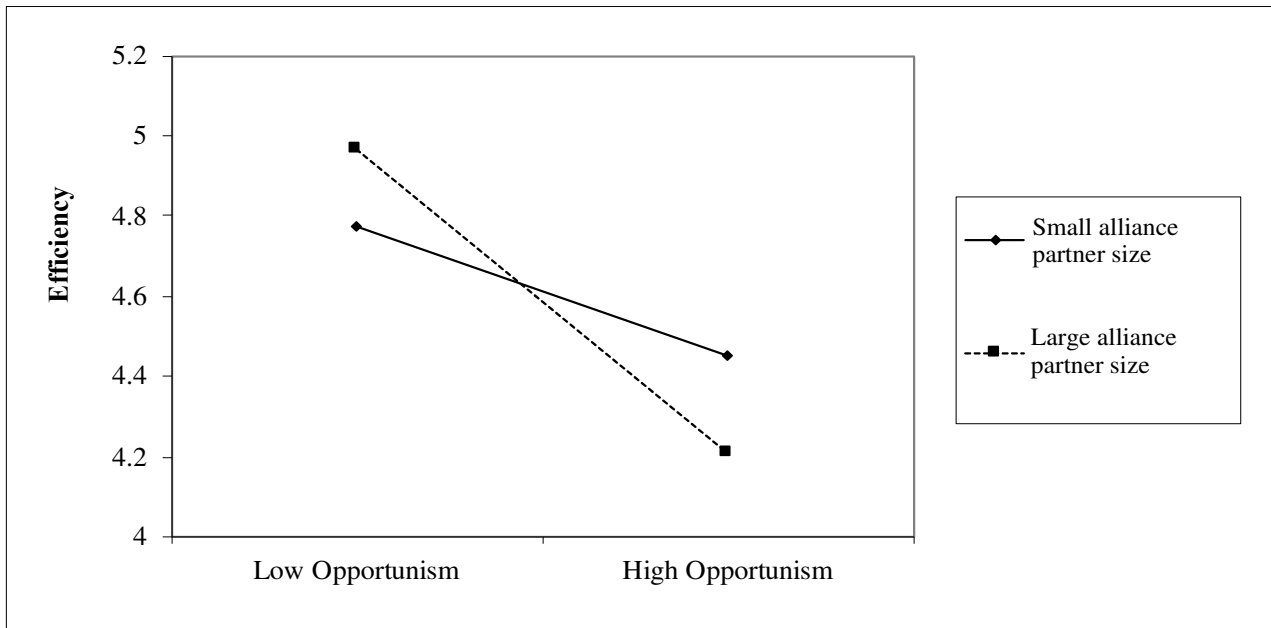**Figure 2:** Interaction effects

Plot A: Partner-based opportunism and no end-point
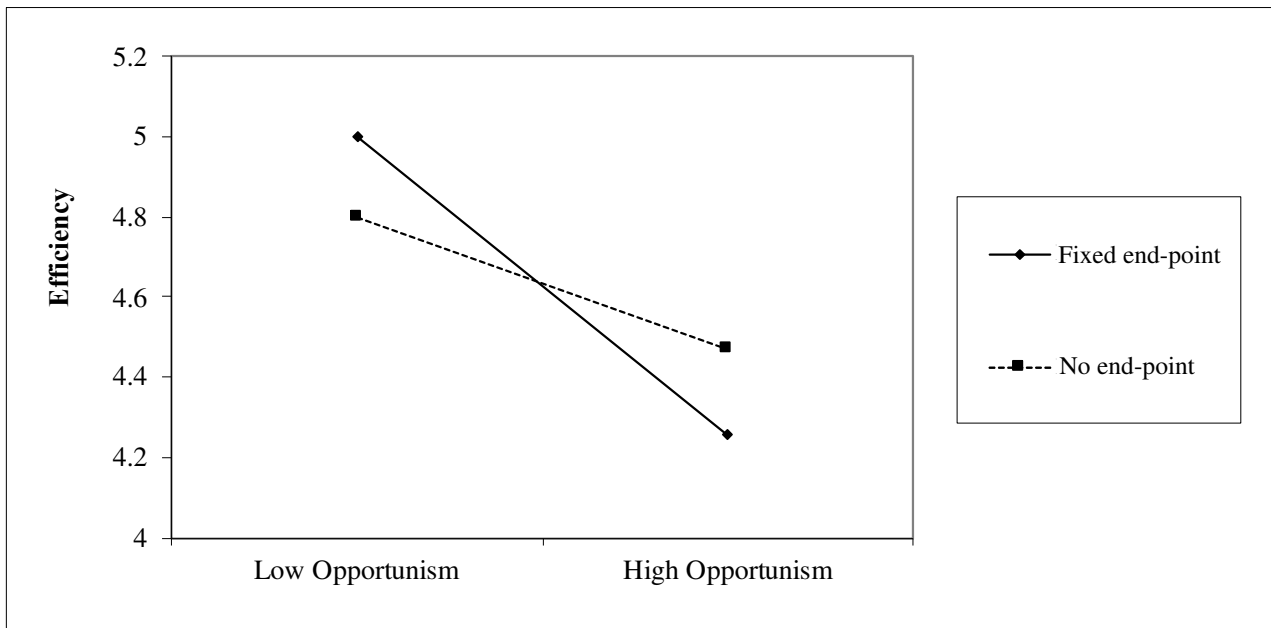
Plot B: Partner-based opportunism and alliance activities context

Plot C: Partner-based opportunism and alliance partner size in downstream alliances

Plot D: Partner-based opportunism and no-end-point in upstream alliances