DOI: 10.1177/0022242920982545

Author Accepted Manuscript



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Journal:	Journal of Marketing
Manuscript ID	JM.18.0206.R4
Manuscript Type:	Revised Submission
Research Topics:	B2B Marketing, Interorganizational Marketing, Marketing Organization
Methods:	Regression Models
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Mobilizing the Temporary Organization: The Governance Roles of Selection and Pricing

Abstract

Many marketing transactions between buyers and suppliers involve short-term collaborations or so-called temporary organizations. Such organizations have considerable value-creation potential, but also face challenges, as evidenced by their mixed performance records. One particular challenge involves relationship governance, and in this respect, temporary organizations represent a conundrum: On the one hand, they pose significant governance problems, due to the need to manage numerous independent specialists under time constraints. At the same time, temporary organizations lack the inherent governance properties of other organizational forms like permanent organizations. The authors conduct an empirical study of 429 business-to-business (B2B) construction projects designed to answer two specific questions: First, how are particular selection and pricing strategies deployed in response to monitoring and coordination problems? Second, does the joint alignment between the two mechanisms and their respective attributes help mitigate cost overruns? We follow up our formal hypotheses tests with a series of in-depth interviews to explore and to gain insight into the validity of our key constructs, explanatory mechanisms, and outcomes. Managerially, the authors answer the long-standing question of how to mobilize a temporary organization. Theoretically, they develop an augmented "discriminating alignment" heuristic for relationship management involving multiple governance mechanisms and attributes.

Keywords: Temporary organizations, Projects, B2B Marketing, Governance, Partner selection, Pricing terms, Discriminating Alignment

It is commonly accepted that marketing performance, or value-creation more broadly, depends on how the buyer-supplier interface is organized or governed. A large body of research shows how both formal organizational structures (Lee, Kozlenkova, and Palmatier 2015; Moorman and Day 2016) and long-term relationships (Dwyer, Schurr, and Oh 1987; Ghosh and John 2005) play important governance roles.

Recent research shows, however, that much marketing activity takes place outside of formal organizations and long-term relationships through so-called temporary organizations (Hadida, Heide, and Bell 2019; Bakker et al. 2016), namely a "temporally bounded group of interdependent actors" (Burke and Morley 2016, p.1237) which is assembled for the purpose of performing a particular task (Goodman and Goodman 1976). Temporary organizations have existed since antiquity, and they have been used for a variety of purposes, including the deployment of military campaigns like those of Alexander the Great, the construction of iconic structures like the Great Wall of China and the Sydney Opera House, the execution of the Manhattan Project and the Apollo Moon landing, and the development of well-known advertising campaigns and new products (Flyvbjerg 2014; Grabher 2002; Lundin et al. 2015). Spending on temporary organizations is substantial—a McKinsey study (Garemo, Hjerpe, and Mischke 2015) estimates a world-wide expenditure of \$57 trillion from 2015 to 2030 on infrastructure projects alone.

Surprisingly, despite their versatility and prominence, temporary organizations have been subject to limited systematic theorizing. In particular, their specific governance practices are poorly understood. Researchers (e.g., Bechky 2006) have noted how past accounts of temporary organizations (e.g., Kanter 1995; Powell 1990) are limited to stating their general *impetus*, such as knowledge sharing, cost containment, and flexibility, but are silent on the specific mechanisms by which such outcomes come about. As a consequence,

the question originally raised by Goodman and Goodman (1972, p. 108) about "how to mobilize a temporary organization" remains largely unanswered.

Temporary organizations represent a governance conundrum. First, they must coordinate and monitor the efforts of multiple specialist suppliers without the benefit of the mechanisms that are available to other organizational forms, such as hierarchical structures, rules, and long-term compensation (Williamson 1975). In addition, they must manage the relevant relationships under time pressure (Lundin and Söderholm 1995). These challenges have led some researchers to describe temporary organizations as inherently ephemeral and unstable (Kanter 1995; Bechky 2006); using descriptors like "one-night stands" (Meyerson, Weick, and Kramer 1996). There is industry evidence which supports this position: Studies of major construction projects show that nine out of ten have significant cost overruns, and that overruns above 100 percent are quite common (Flyvbjerg 2014; Flyvbjerg, Holm, and Buhl 2003).

Other researchers, however, have challenged the instability thesis, and suggested that temporary organizations may draw on unique sources of support, such as prior ties between its members (Eccles 1981). This line of work, however, has stopped short of specifying these mechanisms' specific effects and performance implications.

Our main contribution is to shed light on the governance conundrum of temporary organizations. In doing so, we build on recent work by Hadida, Heide, and Bell (2019) which examined such organizations through a governance lens. Our specific focus is on so-called "hybrid" temporary organizations that exist outside of the boundaries of a permanent firm (unlike "fully embedded" ones), yet may exhibit prior ties among its members (unlike "standalone" ones which are assembled from scratch). We develop and test empirically a novel two-stage model of hybrid governance. The first stage, the *deployment* stage, considers 1) the monitoring and coordination problems that follow from a temporary organization's size (the

number of involved suppliers or subcontractors), and 2) how these problems drive governance choices in terms of selection and pricing. These effects, in turn, are contingent on a hybrid's particular features, namely 1) the availability of prior ties among its members at different levels, including buyer, general contractor, and subcontractor, and 2) its particular time horizon or contracted duration.

The second stage in our framework, the *performance* stage, captures whether the mechanisms of selection and pricing, when jointly aligned with their respective attributes (called plural discriminating alignment), help minimize cost overruns. In general, our model captures the unique logic of temporary organizations, which involves solving multiple governance problems under time constraints. This logic has been succinctly expressed by Lundin and Söderholm (1995, p. 437) as "the need to make things happen".

Beyond the general goal of developing and testing a novel model of temporary organizations, we make the following three contributions: First, our conceptualization advances the theoretical notions of plural governance and alignment. Since the publication of Bradach and Eccles' (1989) seminal paper, researchers (e.g., Cao and Lumineau 2015; Heide 2003) have embraced the idea that buyer-supplier interfaces comprise multiple governance mechanisms. Past research, however, has focused on the observed relationships between the mechanisms *themselves* (Poppo and Zenger 2002). We advance the plural forms thesis by showing how performance is not necessarily a function of multiple governance mechanisms *per se*, but of whether the different mechanisms are simultaneously aligned with their theoretically specified antecedents. Practically, as noted by one of our interviewees, this question addresses "how we can get things right". Theoretically, it adds precision to the plural forms thesis, and to the alignment thesis in governance theory (Williamson 1991) more generally.

Second, we generate fine-grained insights into two fundamentally different approaches to governance, namely partner selection and incentives. These two mechanisms work in quite different ways, either by 1) identifying the "right" party in the first place, or 2) inducing action through financial rewards (Ouchi 1980, Wathne et al. 2018). Our particular analyses allow us to undertake a precise comparison of the two approaches, and to examine whether aligned selection has a more significant performance effect than aligned incentives. As "projects can fail spectacularly" (Matta and Askenas 2003), taking a significant financial but also human toll, understanding performance is a key concern.

Third, and building on the previous point, the two mechanisms that we study, selection and pricing, are managerially relevant and can be readily deployed within the time frame of a temporary organization. Their quick deployment has intrinsic benefits. Bechky's (2006) study of movie projects shows the challenge of achieving coordination under time constraints, as vividly illustrated by a comment from one of her subjects during a movie shoot: "We have two days to do it – we need to get things done right away". Despite their quick deployment, we show that these mechanisms have significant long-term performance implications in the form of *ex post* costs that manifest themselves after project completion.¹

This paper is organized as follows: The next section provides a general discussion of governance in a temporary organization context. This is followed by a presentation of our conceptual framework and research hypotheses. Next, we describe the research method used to test the hypotheses, including a unique data set of 429 construction projects spanning the time period from 2001 through 2015. We follow up our formal hypotheses tests with a set of in-depth interviews with construction managers to gain insights into the validity of our hypothesized constructs, explanatory mechanisms, and outcomes. Collectively, the projects

¹ The average project completion time is 2 years. Thus, the implications of the different ex ante governance choices are quite durable.

we study are worth \$33 billion, yet they suffered from \$4 billion in cost overruns. We conclude by discussing the study's contributions and limitations, and draw up an agenda for future research on temporary organizations.

The Governance Properties of Temporary Organizations

Temporary organizations raise complex questions that are not addressed by standard theory. In particular, they raise questions regarding the properties that its governance mechanisms must possess, compared to permanent firms and long-term relationships.

First, a temporary organization's discrete time horizon requires mechanisms that possess a *deployment* property, namely "short term" marketing tools (Jackson 1985) that can 1) be rapidly implemented at the organization's initiation stage (Heide 1994), and 2) take effect "swiftly" (Meyerson, Weick, and Kramer 1996). The mechanisms of selection and pricing, which we focus on, possess such properties. Parenthetically, a deployment property contrasts sharply with other, more commonly studied, governance mechanisms that require time-consuming *design* efforts, such as permanent organizational structures (Williamson 1975) and relational norms (Macneil 1980).

Second, the emphasis on governance deployment has implications for mechanism *content;* namely a need for mechanisms that are *formal*, rather than informal, in nature (Poppo and Zenger 2002). For instance, pricing provisions in B2B settings are typically built into formal contracts (Mooi and Ghosh 2010) that can be crafted and brought to bear on an organization quickly. In contrast, informal governance mechanisms such as norms, expectations, and rules possess a distinct social component (Jones, Hesterly, and Borgatti 1997) and their availability requires prolonged interaction between parties.

The third property that we identify has to do with the *level* at which a given governance mechanism originates. Building on and extending the "discriminating alignment" principle of transaction cost economics (Williamson 1991), we posit that temporary

organizations require mechanisms that are *organization-specific* in nature, in the sense that they match the focal organization's particular attributes. That said, past research suggests that some temporary organizations, sometimes described as "hybrids" (Schwab and Miner 2008), can also draw on pre-existing, more general, properties that can be "activated" or brought to bear on the organization in question. For instance, Eccles (1981), in his analysis of so-called "quasi-firms", shows how construction projects often exhibit recurring ties between its members. Similar patterns have been shown in movie production, where repeated interactions between actors and producers (Faulkner and Anderson 1987) serve governance purposes through the roles structures and social bonds that emerge over time. Indeed, some researchers (e.g., Kanter 1995; Jones, Hesterly, and Borgatti 1997) have described temporary organizations as exemplars of social forms of governance. Despite the intuitive appeal of such arguments, important questions remain regarding 1) the specific form that prior ties can take, and 2) the juxtaposition between prior ties and organization-specific governance mechanisms. We return to these questions below.

Conceptual Framework

Our main theoretical anchoring is two-fold: First, we rely on the extant literature on temporary organizations (e.g., Hadida, Heide, and Bell 2019; Jacobsson, Burström, and Wilson 2013) to identify relevant antecedents or attributes such as the focal organization's size (Holloway and Parmigiani 2016; Knoben and Gössling 2009). Second, we draw on the "new institutional economics" (e.g., Williamson 1985) literature to link the relevant attributes with governance mechanisms and performance outcomes.

Our conceptual framework is shown in Figure 1. Its key attribute or driver is organizational size, captured by the number of suppliers or subcontractors that are involved (Holloway and Parmigiani 2016). For instance, the "Boston Big Dig" – a highway tunnel under the central part of Boston – involved more than 200 subcontractors (Hollmer 2002).

Similarly, developing the Boeing 737 required the involvement of hundreds of individual suppliers (Linn 2010).

---- Insert Figure 1 about here ----

Organizational size gives rise to different kinds of governance problems. Some of them have to do with controlling the actions of the individual suppliers or agents, as per established governance theory (Williamson 1985). For instance, the larger the temporary organization, the greater the difficulty of *monitoring* individual members' contributions. Oxley (1997, p. 395) argues that as the number of involved partners increases, it exacerbates monitoring problems because of the cost of assigning accountability for individual actions (Alchian and Demsetz 1972).

Importantly, however, the governance challenges of temporary organizations go beyond managing individual actions *per se* – they also include ensuring consistency *between* the different parties' actions (Gulati, Wohlgezogen, and Zhelyazkov 2012). Conceptually, the latter represents a particular form of governance problem, namely *coordination* (Thompson 1967). While researchers (e.g., Oliveira and Lumineau 2017) have noted that coordination problems have received limited attention in the governance literature, they are ubiquitous in temporary organizations, in part because of interdependencies between the different agents' tasks (Mathieu et al. 2008). To use an obvious example, plumbing cannot begin until a building's foundation work has been completed.

As shown in Figure 1, the monitoring and coordination challenges that follow from organizational size require the deployment of governance mechanisms with particular properties. We draw on Hadida, Heide, and Bell's (2019) general framework to focus on the particular *selection* criteria and *pricing* provisions used. Both of these mechanisms possess the properties discussed above, namely being readily deployable, formal, and organization-specific. With regard to selection, we distinguish between 1) *ex ante* assessments focused on

supplier *ability* (Ireland, Hitt, and Vaidyanath 2002) and 2) evaluations that emphasize the *price* charged (Dekker 2008). With regard to the actual pricing provisions, we compare 1) *variable* pricing contracts which reimburse the supplier for costs plus a margin, and 2) *fixed* pricing, which offers the supplier a pre-specified price. These two formats possess different governance properties, in that the latter focuses strictly on the final output, while the former contains a built-in price adjustment mechanism (Bajari and Tadelis 2001; Corts and Singh, 2004).

The first part of our framework, which captures the *governance deployment* decision, specifies the relationship between organizational size and the two governance mechanisms. As shown in Figure 1, we also identify two different contingent influences, namely 1) the temporary organization's time horizon, as indicated by the construction project's *contracted duration*, and 2) the presence of *pre-existing ties* between the organization's members (Eccles 1981; Schwab and Miner 2008). The second part of the framework pertains to the performance implications of the governance choices made. Below, we consider each part of the framework in turn.

Governance Deployment: Size, Mechanisms, and Contingent Effects

We argue that the main effect of organizational size, as measured by the number of suppliers involved, is to increase the likelihood of ability-based selection, because such a selection process proactively addresses monitoring and coordination problems. Consider first the problem of monitoring. As an example, the larger the number of individual suppliers involved in a building project, the greater the difficulty of monitoring their individual contributions (Mishra, Das, and Murray 2016; Li et al. 2012). Extant governance research suggests that such problems can be managed through purposeful *ex ante* supplier selection on criteria like skills, competencies, past performance, and reputation (e.g., Wuyts and Geyskens 2005). In practice, such ability-based selection reduces the need for on-going supplier

handholding and follow-up. Essentially, having identified the "right" supplier in the first place economizes on on-going monitoring efforts.²

Next, consider how organizational size gives rise to coordination problems. The larger the temporary organization, the greater the number of intra-organizational linkages that exist, and the greater the difficulty of coordinating the focal tasks (Puranam and Raveendran 2013). Kremer (1993) discusses this issue in terms of the "O-ring property", where the organization's overall output requires that each input perform up to a certain level—if anything fails, the value of the project as a whole may be severely diminished. As an example, the size of the previously mentioned "Boston Big Dig" gave rise to extraordinary coordination problems between the different suppliers.

We draw on Gulati, Wohlgezogen, and Zhelyazkov (2012) to posit that the coordination needs that follow from organizational size can be addressed proactively through ability-based supplier selection. The more stringent the *ex ante* assessment of supplier ability, the higher the likelihood of identifying suppliers whose actions are unlikely to cause ongoing coordination problems. As noted by Dekker (2008), the selection of such suppliers is an important way to curb potential supplier opportunism and facilitate coordination. Importantly, such information would not be revealed by a selection process which focused on the price charged.

As discussed above, our baseline (main effect) expectation is that organizational size will increase the likelihood of an ability-based (as opposed to a price-based) supplier selection process. We posit, however, that the specific nature of this relationship is contingent on 1) a given organization's time horizon, as reflected in its contracted duration, and 2) the number of past collaborations between its key parties.

² As suggested by our industry interviews, buyers' selection processes, due to the interactions that take place, also help establish and induce supplier motivation. We return to this question below.

Consider first how contracted duration modifies the expected positive relationship between organizational size and ability-based selection. We expect the governance benefits of ability-based supplier selection to be the greatest for organizations that have a short contracted duration, where the parties have limited time to overcome size-related monitoring and coordination problems. In such situations, selection that emphasizes ability increases the likelihood that a given supplier will possess attributes that ensure frictionless interaction.

For longer-lasting collaborations, the on-going interactions between the parties serve socialization purposes that 1) reduce the need for monitoring, and 2) allow mutual learning that facilitates coordination. In turn, this reduces the need to explicitly select on ability. Instead, the relevant actions are induced through the organization's time horizon. Thus, while ability-based selection serves governance purposes for large temporary organizations in general, we expect the actual effect of size to be contingent on the contracted duration. In hypothesis form:

H1: The positive effect of a temporary organization's size on ability-based selection is weakened as contractual duration increases.

Consider next the effect of an organization's past, as reflected in the number of prior collaborations between its key parties, namely the buyer, the general contractor, and the subcontractors. Many temporary organizations, due to their "one-off" nature, have idiosyncratic requirements and require that an organization be assembled from scratch. To the extent that the focal suppliers have not worked together before, they are, for all practical purposes, "interdependent strangers" (Meyerson, Weick, and Kramer 1996, p. 169). If so, the monitoring and coordination problems that follow from size will be significant; the parties will lack first-hand information about each other, and they can't rely on established routines to manage their on-going interactions. This, in turn, places a premium on ability-based selection to proactively mitigate the relevant governance problems.

Research suggests, however, that temporary organizations may involve repeated collaborations between its members (e.g., Faulkner and Anderson 1987). Eccles (1981) specifically discusses the "persistent inter-firm relationships" (Holloway and Parmigiani 2016, p.465) that sometimes exist in the construction industry. Importantly, however, prior ties may occur at different levels, namely between 1) the buyer and a general contractor, 2) the general contractor and a subcontractor, and 3) a buyer-general contractor-subcontractor pair. If prior collaborations have taken place between a fully matched set or "triad" of ties, it mitigates monitoring and coordination problems, and reduces the need for costly and timeconsuming ability-based selection. Essentially, first-hand observation and direct interaction on prior collaborations represent exogenous governance benefits (Oxley 1997; Gulati and Singh 1998) which reduce the need for organization-specific governance efforts in the form of purposeful selection. Past research on teams suggests that prior collaborations create knowledge about "who is good at what" which helps promote partner-specific coordination routines (Kellogg 2011; Schwab and Miner 2008). As one of our industry contacts stated, prior ties simply provide a "high level of certainty" as it "takes time to understand beliefs, how they [subcontractors] operate, how they like you to behave". Absent prior ties, however, the inherent monitoring and coordination challenges of large organizations will prevail, and ability-based selection will play a key role.

We stress that our arguments above are based on a specific configuration of prior ties, namely a fully matched triad of parties. While Eccles' (1981) original thesis focused on the repetition of individual (dyadic) ties, we expect such a "partial reconstruction" (DeFillippi and Sydow 2016) of a temporary organization to produce more limited governance benefits than a more comprehensive one. Stated differently, we expect that the specific *form* of prior ties matters. We propose the following hypothesis:

H2: The positive effect of a temporary organization's size on ability-based selection is weakened as the number of prior collaborations increases.

Next, we introduce the main effect of organizational size on pricing, and consider how size-related monitoring and coordination problems can be alleviated through the choice of pricing format. Similar to selection, pricing represents a 'short-term marketing tool' (Jackson 1985) that can be readily deployed in a temporary organization context. However, as noted previously, there are important differences between the available pricing contracts, namely a fixed versus a variable format.

Consider first the pricing decision against the backdrop of an organization's monitoring problem. As discussed, for large organizations it is difficult to measure individual parties' contributions. We posit that variable pricing under such conditions provides inherent monitoring benefits, because of the particular incentive structure it generates, and which discourages shirking (Williamson 1991). Conceptually, variable pricing represents low-powered incentives, because the supplier's actions are unrelated to her outcomes (Gilliland and Kim 2014). In contrast, a fixed pricing contract represents high-powered incentives, because the supplier benefits directly and immediately from shirking. In essence, the incentive structure that is induced through variable pricing alleviates the need for on-going monitoring in the first place (Oxley 1997).

Consider next pricing and the coordination problem. The greater the number of suppliers, the higher the number of interdependencies that must be managed, and the higher the likelihood that unilateral actions on the part of one supplier will impact others. Gulati, Lawrence, and Puranam (2005) suggest that such coordination challenges can be managed through governance mechanisms that generate feedback and keep the parties informed of each other's actions on an on-going basis. This can be achieved more readily through variable than fixed pricing, since a variable format by design involves regular checks on suppliers' costs and actions. Calvo, Cui, and Serpa (2019, p.7) describe this in terms of "progress reports" which hold individual contractors accountable.

Importantly, variable pricing involves coordination benefits per se, but it also controls costs by preventing sizeable and unexpected renegotiations (Bajari and Tadelis 2001; Corts and Singh 2004). From a governance standpoint, variable pricing represents a built-in adjustment mechanism that provides flexibility when the organization's attributes (i.e., size) require it. As one of our industry contacts stated. "variable pricing releases funds that are required to proceed with construction" which involves intensive and regular communication. In contrast, under fixed pricing the focal point is the final output, and there is no built-in mechanism for managing the underlying process. Thus, everything equal, we expect organizational size to promote the use of variable pricing.

As with selection, however, we expect the specific nature of this effect to be contingent on the organization's contracted duration. Conceptually, crafting a variable pricing contract means infusing a market relationship with hierarchical elements. In effect, variable pricing provisions generate communications that "will be taken as authoritative" (Stinchcombe 1985 p.165), thereby facilitating coordination. At the same time, a variable pricing scheme is costly, time-consuming, and administratively burdensome, both with regard to its initial set-up and on-going communication requirements. As a consequence, variable pricing is more easily justifiable when the contracted duration is long. Conversely, shorter duration makes it more difficult to justify hierarchical mechanisms which may slow down communication and decision-making. Thus, while organizational size motivates the use of variable pricing, as per the discussion above, we expect this effect to be contingent on duration. We propose the following hypothesis:

H3: The positive effect of a temporary organization's size on variable pricing is strengthened as contractual duration increases.

Finally, consider the moderating effect of prior collaborations on pricing. As discussed in H2, given pre-existing ties between all of the relevant parties (i.e., the buyer, the general contractor, and the subcontractors), certain monitoring and coordination benefits are

supplied to the temporary organization exogenously. In turn, this reduces the need to specifically craft administratively burdensome monitoring and coordination mechanisms in large projects through variable pricing. Thus, we expect the general tendency of organizational size to promote variable pricing, as per our discussion above, to be weaker the higher the number of prior collaborations between the relevant parties. In hypothesis form:

H4: The positive effect of a temporary organization's size on variable pricing is weakened as the number of prior collaborations increases.

The Performance Consequences of Selection and Pricing: Plural Discriminating Alignment

The second part of our conceptual framework describes a temporary organization's performance implications, as reflected in its cost overruns. Cost overruns represent a measure of supplier (non) performance, as expressed by the deviation between the project's actual and contracted cost.

Drawing on Bradach and Eccles' (1989) "plural forms" thesis about governance mechanisms as "building blocks" (p.98), a nascent body of literature (e.g., Heide 2003; Weber, Mayer, and Macher 2011) shows how firms rely on combinations of governance mechanisms. While Bradach and Eccles' (1989) original work failed to specify the exact nature of such combinations, subsequent research has operationalized the plural forms thesis by formally testing interactions between individual mechanisms (Cannon, Achrol, and Gundlach 2000; Poppo and Zenger 2002). This body of research has significantly enhanced our understanding of plural governance, but extant studies have also limited their focus to the relationships among the mechanisms themselves, without accounting for the underlying attributes that motivate their deployment in the first place. This represents a limitation, especially when considered against the backdrop of TCE's principle of "discriminating alignment" which deals specifically with the relationships between governance mechanisms and their corresponding attributes.

While past studies (e.g., Ghosh and John 2005) have examined the performance implications of discriminating alignment, they have limited their focus to single mechanism-attribute combinations. Extending the logic of discriminating alignment to the context of plural governance poses certain conceptual, and, as will be discussed, empirical challenges. Regarding the former, the specific challenges involve 1) articulating each mechanism's unique properties, and 2) considering how a larger constellation of mechanisms and their respective attributes impacts performance.

With regard to selection, its main purpose is to identify suppliers who possess the right *abilities* or characteristics to complete a particular task. Although it seems intuitive that buyers should always select the most skilled and experienced suppliers (i.e., use ability-based selection), that may be neither necessary nor efficient for a relatively simple project. In fact, suppliers who are selected on the basis of such a process may be naturally inclined to conduct tasks or pursue project features that were not requested (or strictly required). In the project management literature, this phenomenon is referred to as *gold-plating* (Kautz, 2009). In practice, it involves "overprovision" of quality (Rubin 1990), and it may be systematically induced by the particular supplier selection practices that were used in the first place. As such, we argue that only *aligned* selection, that is, the use of the particular selection strategy that is predicted by the focal organization's attributes, will enhance performance. Conversely, a failure to align will compromise performance.

In contrast to selection, the goal of pricing is to impact a supplier's *motivation*; the assumption being that a lack of motivation (or insufficient incentives) may compromise performance. As discussed, however, different types of pricing contracts (fixed versus variable) impact motivation differently, and must therefore be considered in the context of the focal organization's attributes.

While in principle transactional outcomes follow from the joint presence of motivation and ability (Merton 1957) a full-fledged test of performance must account for the relevant drivers of each. In our framework, when the strategies used for selection and pricing are simultaneously aligned with their respective attributes, the necessary levels of supplier ability and motivation are both brought to bear on the temporary organization. This argument is logically consistent with both Bradach and Eccles' (1989) 'plural forms' thesis and Williamson's (1985) notion of discriminating alignment, but we expand on them by jointly accounting for multiple mechanisms and attributes.

In practice, because we study two governance mechanisms, we must account for 2x2 or 4 different scenarios. In principle, for a given temporary organization, all of the governance mechanisms can be properly aligned with their respective attributes (hereafter called "joint alignment"), all can be misaligned (hereafter called "joint misalignment"), or some combination of alignment and misalignment may occur. As a hypothetical example, for a large project with many suppliers, ability-based selection may be chosen (consistent with our predictions), and a fixed pricing format may be used (contrary to our predictions).³ In general, when both selection and pricing are aligned with their respective attributes, the appropriate levels of supplier ability and motivation are both brought to bear on the focal project. Conceptually, the relevant "gaps" (Lazzarini, Miller, and Zenger 2004) have been filled, which should produce higher performance, as reflected in the smallest cost overruns. In sum, we expect:

H5: Joint alignment of selection and pricing decreases *ex post* cost overruns.

H5 specifies how an appropriate joint deployment of selection strategy and pricing format will promote performance in the form of minimizing cost overruns. It does not, however, address the separate effects of selection and pricing on performance. For instance,

³ For reasons of collinearity, the performance outcomes of all four cells cannot be tested simultaneously.

does matched (or aligned) selection have a greater effect on performance than matched (or aligned) pricing? Stated differently, is there a greater payoff from having identified the "right" supplier than from administering the "right" incentive structure? From a resource allocation standpoint, this question has obvious practical implications – should a temporary organization prioritize selection over incentive design? In addition, this question is of considerable theoretical importance, since the two mechanisms represent fundamentally different approaches to relationship governance (Bradach and Eccles 1989; Heide 1994; Ouchi 1980). Indeed, research suggests that selection and pricing reflect two different decision logics (March 1981). As Heide and Wathne (2006) note, selection efforts are inherently associated with a logic of appropriateness and the identification (or creation) of a "friend". Pricing, in contrast, is based on a "logic of consequences" and on inducing a "businessperson's" action through appropriately crafted incentives (Montgomery 1998).

Consider the likely performance difference of aligned selection versus aligned incentives. Our specific expectation is that the beneficial effects that follow from ability (correct selection) will exceed those that follow from motivation (correct pricing). This is because finding the right party (and inducing a logic of appropriateness) represents a governance baseline or a performance prerequisite. In contrast, getting the incentives right (and inducing a logic of consequences) will contribute to performance, but its individual effect may be limited in the absence of the right partner abilities.

Beyond representing a performance baseline, we expect aligned selection to have a relatively greater performance effect because of its broader scope of influence. Heide and Wathne (2006) note how selection, besides helping to identify the "right" suppliers, may also serve a socialization purpose due to the interactions that take place during the process. As such, proper selection may impact supplier ability as well as motivation.⁴ In contrast, pricing

⁴ As suggested by our follow-up interviews, this was indeed the case.

is likely to have a narrower effect, involving only supplier motivation. In sum, with regard to the individual effects of the two mechanismse expect selection to have stronger governance properties than pricing. Based on the preceding arguments, we posit:

H6: Alignment of selection (only) decreases *ex post* cost overruns more than alignment of pricing (only).

Method and Results

Empirical Context

We test our research hypotheses using data on construction projects. These are complex both from a technical and governance perspective, featuring a supplier (typically called a general contractor) who contracts tasks to other suppliers or subcontractors. Our data source is the Design-Build Institute of America (DBIA), whose stated purpose is the promotion of design-build project delivery in the U.S. Based on what the DBIA and its members deem to be the "critical ingredients" to delivering such projects, its members are asked to continuously submit structured information on completed projects; information which is subsequently subject to verification. The DBIA database contains 429 completed projects spanning the time period from 2001 through 2015, and represents contracted budgets ranging from \$ 687,520 to \$ 999,000,000.

Past research points to the significant obstacles involved in obtaining data on construction projects. One particular constraint is that much of the relevant data are proprietary (Mooi, Sarstedt, and Mooi-Reçi 2017), which, as noted by Flyvbjerg, Holm, and Buhl (2003, p.73), tends to "keep [project] data from the hands of scholars". As a specific example, this obstacle required Flyvbjerg, Holm, and Buhl (2003) to spend 4 years collecting data on 258 transport infrastructure projects. Using the DBIA data allows us to conduct large-scale quantitative analyses using a rich variety of infrastructure, commercial, and industrial projects. We augment the rich DBIA data with data from the United States Census Bureau,

the Construct Connect database, and metrics from Google. The unit of analysis is an individual construction project.

Measurement and Descriptive Statistics

Table 1 summarizes the measures and data sources for all the study variables, and Table 2 presents the correlation matrix and descriptive statistics. We discuss each of the variables next.

Ex post cost overruns is defined as a project's level of (non-) performance relative to the agreed-upon project cost, as per the formal contract. It is measured in terms of the % deviation between the actual cost of the project and the contracted cost. Descriptive evidence suggests that 76.03% of projects experience cost deviations, of which overruns are the most common. The mean cost overrun is 21.79 %, while the mean cost underrun is -4.91%.

Selection is defined as a buyer's ex ante efforts to screen or verify a supplier prior to entering a relationship (Heide and John 1990). Our specific measure indicates whether buyers in their supplier selection emphasize 1) capabilities, skills, and past performance (ability-based selection), or 2) the price they offer on the project (price-based selection). Importantly, ability-and price-based selection are not mutually exclusive; the DBIA database reports on what criterion was the most important in a given situation. In our database, 71.09% of projects emphasize price-based selection, while 28.91% emphasize ability-based selection.

Pricing reflects the payment arrangement for the delivery of the project (Ghosh and John 2009; John 2008). Specifically, it captures whether the project relies on a fixed or a variable pricing contract. Fixed and variable pricing are grounded measures of contract design and incompleteness (Crocker and Reynolds 1993; Banerjee and Duflo 2000; Ghosh and John 2005) and show whether the contract is subject to adjustments and renegotiations. Fixed pricing makes no allowance for adjusting the initial prices, while variable pricing allows for some mutually acceptable adjustment, either *ex ante* using adjustment formulas or ex-post through

negotiated adjustment (Ghosh and John 2005). We captured fixed vs. variable pricing using a single direct measure collected by the DBIA. Fixed prices are used for 54.55% of projects while 45.45% of projects used variable pricing.

Project size captures the size of the project organization. The actual measure is a count of the number of suppliers involved in the project. The size of the project ranges from 1 to 142.

Our conceptual framework includes two moderators which describe different aspects of a project's time dimension. The first of these describes *prior ties* between the project's members (Eccles 1981). Specifically, we control for prior ties at three different levels: 1) *buyer-general contractor prior ties* is a count variable indicating the number of times a buyer has done business previously with the same general contractor, 2) *general contractor-subcontractor prior ties* is a count variable indicating the number of times a specific pair of general contractor-subcontractor share a prior tie, and 3) *buyer-general contractor-subcontractor prior ties*, also as a count variable, indicates the number of times a specific pairing of buyer-general contractor-subcontractor-subcontractor share a prior tie.

Second, we capture time through a project's *contracted duration*. Conceptually, duration refers to a given project's degree of time compression. Our specific measure is the number of days between the project's contracted start and end dates. Shorter projects involve greater time compression, *ceteris paribus*, which has governance implications.

We include an extensive set of control variables. We account for the *project category* to absorb unobserved heterogeneity across different types of projects (including commercial/institutional, industrial process facility, civil infrastructure, and others). *Environmental uncertainty* describes the unpredictability of the project's environment. Following earlier work in marketing (e.g. Raassens, Wuyts, and Geyskens 2012), we use fluctuations of spending in the construction industry as a measure of uncertainty by 1)

regressing total construction spending on the related years and 2) using the standard errors of the regression slope coefficient as a measure. The *number of regulations* refers to the number of building regulations in the project's state and may have different effects on cost overruns. For example, regulations may guide the conduct of the project and reduce cost overruns but may also complicate on-cost completion. Additionally, we control for whether projects are purchased by *municipalities*, which may favor local contractors. We also control for projects which are purchased by *non-profit corporations* as these don't have shareholders and thus buyer value (and overruns) may not be their primary concern. We also control for whether the projects were purchased by *developers*. A developer may not be a project's final owner, but rather builds in anticipation of prospective buyers. This has potential implications for the governance mechanisms deployed and cost overruns incurred. *Buyer-project distance* is measured as the number of miles between the buyer and the project location (cf. Brickley and Dark 1987). Using Google Maps, we extracted the geographical distance between a buyer and a project using the exact address of the buyers and the focal projects, as made available by the DBIA.

Hypotheses tests

To test our hypotheses, our model specification must meet four different requirements. The first of these is the potential endogeneity of selection and pricing.⁵ Second, our database consists of 429 projects across 291 buyers. Therefore, we need to account for clustering (Wooldridge 2003). Third, the drivers of the pricing, selection, and *ex post* cost

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⁵ In theory, size could be endogenous. However, it is not entirely clear how this would impact our dependent variable of *ex post* cost overruns, since size may be associated with competing predictions. For instance, having a small number of suppliers may reduce cost overruns by virtue of more limited communication needs. At the same time, a small organization may be more prone than a large one to overruns given its limited slack resources. The implication of these competing expectations is that a buyer's strategy is not a given a priori, and the potential impact of endogeneity is unclear. Relatedly, as the choice of the number of suppliers is contingent on factors like potential incompatibilities with other subcontractors, local availability of subcontractors, and various task features, any buyer wishing to "deploy" the number of suppliers would need a formidable degree of foresight; one that we believe is lacking in practice.

equations are likely correlated due to unobserved factors. Fourth, selection and pricing are binary variables and the *ex post* cost variable is a continuous metric.

We accommodate all of these requirements by employing Roodman's (2011) conditional (recursive) mixed-process (CMP) regression procedure, which uses a simulated maximum likelihood algorithm to estimate multiple equations simultaneously. To address concerns of endogeneity, we leverage CMP's ability to act as a control function estimator (cf. Kashyap, Antia, Frazier, 2012). This involves the use of instruments to explain selection and pricing, and the residuals of both equations are used subsequently as controls in the outcome equation. Our specification is consistent with prior use in marketing (e.g. Luan and Sudhir 2010) and in governance research more specifically (e.g. Mooi and Ghosh 2010). The instruments used are government and defense projects. Per federal rules, such projects must feature fixed pricing and price-based selection, regardless of the project's attributes (Wang and Miguel 2013) This potentially makes them good instruments if they satisfy the relevance and orthogonality conditions. It is noteworthy that these are two distinct instruments, both theoretically and empirically (r = -.36). For instance, a government project such as the construction of a new library can attract a large set of potential bidders and is subject to federal (specifically, Federal Acquisition Rules, Chapter 1, Title 48), state, and potentially local rules. Defense projects, such as the construction of a new naval base, are also subject to federal rules, but there is a larger set of federal codes involved (Code of Federal Regulations 10), and they may draw on fewer suppliers (cf. Garner 2009). We will provide empirical evidence regarding the orthogonality and appropriateness of these instruments as part of our analyses.

Plural Discriminating Alignment

Critical to our research is an empirical formulation of plural discriminating alignment. Williamson's (1985) classic alignment argument involves a single governance mechanism-attribute combination, and suggests that appropriate matches have positive performance

implications. Expanding on this argument, we argue that when firms deploy multiple governance mechanisms, each individual one must be aligned with its particular attributes, which includes the entire spectrum of variables included in the first stage (as per equations 2 and 3), for superior performance to result. When two governance mechanisms are jointly aligned with their hypothesized attributes, we refer to the resulting mechanisms-attributes constellation as plural discriminating alignment.

We previously identified the possibility of four different scenarios; one scenario where both selection and pricing are aligned (predicted) by project attributes, a second where both selection and pricing are misaligned, and two "off diagonal" scenarios where pricing or selection is misaligned but where the counterpart is aligned. Based on this, we construct a binary variable; joint alignment, for the empirical test. Following Leiblein, Reuer, and Dalsace (2002) and Mooi and Gilliland (2013), we use a two-step procedure where in the first step we use a bivariate Probit model to predict selection and pricing, using project attributes and instruments while mean-centering the key variables of interest and their lower-order terms for interpretation purposes, as follows:

(1)
$$P (pricing_i = 1 \text{ and selection}_j = 1) = \Phi (\beta_1 X_i, \beta_2 X_i, \rho)$$

where Φ is the cumulative bivariate standard normal distribution, and β_1 and β_2 are the vector of estimated coefficients for project attributes and ρ is the correlation coefficient between the residuals. Using the predictions from equation 1, we construct a joint alignment variable which takes on a value of 1 when the observed choices of selection and pricing are both identical to the predicted choices, and 0 otherwise. We observe 179 cases of joint alignment.

To test the hypotheses, we insert the joint alignment, aligned pricing, and aligned selection variables in the outcome equation of the CMP model. We use cluster robust standard errors, to allow for possible heteroskedasticity and to allow for clustering, which deals with potential correlations when the same buyer is observed more than once (Wooldridge 2003).

Overall, the CMP model accounts for potential endogeneity of selection and pricing, clustered observations, and simultaneously estimates pricing, selection, and ex post cost overruns (that are measured on different scales). We specify our model as follows:

- Selection_i = $\beta_{10} + \beta_{11}$ Project size + β_{12} Contracted duration + β_{13} Buyer-general (2) contractor prior ties + β_{14} General contractor-subcontractor prior ties + β_{15} Buyer-general contractor-subcontractor prior ties+ β_{16} (Project size * Contracted duration) + β_{17} (Project size * Buyer-general contractorsubcontractor prior ties)+ $\beta_{18.19.110}$ Project category dummies + β_{111} Environmental uncertainty + β_{112} Number of state regulations + β_{113} Municipality + β_{114} Non-profit corporation + β_{115} Developer + β_{116} Buyerproject distance + β_{117} Government + β_{118} Defense + ϵ_1
- Pricing_i = $\beta_{20} + \beta_{21}$ Project size + β_{22} Contracted duration + β_{23} Buyer-general (3) contractor prior ties + β_{24} General contractor-subcontractor prior ties + β_{25} Buyer-general contractor-subcontractor prior ties+ β_{26} (Project size * Contracted duration) + β_{27} (Project size * Buyer-general contractorsubcontractor prior ties)+ $\beta_{28,29,210}$ Project category dummies+ β_{211} Environmental uncertainty + β_{212} Number of state regulations + β_{213} Municipality + β_{214} Non-profit corporation + β_{215} Developer + β_{216} Buyerproject distance + β_{217} Government + β_{218} Defense + ε_2
- **(4)** Ex post cost overrun_i = $\beta_{30} + \beta_{31}$ Joint alignment + β_{32} Aligned pricing + β_{33} Aligned selection + β_{34} Project size + β_{35} Contracted duration + β_{36} Buyergeneral contractor prior ties + β_{37} General contractor-subcontractor prior ties + β_{38} Buyer-general contractor-subcontractor prior ties+ β_{39} (Project size * Contracted duration) + β_{310} (Project size * Buyer-general contractorsubcontractor prior ties) + $\beta_{311-313}$ Project category dummies + β_{314} Environmental uncertainty + β_{315} Number of state regulations + β_{316} Municipality + β_{317} Non-profit corporation + β_{318} Developer + β_{319} Buyerproject distance + ε_3

---- Insert Table 2 about here ------- Insert Table 3 about here ----

Results

Hypotheses testing. Table 3 contains the results of our CMP estimates. The results provide support for most of our key hypotheses. The significant Wald chi-square statistic of 198.28 (p < .01) demonstrates that the CMP model is significant. With regard to the deployment stage of our model, we find that the interaction between project size and contracted duration on selection is significant and negative (p < .05), consistent with H1.

Heeding Aiken and West's (1991) recommendations, we conduct a simple slope analysis to gain a better understanding of the nature of this interaction. For this purpose, we tested the simple slopes at their minimum, low (-1SD), mean, high (+1SD), and maximum values of project contracted duration. Given the scaling of contracted duration, we thus cover the range and typical (minimum, -1SD, mean, and +1SD, maximum) values (Spiller et al. 2013). Figure 2, panel A, presents the moderating effect of contracted duration on the relationship between project size and selection. As the plot indicates, the effect is non-monotonic over the range of project contracted duration. Specifically, the effect is positive at the minimum (p < .05) and -1SD levels (p < .05), where time compression is the greatest, turning negative as time compression decreases or contracted duration is at its observed maximum (p < .05).

Hypothesis 2 is also supported, as indicated by the negative and significant (p < .01) coefficient. We again rely on Aiken and West's (1991) approach. As shown in Figure 2 Panel B, we find that when buyer-general contractor-subcontractor prior ties are absent (p < .01) and at -1SD (p < .01), the effect is positive. From +1SD (p < .05) to the highest (p < .01) observed values of buyer-general contractor-subcontractor prior ties, this effect becomes negative and stronger.

---- Insert Figure 2 about here ----

Turning to H3, as hypothesized we obtain a positive and significant (p < .05) interaction between project size and contracted duration on pricing. To understand if this effect is non-monotonic, we again rely on Aiken and West (1991). Figure 2 in panel C, shows a negative and significant coefficient at the lowest (p < .1) values where time compression is strongest. This is in support of H3. From +1SD (p < .01) to highest (p < .01), this effect becomes positive.

As Table 3 shows, we don't find support for H4 (p > .1) which involved the expectation that the positive relationship between project size on variable pricing is weakened as the number of prior collaborations among all the involved parties increases.

To understand the managerial impact of the three significant results, we calculated the marginal effects when the contracted duration increases from 1 year to 5 years. These results show that the probability of choosing ability-based selection *decreases* by 6.39% (p < .1), while the probability of choosing variable pricing *increases* by 8.89% (p < .05). Similarly, we calculated the marginal effect for prior ties when these increase from 0 (no prior ties) to 5. The calculated impact shows the probability of choosing ability-based selection decreases by 12.87% (p < .01).

Turning to our performance stage hypotheses, H5 is supported (β = -19.057; p < .05), which shows that the joint alignment of selection and pricing significantly decreases ex post cost overruns. We also find support for H6 (β = -2.686; p < .01), which shows that aligned selection (alone) decreases ex post cost overruns more than aligned pricing (alone).

We probe all scenarios that are raised by alignment of selection and pricing in more detail by considering; 1) joint alignment, 2) aligned pricing and misaligned selection, 3) misaligned pricing and aligned selection, 4) and joint misalignment. Specifically, we calculated the mean predicted cost overrun for each scenario and carried out pairwise comparisons using Tukey's testing procedure. The results, as illustrated in Figure 3, indicate that the mean cost overrun of projects characterized by joint misalignment is 39.55%, which is significantly higher than the mean cost overrun of all other scenarios. Interestingly, no differences appear between the two scenarios that involve alignment on one mechanism (selection or pricing) and misalignment on the other (selection or pricing) (p > .10). We return to this finding in the discussion section.

---- Insert Figure 3 about here ----

In addition, we find the correlation coefficient between the residuals of selection and cost overrun equations to be significant (p < .01), suggesting the appropriateness of applying an endogeneity-correcting procedure. However, the correlation coefficient of the residuals between the selection and pricing equations as well as the correlation coefficient associated with pricing and cost overrun equations are insignificant (p > .1).

Post Hoc Analyses

The relevance of the instrumental variables. Both government and defense projects significantly relate to selection and pricing, which suggests instrument relevance. To understand instrument relevance further, we consider instrument strength using the approach of Danaher et al. (2015). For nonlinear models, such as those used to estimate selection and pricing, traditional indicators of instrument strength such as those developed by Stock and Yogo (2002) are not applicable. Danaher et al. (2015) suggest comparing nonlinear models through the use of AIC and BIC fit indices where a "marked" increase in fit indicates good instrument strength. Heeding this approach, we estimated a model explaining pricing with and without these two instruments. Subsequently, we calculated the AIC and BIC fit statistics for both models and assessed whether fit had increased markedly (i.e. the Δ AIC and BIC >10). This was the case for both the selection and pricing estimates, which suggests that they are strong instruments. To assess the orthogonality of the instruments, we also estimated a separate model where we added *government* and *defense* projects to equation (4). In this alternative model, the coefficients of *government* and *defense* are insignificant, suggesting the instruments are orthogonal and thus satisfy an important criterion.

Interactive effects of selection and pricing. Hypothetically, a simple interaction between pricing and selection may explain $ex\ post$ costs. We considered this possibility by adding the multiplicative interaction of selection and pricing to equation (4). The parameter estimate was not significant (p > .1), suggesting that interactions cannot explain the more

complex and nuanced effects our plural discriminating alignment thesis suggests. We return to the question of plural discriminating alignment in the discussion section.

Exploration of Constructs, Mechanisms, and Outcomes. To complement our formal hypothesis tests, we conducted three in-depth interviews with senior managers in the construction industry. We selected these managers using an industry contact to ensure a) manager experience, b) willingness to engage, and c) variation across project types (i.e., residential, government, large infrastructure, and commercial construction). As summarized in the Web Appendix, the three had significant experience with managing construction projects generally, as well as with the governance of sub-contractor relationships. These managers' seniority allowed them to consider our questions against the backdrop of a wide range of construction projects, and to comment on the key aspects of our model. The interviews started with a brief introduction that outlined general aims, followed by a semi-structured interview that took about 50 minutes and which focused on the four constructs of selection, pricing, prior ties, and cost overruns. Notes were taken and from these we extracted salient aspects and representative quotes. We present our findings from these interviews in the Web Appendix, and summarize the key insights below.

First, with regard to selection, the managers expressed views that support our contention that ability-based selection reduces subsequent coordination problems. Moreover, we learned that the benefits of *ex ante* assessments of ability go beyond pure screening – the selection process itself, including the interviews with the focal suppliers, serves a relationship-building (socialization) purpose. One interviewee specifically described selection in terms of "this is where the relationship resides". Thus, ability-based selection, while focusing on a set of tangible (ability-based) partner attributes, also establishes and promotes partner motivation.

Second, with regard to pricing, our interview data clearly show the managers' beliefs that variable pricing involves more ongoing communication than fixed pricing. One interviewer specifically noted the "back and forth" involved in this type of pricing contract.

Third, with regard to the role of prior ties, we learned that previous interactions help reduce ambiguity and, as noted by one manager, ensure that "parties are of the same mind". This, in turn, has governance implications for a new project, because prior ties reduce the need for mechanisms that "protect one's position".

Finally, the interviews suggested that the impact of cost overruns is both significant and multi-faceted. Specifically, cost overruns have a significant impact on a contractor's reputation and ability to secure future work. Cost overruns also raise the possibility of subsequent conflict and costly litigation. Cost overruns may also, as a future safeguard, cause rigid and formalized relationships.

Discussion

Marketing decisions and their outcomes depend crucially on the organizational context within which the focal decisions are made (Moorman and Day 2016; Lee, Kozlenkova, and Palmatier 2015; Ghosh and John 2005). Stated differently, organizational form matters. To date, however, marketing's focus has been limited to two forms, namely permanent organizations and long-term relationships. With some exceptions (Hadida, Heide, and Bell 2019), very little attention has been given to a third, yet quite common form, namely temporary organizations. Recent reviews (e.g., Lundin et al. 2015) note how fields like strategy, operations, management, and engineering have started to build a literature on temporary organizations. To date, however, marketing has contributed little to our understanding of this important organizational form.

The importance of temporary organizations stems from their ability to 1) solicit inputs from a team of specialist suppliers, 2) deploy these inputs within a particular time frame, and ultimately 3) deliver outputs which would be unattainable for a single firm. In many respects,

temporary organizations are uniquely suited to deliver customer value. At the same time, they pose significant challenges, as evidenced by their mixed performance record. For instance, Facebook and Apple's MobileMe initiative is widely considered to be a significant failure, despite the very significant investments made by both firms (Fortt 2011).

Our particular focus was on hybrid temporary organizations. Theoretically, such organizations raise interesting questions because of their particular constellation of governance problems and solutions. On the one hand, hybrids don't possess the extended time horizon of "fully embedded" temporary organizations that exist within a permanent firm, and therefore must deploy governance mechanisms subject to time compression. However, unlike "standalone" temporary organizations that are assembled from scratch, hybrids may benefit from prior ties among its members.

We sought to capture the unique features of hybrids through a two-stage conceptual framework which comprised 1) the governance deployment decision, and 2) the resulting performance implications. An empirical test of the framework in the context of construction projects provided good support for our hypotheses. Below, we first highlight our key empirical findings and their managerial implications. Next, we discuss theoretical implications, limitations, and suggest future research topics.

Theoretical Implications

Our primary goal with this study was to gain insight into temporary organizations' governance practices. This question was posed originally by Goodman and Goodman (1972) in their classic article, and framed in terms of how to "mobilize" a temporary organization. Since that time, however, this question has gone largely unanswered. Some researchers have asserted, largely without formal evidence, that temporary organizations are inherently unstable. Our findings cast doubt on this assertion. We showed that temporary organizations

not only have particular governance mechanisms at their disposal; these mechanisms have significant and predictable effects on performance.

Importantly, however, given a temporary organization's unique time dimension, its governance mechanisms must possess particular properties. We focused on two broad categories of mechanisms: First, drawing on the "new institutional economics" literature, we considered *organization-specific* mechanisms that match a given organization's attributes (Williamson 1991). These mechanisms, however, must be capable of being *deployed* and of taking effect quickly. Our specific focus was on supplier selection strategy and pricing provisions. Our second category consisted of exogenous or *pre-existing* mechanisms that could be *activated* and brought to bear on a new organization. Our specific focus was on the role of prior ties between the temporary organization's members.

Our conceptual framework was based in part on the juxtaposition between the two categories of mechanisms, including the possibility that the deployment of organization-specific mechanisms was contingent on the presence of prior ties. Our empirical findings provided good support for our framework, and in doing so refuted the idea that temporary organizations lack structure. They do show, however, that temporary organization governance is more complex than frequently assumed, and that it involves complex interactions between mechanisms at different levels.

Consider the governance mechanisms that we studied in more detail. As discussed, prior ties serve useful governance purposes due to the partner knowledge and social fabric that is brought forward from prior collaborations. This makes prior ties valuable, consistent with Granovetter's (1985) "embeddedness" thesis. We showed, however, that the specific form of prior ties matters crucially. Specifically, our results suggest that only a fully matched triad of existing ties—rather than a dyadic tie between an individual buyer and general contractor—provides discernible benefits. This finding also highlights the importance of

broadening the focus beyond individual dyads (cf. Wathne and Heide 2004; Kumar, Heide, and Wathne 2011).

Beyond shedding light on individual governance mechanisms and their properties, an important conclusion from this study is the importance of jointly accounting for combinations of mechanisms and their theoretically specific attributes – what we referred to as "plural discriminating alignment". Specifically, we showed that selection and pricing, when jointly matched with their theoretically specified attributes, impact cost overruns. A simple, model-free analysis of our data, involving an ANOVA test for fixed/variable pricing and price/ability-based selection on cost overruns, suggests no clear effects (F (4, 360) = 0.91, p > .10). Yet, our more advanced analyses, built on an operationalization of plural alignment, revealed a nuanced pattern of performance implications, where cost overruns followed from complex constellations of governance mechanisms and organizational attributes. From a theoretical standpoint, this both advances TCE's general discriminating alignment (Williamson 1985) argument and takes the plural forms" thesis (Bradach and Eccles 1989; Cao and Lumineau 2015) to its logical conclusion.

Managerial Implications

From a managerial standpoint, the governance mechanisms that we studied, selection and pricing, represent decision variables that can be readily deployed by firms. However, the deployment of these variables is not straightforward. Our results show that controlling cost overruns is not simply a function of deploying multiple governance mechanisms *per se*. Rather, performance requires that all the governance mechanism be aligned with their corresponding attributes. Consider the specific implications of selection and pricing in turn.

First, with regard to pricing, past research in marketing has established the importance of pricing as a decision variable. However, the focus of past research has been on how pricing impacts supplier profit, not necessarily on specific aspects of buyer value such as cost overruns.

Further, we showed that it's not necessarily the pricing *level* that matters in creating buyer value, but the specific pricing *format* used. Interestingly, this suggests that the same price level can actually produce entirely different buyer outcomes. From the perspective of a supplier, managing overruns through appropriate choices on pricing format is equally important, since cost overruns impact supplier reputation and thus the likelihood of attracting future business.

The marketing implications of selection are significant. To buyers, managing cost overruns does not follow from selecting suppliers on ability or price *per se*, but by appropriately aligning selection with key organizational attributes. For instance, we showed that *less* stringent selection, involving price only, can actually be beneficial, but only when matched to 1) particular attributes and 2) other governance mechanisms. This adds nuance to prior work which has categorically recommended strict selection as a strategy (e.g. Dekker 2004; Dekker 2008). This finding helps explain why firms in practice may choose less stringent selection for reasons other than economizing on search costs (Mooi and Ghosh 2010).

In general, our current research helps expand the toolkit available to B2B marketers. From a practical standpoint, selection and pricing have attractive decision-making properties, since they can be deployed under time compression. At the same time, firms' choices with regard to selection and pricing have long-term effects. In our study, performance outcomes were effectuated months and even years after the initial governance deployment. As such, these governance choices are both durable and important. Conversely, we found that making the (theoretically) wrong governance choices given the prevailing attributes resulted in greater cost overruns. Importantly, the implications of overruns go beyond narrow financial metrics. Our interviews pointed to potential reputational damage, litigation, and future (over) reliance on rigid and formalized relationship features.

To generate fine-grained insights into the managerial importance of selection and pricing, we considered four specific performance scenarios, namely 1) joint alignment, 2)

misaligned selection and aligned pricing, 3) aligned selection and misaligned pricing, and 4) joint misalignment. Though we established that scenario 1 is preferable from the perspective of minimizing cost overruns, our current research also demonstrates which mechanism (selection or pricing) matters more, through a "what-if" analysis involving counterfactual computations. These shed light on the performance implications of two scenarios 2 and 3 by comparing a chosen alternative to the outcomes obtained had a different selection or pricing choice been made.

As an observation of scenario 2, the construction of a power transmission line was governed by capability-based selection and variable pricing. In this project, selection was misaligned with our model-predicted choice while pricing was aligned. Per our model, had the project instead been governed by aligned selection and aligned pricing, the cost overrun would have been 37.57% lower. Conversely, in the renovation project of San Francisco International Airport (Terminal 2), as a manifestation of scenario 3, the observed choice of selection was aligned with our model-predicted choice, while the observed choice of pricing was misaligned. Again, we calculated the counterfactual cost overrun, which showed that if this project had used aligned selection and aligned pricing, the cost overrun would have been 14.93% lower.

These two examples show the explanatory power of selection and pricing as individual governance mechanisms, as reflected in the substantial reductions in cost overruns (37.57% and 14.93%, respectively) that potentially were available. Further, they show that selection (only) decreases *ex post* cost overruns more than alignment of pricing (only). Since the benefits from getting selection "right" outweigh those that result from getting pricing "right", it suggests that selection should be, relatively speaking, a higher strategic priority for a firm.

Limitations and Future Research

We close with a discussion of some research limitations and possible extensions. First, certain exogenous governance benefits may be afforded by national culture. Specifically, cultural variables may facilitate both coordination and monitoring, but our U.S. centric database prevented us from examining this. Relatedly, Bechky (2006) showed how a temporary organization may benefit from industry roles that facilitate member coordination. General industry codes and professional certifications may serve similar purposes. It's noteworthy, however, that some researchers (e.g., Grabher 2002) have questioned such mechanisms' properties. While roles and codes may be capable of solving governance problems that involve coordination, they may possess constraints vis-à-vis more fundamental problems of cooperation (Gulati, Wohlgezogen, and Zhelyazkov 2012).

Second, unanswered questions pertain to the effect of prior ties. While such ties may be beneficial, existing ties may come under strain, depending on the nature of an organization's task. If a temporary organization's task involves a meaningful degree of repetition vis-à-vis an earlier one (DeFillippi and Sydow 2016), existing ties may indeed continue to serve governance purposes. In fact, our interviews revealed that prior ties help parties to "read contracts correctly". However, radically new tasks may require a recalibration of past rules, and could, potentially, even be reflected in the selection deployed. If so, existing ties are associated with boundary conditions which diminish their value, and a new temporary organization may need to fall back on organization-specific (and short-term) mechanisms like selection and pricing.

Third, the degree to which selection induces specific roles and behaviors among project members is difficult to discern using secondary data. While we attempted to ascertain this through interviews, an experiment might generate more nuanced insights.

Fourth, future research may go beyond our current focus on cost overruns to examine additional performance outcomes, for instance in the form of time delays, innovation, and financial returns. Similarly, future studies of temporary organization would also benefit from comparing the choice of governance and the resultant performance outcomes of stand-alone or fully embedded temporary organizations against hybrid ones.

Fifth, the focus of this study was on the *ex ante* resolution of *ex post* costs. However, such costs could be managed formally, for example through court ordering, or informally through renegotiation or private enforcement. Future work could usefully focus on such *ex post* resolution mechanisms and show the conditions under which they are effective.

Finally, given our anchoring in marketing, our main focus was on the buyer.

However, projects feature multiple parties, including first- and second-tier suppliers. The impact of project governance on these particular parties is likely a fruitful avenue for further research.

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Author Accepted Manuscript TABLE 1. VARIABLES AND DATA SOURCES

Variable	Conceptual definition of key theoretical variables	Measure	Data Source
Ex post cost overruns	-	A continuous variable indicating the percentage difference between the actual cost of the project and the contracted cost.	DBIA
Selection	A buyer's ex ante efforts to screen or verify a supplier prior to entering a relationship (Heide and John 1990).	A dichotomous variable indicating the main criteria on which the buyer selects the supplier(s): 0 = pricebased selection, and 1 = abilitybased selection.	DBIA
Pricing	The payment arrangement for the delivery of the project (Ghosh and John 2009; John 2008).	A dichotomous variable indicating the pricing terms guiding the project: $0 = $ fixed pricing, and $1 = $ variable pricing.	DBIA
Project size	The size of the project organization.	Count of the number of suppliers included in the project.	DBIA
Contracted duration	The degree of time compression to which a project is subject.	The number of days between the start and end date of the project defined on the contract.	DBIA
Buyer-general contractor prior ties		A count variable indicating the number of times a specific pair of buyer-general contractor share a prior tie.	DBIA
General contractor- subcontractor prior ties		A count variable indicating the number of times a specific pair of general contractor-subcontractor share a prior tie.	DBIA
Buyer-general contractor- subcontractor prior ties		A count variable indicating the number of times a specific triad of buyer-general contractor-subcontractor share a prior tie.	DBIA
Project category		A categorical variable classifying construction projects into commercial/institutional, industrial process facility, civil infrastructure, with other projects being the base category.	DBIA
Environmental uncertainty		The dollar value of U.S. construction spending regressed on the year. The resultant standard errors of the regression slope coefficient indicate	

Construct

Author Accepted Manuscript

environmental uncertainty. Number of state A count variable indicating the number of rules and regulations that Connect regulations specify standards for constructed

objects such as buildings and non-

building structures.

Municipality A binary variable indicating whether DBIA

a project is bought by municipality

(=1), or not.

Non-profit A binary variable indicating whether DBIA corporation

a project is bought by a non-profit

corporation (=1), or not.

A binary variable indicating whether DBIA Developer

a project is bought by a developer

(=1), or not.

Buyer-project The distance (in miles) between the Google distance

address of the buyer and the focal

project.

Government A binary variable indicating whether DBIA

a buyer is government (=1), or not.

A binary variable indicating whether DBIA Defense

a buyer is a defense organization

(=1), or not.

37 38

45 46

TABLE 2. CORRELATIONS AND DESCRIPTIVE STATISTICS

5																	
6 Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
7																	
8																	
9 1. Ex post cost overrun	074	_ a															
10 Selection			9														
3. Pricing	.066	.275	_ a														
4. Project size	.029	019	.042	<u> </u>													
12. Contracted duration	.445	143	118	.101	-												
13. Buyer-general	035	056	039	072	.018	-											
14 ontractor prior ties																	
15. General contractor-	044	095	116	.172	.014	.342	-										
16 ubcontractor prior ties																	
178. Buyer-general	028	087	023	000	.049	.611	.408	-									
contractor-subcontractor																	
priorties																	
19. Project category	036	034	094	067	.156	036	106	033	_ a								
200. Environmental	002	.014	.099	049	190	.165	.050	020	111	-							
21uncertainty																	
221. Number of state	001	011	.129	058	103	060	133	174	001	.147	-						
23 regulations																	
12. Municipality	044	.084	.065	020	.057	044	096	031	.283	.039	.178	_ a					
2412. Municipality 13. Non-profit 25 corporation	023	.091	.044	.019	017	.038	057	.098	102	049	024	066	- a				
² corporation																	
264. Developer	002	.026	.108	043	035	.023	093	.027	058	001	011	072	036	_ a			
27.5. Buyer-project distance	053	086	072	016	.083	.049	.058	014	.037	073	042	062	055	000	-		
286. Government	.041	091	137	.134	.134	099	095	071	.178	057	035	237	118	129	059	_ a	
297. Defense	.061	274	216	041	.082	.244	.267	.152	104	.019	.061	210	104	115	.037	376	_ a
30 31 32 32	12.591	.289	.454	10.992	685.450	.142	1.059	.371	1.531	48,198.550	9.542	.116	.041	.044	167.821	.283	.250
31°	74.092	.454	.499	10.873	389.747	.404	2.950	1.633	.941	2,407.653	3.020	.321	.199	.205	796.167	.451	.433
32 ¹²																	
33Minimum	-37.723	.000	.000	1.000	91.000	.000	.000	.000	.000	44,570.560	3.000	.000	.000	.000	.000	.000	.000
34 ^{Maximum}	1,046.207	1.000	1.000	142.000	4,856.000	3.000	24.000	13.000	3.000	51,865.810	15.000	1.000	1.000	1.000	7,039.000	1.000	1.000

³⁵ The correlations in these columns are with binary or categorical variables and are therefore indicative only.

³⁶Note: n = 328. Correlations with an absolute value greater than .10 are significant at p < .05 (two-tailed).

TABLE 3. CMP REGRESSION ESTIMATES

Variables	Selection	Pricing	Ex Post Cost Overrun (%)
	β (Robust SE)	β (Robust SE)	β (Robust SE)
Joint alignment		•	(H5) -19.057 (9.648) **
Aligned pricing			8.466 (7.558)
Aligned selection			-20.454 (7.669) ***
Project size	.014 (.008) **	.012 (.010)	884 (.565) *
Contracted duration	001 (.001) ***	000 (.000) *	.093 (.048) **
Prior ties:			
Buyer-general contractor prior ties	.520 (.292) **	145 (.398)	-19.754 (12.808) *
General contractor-subcontractor prior ties	043 (.086)	167 (.125) *	413 (4.061)
Buyer-general contractor-subcontractor prior ties	211 (.180)	.262 (.268)	-1.299 (6.150)
Interactions:			
Project size * Contracted duration	(H1)000 (.000) **	(H3) .000 (.000) **	.003 (.002) *
Project size * Buyer-general contractor-subcontractor prior ties	(H2)072 (.029) ***	(H4)011 (.051)	2.979 (1.659) **
Control variables and instruments:			
Project category:			
Commercial/Institution building	.454 (.276) *	.005 (.322)	-4.2034 (10.489)
Industrial process facility	.458 (.293) *	.456 (.445)	4.546 (13.934)
Civil infrastructure project	.617 (.301) **	167 (.384)	-20.859 (15.127) *
Environmental uncertainty	000 (.000) **	.000 (.000) *	.003 (.002) **
Number of state regulations	024 (.020)	.072 (.027) ***	.550 (1.203)
Municipality	.203 (.199)	282 (.289)	-16.855 (8.720) **
Non-profit corporation	.285 (.270)	190 (.430)	-13.948 (13.211)
Developer	.086 (.234)	.266 (.404)	-7.153 (12.335)
Buyer-project distance	020 (.034) ***	.002 (.035)	-2.595 (1.858) *
Government	290 (.137) **	765(.222) ***	2.676 (2.668)
Defense	604 (.244) ***	-1.066 (.270) ***	
Intercept	1.505 (1.284)	-2.400 (1.649) *	-114.894 (91.4789) *

No. observations = 336, *p < 0.10; **p < 0.05; ***p < 0.01. One-tailed if hypothesized. Robust standard errors are reported in parentheses. ¹ This variable is scaled as a percentage

FIGURE 1. CONCEPTUAL FRAMEWORK

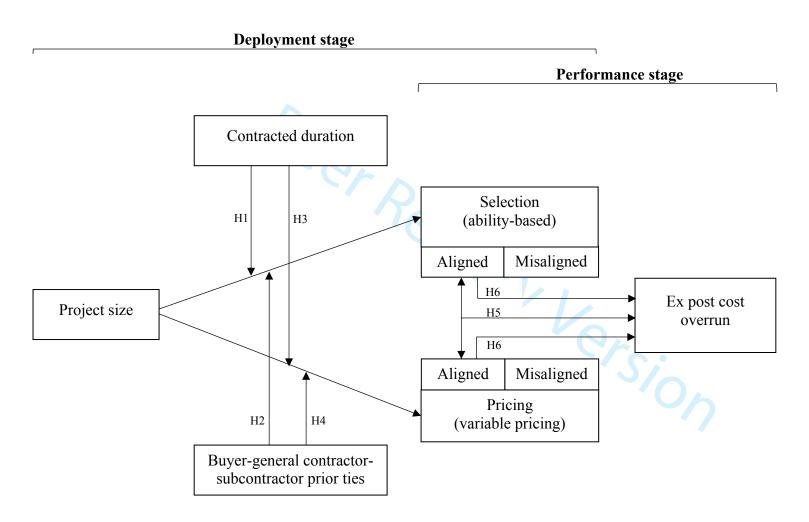
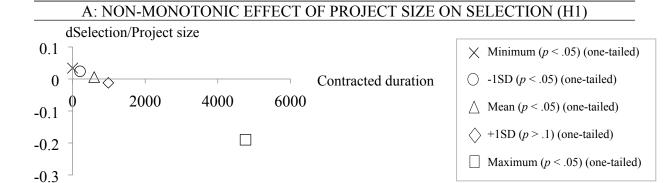
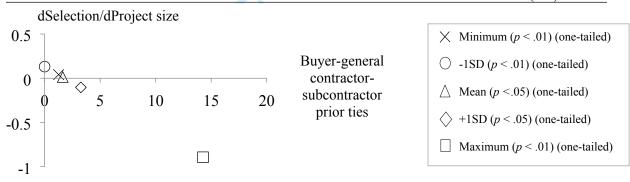


FIGURE 2. ILLUSTRATIONS OF THE CONTINGENCY EFFECTS OF PROJECT SIZE



B: NON-MONOTONIC EFFECT OF PROJECT SIZE ON SELECTION (H2)



C: NON-MONOTONIC EFFECT OF PROJECT SIZE ON PRICING (H3)

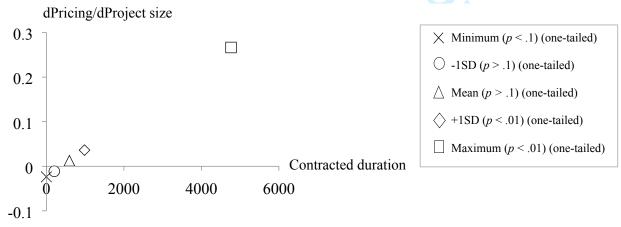
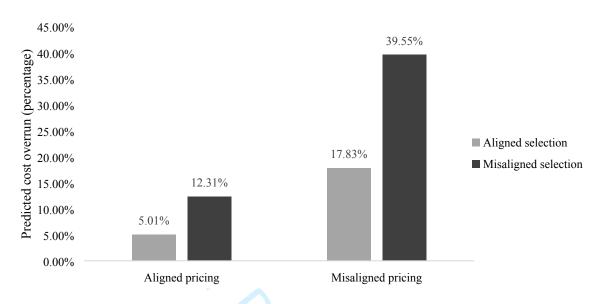


FIGURE 3. THE COSTS OF MISALIGNMENT



I	DIFFERENCES IN THE COSTS OF MISALIGNMENT						
Scenarios	M	Scenario	Scenario	Scenario	Scenario		
	(SD)	1	2	3	4		
Scenario 1:	5.01		p > .1	<i>p</i> > .1	<i>p</i> < .01		
Aligned pricing-Aligned selection	(48.447)		t-value = 1.08	t-value = 2.17	t-value = 4.54		
Scenario 2:	12.31		<u>-</u>	p > .10	p < .05		
Aligned pricing-Misaligned selection	(27.278)				t-value = 2.97		
Scenario 3: Misaligned pricing-Aligned selection	17.83 (31.875)			<u>-</u>	<i>p</i> < .10 t-value = 2.54		
Scenario 4: Misaligned pricing- Misaligned selection	39.55 (30.252)				-		

Note. Please note that this matrix is symmetric, and the lower triangle is a mirror of the upper triangle.

Mobilizing the Temporary Organization: The Governance Roles of Selection and Pricing

Elham Ghazimatin, Erik A. Mooi, Jan B. Heide

Web Appendix: Themes, Take-Aways, and Illustrative Quotes from Interviews

We indicate the participants using numbers, with (1) referring to a senior project manager of \$100 US mln+ construction projects with 25+ years' experience, (2) referring to a senior partner of 1 US bln+ construction company with 30+ years' experience, and (3) referring to a senior construction partner with 30+ years' experience ranging from infrastructure, commercial and residential construction.

Theme	Key take-away	Illustrative quotes
Pricing	Variable pricing involves considerably more on-going communication than fixed pricing.	(1) [For fixed pricing] "all comms break down"
	Variable pricing often involves a "bills of adjustment" that requires significant communication.	(2) "The general contractor needs to ask lots of detailed questions to the client"
		(3) "particularly with variable pricing there is a log of back-and-forth as this releases funds"
Selection	Selection on ability reduces coordination problems. Selection on ability also involves relationshipbuilding and socialization, due to the interviews and interactions that take place during a selection process. Motivation is, to some degree, part of any type of selection process.	(1) "You are as good as your weakest link", "parties need to show interest in the next project" (2) Good selection criteria for ability are "some price", "previous experience" "the people", "understanding of the tasks", "make sure you see commitment" (3) "selection on capability has a critical
		advantage in that it is more likely to assure the contractors survive during the project"
Prior ties	Prior ties between key parties help establish beliefs, help them read	(1) The "interplay between subcontractor, general contractor, and client is where the relationship truly

	contracts correctly, and generally	resides", "If it is truly relationship-
	reduce ambiguity and uncertainty.	based, all parties involved need to be of the same mind"
		(2) Prior ties help "deliver on promises" Prior ties help as it "takes time to understand beliefs, how they operate, how they like you to behave", Conversely, "with new clients you protect your position"
		(3) "generally, there is a lot of conflict over 1) time, 2) money, 3) quality, and prior relationships take an unknown out". Prior relationships help parties avoid "misreading the contract" or argue that they "didn't see this on the plan"
Cost	Cost overruns have an impact beyond	(1) "if there is ill intent or negligence
overruns	the cost overrun itself. This is	we'll sue 'em!", "people avoid you"
	manifested through:	[when cost overruns are significant]
	- a significant impact on supplier reputation and a resulting ability to secure future work and future earnings;	(2) "they [the counterpart] tend to become strict and formalize everything", "not complying" [due to
	- litigation as a distinct possibility;	cost overruns]
	- significant discussions and intense	
	debates around the causes of the cost	(3) "In the US litigation is likely",
	overrun; and	"huge reputational risk", "who is to
	- parties becoming rigid and	blame"
	beginning to interpret the letter but	0).
	not the spirit of the agreement.	