

Effect of Customer-Centric Structure on Long-Term Financial Performance

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Firms with a customer-centric structure—an organizational design that aligns each business unit with a distinct customer group—are expected to exhibit superior performance compared to firms that are internally structured. Top executives invoke these customer-centric beliefs when initiating corporate reorganizations. However, a lack of empirical evidence linking these customer-centric structures to better long-term financial performance raises doubts if corporate structure can truly foster customer centricity and better position a firm to satisfy customers and hence exhibit superior performance. The current research addresses this question by using longitudinal data (1998–2010) that links *Fortune* 500 firms' corporate-level structure to performance. Utilizing a dueling mediator model with allowance for endogeneity in a firm's organizational structure choice, the study reveals that a corporate-level customer-centric structure translates to greater customer satisfaction, but simultaneously adds coordinating costs. Further explaining customer-centric structure's record of mixed success, the benefits of increased customer satisfaction diminish (1) as competitors have already adopted customer-centric structures, (2) in fragmented markets where competitors leave few unique customer needs unaddressed, and (3) in less profitable industries. Ultimately, we show that aligning corporate structure around customers pays off only in specific competitive environments.

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Keywords: customer-centric structure; customer satisfaction; coordinating cost; competitive environment; financial performance

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1. Introduction

A widespread belief among academics and managers is that customer-centric firms outperform their peers that are internally structured, because they nurture closer customer relationships, enhance customer value, and improve customer satisfaction (Kumar et al. 2008, Shah et al. 2006). For example, Dell realigned its corporate business units around distinct customer groups (e.g., large enterprise, public, small and medium business, and consumer division), stating that “this alignment creates a clear customer-centric focus . . . , and enables us to better understand and address their challenges” (2010, p. 2). A survey of managers indicate that the proportion of U.S. firms with structures organized around customers

will grow from 32% to 52% as firms race to build more customer-centric organizations (Day 2006). Data collected for the current research shows that the proportion of *Fortune* 500 firms with a customer-centric structure has increased by 46% in the past decade. Yet extant research offers no actual evidence of a “significant correlation between organizing by customer groups and relative performance” (Day 2006, p. 42). Managerial interest in, combined with the lack of empirical support for, the link between customer-centric structure and performance has led the Marketing Science Institute (2012, p. 8) to announce “Research is needed to better understand how organizational structure and marketing capabilities influence business performance” as one of the top research

priorities. Accordingly, we investigate *the effect of customer-centric structure on financial performance*.

Extant marketing research studying other organizational design elements shows that adopting a customer-centric culture (Shah et al. 2006), metrics (Rust et al. 2010), and processes (Kumar et al. 2008) improves relational and financial outcomes. Applying the same logic to organizational structure, many *Fortune* 500 firms, such as WellPoint and American Express, have shifted their corporate structure to align divisions with each of their key customer groups. Still, nearly 70% of the *Fortune* 500 firms organize their top divisions around internal criteria (i.e., product groups, functional areas); operational functions are streamlined internally but cover multiple customer groups externally. Drawing a contrast with internally aligned structures, we evaluate the financial performance effect of a firm's organizational structure (i.e., business units, divisions) that is externally aligned to distinct customer groups.

Such a customer-centric structure represents a deliberate managerial attempt to foster a shared commitment, in each division of the firm, to fulfill the needs of a unique customer segment, which purportedly improves customer satisfaction and performance (Lee et al. 2015, Yim et al. 2004). Although this structural alignment is customer-centric in name and purpose, the lack of evidence linking it to performance raises the concern that perhaps corporate-level structure is too far removed from the customer to foster meaningful differences in firm performance. To better understand this linkage we include customer satisfaction as a positive mediating mechanism and coordinating costs, expenses incurred from managing interdependent functional activities across internal units, suppliers, and customers, as a negative mediating mechanism. This allows us to examine researchers' warning that organizing a firm's structure around customer groups instead of internal criteria will create more difficulties in managing relationships between front-end and back-end offices (Homburg et al. 2000), and duplicate resources and functional efforts across divisions (Gulati 2007). When organizing by an internal production basis, communication will be optimized for operational efficiency. Under this structure, management will easily see and react to any suboptimal coordination of functional activities that slows production, duplicates resources, or requires too much administrative overhead. Thus, the total impact of a customer-centric structure on performance likely depends on whether the customer-centric benefits surpass the higher coordinating costs. We posit that the trade-off between these positive and negative mediating pathways also depends on the external environments where the firm chooses to compete. The failure to account for the positive and negative mediating paths, and the contingent effects of

the external environment could explain prior inconclusive empirical results (Day 2006).

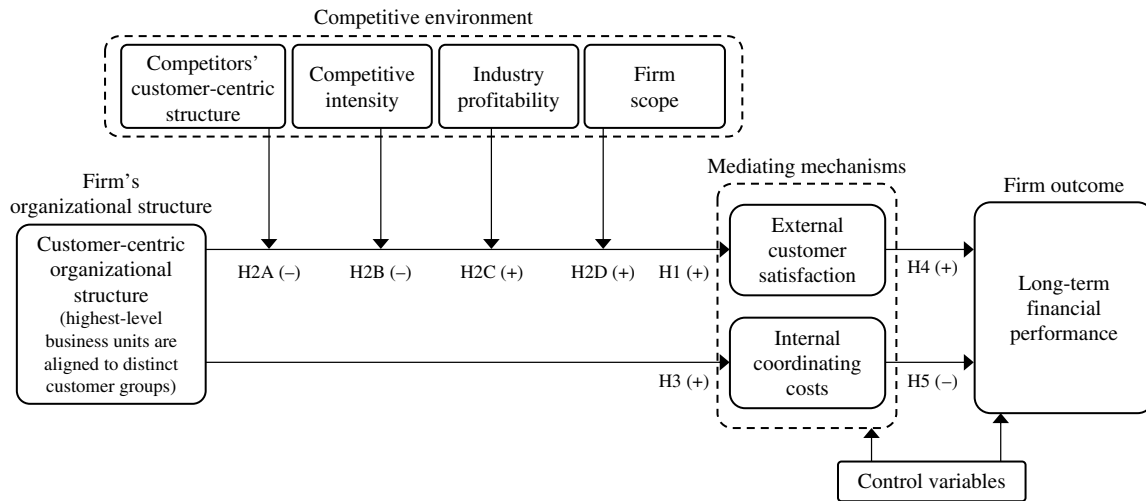
Using a unique, multisource data set that combines measures of organizational structure, customer satisfaction, and coordinating costs of *Fortune* 500 firms from 1998 to 2010, we examine the performance effects of a customer-centric structure. We analyze 13 years of annual data, comparing the performance of firms with a customer-centric structure to other internally aligned structures, as mediated by customer satisfaction and coordinating costs. We consider how the positive link through customer satisfaction may be moderated by a firm's competitive environment (Figure 1), using a Bayesian latent instrumental variable (LIV) approach to explicitly account for endogeneity in firms' structure choices (Zhang et al. 2009). Our study addresses the "clear need for large-scale empirical research...[using] secondary data...[to] assess performance outcomes of various organizational structures" (Homburg et al. 2000, p. 474) whereas previous research on customer-centric structures has remained theoretical (Rust et al. 2010, Shah et al. 2006), or drawn mainly on surveys (Becker et al. 2009), qualitative field research (Homburg et al. 2000), and case studies (Galbraith et al. 2002).¹

This paper contributes to existing literature in three ways. First, to the best of our knowledge, we are the first to conceptually and empirically disaggregate the positive and negative mediating mechanisms to understand *how aligning a firm's highest-level business units around distinct customer groups affects long-term financial performance*. The results show that a customer-centric structure improves performance by increasing customer satisfaction but also degrades performance by adding coordinating costs. When top executives realign divisions with distinct customer groups, they can credibly invoke the external benefits of greater customer centricity (e.g., greater responsiveness, customization), but must weigh them against the internal costs (e.g., duplication, complex communication across functions) to determine the overall effect. Because "efforts to increase customer satisfaction produce costs that reduce efficiency improvements in the short term" (Swaminathan et al. 2014, p. 184, Mittal et al. 2005), we evaluate the ultimate consequences of a customer-centric structure with the use of long-term versus short-term performance metrics (e.g., immediate market metrics).

Second, with this trade-off between benefits and costs, it becomes necessary to determine *when a*

¹ Only recently has it become possible to amass a longitudinal secondary data set because of changes in the Financial Accounting Standards Board's reporting guidelines, possibly contributing to the lack of response to Homburg et al. (2000) call for large-scale empirical research from secondary data.

Figure 1 Effect of Customer-Centric Structure on Long-Term Financial Performance, Mediated By Customer Satisfaction and Coordinating Costs



customer-centric structure pays off. Customer satisfaction benefits are often determined by competitive forces external to the firm (Mittal and Frennea 2010). We consider four key characteristics of where firms compete to better determine when customer satisfaction benefits promised by a customer-centric structure actually materialize. Our results suggest that a firm is *less likely* to capitalize on the potential benefits of a customer-centric structure when more competitors already have customer-centric structures. We also find that the customer satisfaction effect of a customer-centric structure weakens when competition intensifies and industry profitability decreases. We tested if a customer-centric structure is more beneficial when the firm competes in many end markets; however, firm scope was not confirmed as a significant moderator. Thus, contrary to popular notions that customer-centric structures are generally beneficial (Becker et al. 2009), we find that their costs often outweigh their benefits, at least in competitive environments where unmet customer needs are scarce or relatively unimportant.

Third, we offer managerial insight into the impact of customer-centric structure on financial performance by conducting post hoc analysis on the entire *Fortune* 500 firms, removing date limitation of customer satisfaction measure in a non-mediated model. The average performance level for firms with a customer-centric structure relative to firms with internally aligned structures varies from +10% to -23%, depending on the competitive environments. Therefore, our study provides theoretical and empirical insights that clarify the mixed picture that has emerged from high-profile stories of firms that enjoy the fruits of restructuring around customer groups (e.g., IBM, Fidelity Investments), even as others see their business sour after making similar changes (e.g., Cisco, Xerox).

2. Customer-Centric Organizational Structures

Researchers often investigate ways to make firms more “customer centric,” in the belief that doing so will enhance firm performance (Shah et al. 2006). The widely researched “market orientation” construct, which typically refers to specific firm *behaviors* or *culture* (e.g., gather, disseminate, and react to customer and competitor information), is distinct and can best be described as an outcome of customer-centric structure (Homburg et al. 2000, Kohli and Jaworski 1990). In line with organizational design theory (Galbraith et al. 2002), marketing scholars compare customer-centric culture, incentives, and processes with traditional production-oriented approaches to understand how these organizational design dimensions affect performance (Kumar et al. 2008). Despite the widespread belief that *organizational structure* is an important design element for making a firm more customer centric, “there has been relatively little discussion” of how and when customer-centric structures improve firm performance (Homburg et al. 2000, p. 469).

We examine customer-centric structure at the corporate level where it manifests as an organizational design with top-level business units aligned to distinct customer groups. Although it is not unusual to find various structures at lower layers of the organization, we focus on the top hierarchical level because the general consensus that adopting a top-level customer alignment will yield customer-centricity benefits has yet to be empirically verified (Day 2006). Executives view corporate structure as the firm’s architectural foundation for communication (Horowitz 2014). Furthermore, corporate-level structure receives intense scrutiny because (1) decisions made at the top level dictate the management of organizational entities at

lower levels, (2) the top-level structure determines the assignment of responsibilities to the senior executives who determine the firm's strategy, and (3) each corporate-level business unit is responsible for its profit-and-loss statement, which the firm discloses in legal filings. Of central importance to the current research purpose, corporate-level structure is most relevant to marketing if it can truly influence a firm's ability to satisfy customers. If not, shareholders should demand executives offer a different rationale to justify a costly corporate structural realignment.

To date, empirical support linking customer-centric structures to performance improvement is limited. Perhaps a customer-centric structure is not intrinsically superior, because placing any criteria as the focus of a structural unit necessitates a trade-off in loss of focus on other criteria. Prominent executive and investor Ben Horowitz recognized this issue, stating that "the first rule of organizational design is that all organizational designs are bad...you will optimize communications among some parts of the organization at the expense of other parts" (Horowitz 2014, p. 188). For example, Intel found internally aligned divisions (i.e., organizing top-level divisions around product groups or functional areas) a superior structure in terms of its *internal simplicity*, which minimized communication complexities and functional duplication. Customer-centric structure (i.e., organizing top-level divisions around customer groups) instead offered *greater knowledge of and commitment to customers*, which better positioned the firm to increase customer satisfaction (Shah et al. 2006). That is, it is imperative to recognize both the benefits and costs of employing customer-centric structures to understand their performance impacts.

3. Conceptual Framework and Hypotheses

We seek to examine (1) the mediation processes determining *how a customer-centric structure affects long-term financial performance* and (2) the contingent circumstances that determine *when a customer-centric structure pays off*. We begin by highlighting positive and negative mechanisms through which structure affects firm performance. Our review of literature (Table 1) identified customer satisfaction and coordinating costs as key mediators. In essence, organizing divisions (internal to the firm) around customer groups (external to the firm) should better position the firm to improve customers' experience and thus increases satisfaction, though at the expense of internal simplicity (Gulati 2007, Homburg et al. 2000). Coordinating costs, defined as the expenses incurred from managing interdependent functional activities across internal units, suppliers, and customers (Ray

et al. 2009, Bendoly et al. 2012, Im et al. 2013), are higher when external, front-end, customer considerations are prioritized in organizing back-end functional activities.

To fulfill our second research goal, we incorporate characteristics of where firms choose to compete as contingent factors. Organizational design theorists have long held that a firm's ideal internal structure impact depends on its fit with the external context (Drazin and Ven 1985). To understand how the external environment makes a customer-centric structure more or less efficacious, we focus on its linkage to customer satisfaction. Because the structure's domain of control ends at the firm's boundary, customer satisfaction—residing externally to the firm, in customers' evaluations of experiences relative to expectations—is particularly vulnerable to external contingencies (Mittal and Frennea 2010). We consider four dimensions of where a focal firm competes that influence the number and quality of such opportunities.

3.1. Linking Customer-Centric Structure to Performance Through Customer Satisfaction

Customer satisfaction, which reflects customers' overall evaluations of their experiences with the firm's products or services (Mittal et al. 2005), captures the external, beneficial effects of a customer-centric structure. A two-step process leads to high customer satisfaction: (1) The firm uncovers customers' unmet needs, and then (2) responds quickly to address this need, even beyond customers' expectations (Mittal and Frennea 2010). A customer-centric structure is designed to allow each division to focus on a unique customer segment, which should increase knowledge of and commitment to each customer group throughout the firm's hierarchy (Gulati 2007, Jayachandran et al. 2005). Subunits cooperate to focus on customers, and competition across product lines does not come at any one customer's expense. Functional specialists also become customer specialists, and managers who set priorities are just (Galbraith et al. 2002). Shared customer-specific knowledge positions the firm favorably to uncover any unmet needs, and greater shared customer-specific commitment enables it to respond quickly and effectively to unmet needs (Reinartz et al. 2004). Structural solutions that enable a firm to concentrate on specific customers support "Customer satisfaction information usage," which captures both monitoring satisfaction and reacting accordingly (Morgan et al. 2005, p. 114). Furthermore, a customer-centric structure generates a shared within-unit focus on customers, increases customer insight, provides a single customer contact point, and creates more "Accountability for managing customer relationships" (Shah et al. 2006, p. 117).

Table 1 Literature Review: Mediating Mechanisms for the Effect of Customer-Centric Structure on Performance

Reference	Context	Customer-centric structure	Measure of customer-centric structure	Key findings/propositions
Customer satisfaction: Positive mediating mechanisms				
Becker et al. (2009)	Survey of 90 CRM project managers	Included as part of a multidimensional construct: "Organizational implementation"	We have an organizational structure that is based on customer segments (e.g., customer segments as profit center). Our distribution is organized according to customer groups (segment-based).	Organizational implementation improves the acquisition and regaining of lost customers when supported by management.
Jayachandran et al. (2005)	Survey of 151 marketing managers	Included as part of a multidimensional construct: "Customer-centric management system"	We organize our company around customer-based groups rather than product or function-based groups. In our organization, various functional areas coordinate their activities to enhance the quality of customer experience.	Customer-centric management system supports relational information processes (the specific routines that a firm uses to manage customer information), which in turn relates positively to customer satisfaction and retention.
Reinartz et al. (2004)	Survey of 211 senior managers of business units	Included as part of a multidimensional construct: "Organizational structure around customer groups"	Our business unit is organized to optimally respond to customer groups with different profitability. Organizing people (i.e., changing organizational structure) to deliver differentiated treatment and products to different customer segments presents a strength for our business unit.	Organizing a firm's structure around customer groups moderates the relationship between a formalized CRM process and performance (for the initiation and termination stages).
Shah et al. (2006)	Conceptual paper about a customer-centric organization	Discussed as part of an organization design element: "Customer-centric organization structure"	Organizing all functional activities around customer segments.	Transitioning to a customer-centric structure increases accountability for managing the customer relationship, which in turn leads to superior business performance.
Yim et al. (2004)	Survey of 215 senior managers	Included as part of a multidimensional construct: "Organizing around CRM"	Our organizational structure is meticulously designed around our customers.	Organizing around CRM relates positively to customer satisfaction, which increases retention and sales growth.
Coordinating costs: Negative mediating mechanisms				
Day (2006)	Survey of 347 midsize to large U.S. companies	A binary concept of divisions organized around customers: "Customer-focused structure"	How are you organized now? (e.g., functions, product/service lines, customer groups).	Organizing by customer-focused units increases accountability, employee freedom, and ease and ability to deal with customer problems, but not relative customer retention or profits due to bureaucracy and coordinating costs.
Gulati (2007)	Survey of senior executives at Cisco, GE Healthcare, and Jones Lang LaSalle	Firm's formal structure organized by customer segment: "Customer-focused structure"	Semi-autonomous lines of business focusing on a distinct customer-customer type (vs. function, technology/product).	Under a customer-centric structure, firms need to invest significant time and resources in developing the ability to maintain both product and customer expertise and the ability to resolve dissonance across internal boundaries.
Homburg et al. (2000)	Field interviews with 50 managers; quantitative study of 385 firms	Structuring the organization around customers: "Customer-focused organizational structure"	Organizational structure that uses groups of customers as the basis on which business units are established.	Given the greater reporting complexity associated with a customer-focused structure, many companies have not made the shift to a customer-focused structure, and some have reverted to other structures.

In contrast, other structures with divisions responsible for serving multiple customer groups cannot continually focus on any particular customer's needs; multiple divisions internally organized by product lines or functions create confusion for customers and undermine relationship-building efforts (Day 2006, Rust et al. 2010). The lack of external alignment makes it difficult to sense changes affecting a particular customer group, which can reduce the speed of response

to emerging trends. Managers in charge of product divisions serving multiple customer groups primarily focus on the customer group that is most important for their division's current sales, which could lead to missed opportunities to satisfy other customer groups. In summary, firms with a customer-centric structure develop richer depositories of customer knowledge and ensure greater commitment to each customer group throughout the firm's hierarchy.

These outcomes lead to improved customer satisfaction (Lee et al. 2012, Yim et al. 2004).

HYPOTHESIS 1 (H1). *A customer-centric structure increases customer satisfaction more than internally aligned structures.*

3.2. Moderating Effects of the Competitive Environment

The environments in which firms choose to compete may have significant implications for the extent to which expected customer satisfaction benefits actually materialize. Shah et al. (2006, p. 122) argue that “the relevance, importance, and associated benefits of customer centricity may vary across different industries.” A customer-centric structure organizes internal units to foster greater knowledge of and commitment to customer groups; translating these strengths into superior customer satisfaction is subject to processes external to the firm. For customer-centric firms, a rich depository of customer knowledge and ability to uncover unmet needs is of little value in environments in which *unmet customer needs are scarce or of relatively little importance*. Therefore, we consider the moderating effects of (1) the adoption of customer-centric structures by competitors, which undermines the focal customer-centric firm’s unique advantage, (2) competitive intensity that increases the number of focused, competitive firms, leaving fewer unmet customer needs for discovery, (3) industry profitability, which indicates customers’ desire and willingness to pay for centricity benefits in the industry, and (4) firm scope because a firm in a broad set of end markets has more potential customer issues worth addressing.

3.2.1. Competitors’ Customer-Centric Structure.

In industries in which a customer-centric structure has become popular, the customer-specific knowledge and commitment that help firms uncover and quickly address unmet customer needs becomes more common. As more competitors take strong positions for uncovering and responding to customer needs, each firm’s relative advantage diminishes, and they face fewer unique opportunities to improve customer satisfaction. Stated simply, “a firm can be customer centered and still not gain an advantage if the competitors are equally customer centered” (Shah et al. 2006, p. 122).

Instead, if competitors generally employ internally aligned structures, the industry as a whole has few divisions specifically attuned to particular groups’ unique needs, leaving an untapped environment rich with potential opportunities to improve customers’ experience. A firm thus can increase its customer-specific knowledge and responsiveness by adopting a customer-centric structure and gain a relative advantage, but competitors “blunt any advantage” if they

“also reorganiz[e] around customer groups” (Day 2006, p. 42). Thus, we expect the increased satisfaction generated by a customer-centric structure to diminish as the number of competitors with the same structure increases.

3.2.2. Competitive Intensity. Competitive intensity refers to the degree of rivalry among competitors in an industry, as determined by less concentrated market shares, a greater number of product or service alternatives, and increased customer power (Anderson et al. 2004, Porter 1985). In highly competitive, fragmented markets, many small firms carve out narrow niches; the jockeying for a relative position helps make the overall industry more suited to sense and accommodate specific customer needs. In such industries, the large number of highly focused firms likely have addressed customers’ needs already, so firms with a customer-centric structure have fewer opportunities to exploit their greater internal focus on any particular customer group.

Further reducing the advantages gained from a customer-centric structure, even the competitors without customer-centric divisions should become more aggressive as markets become more competitive, which increase their focus on core customers, customer accountability, and responsiveness (Roberts et al. 2005). Consequently, the firms with a customer-centric structure are left with fewer unmet customer needs available to uncover or fulfill. In summary, when competitive intensity is low, firms with a customer-centric structure should benefit from more opportunities to improve customers’ experience, through their knowledge of and commitment to specific customer groups. Thus, we expect the increased customer satisfaction generated by customer-centric structures to diminish as competitive intensity increases.

3.2.3. Industry Profitability. In an industry experiencing considerable financial strain, firms tend to compete with lower price (Porter 1985). At one extreme, there exist struggling low-profit industries such as true commodity markets where customers prefer buying a standardized offering from any provider at the lowest possible price. In such cases, an internally aligned structure focused on economies of scale and controlling costs should suffice, because customers do not have unmet needs they want addressed. If they prefer an efficient exchange, constant communications from customer-centric firms actually could bother customers (Palmatier et al. 2008). Alternatively, highly profitable industries emerge because of customers’ willingness to pay for customization and responsiveness, two features well supported by externally focused, customer-centric divisions. Thus, we expect higher satisfaction levels

to result from customer-centric structures as industry profitability increases.

3.2.4. Firm's Scope. Firms that operate in a larger set of independent market segments have greater opportunities to uncover unmet customer needs, but simultaneously face the risk of spreading managerial attention too thin (Rao et al. 2004, Morgan et al. 2005). In such a case, a customer-centric structure should better enable the firm to stay on top of evolving customer needs and take advantage of the many opportunities available with operations in many end markets. Alternatively, the number of unmet needs covered are limited when firms operate in fewer end markets; yet, paradoxically, these firms should be better able to uncover and respond to an unmet need because their less heterogeneous customer portfolio provides inherent external alignment (Lee et al. 2012). For example, when Intel eliminated its Web hosting business to focus on microprocessor markets, it reduced the diversity of customer problems that it needed to address, thereby reducing customer heterogeneity, concentrating information gathering to fewer market segments, and increasing institutional knowledge (Vance and Weiss 2002). A narrow scope of business helps a firm gather more detailed information about customers and respond to their needs independent of structure (Varadarajan et al. 2001), and thus makes a customer-centric structural solution less beneficial.

In summary, the increased customer-specific knowledge and commitment attained with a customer-centric structure positions a firm to uncover and then quickly address unmet customer needs. This ability becomes less valuable when many competitors also adopt customer-centric structures, when many highly focused competitors leave few unmet customer's needs to address, when few customers strongly desire customization and responsiveness, and when a firm's scope provides few opportunities to uncover unmet needs. Therefore, we offer the following:

HYPOTHESIS 2 (H2A). *The positive effect of a customer-centric structure on customer satisfaction relative to internally aligned structures diminishes as the number of competitors with a customer-centric structure increases (negative interaction).*

HYPOTHESIS 2 (H2B). *The positive effect of a customer-centric structure on customer satisfaction relative to internally aligned structures diminishes as competitive intensity increases (negative interaction).*

HYPOTHESIS 2 (H2C). *The positive effect of a customer-centric structure on customer satisfaction relative to internally aligned structures diminishes as industry profitability decreases (positive interaction).*

HYPOTHESIS 2 (H2D). *The positive effect of a customer-centric structure on customer satisfaction relative to internally aligned structures diminishes as a firm's scope decreases (positive interaction).*

3.3. Linking Customer-Centric Structure to Performance Through Coordinating Cost

Despite its benefits, a customer-centric structure also incurs more costs than an internally aligned structure. A customer-centric structural design prioritizes communication about and knowledge of specific customer groups over clarity in internal and back-end functional operations (Day 2006, Gulati 2007, Lee et al. 2015). We argue that a customer-centric structure will increase a firm's coordinating costs, or the expenses incurred from managing interdependent functional activities across internal units, suppliers, and customers (Ray et al. 2009, Im et al. 2013). First, a customer-centric structure employs more resources in communication and decision-making processes, because complex reporting relationships arise between front-end (customer-facing) and back-end (product-producing) operation centers. In each customer-centric division, managers must foster boundary-spanning skills to ensure that sales calls from the front-end transcend multiple back-end product groups, which often involves additional time and costs to resolve dissonance in complex structures (Day 2006, Galbraith et al. 2002). For example, Intel's change to a customer-centric structure made managers concerned that internal communication could be inefficient as "the rank and file won't know who to report to" (BusinessWeek 2005a). In contrast, an internally aligned structure has simple, unambiguous lines of communication for each function and product group—the front-end is never confused with different back-ends—so internal reporting structures are streamlined. This logic is in line with Gulati's (2009) point that firms should recognize "the potential loss of economies of scale that comes from duplicating functions in each customer-unit instead of locating them all under one umbrella" (p. 65).

Second, a customer-centric structure needs to invest more in selling and delivering products to customers, because front-end employees are responsible for understanding diverse, expansive product bundles and performing more complex selling tasks for their own customer groups. Such integration efforts often require additional front-end staff and costs to train them as the firm attempts to maintain both product and customer expertise in each customer-focused division, which in turn increases the costs associated with coordinating sales (Gulati 2007, Homburg et al. 2000). For example, Hewlett-Packard dismantled a major part of its customer-centric structure to "lower [its] selling costs... [and] commissions for

each deal,” after finding that selling the entire portfolio of products required 15,000 more employees (BusinessWeek 2005b). This additional investment in resources is required throughout customer-centric divisions as customer-specific customization necessitates duplication of resources across each customer-focused division. Conversely, in an internally aligned structure, employees specialize in their function, producing and selling their “own products” to any market. Our argument mirrors (Gulati’s 2009, p. 103) view that organizing the firm’s structure around customer groups can mean “time-consuming and costly adjustments in the interest of customers.” The detrimental effects of increased duplication and complexity in internal reporting structures lead to higher coordinating costs.

HYPOTHESIS 3 (H3). *A customer-centric structure increases coordinating costs more than internally aligned structures.*

3.4. Effects of Customer Satisfaction and Coordinating Costs on Financial Performance

Firms with satisfied customers enjoy higher levels of positive word of mouth, customer loyalty, future revenues, and long-term growth (Evanschitzky et al. 2011, Mittal et al. 2005), as well as lower customer defection, expenses related to customer complaints, and price elasticities (Anderson et al. 2004, Ittner et al. 2009), all of which enhance a firm’s long-term performance. Thus, we propose that customer satisfaction, which captures the beneficial effects of a customer-centric structure, enhances long-term financial performance (positive mediating mechanism). In contrast, coordinating costs lower financial performance directly, by reducing firm profits, and indirectly, by adding complexity and slowing decision making, which undermines future growth opportunities (Galbraith et al. 2002). Overall, higher coordinating costs, a key negative mediating mechanism, undermine long-term financial performance.

HYPOTHESIS 4 (H4). *Customer satisfaction positively affects long-term financial performance.*

HYPOTHESIS 5 (H5). *Coordinating costs negatively affect long-term financial performance.*

4. Methodology

4.1. Data

To test our hypotheses (Figure 1), we assembled a data set from multiple archival sources, including the American Customer Satisfaction Index (ACSI), COMPUSTAT Industrial Annual database, COMPUSTAT Business Segments database, and the annual/quarterly financial reports (Form 10-K, 10-Q). We began with a sample of all *Fortune* 500 firms, to be broad in our scope and diverse in our selection of industries. Beginning in 1998, all U.S. public firms

were required to disclose disaggregated information in Forms 10-K and 10-Q about all operating units, in accordance with their internal structure (Financial Accounting Standards Board 1997). We exploit this information to develop an *objective customer-centric structure measure*. In congruence with the availability of 10-K and 10-Q information, our data spans the 13-year period from 1998 to 2010.

We concatenated the database with data on financial performance and other control variables from the COMPUSTAT Industrial Annual database. Finally, we turned to the ACSI database to collect overall customer satisfaction with a firm’s products and services. To link the name of each ACSI entity (e.g., brands, firms) to company identifiers in financial databases, we followed the “cleaning the ACSI data” approach outlined by Ittner et al. (2009, p. 834).

After merging all three databases, the final sample comprised a panel of 1,241 observations, representing 137 firms over a 13-year period. Annual customer satisfaction scores are only available for about 200 of the *Fortune* 500 firms (Anderson et al. 2004). Because of these data restrictions and incomplete company records in COMPUSTAT, we were not able to include the entire *Fortune* 500 in the estimation. However, we conduct several post hoc analyses of all *Fortune* 500 firms to see if our findings are supported in a more generalized setting. In Table 2, we describe the constructs, definitions, measures, and data sources.

4.2. Measures

4.2.1. Long-Term Financial Performance. Consistent with the extant marketing literature (Mittal et al. 2005), we used Tobin’s q to measure long-term financial performance for the following reasons. First, this forward-looking, risk-adjusted measure enabled us to evaluate the effect of structure on firm performance. Tobin’s q captures both the beneficial effects due to improvements in customer satisfaction and the detrimental effects of increases in coordinating cost. Second, Tobin’s q is not vulnerable to the distortion from tax laws or latitude in interpreting regulations (Anderson et al. 2004, Fang et al. 2008). Using the COMPUSTAT Industrial Annual database, we operationalized Tobin’s q with Chung and Pruitt’s (1994) method: $\text{Tobin's } q = (\text{MVE} + \text{PS} + \text{DEBT}) / \text{TA}$, where MVE is the closing prices of shares at the end of the financial year \times number of common shares outstanding; PS refers to the liquidation value of outstanding preferred stock; DEBT indicates (current liabilities – current assets) + (book value of inventories) + (long-term debt); and TA is the book value of total assets.

4.2.2. Customer Satisfaction and Coordinating Costs. We measured *customer satisfaction*, the overall evaluation of a customer’s experience with the

Table 2 Constructs, Definitions, Measurements, and Data Sources

Constructs	Definitions	Measures (references)	Data sources
Long-term financial performance	Overall level of a firm's long-term financial performance	Tobin's q (Chung and Pruitt 1994).	COMPUSTAT Annual Industrial Files
Customer satisfaction	Overall evaluation of a customer's experience with firms' products or services	American Customer Satisfaction Index score (Ittner et al. 2009, Mittal et al. 2005).	National Quality Research Center at the University of Michigan
Coordinating costs	Expenses incurred from managing interdependent functional activities across internal units, suppliers, and customers	Subtracting expenses for advertising, R&D, software, bad debt, and pension and retirement from selling, general, and administrative expenses (billions of dollars) (Im et al. 2013, Shin 2003, Ray et al. 2009).	COMPUSTAT Annual Industrial Files
Customer-centric organizational structure	An organizational design where a firm's highest-level business units are aligned to distinct customer groups	Dummy variable measured as 1 if a firm has a customer-centric structure and 0 if a firm has an internally-aligned structure (Day 2006, Homburg et al. 2000, Shah et al. 2006).	Form 10-Ks and 10-Qs under Statement of Financial Accounting Standards (SFAS) No. 131
Competitors' customer-centric structure	The extent to which competitors within the same industry have adopted a customer-centric structure	The percentage of <i>Fortune</i> 500 firms with a customer-centric structure for each industry, identified by four-digit Standard Industrial Classification (SIC) codes.	Form 10-Ks and 10-Qs under SFAS No. 131, and COMPUSTAT Annual Industrial Files
Competitive intensity	The degree of rivalry among competitors in an industry	Herfindahl's concentration index, or the sum of squared shares of firms in the industry at the four-digit SIC level. We subtracted the concentration ratio from 1 to measure competitiveness because we are interested in competition rather than concentration (McAlister et al. 2007).	COMPUSTAT Annual Industrial Files
Industry profitability	The extent to which the industry is profitable	The average return on assets of publicly traded firms operating in the same four-digit SIC industry (Bowen and Wiersema 2005).	COMPUSTAT Annual Industrial Files
Firm scope	The extent to which the firm operates in a larger set of independent market segments	The number of distinct four-digit Business Segment SIC in which the firm operates (Rao et al. 2004).	COMPUSTAT Business Segments
Firm size	Size of the firm	Natural log of the total assets in the firm.	COMPUSTAT Annual Industrial Files
Service ratio	Firm's share of sales revenue generated by services versus products	The percentage of sales revenues in all service business segments compared with the total sales revenue of each firm in a given year (Fang et al. 2008).	COMPUSTAT Annual Industrial Files, and COMPUSTAT Business Segments
Restructuring charges	One-time costs attributed to restructuring events	The aggregate restructuring charges in years t and $t-1$ scaled by the firm's year t market capitalization (Doyle et al. 2007).	COMPUSTAT Annual Industrial Files
Industry growth	Rate of sales growth within an industry	We regress industry sales (four-digit SIC) over time, using a three-year window. Then, we normalize the industry's growth coefficient by the average industry sales for those years (Fang et al. 2008).	COMPUSTAT Annual Industrial Files
Regulated industry	Industry which is significantly regulated by the state or federal government	Dummy variable measured as 1 if a firm's primary SIC begins with 4 (transportation, communication, and utilities), 6 (financial), and 9 (public administration); otherwise 0 (Servaes 1994).	COMPUSTAT Annual Industrial Files

firm's products or services, using the ACSI score (Ittner et al. 2009, Mittal et al. 2005). Consistent with prior studies employing *coordinating costs* to capture the expenses incurred from managing interdependent functional activities across internal units, suppliers, and customers, we operationalized coordinating costs with reported selling, general, and administrative (SG&A) expenses, which capture nonproduction overhead expenses due to customer-supporting activities, business inefficiencies, or other administrative labor costs (Im et al. 2013, Shin 2003, Ray et al. 2009).

The coordinating cost measure is not as prevalent in the marketing literature as customer satisfaction. Thus we adopt the measure from management and operations research, which also endorses that "SG&A is an appropriate surrogate for coordination costs" (Im et al. 2013, p. 7). SG&A has been the basis for secondary research on coordinating costs since Strassmann (1999) experimented with several metrics available from public sources and found it to be the best metric of information and process management of functional activities. The main advantages of SG&A

as a measure of coordinating costs are its objectivity and availability for all the publically traded firms in the United States across various industries and time periods. This availability allow researchers to study the relationship of coordinating costs to other key constructs while parsing out variance due to industry practices, firm-specific factors, and temporal shocks. Yet, a disadvantage of using SG&A as a proxy for coordinating costs is that reported values of SG&A include expense items that do not fit with the definition of coordinating costs. To overcome this weakness, we subtracted the irrelevant items (i.e., R&D, advertising, software, bad debt, and pension and retirement expenses) from SG&A. To better explain this decision, we show the itemized expenses of SG&A provided by the User's Guide for COMPUSTAT and their relation with coordination costs in Web Appendix A (available as supplemental material at <http://dx.doi.org/10.1287/mksc.2014.0878>). We also conduct robustness checks with alternate measures.

4.2.3. Customer-Centric Structure. At the corporate level, customer-centric structure manifests as an organizational design where a firm's highest-level business units are aligned to distinct customer groups. Accordingly, we adopted a dummy variable operationalization, coded as 1 if a firm exhibited a customer-centric structure and 0 if it has an internally aligned structure (Day 2006, Homburg et al. 2000, Shah et al. 2006). We used unit operating segment information from Forms 10-K and 10-Q, which offered two advantages. First, according to the Statement of Financial Accounting Standards (SFAS) No. 131, these forms provide information about a firm's structure: "the segments are evident from the structure of the enterprise's internal organization" (Financial Accounting Standards Board 1997, p. 6), and the segment information is "regularly reviewed by the enterprise's chief operating decision maker, so it reflects the internal structure in place at that time" (p. 7). Second, legally required reports of structure are transparent and less subject to "management's latitude" (Ettredge et al. 2005, p. 776).

Two researchers who are experts in organizational design independently reviewed each firm's 10-K and 10-Q information. They classified the structure as either customer centric or other (i.e., internally aligned structure). An example of a statement indicating a *customer-centric structure* is "During 2007, we realigned our reportable operating segments to reflect the reorganization of our businesses into two customer-focused groups—the Global Consumer Group and the Global Business-to-Business Group" (American Express Company 2007, p. 1). An example of a statement indicating an *internally aligned structure* is "Our segments are strategic business units

that offer different products and services over various technology platforms and are managed accordingly. We have four reportable segments: (1) wireless, (2) wireline, (3) advertising & publishing and (4) other." (AT&T Inc. 2008, p. 10). As discussed in our background discussion of customer-centric organizational structures, it is not unusual to find various structures at lower layers of the organization, but we focus on top-level structure because it is observable and assumed to be impactful. Our level of analysis empirically tests the assumption that a customer-centric structure at the firm's highest level translates to higher customer satisfaction and performance despite structural design at lower levels of the organization.

Single business unit companies were classified as internally aligned as per established practice in organizational design, to reflect the tendency for responsibilities organized by functional specialty within a given unit (Hoskisson et al. 1993). To limit discrepancies in cases where descriptions of divisions were not obviously customer centric, conservative coding criteria were adopted. The coding criteria required each division in a customer-centric structure to serve a distinct part of the market; firms were coded as not having a customer-centric structure if descriptions of divisions indicated that multiple divisions might serve the same customer. Overall, disagreement between the two researchers occurred less than 7% of the time, which was resolved with discussion. We provide a description of the coding procedure in Web Appendix B.

We excluded firms from the analysis if they had a pure geographical structure because what "matters" in a geographical structure is the structural form within the geography. Specifically, (Egelhoff 1988, p. 3) characterizes a geographical structure as: "Each [geographic] headquarter is responsible for all of the company's products and business within its geographical area...[so] this structure tends to coordinate around, and optimize, performance within a geographical area." That is, a geographical structure is determined under the top level and can be either internally or externally focused. Less than 10% (e.g., 6.4% in 1998, 9.3% in 2010) of the *Fortune* 500 consisted of firms with a pure geographic structure; we dropped them from the analysis.

In some cases, firms have a geographic hybrid structure, creating for example, product-geography or customer-geography hybrid structures. With our focus on customer-centric versus internally aligned structures, we classified product-geography hybrids as internally aligned structures and customer-geography hybrids as customer-centric structures if sales from geographical units accounted for less

than 50% of the firm’s total sales. Sensitivity analysis revealed that the results were similar when we excluded all hybrid structures from the sample.

4.2.4. Competitive Environment. We define *competitors’ customer-centric structure* as the extent to which competitors within the same industry have adopted a customer-centric structure. For each industry, identified by four-digit standard industrial classification (SIC) codes, we calculated the percentage of *Fortune* 500 firms with a customer-centric structure. Over our study period, competitors’ customer-centric structure increased by 41.3% among the *Fortune* 500. *Competitive intensity* was measured with Herfindahl’s concentration index, or the sum of squared shares of firms in the industry at the four-digit SIC level (McAlister et al. 2007). Key attributes of competitive industries are (1) the presence of many small and medium-sized firms and (2) the absence of market leaders with the power to shape industry events (i.e., low concentration ratio), so we subtracted the firm concentration ratio from 1 to measure competitiveness. The average competitive intensity score decreased by 5.1% for the *Fortune* 500 over the sample period. *Industry profitability* was measured as the average return on assets in the four-digit SIC primary industry of the firm (Bowen and Wiersema 2005). Average industry profitability increased by 9.1% for the *Fortune* 500 over the sample period. *Firm scope* was operationalized as the number of distinct four-digit business segment SIC in which the firm operates (Rao et al. 2004). The average competitive intensity score decreased by 1.4% for the *Fortune* 500 over the sample period.

4.2.5. Control Variables. We considered nine control variables capturing a comprehensive set of time-varying firm and industry characteristics that could potentially affect all three outcomes (i.e., customer satisfaction, coordinating cost, and financial performance).² We include the main effects of the four moderators on all outcomes. More specifically, we controlled for *firm size*, measured as the natural log of the total assets in the firm, because larger firms tend to have higher coordinating costs but also tend to be more profitable. We also used *service ratio*, measured as the percentage of a firm’s sales from service segments (Fang et al. 2008), because firms selling services may gain more value from being customer centric because of the added complexity of selling services. To isolate any one-time, immediate changes in all outcomes because of a firm’s restructuring, we controlled for *restructuring charges*, using the aggregate restructuring charges in years during and before

switching, scaled by the firm’s year t market capitalization (Doyle et al. 2007). To identify restructuring charges, we used nonzero values of the COMPUS-TAT data items: restructuring costs pretax, restructuring costs after-tax, restructuring costs basic EPS effect, or restructuring costs diluted EPS effect. To account for industry trends, we controlled for *industry growth*. To measure it, we regressed industry sales (four-digit SIC) over time (three-year window) to obtain the industry’s growth coefficient, and we normalized this coefficient by industry size (Fang et al. 2008). As industry regulation may affect a firm’s policy choices, we controlled for *regulated industry* using a dummy variable: 1 if a firm’s primary SIC begins with 4 (transportation, communication, and utilities), 6 (financial), and 9 (public administration), otherwise 0 (Servaes 1994). We provide descriptive statistics and correlations in Web Appendix C.

4.3. Model Specification

To test H1–H5, we employed a specification that disentangles the positive and negative mediating mechanisms driving the effects of customer-centric structure on financial performance. We estimated the following equations for firm i in time period t :

$$\begin{aligned}
 CSAT_{it} = & \alpha_{10i} + \alpha_{11}CCS_{it} + \alpha_{12}CCS_{it} \times CMPCCS_{it} \\
 & + \alpha_{13}CCS_{it} \times CMPINT_{it} + \alpha_{14}CCS_{it} \\
 & \times INDPRF_{it} + \alpha_{15}CCS_{it} \times SCOPE_{it} \\
 & + \alpha_{16}\mathbf{Z}_{it} + \varepsilon_{it}^1, \tag{1}
 \end{aligned}$$

$$COST_{it} = \alpha_{20i} + \alpha_{21}CCS_{it} + \alpha_{22}\mathbf{Z}_{it} + \varepsilon_{it}^2, \tag{2}$$

$$\begin{aligned}
 PERF_{it} = & \beta_{0i} + \beta_1CSAT_{it} + \beta_2COST_{it} + \beta_3CCS_{it} \\
 & + \beta_4\mathbf{Z}_{it} + \varepsilon_{it}^3, \tag{3}
 \end{aligned}$$

where $CSAT$ is customer satisfaction; $COST$ denotes coordinating costs; $PERF$ is long-term financial performance; CCS is customer-centric structure dummy; $CMPCCS$ is competitors’ customer-centric structure; $CMPINT$ is competitive intensity; $INDPRF$ is industry profitability; and $SCOPE$ is a firm’s scope. A vector \mathbf{Z} comprises nine control variables: competitors’ customer-centric structure, competitive intensity, industry profitability, firm scope, firm size, service ratio, restructuring charges, industry growth, and regulated industry.

In Equation (1) (i.e., the positive mediating path), customer satisfaction is the dependent variable, α_{11} captures the main effect of customer-centric structure on customer satisfaction, α_{12} , α_{13} , α_{14} , and α_{15} represent the moderating effects of competitors’ customer-centric structure, competitive intensity, industry profitability, and the scope of a firm, respectively, on the effect of customer-centric structure on customer

² We thank the review team for recommending a comprehensive set of control variables.

satisfaction. Also, α_{16} is the parameter vector corresponding to the nine control variables in \mathbf{Z} . We specify a random intercept term denoted by α_{10i} , to capture unobserved heterogeneity in customer satisfaction due to firm-specific idiosyncratic reasons over and beyond the hypothesized variables and nine control variables. We mean centered moderators to aid in interpretation (Spiller et al. 2013).

In Equation (2) (i.e., the negative mediating path), coordinating costs is the dependent variable, and α_{21} captures the main effects of customer-centric structure on coordinating costs. Similar to Equation (1), we include the nine control variables in \mathbf{Z} , whose effects are captured by the parameter vector α_{22} , and specify a random intercept term denoted by α_{20i} , to capture unobserved heterogeneity in coordinating cost. In Equation (3), the parameters are the performance effects of customer satisfaction (β_1), coordinating costs (β_2), and customer-centric structure (β_3). We included a direct effect of customer-centric structure on performance, for model completeness (i.e., to capture the effect of customer-centric structure on performance, beyond the variation explained by mediation paths). Also, the parameter vector β_4 captures the effects of the nine control variables in \mathbf{Z} and the random intercept term β_{0i} captures unobserved heterogeneity in firm performance over and beyond the hypothesized variables and nine control variables.

The error terms in Equations (1), (2), and (3) (ε_{it}^1 , ε_{it}^2 , and ε_{it}^3) are normally distributed with zero means and constant variances (σ_1^2 , σ_2^2 , and σ_3^2 , respectively), but possibly correlated since myriad industry and economic conditions could potentially affect all outcomes. Hence, we specify and estimate a full variance-covariance matrix (nine terms), thereby allowing for correlation across the three equations. Further, managers could set their structure strategically, in anticipation of actual performance or other unobserved factors, the covariate β_3 may be correlated with the error term in Equation (3) (i.e., endogenous to performance). We used a latent instrumental variable approach to correct for possible endogeneity (Ebbes et al. 2005, Zhang et al. 2009). That is, we used a binary, unobserved instrument to separate an observed endogenous predictor into correlated versus uncorrelated components, with the error term in the Equation (3) estimation. Accordingly, we augment the model specification for Equation (3) as follows:

$$PERF_{it} = \beta_0 + \beta_1 CSAT_{it} + \beta_2 COST_{it} + \beta_3 CCS_{it}^{IV} + \beta_4 \mathbf{Z}_{2it} + \varepsilon_{it}^3, \quad (4a)$$

$$CCS_{it} = CCS_{it}^{IV} + \varepsilon_{it}^{CCS} = \lambda_{10} + \lambda_{11} w_{1it} + \varepsilon_{it}^{CCS}. \quad (4b)$$

The slope coefficients in Equation (4a) are as defined previously, but instead of the actual values of a customer-centric structure, we used the

instrumented values, CCS_{it}^{IV} . The instrumented value CCS_{it}^{IV} specified in Equation (4b) is a function of an unobserved LIV, w_{1it} , which follows a Bernoulli distribution $w_{1it} \sim B(\pi^{w_1})$, where $\pi^{w_1} = P(w_{1it} = 1)$ is the instrument probability. Therefore, the observed covariate consists of one part (w_{1it}) that is uncorrelated with the error ε_{it}^3 in the performance and one part (ε_{it}^{CCS}) that is correlated with the error ε_{it}^3 . The influence of the LIV on the observed customer-centric structure can be captured by λ_{11} , whereas λ_{10} is an intercept. By construction, w_{1it} is uncorrelated with the error term in Equation (4a) to ensure consistency.

We estimated all equations simultaneously using Markov chain Monte Carlo recursively sampling from the full conditional distributions of the model. We assumed noninformative priors, normal distributions for the slope coefficients, and inverse gamma distributions for the variance coefficients. The burn-in periods contained 55,000 draws from the full conditional posterior distributions, and estimates were stable to the choice of the burn-in period.

5. Estimation Results

5.1. Test of Hypotheses

We present the results of the estimation in Table 3, panels A–C. Panel A shows the results of Equation (1), and panels B and C show the results of Equations (2) and (3), respectively. In each panel, we confirm the stability of the estimates, by estimating and reporting the model results in nested fashion. We report the model with controls only (model 1 in Table 3), model with controls and main effects (model 2 in Table 3), and model with controls, main effects, and moderating variables (model 3 in Table 3). For hypothesis testing, we use the third and final model.

We find that customer-centric structure had a positive but insignificant effect on customer satisfaction (posterior mean $\alpha_{11} = 0.304$, not significant). However, the positive effect of customer-centric structure on customer satisfaction was moderated negatively by both competitors' customer-centric structure ($\alpha_{12} = -0.944$, zero not in the 95% credible interval [CI]) and competitive intensity ($\alpha_{13} = -0.629$, zero not in the 90% CI), in support of H2A and H2B. The positive effect of customer-centric structure on customer satisfaction also was moderated positively by industry profitability ($\alpha_{14} = 1.195$, zero not in the 90% CI), in support of H2C. Yet, we do not find support for H2D because firm scope does not significantly moderate the positive effect of customer-centric structure on customer satisfaction ($\alpha_{15} = 0.059$, not significant).

As predicted in H3, a customer-centric structure increased the coordinating costs ($\alpha_{21} = 2.691$, zero not in the 95% CI). Also, in support of H4, customer satisfaction enhanced performance (posterior mean

Table 3 Estimation Results: Effect of Customer-Centric Structure on Long-Term Financial Performance Mediated by Customer Satisfaction and Coordinating Costs

	Hypothesis	Model 1 Controls only		Model 2 Control and main effects		Model 3 Control, main, and interactions	
		Estimate		Estimate		Estimate	
		Mean	SD	Mean	SD	Mean	SD
A. Effect of customer-centric structure on customer satisfaction		(DV: Satisfaction)		(DV: Satisfaction)		(DV: Satisfaction)	
Intercept		79.576**	1.381	82.127	4.374	70.622	4.602
Main effect							
<i>Customer-centric organizational structure</i>	H1 (+)			1.337**	0.495	0.304	0.739
Moderating effects							
<i>Customer-centric structure</i> × <i>Competitors' customer-centric structure</i>	H2A (–)					–0.944**	0.402
<i>Customer-centric structure</i> × <i>Competitive intensity</i>	H2B (–)					–0.629*	0.365
<i>Customer-centric structure</i> × <i>Industry profitability</i>	H2C (+)					1.195*	0.682
<i>Customer-centric structure</i> × <i>Firm scope</i>	H2D (+)					0.059	0.097
Control variables							
<i>Competitors' customer-centric structure</i>		0.000	0.063	0.035	0.064	–0.008	0.059
<i>Competitive intensity</i>		–4.244**	1.180	–3.701	1.029	–4.643**	1.043
<i>Industry profitability</i>		–0.044	2.399	1.171	2.338	1.766	2.286
<i>Firm scope</i>		–0.113	0.122	–0.075	0.116	–0.191	0.135
<i>Firm size</i>		–0.117*	0.074	–0.369	0.347	0.746**	0.442
<i>Service ratio</i>		–2.641**	0.776	–2.855**	1.575	–1.642**	0.640
<i>Restructuring charges</i>		–0.156	0.177	–0.152	0.176	–0.053	0.188
<i>Industry growth</i>		–2.684**	0.679	–2.697**	0.702	–2.294**	0.660
<i>Regulated industry</i>		–2.574**	0.583	–3.018**	0.591	–2.772**	0.690
B. Effect of customer-centric structure on coordinating costs		(DV: Costs)		(DV: Costs)		(DV: Costs)	
Intercept		5.564**	1.710	–2.718	13.874	16.885**	9.421
Main effect							
<i>Customer-centric organizational structure</i>	H3 (+)			1.501**	0.826	2.691**	0.599
Control variables							
<i>Competitors' customer-centric structure</i>		0.011	0.027	0.004	0.035	–0.005	0.031
<i>Competitive intensity</i>		–0.881**	0.291	–3.287**	1.264	–3.085**	0.791
<i>Industry profitability</i>		–0.164	0.406	3.944	3.942	0.262	1.208
<i>Firm scope</i>		–0.441**	0.053	–0.437**	0.180	–0.451**	0.139
<i>Firm size</i>		–0.065	0.159	0.741	1.400	–1.126**	0.891
<i>Service ratio</i>		–1.983**	0.107	–1.276	1.050	–4.344**	1.269
<i>Restructuring charges</i>		–0.021	0.081	0.027	0.140	–0.189*	0.127
<i>Industry growth</i>		–0.487**	0.351	–0.469	0.580	–1.207**	0.589
<i>Regulated industry</i>		–1.454**	0.062	–1.622**	0.523	–0.884**	0.348
C. Effects of satisfaction and costs on long-term financial performance		(DV: Performance)		(DV: Performance)		(DV: Performance)	
Intercept		21.484**	5.286	0.155	8.612	–8.552	6.347
Mediating mechanisms							
<i>Customer satisfaction</i>	H4 (+)	3.126**	1.265	3.685**	3.279	6.367**	2.488
<i>Coordinating costs</i>	H5 (–)	–7.573**	0.399	–2.548**	2.409	–2.122**	0.596
Main effect							
<i>Customer-centric organizational structure</i>				3.938	3.883	–2.169**	0.797
Control variables							
<i>Competitors' customer-centric structure</i>		0.071	0.207	0.048	0.140	–0.037	0.074
<i>Competitive intensity</i>		–4.295*	2.594	–3.229	3.942	–2.182	2.867
<i>Industry profitability</i>		0.633	2.872	2.944	1.682	1.121	2.269
<i>Firm scope</i>		–3.345**	0.551	–0.713**	0.626	–0.896**	0.608
<i>Firm size</i>		–0.712	1.142	–1.590	1.529	–2.732**	1.574
<i>Service ratio</i>		–13.900**	0.607	–3.900	3.954	–7.189**	0.363
<i>Restructuring charges</i>		–0.237	0.602	–0.230	0.297	–0.483*	0.279
<i>Industry growth</i>		–2.468	2.336	–0.808	1.516	–0.585	1.109
<i>Regulated industry</i>		10.230**	1.163	–2.266**	1.894	–0.178	0.602

Notes. We tabulated posterior means and standard deviations of the parameters. All coefficients in panels A, B, and C were estimated simultaneously using a Bayesian mediation analysis.

*The 90% credible interval does not contain zero (two-sided); **the 95% credible interval does not contain zero (two-sided).

$\beta_1 = 6.367$, zero not in the 95% CI). Finally, coordinating costs significantly decreased performance ($\beta_2 = -2.122$, zero not in the 95% CI) in support of H5.

Following Zhang et al. (2009), we conducted a Bayesian mediation analysis to determine if the effect of customer-centric structure on performance was mediated by satisfaction and coordinating costs. We found that the mediating process through customer satisfaction depends on the value of moderators. At the mean levels of moderators, the indirect effect of customer-centric structure on performance through customer satisfaction was positive but not significant (posterior mean = 0.444, not significant). The indirect effect of customer-centric structure on performance through coordinating costs was negative and significant (posterior mean = -5.388 , zero not in the 95% CI). Thus, coordinating costs mediated the effect of customer-centric structure on performance, but the mediated path through customer satisfaction is contingent on the competitive environment.

5.2. Sensitivity Analyses

5.2.1. Alternative Operationalization of Customer-Centric Structure. To enhance confidence in our findings, we tested our results with an alternative measure of a customer-centric structure. We performed an analysis on 111 firms with pure organizational structures (i.e., excluding firms with product-geography or customer-geography hybrid structures). As model 1 in Table 4 shows, the results were substantively similar to those obtained from the main model.

5.2.2. Alternative Operationalization of Coordinating Costs. We examined two alternative measures of coordinating costs. SG&A is the preferred basis for secondary metrics capturing coordinating costs (Ray et al. 2009), but not every expense reported under SG&A fit with the definition of coordinating costs. To construct our original measure of coordinating costs, we subtracted the irrelevant items (i.e., R&D, advertising, software, bad debt, and pension and retirement expenses) from the overall value reported for SG&A. As our first alternative, we used an adjusted SG&A without advertising expenses to exclude all costs for the use of media and advertising agency services but retain R&D costs. Second, we used an adjusted SG&A that subtracted only R&D expenses, but included advertising costs. These sensitivity tests, as represented by models 2 and 3 in Table 4, revealed robust results with respect to the alternative measures of coordinating costs. Also, for model free evidence, we compared coordinating costs as a percentage of sales between firms with internally aligned structures and customer-centric structures; always finding at least a 29% higher value for customer-centric structures regardless of our construction of coordinating costs from SG&A.

5.2.3. Additional Alternative Model Specifications. To examine the sensitivity of our results to the potential bias that could result from the direct effect of the customer-centric structure in the performance equation (Equation 3), we tested the model without the direct path. As model 4 in Table 4 shows, the findings were consistent. Also, we confirmed that the inclusion of lagged performance in the performance equation (model 5 in Table 4), which captured dynamics in performance, does not change the substantive results. Finally, it is possible that firms could obtain differential rewards to customer-centric structures, either because they receive different positive performance effects of customer satisfaction (β_1), receive different negative performance effects of coordinating costs (β_2), or because the main and moderation effects of customer-centric structure on the positive customer satisfaction pathway ($\alpha_{11} - \alpha_{15}$) or the negative coordinating cost pathway (α_{21}) differ across firms. To account for these various differential effects, we allow for unobserved heterogeneity in the slope coefficients (in addition to the intercept) and verify that our results are similar. Specifically, to be systematic, we estimated eight additional models over and above the base model (model 3 in Table 3) where we specified one of the eight hypothesized coefficients (pertaining to H1, H2A, H2B, H2C, H2D, H3, H4, and H5, respectively) to have a random slope structure, and tested the hypotheses with the resultant estimated. The results across all eight models (not reported here because of brevity but available from the authors upon request) indicate that substantive insights pertaining to the hypotheses remain unchanged.

6. Discussion

Conventional wisdom implies that firms with a customer-centric structure outperform their competitors. Presumably acting on this belief, the proportion of *Fortune* 500 firms with a customer-centric structure has increased by nearly 50% in the past decade. Yet many firms have failed to achieve the expected performance improvements, begging the question, when does customer-centric structures exhibit superior performance over internally aligned structures?

We have proposed and tested a model of the effects of customer-centric structure on long-term financial performance, with a focus on understanding how and when a firm's customer-centric structure affects firm performance. Our finding shows that a customer-centric structure enhances performance by increasing customer satisfaction but degrades performance by adding to coordinating costs. We verify that customer-centric structures can provide external benefits as is often claimed by executives initiating reorganization. Thus, attaching the "customer-centric" label

Table 4 Sensitivity Analysis: Alternative Measures and Model Specifications

	Hypothesis	Model 1 Alternative IV: only pure structures (no hybrid)		Model 2 Alternative coordinating costs: SG&A-advertising		Model 3 Alternative coordinating costs: SG&A-R&D		Model 4 Alternative model: no direct effect of CCS on performance		Model 5 Alternative model: lag of financial performance	
		Estimate Mean	SD	Estimate Mean	SD	Estimate Mean	SD	Estimate Mean	SD	Estimate Mean	SD
A. Effect of customer-centric structure on customer satisfaction											
Intercept		73.029	3.044	71.616**	3.230	72.667**	3.533	76.546**	1.945	73.811**	1.830
Main effect	H1 (+)	1.712**	0.651	0.570	0.643	0.635	0.621	1.811**	0.524	1.323**	0.502
Moderating effects											
<i>Customer-centric structure × Competitors'</i>											
<i>customer-centric structure</i>	H2A (-)	-0.707	0.443	-0.941**	0.411	-0.905**	0.419	-0.628	0.440	-0.828*	0.448
<i>Customer-centric structure × Competitive intensity</i>	H2B (-)	-0.841*	0.452	-0.638*	0.373	-0.635*	0.378	-0.946**	0.468	-0.712	0.460
<i>Customer-centric structure × Industry profitability</i>	H2C (+)	1.373*	0.703	1.225*	0.689	1.204*	0.694	1.363*	0.715	1.334*	0.698
<i>Customer-centric structure × Firm scope</i>	H2D (+)	-0.651	0.603	0.045	0.124	0.054	0.124	-0.783**	0.309	-0.013	0.135
Control variables											
<i>Competitors' customer-centric structure</i>		0.011	0.079	0.036	0.062	-0.020	0.058	-0.006	0.060	0.005	0.056
<i>Competitive intensity</i>		-3.898**	1.340	-3.986**	0.993	-4.461**	1.109	-3.825**	1.177	-3.768**	1.207
<i>Industry profitability</i>		0.621	2.537	1.397	2.285	1.434	2.275	0.828	2.401	1.204	2.344
<i>Firm scope</i>		-0.187	0.148	-0.202	0.138	-0.165	0.116	-0.066	0.125	-0.113	0.115
<i>Firm size</i>		0.440**	0.207	0.653**	0.302	0.557**	0.327	0.120	0.171	0.414**	0.149
<i>Service ratio</i>		-1.518	1.014	-1.647**	0.559	-1.877**	0.726	-1.455*	0.870	-1.624*	0.875
<i>Restructuring charges</i>		-0.174	0.207	-0.095	0.175	-0.072	0.181	-0.109	0.172	-0.098	0.174
<i>Industry growth</i>		-2.626**	0.783	-2.433**	0.708	-2.380**	0.726	-2.481**	0.704	-2.465**	0.701
<i>Regulated industry</i>		-2.887**	0.711	-2.993**	0.681	-3.027**	0.536	-3.059**	0.691	-2.970**	0.662
B. Effect of customer-centric structure on coordinating costs											
Intercept		-3.506	10.002	18.915**	11.808	18.144**	11.146	-15.940**	1.056	-5.135	9.901
Main effect	H3 (+)	2.155**	0.540	3.310**	0.536	3.180**	0.660	0.782**	0.343	0.907**	0.299
Control variables											
<i>Competitors' customer-centric structure</i>		0.002	0.023	0.001	0.031	0.000	0.034	0.001	0.026	0.001	0.029
<i>Competitive intensity</i>		-3.444**	1.421	-2.616**	0.763	-3.620**	1.497	-4.172**	0.808	-3.737**	0.839
<i>Industry profitability</i>		2.093	2.619	-0.452	1.465	-0.508	1.126	7.310**	1.992	3.872	3.462
<i>Firm scope</i>		-0.425**	0.167	-0.419**	0.097	-0.319**	0.083	-0.600**	0.088	-0.532**	0.087
<i>Firm size</i>		0.850	1.039	-1.237**	1.081	-1.182**	1.056	2.078**	0.080	1.011**	0.962
<i>Service ratio</i>		-1.865**	0.452	-4.307**	1.742	-3.965**	1.351	-0.540	0.543	-1.474	1.153
<i>Restructuring charges</i>		0.111	0.146	-0.065	0.167	-0.245	0.189	0.123	0.121	0.019	0.155
<i>Industry growth</i>		-0.876*	0.433	-1.026	0.905	-1.170	0.826	-0.065	0.504	-0.352	0.555
<i>Regulated industry</i>		-0.975**	0.360	-1.899**	0.774	-2.098**	0.511	-1.706**	0.447	-1.561**	0.375

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Table 4 (Continued)

	Hypothesis	Model 1 Alternative IV: only pure structures (no hybrid)		Model 2 Alternative coordinating costs: SG&A-advertising		Model 3 Alternative coordinating costs: SG&A-R&D		Model 4 Alternative model: no direct effect of CCS on performance		Model 5 Alternative model: lag of financial performance					
		Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD	Estimate	SD				
C. Effects of satisfaction and costs on long-term financial performance															
Intercept		8.867	11.808	(DV: Performance)	-1.826	7.638	(DV: Performance)	-1.398	7.203	(DV: Performance)	4.120**	0.639	(DV: Performance)	-25.208**	12.989
Mediating mechanisms															
Customer satisfaction	H4 (+)	1.573**	0.871	5.704**	2.783	5.934**	2.874	0.020	0.077	4.584**	0.748				
Coordinating costs	H5 (-)	-2.448	2.438	-2.184**	0.717	-2.434**	0.750	-0.042**	0.022	-1.383**	1.100				
Main effect															
Customer-centric organizational structure		1.017	1.307	-1.476	1.319	-1.227	0.976			0.785	1.114				
Control variables															
Competitors' customer-centric structure		0.006	0.067	-0.012	0.075	-0.013	0.083	-0.012	0.027	-0.005	0.065				
Competitive intensity		-3.993	5.006	-1.993	2.050	-3.970**	1.351	0.610**	0.272	-1.811	3.560				
Industry profitability		1.559	1.957	0.140	2.991	-0.429	2.486	2.793**	0.728	2.942	2.492				
Firm scope		-0.660	0.687	-0.823**	0.517	-0.718**	0.440	-0.036	0.028	-0.643*	0.548				
Firm size		-0.745**	0.493	-2.692**	1.717	-2.777**	1.914	-0.213**	0.041	-0.176	0.149				
Service ratio		-4.314	4.383	-7.017**	0.458	-7.399**	0.419	-0.065	0.144	-2.295	3.473				
Restructuring charges		0.010	0.469	-0.199	0.352	-0.631*	0.386	-0.143**	0.035	-0.171	0.247				
Industry growth		-1.642	2.514	-0.060	1.253	-0.768	1.712	0.319**	0.146	0.578	1.252				
Regulated industry		-3.072	3.060	-2.047**	0.640	-3.109**	1.853	-0.367**	0.158	-0.629	1.745				
Lag of financial performance										0.051**	0.008				

Notes. We tabulated posterior means and standard deviations of the parameters. All coefficients in panels A, B, and C were estimated simultaneously using a Bayesian mediation analysis. *The 90% credible interval does not contain zero (two-sided); **the 95% credible interval does not contain zero (two-sided).

to a corporate structure aligned with distinct customer groups appears appropriate. Yet, firms with these externally aligned structures simultaneously incur higher internal costs (complex communication, adding boundary spanners). We offer the empirical demonstration that customer satisfaction and coordinating costs mediate the effects of customer-centric structures on performance. Thus, the net performance effect depends on whether the external benefits generated exceed the internal costs incurred. Neglecting these trade-offs can create misguided managerial expectations about the returns from shifting to a customer-centric structure. This finding is especially interesting in light of recent research that suggests firms simultaneously pursue improvements to both customer satisfaction and efficiency following a corporate merger (Swaminathan et al. 2014). Mergers present an opportunity for corporate level restructuring; however, our findings caution that a customer-centric structure does not always facilitate the simultaneous pursuit of improvements to customer satisfaction and efficiency.

Moreover, the trade-off between positive and negative mediating pathways varies with the firm's environment, because customer satisfaction benefits depend on competitive forces external to the firm. Our results indicate that increased customer-specific knowledge and commitment, as provided by a customer-centric structure, become less valuable when many competitors also adopt customer-centric structures, which reduces the firm's unique advantage; when many, highly focused competitors effectively meet customer needs already (i.e., higher competitive intensity); and when few customers desire greater customization and responsiveness (as indicated by lower industry profitability). Thus, managers should evaluate their competitive environment to understand if shifting to a customer-centric structure is appropriate for them.

6.1. Managerial Takeaways

To provide managerial insight into how the performance impact of a customer-centric structure varies across competitive conditions, we conducted two post hoc analyses. For both analyses, we were able to include the full set of all *Fortune* 500 firms (1998–2010) because we no longer required ACSI data to measure customer satisfaction as a mediator. In our first post hoc analysis, we split the *Fortune* 500 into high (top quartile) and low (bottom quartile) groups for each of the significant moderating variables, and then compared the average long-term financial performance (Tobin's q) of firms with a customer-centric structure versus those with internally aligned structures across these groups. This approach is independent of model specification and generalized to the larger sample.

Firms with a customer-centric structure that had few competitors also adopting a customer-centric structure (bottom 25% of competitors have customer-centric structure) performed 8% better than peer firms with an internally aligned structure. This provides evidence that structuring around customer groups pays off for *Fortune* 500 firms whose competitors do not have customer-centric structures. In contrast, customer-centric firms that had many competitors also adopting a customer-centric structure (top 25%) exhibited 23% lower performance, on average, when they also had a customer-centric versus internally aligned structure. This suggests that greater customer satisfaction fails to materialize from a customer-centric structure in this context, but coordinating costs are still higher.

Firms operating in a less competitive market (bottom 25% of competitive intensity) and structured around customers performed 3% lower than firms not structured around customers. Yet, firms that operated in a competitive market (top 25% of competitive intensity) had 21% lower performance when they organized around customer groups instead of an internal basis. This post hoc finding that aligning a firm's structure around customers is more detrimental for firms that operate in highly competitive markets is consistent with our empirical finding that the benefits of customer-centric structure is suppressed as competitive intensity increases. Firms in a less profitable industry (lowest 25% of industry profitability) and aligned with customers performed 18% lower than firms not aligned with customers. In contrast, firms with a customer-centric structure that operated in industries with high profitability (top 25%) yielded 10% higher performance than their internally aligned peers. Aligning around customers paid off very well for *Fortune* 500 firms that operated in a more profitable industry.

These findings provide managers with some caveats to consider before realigning their structures around customer groups. First, adopting a customer-centric structure enhances firm performance by increasing customer satisfaction, but damages performance by increasing coordinating costs. Second, the net effect appears most positive where customer satisfaction gains are the likeliest: (1) when few competitors adopt customer-centric structures, (2) when competitive intensity is lowest, and (3) when a firm operates in a highly profitable industry.

As a second post hoc analysis, we illustrate a few firms with their peers who have customer-centric structures or not and hence reap the benefit of customer-centric structure. Oshkosh Corporation and Avnet, Inc. both shifted from internally aligned to customer-centric structures, but Oshkosh's organizational change yielded a significant performance

improvement (+46% in Tobin's q), whereas Avnet restructuring decreased firm performance (−29% in Tobin's q). The performance differences may stem from their relative difference in competitors' customer-centric structure: Oshkosh had fewer competitors with customer-centric structures (the percentage of *Fortune* 500 firms with a customer-centric structure was lower by 86% on average). Thus, Oshkosh's restructuring provided incremental centrality benefits that outweighed their costs. Avnet operated in competitive environments where unmet customer needs are not scarce, so its restructuring offered little incremental benefit while adding cost and complexity.

6.2. Limitations and Future Research

This research has limitations that offer opportunities for future research. First, the nature of our sample—*Fortune* 500 firms for which customer satisfaction data were available—limits our results to large, publicly traded, U.S. firms. Our findings appear robust in our additional analyses but should be generalized only with caution to smaller firms. Also, future research should examine cross-country differences in the effects of customer-centric structures.

Second, the use of 10-K and 10-Q statements limited our measure to capture only if the top-level division sells to distinct customer groups. We used strict inter-rater reliability criteria, and performed multiple robustness checks to validate that our results remain unchanged based on variations in the measure's operationalization, but we acknowledge that our approach is only one way of measuring a heretofore understudied and interesting construct. Thus, we encourage replications of our results with survey measures. Future research should further enrich our measure by integrating mid-level and low-level firm organizational structures (e.g., sales teams, marketing organization) with the use of complementary methods. It would be helpful to compare the potential direct influence of top-level structure on customer satisfaction and performance with the potential effects of top-level structure on those outcomes through its influence on dictating lower-level structure. Although our model controlled for firm level unobservable factors, it would be interesting for future research to explicitly identify the impact of processes, culture, metrics, and other important aspects of a fully customer-centric organization, and examine how these organizational design elements interact with customer-centric structures.

Future studies should continue to integrate the organizational structure as a key variable in marketing models and recognize how firms use their structure to achieve various marketing objectives. Given our data confirms the expected, but contingent, link

between top-level customer-centric structure and customer satisfaction, future research could add richness by incorporating a customer-driven perspective when studying the role of organizational structure (Lee et al. 2015). Organizational structure determines how units and employees inside of the firm interact with each other and ultimately with customers who reside outside of the firm, a firm's structural design may leverage various marketing objectives (e.g., innovation, channel relationships, branding, and corporate social responsibility). To aid in the discovery of when a customer-centric structure is appropriate, it is worth uncovering the antecedents of a customer-centric structure among firms currently adopting such a design. Are they acting myopically, copying each other, or reading market signals appropriately? In addition to the variables we propose, other structural design elements may be investigated (e.g., centralization, formalization, team structure) (Hauser et al. 2006). Executives who make restructuring decisions without sufficient evidence to support their choices may suffer unintended consequences that undermine marketing capabilities and performance. For example, acquisition, divestiture, and business unit design decisions often focus on financial portfolio or management issues, rather than on the core marketing concern of satisfying customers.

Supplemental Material

Supplemental material to this paper is available at <http://dx.doi.org/10.1287/mksc.2014.0878>.

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