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# THE BUSINESS PERFORMANCE OUTCOMES OF MARKET ORIENTATION CULTURE AND BEHAVIORS

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15

17 **ABSTRACT**

19 Purpose – *The marketing literature indicates that a firm’s organizational*  
21 *culture plays a critical role in determining its market orientation (MO) and*  
23 *thereby the firm’s ability to successfully adapt to its environment to achieve*  
25 *superior business performance. However, our understanding of the organiza-*  
27 *tional culture of market-oriented firms and its relationship with business per-*  
29 *formance remains limited in a number of important ways. Drawing on the*  
*behavioral theory of the firm and the competing values theory perspective on*  
*organizational culture, our empirical study addresses important knowledge*  
*gaps concerning the relationship between firm MO culture, MO behaviors,*  
*innovation, customer satisfaction, and business performance.*

31 Methodology/approach – *We used a survey methodology with Clan*  
33 *Cultural Orientation, Adhocracy Cultural Orientation, Market Cultural*  
35 *Orientation, and Hierarchy Cultural Orientation Clan. Market Orientation*  
*Behaviors, Innovation, and Customer Satisfaction and CFROA<sub>t</sub> (Net*  
*Operating Income + Depreciation and Amortization – Disposal of*  
*Assets)/Total Assets.*

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1 Findings – *The overall fit of the first Confirmatory Factor Analysis (CFA)*  
2 *containing the three MO behavior sub-scales, the four organizational culture*  
3 *scales, and the innovation and satisfaction performance measures was good*  
4 *with a  $\chi^2=760.89$ , 524 df,  $p<0.001$ ; CFI=0.916 and RMSEA=0.055.*  
5 *The overall fit of the second CFA containing the business strategy, bureau-*  
6 *cracy, and customer expectations control variables was also good with a*  
7  *$\chi^2=243.26$ , 156 df,  $p<0.001$ ; CFI=0.937 and RMSEA=0.061. We also*  
8 *subsequently ran a third CFA in which the MO behavior construct was mod-*  
9 *eled as a second-order factor comprising the three first-order sub-scales (gen-*  
10 *eration of market intelligence, dissemination of market intelligence, and*  
11 *responsiveness to market intelligence) each of which in turn arose from the*  
12 *relevant survey indicants. This measurement model also fit well with the data*  
13 *with a  $\chi^2=84.06$ , 63 df,  $p<0.039$ ; CFI=0.955 and RMSEA=0.047.*  
14 *Regressions using seemingly unrelated regressions (SUR) with control vari-*  
15 *ables and with R<sup>2</sup> values ranging from 0.28 to 0.54.*

16 Practical implications – *MO culture has an important direct effect on firms'*  
17 *financial performance as well as an indirect effect via MO behaviors and*  
18 *innovations. Importantly, our findings suggest that MO culture facilitates*  
19 *value-creating behaviors above and beyond those identified in the marketing*  
20 *literature as MO behaviors. In contrast to a series of studies by Deshpandé*  
21 *and colleagues (1993, 1999, 2000, 2004), our empirical results suggest the*  
22 *value of the internally oriented Clan and to a lesser degree Hierarchy cul-*  
23 *tural orientations as well as the more externally oriented Adhocracy and*  
24 *Market cultural orientations. The benchmark ideal MO culture profile we*  
25 *identify is consistent with organization theory conceptualizations of strong*  
26 *balanced organizational cultures in which each of the four competing values*  
27 *orientations is simultaneously exhibited to a significant degree (e.g.,*  
28 *Cameron & Freeman, 1991). Our findings indicate that the organizational*  
29 *culture domain of MO appears to be at least as important (if not more so)*  
30 *in explaining firm performance and suggest that researchers need to re-visit*  
31 *the conceptualization, and perhaps more importantly the operationalization,*  
32 *of MO as a central construct in strategic marketing thought.*

33 Originality/value – *In building an MO culture, an important first step is to*  
34 *assess the firm's existing organizational culture profile (e.g., Goodman,*  
35 *Zammuto, & Gifford, 2001). Organization theory researchers have developed*  
36 *competing values theory-based organizational culture assessment tools that*  
37 *can provide managers with an easily accessible mechanism for accomplishing*  
38 *this (Cameron & Quinn, 1999). The profile of the firm's existing culture and*  
39 *the profile of the ideal culture for MO from our study can then be plotted on*  
40 *a "spider's web" graphical representation (e.g., Hooijberg & Petrock,*  
41 *1993). This aids the comparison of the firm's existing cultural profile with*  
42 *the ideal MO profile, enabling managers to easily diagnose the areas, direc-*  
43 *tion, and magnitude MO culture profile "gaps" in their firm (Cameron,*

1 1997). Specific gap-closing plans and tactics for gaps on each of the four cul-  
3 tural orientations can then be identified as part of the development of a  
change management program designed to create an MO culture profile (e.g.,  
5 Chang & Wiebe, 1996). Cameron and Quinn's (1999) workbook provides  
managers with an excellent operational resource for planning and undertak-  
7 ing such gap-closing organizational culture change initiatives.

9 **Keywords:** Marketing strategy; market orientation; customer satisfaction;  
marketing survey

## 11 13 INTRODUCTION

15 Strategic marketing explanations of firm performance are centered primarily on  
17 market orientation (MO), concerning a firm's ability to sense and appropriately  
respond to its market environment (e.g., Cano, Carrillat, & Jaramillo, 2004;  
19 Kirca, Jayachandran, & Bearden, 2005; Moorman & Rust, 1999). Within this  
research stream, organizational culture, the system of shared values, beliefs,  
21 and assumptions that provide behavioral norms to help individuals and groups  
function within organizations (e.g., Denison, 1996; Schein, 1990), has been  
23 identified as important in understanding both MO and firm performance (e.g.,  
Deshpandé, Farley, & Webster, 1993; Slater & Narver, 1995). Since organiza-  
25 tional culture affects how managers and employees attend and respond to envi-  
ronmental stimuli, it has been viewed as a key determinant of a firm's ability to  
27 generate and use market knowledge to successfully adapt to its marketplace  
(e.g., Homburg & Pflesser, 2000; Hurley & Hult, 1998). Organizational culture  
29 has also been directly linked with firms' ability to innovate and enjoy superior  
performance (e.g., Slater & Narver, 1995).

31 Despite theoretical contributions in the literature positing that MO either  
has a cultural dimension or can be complemented by an appropriate organiza-  
33 tional culture, and a small number of empirical studies, three important knowl-  
edge gaps remain that are addressed in this study. First, the only firm-level  
35 study of organizational cultures supportive of MO behaviors adopts an organi-  
zational symbolism perspective on organizational culture (Homburg & Pflesser,  
37 2000). While the organizational symbolism perspective provides insights at mul-  
tiple-levels of a narrow range of cultural phenomena, it has been viewed in pre-  
39 vious organizational theory research as having limited value in understanding  
the breadth of organizational culture required by firms that face dynamic and  
41 complex business environments and multiple different stakeholders (e.g.,  
Cameron & Quinn, 1999; Denison & Spreitzer, 1991; Quinn, 1988). In this  
43 study, we adopt the broader competing values theory perspective on organiza-  
tional culture that is more consistent with the behavioral theory of the firm that

1 underpins most marketing strategy research. To this end, we identify an MO  
2 culture profile across all four of the competing values cultural orientations to  
3 provide a more comprehensive picture of the organizational culture that facili-  
4 tates MO behaviors. In doing so, we provide a much stronger theoretical and  
5 empirical rationale for the characteristics of rarity and inimitability posited to  
6 be associated with MO as an organizational resource.

7 Second, while the limited number of empirical studies of organizational cul-  
8 ture and MO drawing on competing values theory have provided insights at the  
9 individual (White, Varadarajan, & Dacin, 2003) and project (Moorman, 1995)  
10 levels, only a narrow range of firm-level behaviors and performance outcomes  
11 have been examined (e.g., Deshpandé & Farley, 2004). Organization theory and  
12 the MO literature suggest that an MO culture will be characterized by different  
13 levels of the four competing values cultural orientations. Since the MO litera-  
14 ture directly addressing organizational culture characteristics is sparse, it is  
15 difficult to specify the precise mix of the four competing values cultural orien-  
16 tations that may best facilitate MO behaviors based solely on the literature.  
17 Following established methodological guidelines in the configuration theory lit-  
18 erature, we therefore adopt an empirical approach to identify an “ideal” MO  
19 culture profile across the four competing values cultural orientations for the  
20 firms in our sample to serve as a benchmark against which to assess the MO  
21 culture of each of the firms in our sample (e.g., Venkatraman & Prescott, 1990;  
22 Vorhies & Morgan, 2003). We, therefore, have little understanding of the  
23 impact of organizational culture on firms’ ability to engage in MO behaviors,  
24 deliver value to their customers, and ultimately to drive financial performance.  
25 In this study, we calibrate how a firm’s MO culture affects its MO behaviors  
26 and also examine how it directly and indirectly impacts customer satisfaction  
27 and the firm’s objective financial performance. In doing so, we provide the first  
28 empirical calibration of the value of a firm’s MO culture, and show that it is  
29 significantly more important in determining financial performance than has pre-  
30 viously been believed. This offers new insights into the theoretically important  
31 relationship between MO and business performance.

32 Third, the role of innovation has emerged as an important area of theoretic-  
33 al development in MO research, and innovation has been identified as a key  
34 moderator of the MO–firm performance relationship (e.g., Han, Kim, &  
35 Srivastava, 1998; Slater & Narver, 1995). However, the literature offers no  
36 empirical insights concerning the impact of MO culture on firms’ innovation.  
37 Our study examines the role of both MO culture and MO behaviors in firms’  
38 innovation and indicates that MO culture has a significant relationship with  
39 firms’ innovation while MO behavior does not. This deepens understanding of  
40 the MO–innovation–financial performance relationship that has been the sub-  
41 ject of much debate between marketing and management scholars (e.g.,  
42 Christensen & Bower, 1996; Slater & Narver, 1998).

43 In addition to addressing important knowledge gaps in the marketing litera-  
44 ture, our study offers valuable new insights for managers. By identifying a

1 comprehensive profile of MO culture we provide managers wishing to enhance  
2 their firm's MO and business performance with a detailed and specific goal for  
3 their organizational improvement efforts. Since we ground our research in com-  
4 peting values theory, our findings also allow managers to use established com-  
5 peting values culture assessment and change tools from the organizational  
6 development literature to aid their improvement efforts (e.g., Cameron &  
7 Quinn, 1999; Goodman, Zammuto, & Gifford, 2001).

8 We begin by first elaborating the theory framework that underlies our study.  
9 Next, we delineate the research design adopted, describe the data set we con-  
10 struct, and explain our analytical approach. We then report and discuss the  
11 results of our analysis and explore their implications for theory and practice.  
12 Finally, we examine the limitations of our study and highlight some areas sug-  
13 gested by our study as having high potential for future research.

## 17 THEORY FRAMEWORK

18 Drawing on the behavioral theory of the firm, the organization theory and mar-  
19 keting literatures view firms as complex social systems with multiple stake-  
20 holders whose survival and success is determined by their ability to learn about  
21 and adapt to their environment (e.g., Cyert & March, 1992; Day, 1994). From  
22 this perspective, managers face two fundamental problems. First, they must sat-  
23 isfy the multiple and often conflicting goals of different groups of internal and  
24 external stakeholders. Second, bounded rational managers must achieve these  
25 multiple different goals by deploying the firm's resources in ways that match  
26 the requirements of increasingly complex and dynamic business environments.  
27 Organization theory indicates that firms develop organizational cultures to help  
28 managers to deal with both of these problems (e.g., Cook & Yanow, 1993;  
29 Weick, 1987).

30 The widely adopted competing values perspective in organization theory  
31 posits that in balancing the requirements of different stakeholders, firms make  
32 explicit and implicit choices in the degree to which their cultures exhibit values  
33 and norms representative of four different cultural orientations: the *Clan* orien-  
34 tation focusing on human relations as seen in an emphasis on internal cohesive-  
35 ness, participation and team-work, the welfare of employees, and loyalty and  
36 commitment in employee-firm connections; the *Adhocracy* orientation empha-  
37 sizing flexibility and entrepreneurship, innovation, change and adaptation to  
38 the environment, and expansion and growth; the *Hierarchy* orientation focus-  
39 ing on stability, continuity and order, formalization, and control; and, the  
40 *Market* orientation emphasizing direction-setting and the accomplishment of  
41 clear goals, an internal task focus, and competitive actions and outcomes (e.g.,  
42 Cameron & Quinn, 1999; Denison & Mishra, 1995; Quinn & Rohrbaugh,  
43 1983).

1     Competing values theorists suggest that “strong balanced” cultures – those  
3     with high levels of each of these four cultural orientations, while difficult to  
5     achieve because of the inherent tensions among the four cultural orientations,  
7     are valuable in enabling managers to deal with conflicting stakeholder demands  
9     (e.g., Cameron & Freeman, 1991; Denison & Spreitzer, 1991). Strong cultures  
11    are viewed in organization theory as an efficient and powerful mechanism for  
13    sending clear and unambiguous signals regarding desirable behaviors to man-  
15    agers and employees (e.g., Sorensen, 2002). Cultures that also exhibit balance  
17    among the four competing values orientations can also help organizations to  
19    deal with the rival demands of multiple stakeholders. For example, strength in  
both the clan and hierarchy cultural orientations helps firms to be responsive to  
employee desires while also ensuring that managers can efficiently and effective-  
ly accomplish the resource deployments required to deliver value to custo-  
mers (e.g., Cameron & Quinn, 1999). Similarly, strength in both the adhocracy  
and market cultural orientations enables managers to balance the long-term  
need to seek new resources and capabilities and explore innovative ways to  
solve customers’ needs against the requirement to efficiently exploit existing  
resources and capabilities to deliver shorter-term value to shareholders (e.g.,  
Denison & Mishra, 1995).

Organization culture is also posited to have an important role in determining  
the effectiveness and efficiency of firms’ resource deployments by affecting how  
managers and employees attend to, perceive, and react to the firm’s environ-  
ment (e.g., Quinn, 1988; Schein, 1996). For example, marketing researchers  
drawing on competing values theory have reported that organizational culture  
conditions managers’ attitudes and responses to the type and quality of infor-  
mation on which decisions are based (e.g., Berthon, Pitt, & Ewing, 2001), and  
the types of behavioral responses to environmental stimuli that are deemed  
appropriate (e.g., White et al., 2003). Organization theory posits that strong  
balanced cultures may also be useful in allowing managers to make better  
resource deployment decisions in complex and dynamic environments for two  
reasons. First, balanced cultures enable firms to avoid proneness to “blind  
spots” in their attention to the environment and allow managers to view a  
broader range of options as appropriate responses to environmental stimuli  
(e.g., Harris, 1994; Quinn & Spreitzer, 1991). Second, strong cultures may bet-  
ter enable a firm to implement planned resource deployment responses to  
dynamic environmental shifts by providing enhanced control and co-ordination  
of effort as well as improved goal alignment between the firm, its managers,  
and employees (e.g., Sorensen, 2002; Zammuto & O’Connor, 1992).

Drawing on the same behavioral theory of the firm, marketing researchers  
have focused on MO as key in understanding how a firm balances the compet-  
ing goal requirements of different stakeholders by sensing its market environ-  
ment and responding through planning and implementing appropriate resource  
deployments better than its rivals (e.g., Day, 1994; Jaworski & Kohli, 1993;  
Narver & Slater, 1990). However, the literature reveals considerable confusion

1 regarding whether MO is a cultural or a behavioral phenomenon. For example,  
2 Kohli and Jaworski (1990, p. 1) argue that MO concerns market information  
3 processing behaviors that are distinct from the business philosophy (the mar-  
4 keting concept) with which they are consistent. In contrast, Narver and Slater  
5 (1990, p. 21) argue that MO is an organization culture that creates the beha-  
6 viors necessary to effectively and efficiently deliver superior customer value.  
7 Despite this cultural conceptualization, however, the Narver and Slater's (1990)  
8 MO operationalization taps firm behaviors believed to indicate the presence of  
9 the underlying culture rather than directly assessing the underlying culture itself  
(Deshpandé & Farley, 1998).

11 The resulting behavioral operationalizations of MO have generated a signifi-  
12 cant body of empirical knowledge concerning the linkage between firms' market  
13 information processing behaviors and different aspects of resulting strategic  
14 behavior and firm performance outcomes. This literature indicates that generat-  
15 ing and responding to market knowledge can enhance firms' efficiency by  
16 allowing managers to better allocate available resources to activities that have  
17 the highest customer and competitor-related priorities (e.g., Kirca et al., 2005).  
18 Further, by better understanding customer needs and competitors' strategies  
19 and capabilities, managers in firms engaging in MO behaviors may also be  
20 more effective in making resource deployment decisions that maximize the  
21 satisfaction of customer needs delivered (e.g., Jaworski & Kohli, 1993). Firms  
22 engaging in greater market intelligence processing may also be better able to  
23 anticipate – or at least respond to – marketplace changes and adapt to these  
24 by innovating both in their business processes and value offerings (e.g., Day,  
25 1994; Han et al., 1998).

27 Drawing on the organizational theory literature, however, a number of MO  
28 researchers have argued that MO either has a cultural dimension or that MO  
29 behaviors need to be complemented by an appropriate organizational culture.  
30 At one level, in providing values and norms that guide how managers sense and  
31 respond to environmental stimuli, an appropriate organizational culture has  
32 been viewed as a necessary precursor to effective market information processing  
33 behaviors (e.g., Moorman, 1995; White et al., 2003). For example, Homburg  
34 and Pflesser (2000) have identified specific values, norms, and artifacts that are  
35 associated with a firm's MO behaviors. Other researchers have argued that  
36 while MO behaviors are deeply enmeshed in the values and norms of the orga-  
37 nizational context within which they occur, firms have to do more than process  
38 market intelligence to be successful (e.g., Deshpandé et al., 1993; Hurley &  
39 Hult, 1998). From this perspective, Slater and Narver (1995) theorize that, in  
40 addition to supporting market information processing behaviors, complemen-  
41 tary organizational cultures also have a direct impact on firms' ability to  
innovate.

43 Drawing on competing values theory (e.g., Cameron & Quinn, 1999) and  
configuration theory methodology (e.g., Venkatraman, 1990), we adopt a  
benchmarking approach to empirically identify the configuration of competing

1 values cultural orientations that facilitates a firm's ability to engage in market  
information processing behaviors which we term MO culture. MO theory and  
3 empirical studies of MO behavior indicates that an MO culture may be consistent  
with organization theory conceptualizations of strong balanced cultures.  
5 For example, Slater and Narver (1995) theorize that cultures with strong  
adhocracy characteristics are a necessary complement to MO behaviors; Maltz  
7 and Kohli (1996) find that hierarchical management structures can help firms  
disseminate and respond to market intelligence; Moorman (1995) reports that  
9 the market cultural orientation is correlated with market information processing  
in new product development teams; and, Hurley and Hult (1998) indicate  
11 that cultural characteristics consistent with the clan orientation are antecedents  
of MO behavior.

13 Building on organization and economic theory, we anticipate that an MO  
culture may have performance benefits above and beyond those that result  
15 from facilitating MO behaviors for two reasons. First, by better enabling a firm  
to avoid blind spots in environmental scanning (e.g., Quinn & Spreitzer, 1991)  
17 and allowing managers to view a broader range of responses to environmental  
changes as appropriate (e.g., Harris, 1994), MO cultures may enhance managers'  
19 ability to see and think "outside the box." This should enable firms to be  
more innovative than can be explained simply by manifest MO behaviors  
21 (Slater & Narver, 1995). Second, to the extent that an MO culture is strong, it  
should provide an efficient control mechanism (Camerer & Vepsalainen, 1988;  
23 Sorensen, 2002). Elaborating all likely contingencies associated with a firm's  
planned deployment of its resources, prescribing and communicating rules for  
25 dealing with each contingency, and coordinating and monitoring the precise  
mix of resource deployment activities required under each contingency are usually  
27 uneconomic (e.g., Kreps, 1990; Wilkins & Ouchi, 1983). Economic theory  
therefore indicates that by providing "codes" that help coordinate activities,  
29 strongly held organizational cultures are an efficient mechanism for guiding  
manager and employee behavior (e.g., Arrow, 1974; Cremer, 1993).

31 We now turn our attention to the data set developed to investigate these  
33 questions.

## 35 DATA SET AND ANALYSES

### 37 *Research Design*

39 In studying firms' organizational culture, behavior, and performance, single  
41 industry research designs offer control over industry effects and help isolate  
relationships of interest. This is particularly appropriate here since significant  
43 industry effects on organizational culture and firm performance have been identified  
in the literature (e.g., Chatman & Jehn, 1994; McGahan & Porter, 1997).



1 We selected the US trucking industry as an appropriate single industry context  
2 for three reasons. First, trucking is a large and important industry; it accounts  
3 for about 6% of GDP and employs around 9.5 million people. Second, trucking  
4 is a dynamic and highly competitive industry in which understanding and  
5 responding to the market environment is an important performance driver  
6 (e.g., Silverman, Nickerson, & Freeman, 1997). Third, the industry contains  
7 many single business-line firms, reducing the potential problem of differences  
8 between corporate-level and business unit-level organizational cultures (e.g.,  
9 Denison, 1996).

10 Given the absence of secondary data sources for most of the constructs of  
11 interest, and needing a relatively large sample to explore our research questions,  
12 we used a multistage research design. First, primary data concerning the organiza-  
13 tional culture, MO behaviors, and innovation of trucking companies were  
14 collected using a key-informant survey design. The use of single informants to  
15 indicate a firm's culture and strategic behaviors is well established in the  
16 marketing literature (e.g., Deshpandé, Farley, & Webster, 2000; Homburg &  
17 Pflesser, 2000). In addition, smaller sample studies using multiple-informants in  
18 the management literature have shown remarkably small differences in  
19 responses to organizational culture survey questions between respondents with  
20 significant tenure in the same firm (e.g., Chatman, 1989; Chatman & Jehn,  
21 1994). We followed established guidelines to ensure that our key informants  
22 were knowledgeable on their firm's culture, strategy, and MO behaviors and  
23 had significant tenure in their organization. Prior to collecting data, the face  
24 validity of each measure was confirmed in interviews with industry managers.

25 Questionnaires were mailed to the most senior marketing executive in 1,000  
26 businesses randomly selected from the 2,771 listed in the Transportation  
27 Technical Services (TTS) database that lists businesses generating over 97% of  
28 inter-city freight revenues. Of 923 deliverable surveys, 210 were completed and  
29 returned. Eight returned surveys failed our key-informant knowledgeability  
30 threshold score of 5 or above on a seven-point scale question concerning  
31 respondent familiarity with their firm's culture and business operations. The  
32 202 usable questionnaires returned represent an effective response rate of 22%.  
33 The mean knowledgeability score of respondents was 6.3, with a mean tenure  
34 in the firm for which they responded of 15.5 years. Analysis of non-response  
35 bias using an extrapolation approach revealed no significant differences  
36 between early and late respondents on any of the constructs. We also compared  
37 respondents and non-respondents on a variety of variables concerning their  
38 business operations using secondary data from the TTS database and found no  
39 significant differences.

40 Next, to assess the market performance of the firms in our sample we col-  
41 lected satisfaction data from their customers. These were initially identified via  
42 our trucking company survey where respondents were asked to provide the  
43 names of up to 10 customers (e.g., Deshpandé et al., 1993). To prevent positive  
44 bias, for each customer we identified seven trucking company suppliers: the

1 firm that had identified them as a customer and six additional carriers that they  
2 might be likely to use; these alternate carriers were selected by industry experts  
3 based on customer freight-type match with trucking firm service offerings and  
4 geographical facility location. Customers were asked to rate their satisfaction  
5 with each of the trucking companies in the list of seven named carriers that  
6 they had used over the past 12 months. Of 1,061 customer surveys mailed, 685  
7 were completed and returned, representing a 65% response rate. Comparing  
8 early and late customer respondents indicated no significant differences on any  
9 of the satisfaction or demographic variables. An analysis of respondents versus  
10 a random sample of non-respondents using secondary demographic data also  
11 revealed no significant differences between these two groups. Of the customer  
12 surveys returned, 46.5% of the satisfaction scores for each individual trucking  
13 firm were from customers not identified by that carrier, but were from those  
14 selected by the researchers as likely customers of a given trucking firm.<sup>1</sup>

15 Finally, while the vast majority of the trucking companies in our sample are  
16 privately held, federal reporting requirements in this industry mean that second-  
17 ary financial data for these companies are available. We matched and merged the  
18 trucking company and customer satisfaction data we obtained with the financial  
19 data available in the TTS database, deleting observations for which any of these  
20 data were not available. This resulted in 153 businesses for which we had primary  
21 data from the trucking company along with primary data from their customers  
22 (a mean of 4.48 customer responses for each carrier), and objective financial data  
23 from a secondary source. Of the 153 businesses in the final data set, 26%  
24 reported sales of less than \$10 million, 29% sales of \$10–25 million, 20% sales  
25 of \$26–80 million, and 25% had sales greater than \$80 million. As seen in  
26 Table 1, 43% of the firms in our sample were general freight versus specialist car-  
27 riers, and 84% were truckload versus less-than-truckload (LTL) carriers.

### 31 *Measures*

32 We used existing measures that have been previously demonstrated to have  
33 excellent measurement properties for most of our constructs (appendix).  
34 Specifically, Cameron and Freeman's (1991) cultural orientation scales;  
35 Jaworski and Kohli's (1993) MO behavior scales; and the ACSI customer satis-  
36 faction indicators (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). **AU:3**  
37 Innovation was measured using a new three-item scale with items tapping the  
38 innovativeness and uniqueness of the firm's services and activities. The financial  
39 performance of each trucking company was measured as the firm's cash-flow  
40 return on assets (CFROA) (Neill, Schaefer, Bahnson, & Bradbury, 1991) calcu-  
41 lated as:  $(Net\ Operating\ Income + Depreciation\ and\ Amortization - Disposal\ of\ Assets) / Total\ Assets$ . To minimize the impact of any short-term unobserved  
42 event on CFROA and allow for lagged effects, we collected financial data for a

**Table 1.** Descriptive Statistics.

Constructs	Measures	Mean	Standard Deviation	For Multi-Item Measures		
				AVE (%)	Composite Reliability	Loadings Range
MO culture	Clan cultural orientation	5.16	1.11	52	0.81	0.52–0.84
	Adhocracy cultural orientation	4.76	1.10	49	0.79	0.57–0.84
	Market cultural orientation	4.38	1.03	49	0.79	0.63–0.81
	Hierarchy cultural orientation	4.32	1.15	50	0.79	0.51–0.82
MO behavior	Market orientation behaviors	4.85	0.87	53	0.93	0.56–0.83
Firm strategy	Differentiation	4.50	0.90	54	0.85	0.50–0.89
	Cost leadership	4.68	0.97	51	0.83	0.59–0.90
	Scope	3.90	1.15	57	0.83	0.60–0.91
	Innovation	5.44	0.92	76	0.90	0.65–0.98
Firm structure	Bureaucracy	3.72	1.17	57	0.79	0.55–0.85
Firm performance	Customer satisfaction	6.42	1.67	92	0.97	0.94–0.98
	CFROA <sub>t</sub>	0.18	0.06			
	CFROA <sub>t-1</sub>	0.21	0.40			
Firm size	Employees	862.40	3492.85			
Business type	General freight	0.43	0.50			
	Truckload	0.84	0.37			
	Intermodal	0.06	0.23			
Service quality	Relative loss and damage	0.01	0.04			
Average prices	Revenue per ton mile	0.22	0.32			
Financial structure	Leased-to-owned ratio	0.39	0.27			
	Financial leverage	0.55	1.32			
Customer expectations	Customer expectations	6.44	1.72			

two-year period (the year in which the primary data were collected and the following year) and used the average of the two years data. Since the CFROA data in our sample exhibited a non-normal distribution, we followed the standard accounting and finance research practice of normalizing the data using a log transformation.

1 We also collected data concerning a number of covariates to enable us to  
2 control for heterogeneity among the firms in our data set. This included pri-  
3 mary survey data to capture each firm's business strategy using Doty, Glick,  
4 and Huber's (1993) product market strategy scales; Bureaucracy using a three-  
5 item scale based on Vorhies and Morgan (2003); and, overall customer expecta-  
6 tions using the single-item ACSI indicator. Also included were secondary data  
7 for each firm from the TTS database, specifically, the number of employees to  
8 indicate size; the dollar value of reported "loss and damage" relative to sales  
9 revenue to indicate service quality; revenue per ton mile to indicate average  
10 prices charged; debt-to-equity ratio to indicate financial leverage; and the ratio  
11 of leased-to-owned assets. Finally, we used TTS data classifications to identify  
12 the categories of business in which each firm operated in terms of being a gen-  
13 eral freight versus a specialist freight business, shipping truckload versus LTL  
14 volumes, and being an intermodal logistics provider versus purely a trucking  
15 services firm. Four of these variables (# employees, relative "loss and damage"  
16 costs, revenue per ton mile, and ratio of leased-to-owned assets) exhibited non-  
17 normal distributions which were corrected by a simple log transformation.

#### 19 *Psychometric Testing: Reliability and Validity of Measures*

23 We first purified our primary scale measures using confirmatory factor and reli-  
24 ability analyses. Summary scale statistics for our final measures are reported in  
25 Table 1. Reliability was assessed by computing composite reliabilities. With  
26 values ranging from 0.79 to 0.97, our measures demonstrate good reliability.  
27 To assess convergent and discriminant validity, we used confirmatory factor  
28 analyses (CFA) (e.g., Anderson & Gerbing, 1988). The overall fit of the first  
29 CFA containing the three MO behavior sub-scales, the four organizational cul-  
30 ture scales, and the innovation and satisfaction performance measures was  
31 good with a  $\chi^2 = 760.89$ , 524 df,  $p < 0.001$ ; CFI = 0.916 and RMSEA = 0.055.  
32 The overall fit of the second CFA containing the business strategy, bureau-  
33 cracy, and customer expectations control variables was also good with a  
34  $\chi^2 = 243.26$ , 156 df,  $p < 0.001$ ; CFI = 0.937 and RMSEA = 0.061. As seen in  
35 Table 1 all items loaded strongly (loadings ranging from 0.50–0.98) on the con-  
36 structs they were intended to represent with no evidence of cross-loading, indi-  
37 cating convergent validity (Anderson & Gerbing, 1988). We also subsequently  
38 ran a third CFA in which the MO behavior construct was modeled as a sec-  
39 ond-order factor comprising the three first-order sub-scales (generation of mar-  
40 ket intelligence, dissemination of market intelligence, and responsiveness to  
41 market intelligence) each of which in turn arose from the relevant survey indi-  
42 cants. This measurement model also fit well with the data with a  $\chi^2 = 84.06$ ,  
43 63 df,  $p < 0.039$ ; CFI = 0.955 and RMSEA = 0.047.

1 Discriminant validity was also assessed by calculating the average variance  
2 extracted (AVE) for each of our scale measures and comparing this with the  
3 squared correlations between each of the constructs (e.g., Fornell & Larcker,  
4 1981). The lowest AVE value for any of our constructs is 49%, while the largest  
5 squared correlation is 0.397, indicating that our measures have good discrimi-  
6 nant validity. This was confirmed by comparing a series of pair-wise measure-  
7 ment models in which each pair of inter-factor correlations was constrained to  
8 one and then allowed to vary freely (e.g., Anderson & Gerbing, 1988).  $\chi^2$  differ-  
9 ence tests on the constrained and unconstrained models supported the discrimi-  
10 nant validity of the constructs in each case. Since the organizational culture,  
11 MO behavior, and innovation data were collected from a single key informant  
12 using the same questionnaire, we also performed the widely used Harmon's  
13 "single-factor" test for common methods variance. Results indicate that the  
14 relationships observed between these constructs are not likely to be significantly  
15 inflated by common method variance.<sup>2</sup> Correlation matrix in the data for  
16 Table 2.

### 19 *Analyses*

21 Organization theory and the MO literature suggest that an MO culture will be  
22 characterized by different levels of the four competing values cultural orienta-  
23 tions. Since the MO literature directly addressing organizational culture charac-  
24 teristics is sparse, it is difficult to specify the precise mix of the four competing  
25 values cultural orientations that may best facilitate MO behaviors based solely  
26 on the literature. Following established methodological guidelines in the config-  
27 uration theory literature, we therefore adopt an empirical approach to identify  
28 an "ideal" MO culture profile across the four competing values cultural orienta-  
29 tions for the firms in our sample to serve as a benchmark against which to  
30 assess the MO culture of each of the firms in our sample (e.g., Venkatraman &  
31 Prescott, 1990; Vorhies & Morgan, 2003).

33 Previous studies have typically selected the top performing 10% of firms in a  
34 sample on the relevant dependent variable and used the profile of these top-per-  
35 formers on independent variables of interest to construct empirically derived  
36 ideal profiles (e.g., Drazin & Van de Ven, 1985; Venkatraman, 1990; Vorhies &  
37 Morgan, 2003). This is an intuitively appealing benchmarking approach here  
38 since, consistent with our theory framework and the MO literature, it assumes  
39 that the firms in a sample exhibiting the highest levels of MO behaviors have an  
40 organizational culture that facilitates them engaging in these behaviors. We  
41 therefore identified the highest scoring 10% of our sample on the MO behavior  
42 scale, and calibrated the mean cultural orientation scores of this benchmark  
43 group as the ideal MO culture profile (e.g., Venkatraman & Prescott, 1990;  
44 Vorhies & Morgan, 2005). We also randomly selected 10% of the firms in our

Table 2. Correlations.

Variable	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18
X1 CFROA <sub>t</sub>																		
X2 CFROA <sub>t-1</sub>	0.04																	
X3 Customer satisfaction	0.25**	-0.15*																
X4 MO culture	0.28**	-0.15*	0.10															
X5 MO behaviors	0.18*	-0.15	0.12	0.39**														
X6 # Employees	0.07	0.10	-0.15*	0.03	0.25													
X7 General freight	0.10	-0.02	-0.03	0.15	-0.03	-0.03												
X8 Truckload	0.27**	0.17 <sup>+</sup>	0.14	-0.10	0.09	0.03	-0.50**											
X9 Intermodal revenue	-0.05	-0.06	0.01	-0.01	0.01	0.06	0.22*	-0.48**										
X10 Differentiation	0.03	-0.07	-0.11	0.16 <sup>+</sup>	0.24**	0.10	-0.05	0.12	-0.23*									
X11 Cost leadership	0.03	0.12	0.03	0.01	0.14**	0.13	-0.13	0.23**	-0.07	0.22*								
X12 Scope	-0.04	0.13	-0.08	0.03	-0.09	0.08	-0.15	0.12	-0.08	0.10	-0.01							
X13 Quality	0.14	0.01	0.09	0.07	-0.01	-0.07	-0.19*	0.35**	-0.63**	0.09	0.04	0.11						
X14 Revenue per ton mile	-0.12	-0.12	-0.10	0.10	-0.12	0.11	0.03	-0.53**	0.09	0.02	-0.11	-0.08	0.14					
X15 Leased-to-own ratio	-0.26**	-0.03	-0.07	-0.06	-0.06	-0.03	-0.19*	0.21*	-0.18*	0.10	-0.03	0.01	-0.16 <sup>+</sup>	-0.11				
X16 Financial leverage	0.07	0.03	-0.02	0.03	0.13	-0.09	0.17	-0.03	-0.05	0.13	0.19*	0.06	-0.05	-0.21*	-0.32**			
X17 Customer expectations	0.18*	-0.09	0.49**	0.03	-0.04	0.05	-0.02	0.11	0.11	0.09	0.13	0.04	0.01	0.06	-0.15 <sup>+</sup>	0.14		
X18 Innovation	0.21*	-0.15	0.05	0.39**	0.39**	0.15	0.07	0.01	0.01	0.59**	0.24**	0.01	0.07	0.15 <sup>+</sup>	-0.03	0.07	0.13	
X19 Bureaucracy	0.25**	-0.05	0.14	0.07	0.07	-0.11	0.17 <sup>+</sup>	0.16 <sup>+</sup>	-0.01	-0.21*	-0.09	-0.01	-0.09	-0.21*	-0.17 <sup>+</sup>	-0.12	-0.14	0.14

\* $p < 0.05$ .

\*\* $p < 0.01$ .

<sup>+</sup> $p < 0.10$ .

**Table 3.** Ideal, Sample, and Baseline Organizational Culture Profile Mean Scores.

	Organizational Culture Profile			
	Clan Cultural Orientation	Adhocracy Cultural Orientation	Hierarchy Cultural Orientation	Market Cultural Orientation
MO behavior ideal benchmark group (highest scoring 10% on MO behavior scale)	5.40	5.18	4.71	4.43
Non-ideal baseline group (randomly selected 10% of firms in sample)	4.78	4.88	4.25	4.50
Sample less top 10% MO behavior benchmark group firms	5.13	4.71	4.27	4.39

sample, and calibrated their mean cultural orientation scores as a baseline “non ideal” profile for comparisons (e.g., Venkatraman, 1990; Vorhies & Morgan, 2003). Table 3 contains the cultural orientation values for the benchmark ideal MO culture profile, that of the remaining sample, and that of the baseline non-ideal profile. With relatively high scores (ranging from 4.43 to 5.40 on seven-point scales) across all four cultural orientations, this MO culture profile has the characteristics of a strong balanced culture in competing values theory terms.

To assess the MO culture of the firms in our sample, we then conducted profile deviation analyses (e.g., Venkatraman, 1990; Vorhies & Morgan, 2003). For each firm in the sample (excluding the 10% highest scoring MO behavior firms used as the benchmark group), we calculated the Euclidean distance of its organizational culture profile from the ideal MO culture profile (e.g., Drazin & Van de Ven, 1985; Venkatraman, 1990), as follows:

$$\text{Dist} = \sqrt{\sum_j^N (X_{sj} - \bar{X}_{ij})^2}$$

where

$X_{sj}$  = the score for a firm in the study sample on the  $j$ th dimension.

$\bar{X}_{ij}$  = the mean for the ideal profile along the  $j$ th dimension.

$j$  = the number of profile dimensions (1, 2, ... , 4).

This provides a profile deviation score representing the degree to which the organizational culture of each firm is similar to that of the ideal MO culture profile in Table 3. We then examined the effects of MO culture on firms’ MO behavior and innovation, and customer satisfaction and CFROA performance

1 in a system of regressions using seemingly unrelated regressions (SUR) to cap-  
 3 ture the direct and indirect effects of MO culture. Using such a modeling  
 5 approach has a number of benefits. First, it allows us to model our data in a  
 7 way that that mirrors the process by which MO behaviors affect firm perfor-  
 9 mance uncovered in Kirca et al.'s (2005) meta-analysis. Second, several vari-  
 11 ables (i.e., MO behavior, innovation, customer satisfaction) are both  
 independents and dependents in different regressions, and estimating all four  
 regressions as a system alleviates some endogeneity concerns. Third, a system  
 of equations produces more efficient estimates when the error terms of different  
 regressions may be correlated. The system of regressions estimated is detailed  
 below:

$$\begin{aligned}
 \text{MO behavior}_t &= \beta_{\text{Mob}0} + \beta_{\text{Mob}1} \cdot \text{MO culture}_t + \beta_{\text{Mob}2} \cdot \text{CFROA}_{t-1} \\
 &\quad + \beta_{\text{Mob}3} \cdot \text{DIFF}_t + \beta_{\text{Mob}4} \cdot \text{COST}_t \\
 &\quad + \beta_{\text{Mob}5} \cdot \text{SCOPE}_t + \beta_{\text{Mob}6} \cdot \text{BUR}_t + \beta_{\text{Mob}7} \cdot \text{EMPS} \\
 &\quad + \beta_{\text{Mob}8} \cdot \text{GENFR}_t + \beta_{\text{Mob}9} \cdot \text{TL}_t \\
 &\quad + \beta_{\text{Mob}10} \cdot \text{INTER}_t + \varepsilon_{\text{Mob}t} \\
 \text{Innovation}_t &= \beta_{10} + \beta_{11} \cdot \text{MO culture}_t + \beta_{12} \cdot \text{MO behavior}_t \\
 &\quad + \beta_{13} \cdot \text{CFROA}_{t-1} + \beta_{14} \cdot \text{DIFF}_t \\
 &\quad + \beta_{15} \cdot \text{COST}_t + \beta_{16} \cdot \text{SCOPE}_t + \beta_{17} \cdot \text{BUR}_t + \beta_{18} \cdot \text{EMPS} \\
 &\quad + \beta_{19} \cdot \text{GENFR}_t + \beta_{110} \cdot \text{TL}_t + \beta_{111} \cdot \text{INTER}_t + \varepsilon_{1t} \\
 \text{SAT}_t &= \beta_{\text{Sat}0} + \beta_{\text{Sat}1} \cdot \text{MO culture}_t + \beta_{\text{Sat}2} \cdot \text{MO behavior}_t \\
 &\quad + \beta_{\text{Sat}3} \cdot \text{Innovation}_t + \beta_{\text{Sat}4} \cdot \text{CFROA}_{t-1} + \beta_{\text{Sat}5} \cdot \text{DIFF}_t \\
 &\quad + \beta_{\text{Sat}6} \cdot \text{COST}_t + \beta_{\text{Sat}7} \cdot \text{SCOPE}_t + \beta_{\text{Sat}8} \cdot \text{BUR}_t \\
 &\quad + \beta_{\text{Sat}9} \cdot \text{EMPS} + \beta_{\text{Sat}10} \cdot \text{GENFR}_t + \beta_{\text{Sat}11} \cdot \text{TL}_t \\
 &\quad + \beta_{\text{Sat}12} \cdot \text{INTER}_t + \beta_{\text{Sat}13} \cdot \text{QUAL}_t \\
 &\quad + \beta_{\text{Sat}14} \cdot \text{RPTM} + \beta_{\text{Sat}15} \cdot \text{EXP}_t + \varepsilon_{\text{Sat}t} \\
 \text{CFROA}_t &= \beta_{\text{Cf}0} + \beta_{\text{Cf}1} \cdot \text{MO culture}_t + \beta_{\text{Cf}2} \cdot \text{MO behavior}_t \\
 &\quad + \beta_{\text{Cf}3} \cdot \text{Innovation}_t + \beta_{\text{Cf}4} \cdot \text{SAT}_t \\
 &\quad + \beta_{\text{Cf}5} \cdot \text{CFROA}_{t-1} + \beta_{\text{Cf}6} \cdot \text{DIFF}_t + \beta_{\text{Cf}7} \cdot \text{COST}_t \\
 &\quad + \beta_{\text{Cf}8} \cdot \text{SCOPE}_t + \beta_{\text{Cf}9} \cdot \text{BUR}_t \\
 &\quad + \beta_{\text{Cf}10} \cdot \text{EMPS} + \beta_{\text{Cf}11} \cdot \text{GENFR}_t + \beta_{\text{Cf}12} \cdot \text{TL}_t \\
 &\quad + \beta_{\text{Cf}13} \cdot \text{INTER}_t + \beta_{\text{Sat}14} \cdot \text{QUAL}_t \\
 &\quad + \beta_{\text{Cf}15} \cdot \text{RPTM}_t + \beta_{\text{Cf}16} \cdot \text{LEASE}_t + \beta_{\text{Cf}17} \cdot \text{LEVER}_t + \varepsilon_{\text{Cf}t}
 \end{aligned}$$

43 where  $\text{CFROA}_{t-1}$  is the firm's prior period CFROA; DIFF, COST, and  
 SCOPE are the extent to which the firm is pursuing a differentiation, low cost,



1 and mass market strategy, respectively; BUR is the level of bureaucracy and  
2 EMPS the number of employees in a firm; GENFR identifies the firm as a gen-  
3 eral versus specialist freight carrier; TL indicates whether the firm is a truck-  
4 load or an LTL carrier; INTER is whether or not the firm is an intermodal  
5 logistics provider; QUAL is the dollar value of reported “loss and damage” re-  
6 lative to the firm’s sales revenue; RPTM is the average revenue received per ton  
7 mile of freight shipped; EXP are customers’ prior expectations; LEASE is ratio  
8 of the value of leased-to-owned assets; and, LEVER is each firm’s debt-to-  
9 equity ratio. Tolerance and VIF statistics in our regressions were well below  
10 standard cutoffs (e.g., all VIF values were below 3) indicating no multicollin-  
11 earity issues.

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## RESULTS AND DISCUSSION

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With  $R^2$  values ranging from 0.28 to 0.54, Table 4 indicates that our independent variables account for significant variance in each of the four dependents in our system of regressions. The coefficients of the main effects independent variables clearly show that MO culture is important in understanding firm performance in our sample. Our results suggest that this is only partly due to MO culture’s indirect effect on customer satisfaction via its positive impact on firms’ MO behaviors. Table 4 reveals that MO culture also has a significant direct performance enhancing value above and beyond that of facilitating MO behaviors in two respects. First, MO culture has a significant direct effect on firms’ CFROA performance, while no such significant relationship exists between firms’ MO behaviors and CFROA. Second, MO culture has a significant direct impact on firms’ innovation, while the coefficient for MO behaviors is not significant at the  $p < 0.05$  level.<sup>3</sup> In turn, we find that innovation has a direct positive relationship with firms’ CFROA performance but not with customer satisfaction performance.

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Our main effects findings differ in three important ways from what may have been anticipated based on the marketing literature. First, in contrast to Homburg and Pflesser (2000) we find that when examined from a competing values perspective, MO culture has an important direct effect on firms’ financial performance as well as an indirect effect via MO behaviors and innovation. Importantly, our findings suggest that MO culture facilitates value-creating behaviors above and beyond those identified in the marketing literature as MO behaviors. For example, the significant direct relationship with firms’ CFROA but not with customer satisfaction indicates that MO culture may facilitate cost minimization and productivity enhancing behaviors as well as MO behaviors. Further, the significant relationship between MO culture and innovation indicates that MO culture may facilitate innovation-related behaviors that are not similarly affected by MO behaviors.

Table 4. System of Equation Results.

Independents	Equation 1		Equation 2		Equation 3		Equation 4	
	Market Orientation	<i>t</i> -value	Innovation	<i>t</i> -value	Customer Satisfaction	<i>t</i> -value	CFROA <sub><i>t</i></sub> (log)	<i>t</i> -value
	Standardized Estimate	<i>t</i> -value	Standardized Estimate	<i>t</i> -value	Standardized Estimate	<i>t</i> -value	Standardized Estimate	<i>t</i> -value
<i>Main effects</i>								
MO culture	0.29	(3.25)	0.15	(2.03)	-0.01	(-0.07)	0.25	(2.85)
MO behavior			0.12	(1.52)	0.27	(2.82)	-0.08	(-0.76)
Innovation					0.13	(1.07)	0.24	(2.01)
Customer satisfaction							0.11	(1.28)
<i>Control variables</i>								
CFROA <sub><i>t-1</i></sub> (log)	-0.15	(-1.53)	-0.10	(-1.32)	-0.08	(-0.90)	0.09	(1.06)
Differentiation	0.20	(2.08)	0.60	(7.65)	-0.27	(-2.40)	-0.05	(-0.40)
Cost leadership	0.10	(1.14)	0.10	(1.32)	-0.06	(-0.69)	0.13	(1.47)
Scope	-0.16	(-1.83)	-0.02	(-0.28)	0.14	(1.71)	-0.12	(-1.48)
Bureaucracy	0.08	(0.79)	-0.07	(-0.90)	-0.01	(-0.07)	0.20	(2.23)
# Employees (log)	0.26	(2.99)	0.12	(1.58)	-0.23	(-2.65)	0.11	(1.26)
General freight	-0.03	(-0.30)	0.14	(1.71)	-0.05	(-0.49)	0.13	(1.20)
Truckload	0.13	(1.13)	0.08	(0.86)	-0.02	(-0.16)	0.47	(3.47)
Intermodal revenue	0.05	(0.51)	0.12	(1.51)	-0.07	(-0.60)	0.15	(1.42)
Quality (log)					-0.04	(0.38)	0.13	(1.34)
Revenue per ton mile (log)					-0.04	(-0.41)	0.05	(0.47)
Customer expectations					0.51	(5.86)		
Leased-to-owned ratio (log)							-0.37	(-4.21)
Financial leverage							-0.01	(-0.09)
R <sup>2</sup>	0.28		0.54		0.42		0.45	

<sup>a</sup> Complete case analysis with *n* = 138.

1 Second, our results indicate that organizational culture viewed from a  
2 competing values perspective is more important in explaining firms' MO behav-  
3 iors than is indicated by Moorman's (1995) study of new product development  
4 teams and Deshpandé et al.'s (1993) study of Japanese firms. In combination  
5 with our findings linking MO culture directly with firms' innovation and finan-  
6 cial performance, this suggests that while some researchers have conceptualized  
7 MO as a cultural phenomenon, the most widely used MO operationalizations  
8 that have focused solely on MO behaviors capture only a part of the conceptual  
9 domain of MO (cf. Moorman & Rust, 1999). Our findings indicate that the  
10 organizational culture domain of MO appears to be at least as important (if  
11 not more so) in explaining firm performance and suggest that researchers need  
12 to re-visit the conceptualization, and perhaps more importantly the operationa-  
13 lization, of MO as a central construct in strategic marketing thought.

14 Third, in contrast to a series of studies by Deshpandé and colleagues (1993,  
15 1999, 2000, 2004), our empirical results suggest the value of the internally ori-  
16 ented Clan and to a lesser degree Hierarchy cultural orientations, as well as the  
17 more externally oriented Adhocracy and Market cultural orientations. The  
18 benchmark ideal MO culture profile we identify is consistent with organization  
19 theory conceptualizations of strong balanced organizational cultures in which  
20 each of the four competing values orientations is simultaneously exhibited to a  
21 significant degree (e.g., Cameron & Freeman, 1991). Organization theory posits  
22 that tensions among individual cultural orientations can be successfully man-  
23 aged to create strong balanced organizational cultures (e.g., Buenger, Daft,  
24 Conlon, & Austin, 1996), and that this is essential in enabling firms to accu-  
25 rately sense and efficiently and effectively adapt to dynamic and complex mar-  
26 ket environments (Quinn & Spreitzer, 1991; Zammuto & O'Connor, 1992). To  
27 the best of our knowledge, our results provide some of the first empirical sup-  
28 port for these important organization theory propositions and contradict prior  
29 suggestions in the marketing literature that firms should seek to minimize the  
30 presence of Clan and Hierarchy cultural orientations.

## 33 **IMPLICATIONS**

34 From a theory perspective, our study provides a much stronger theoretical  
35 rationale for MO as a source of sustainable competitive advantage than has  
36 been previously articulated. Given the centrality of MO in strategic marketing  
37 explanations of firm performance, this is clearly an important area for theory  
38 development. Our results show that firms' attempts to engage in MO behaviors  
39 are significantly facilitated by strong balanced organizational cultures. Yet,  
40 organization theory indicates that because of inherent tensions between individ-  
41 ual cultural orientations, building such strong balanced organizational cultures  
42 is far from easy (e.g., Cameron & Quinn, 1999). The need to manage tensions  
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1 between different individual cultural orientations to facilitate MO behaviors  
and the difficulty inherent in doing so helps to explain why, despite the efforts  
3 of many firms, MO remains a rare resource (e.g., Hult & Ketchen, 2001; Hunt &  
Morgan, 1995).

5 Our study also indicates that the complexity involved in creating and main-  
taining MO cultures is also likely to create causal ambiguity, making it difficult  
7 for rivals to diagnose the cause of superior performance in a firm that has suc-  
cessfully accomplished this difficult task (e.g., Fiol, 1991; Reed & Defillipi,  
9 1990). In addition, since organizational culture is path-dependent, even if rivals  
can diagnose a firm's MO culture as a key performance driver, it is difficult to  
11 imitate (e.g., Barney, 1986). Moreover, because MO behaviors cannot be dis-  
connected from the firm's cultural context (e.g., Homburg & Pflessler, 2000;  
13 Moorman, 1995), and the strategic marketing literature posits no substitutes in  
delivering superior customer value (e.g., Slater & Narver, 1995), MO cultures  
15 are likely to be non-substitutable sources of advantage. Thus, even though we  
use CFROA and satisfaction data that lags our MO culture and behavior data  
17 by only a relatively short-time, Resource Based-View (RBV) theory indicates  
that the performance benefits of MO revealed in our study should be sustain-  
19 able (Barney, 1991).

Our study also has important implications for managers. Our results show  
21 that in attempting to develop and enhance MO behaviors managers need to be  
aware of the important role played by the firm's organizational culture. In par-  
23 ticular, our findings suggest the desirability of organizational culture profiles  
with relatively high levels of Clan, Adhocracy, Market, and Hierarchy cultural  
25 orientations. Our results indicate that in terms of explaining firms' MO behav-  
iors, innovation, and subsequent customer satisfaction and CFROA perfor-  
27 mance, the ideal organizational culture profile in our sample using seven-point  
scales comprises a score of 5.40 for the Clan orientation; 5.18 for the  
29 Adhocracy orientation; and, 4.43 for the Market cultural orientation, with a  
Hierarchy cultural orientation of 4.71.

31 In building an MO culture, an important first step is to assess the firm's  
existing organizational culture profile (e.g., Goodman et al., 2001). Organiza-  
33 tion theory researchers have developed competing values theory-based organi-  
zational culture assessment tools that can provide managers with an easily  
35 accessible mechanism for accomplishing this (Cameron & Quinn, 1999). The  
profile of the firm's existing culture and the profile of the ideal culture for MO  
37 from our study can then be plotted on a "spider's web" graphical representa-  
tion (e.g., Hooijberg & Petrock, 1993). This aids the comparison of the firm's  
39 existing cultural profile with the ideal MO profile, enabling managers to easily  
diagnose the areas, direction, and magnitude MO culture profile "gaps" in their  
41 firm (Cameron, 1997). Specific gap-closing plans and tactics for gaps on each of  
the four cultural orientations can then be identified as part of the development  
43 of a change management program designed to create an MO culture profile  
(e.g., Chang & Wiebe, 1996). Cameron and Quinn's (1999) workbook provides

1 managers with an excellent operational resource for planning and undertaking  
such gap-closing organizational culture change initiatives.

3  
5 **LIMITATIONS AND DIRECTIONS FOR**  
7 **FUTURE RESEARCH**

9 Our study has several limitations as a result of research design trade-off deci-  
sions required in research of this type. First, while our data is not strictly cross-  
11 sectional (since our customer satisfaction the data is collected after our trucking  
survey data and our CFROA data includes data from the year following the  
13 survey data collection), and we are able to control for the effect of prior  
CFROA performance, our data provides only a limited ability to empirically  
15 impute causality. Future research could complement our findings by utilizing  
longitudinal and time-series research designs that will both allow empirical veri-  
17 fication of causality and make it easier to control for the effect of  
unobservables.

19 Second, to ensure a sufficient number of observations from our sample, we  
use a single key-informant design in our primary data collection. This research  
21 design is supported by the marketing and organization theory literature, and  
we followed established guidelines to ensure that our key informants were  
23 knowledgeable on all survey constructs. Nonetheless, future research using  
multi-informant designs would further enhance confidence in our findings.

25 Third, while our single industry research design allows us to control for  
industry effects and isolate the relationships of interest, and the trucking indus-  
27 try is an important and dynamic component of the economy, this necessarily  
limits the generalizability of our findings. However, Kirca et al.'s (2005) meta-  
29 analysis indicates that MO–performance relationships are weaker in service  
industries, and in countries with low power distances. It is therefore likely that  
31 our results in a sample of US trucking firms may be weaker than in most other  
industry and country contexts. Nonetheless, further studies in additional indus-  
33 tries, and those using multi-industry designs, are needed to empirically establish  
the generalizability of our results.

35 The importance of organizational culture in understanding MO and firm  
performance revealed in our study raises two particularly interesting questions  
37 that warrant further investigation. First, while our research indicates the value  
of MO culture, further research is required to explore the process by which this  
39 organizational culture profile contributes to firm performance. Our findings  
indicate the indirect value of MO culture via MO behaviors, but what accounts  
41 for the direct relationship with innovation and the direct relationship with  
CFROA? How does the MO culture profile we identify enable firms to make  
43 and execute appropriate resource deployment decisions that are both more  
innovative and efficient? In addition, future research examining the boundary

1 conditions under which MO culture is more or less valuable would also contrib-  
 2 ute important new insights.

3 Second, given the MO culture profile revealed in our study, it is important  
 4 that we gain a much deeper understanding of relationships between the four  
 5 different competing values cultural orientations. Consistent with Moorman  
 6 (1995), the correlations in Table 2 indicate that the relationships between the  
 7 four different cultural orientations are far from that connoted by the orthogo-  
 8 nal graphical representations often used to illustrate the similarities and differ-  
 9 ences between the competing values cultural orientations. While it is widely  
 10 agreed in the literature that there are inherent tensions between the four cul-  
 11 tural orientations, we have little or no understanding of how these tensions are  
 12 manifest or how they can be managed to enable the MO culture identified in  
 13 our study to flourish. Given our results, it is clearly important to both research-  
 14 ers and managers that this gap in theoretical and empirical knowledge be  
 15 addressed.

## 17 NOTES

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 20  
 21 1. Tests revealed no significant differences between the satisfaction scores received from  
 22 customers identified by the trucking firm and those identified by the researchers. Further,  
 23 the mean customer satisfaction score of 6.47 on a 10-point scale is slightly below the rele-  
 24 vant American Customer Satisfaction Index (ACSI) average of 68.4 (on a 100-point scale)  
 25 for the relevant industrial sector (transportation, communication, and utilities).

26 2. A single-factor confirmatory model with the MO behaviors, organizational culture,  
 27 and performance measures exhibited a  $\chi^2 = 1587.17$ , 496 df, CFI = 0.350, RMSEA = 0.121.

28 3. Confidence in these results is enhanced by the insignificant coefficients in follow-up  
 29 comparison regressions in which the MO culture variable was replaced by deviation  
 30 from the non-ideal baseline cultural profile. We also found substantially the same results  
 31 when using the Narver and Slater (1990) MO behavior measure in place of the Jaworski  
 32 and Kohli (1993) measure.

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## APPENDIX: SURVEY MEASURES USED IN THE RESEARCH

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**Clan cultural orientation** (7-point scale: 1 = very low importance within firm; 7 = very high importance) **AU:6**

This is a very personal place. It is like an extended family. People share a lot of themselves.

The head of this company is generally considered to be a mentor, a sage, or a father or mother figure.

The glue that holds us together is loyalty and tradition. Commitment to this company runs high.

Our company emphasizes human resources. High cohesion and morale in the company are very important.

**Adhocracy cultural orientation** (7-point scale: 1 = very low importance within firm; 7 = very high importance)

This is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.

The head of this company is generally considered to be an entrepreneur, an innovator or a risk taker.

The glue that holds us together is a commitment to innovation and development. There is an emphasis on being first.

Our company emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.

**Hierarchical cultural orientation** (7-point scale: 1 = very low importance within firm; 7 = very high importance)

We are an organized and structured place. Detailed procedures help people know what to do.

The head of this company is generally considered to be a coordinator, an organizer, or an administrator.

The glue that holds us together is formal rules and policies. Maintaining a smooth-running company is important here.

Our company emphasizes permanence and stability. Efficient, smooth operations are important.

**Market cultural orientation** (7-point scale: 1 = very low importance within firm; 7 = very high importance)

Our company is very production-oriented. A major concern is with getting the job done. People are not very personally involved.

The head of this company is generally considered to be producer, a technician, or a hard driver.

The glue that holds us together is the emphasis on tasks and goal accomplishment. A production orientation is commonly shared.

Our company emphasizes competitive actions and achievement. Measurable goals are important.

**Market orientation behaviors** (7-point scales: 1 = not at all; 7 = to a great extent)

*Market intelligence generation*

In this company, we meet with customers at least once a year to find out what services they will need in the future.

In this company, we do a lot of in-house market research.

We are slow to detect changes in our customer's service preferences. *Reverse Scored (RS)*

We poll customers at least once a year to assess the quality of our services.

(Continued)

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- 1
- 3 We are often slow to detect fundamental shifts in our industry (e.g., regarding competition, technology, regulation). (RS)
- 5 We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.<sup>a</sup>
- 7 **Market intelligence dissemination**
- 9 We have interdepartmental meetings (between functional area departments) frequently to discuss market trends and developments.
- 11 We have interdepartmental meetings at least once a quarter to discuss market trends and developments.<sup>a</sup>
- 13 Marketing personnel in our company spend a lot of time discussing customers' future needs with other functional departments.
- 15 When something important happens to a major customer or market, the whole company knows about it within a short time.
- 17 Data on customer satisfaction are distributed at all levels in this company on a regular basis.
- 19 When one department finds out something important about competitors, it is slow to alert other departments. (RS)<sup>a</sup>
- 19 **Market intelligence responsiveness**
- 21 It takes us forever to decide how to respond to our competitors' price changes. (RS)<sup>a</sup>
- 23 For one reason or another, we tend to ignore changes in our customer's service needs. (RS)<sup>a</sup>
- 25 We periodically review our services efforts to insure that they are in line with what customers want.
- 27 Several departments get together periodically to plan a response to changes taking place in our business environment.<sup>a</sup>
- 29 If a major competitor were to launch an intensive campaign targeted at our customers, we would implement an immediate response.
- 31 The activities of the different departments in this company are well coordinated.
- 33 Customer complaints fall on deaf ears in this business unit. (RS)<sup>a</sup>
- 35 When we have customer requests to modify a service, the involved departments try hard to meet the request.
- 37 **Innovation** (7-point scale: 1 = not at all; 7 = to a great extent)
- 39 We offer innovative services.
- 41 We provide unique services.
- 43 We are constantly innovating and changing.
- Product-market strategy** (7-point scale: 1 = not at all; 7 = to a great extent)
- To what extent is it the strategy of your business to ...
- Differentiation**
- Offer services for specialized needs.
- Offer higher quality services than your competitors.
- Offer highly differentiated services.
- Offer a high degree of value in your services.
- Offer services with distinctly different features from those of competitors.

(Continued)

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- 1
- 3 **Cost leadership**
- 5 Be the lowest cost provider in your industry.
- 5 Invest in cost saving technology.
- 7 Emphasize efficiency.
- 7 Redesign services to reduce costs.
- 9 Strive for high volume to spread costs.
- 9 **Scope**
- 11 Stick to your own geographic area.
- 11 Offer only a few services specifically designed for target customers.
- 13 Appeal to a specific niche in the market place.
- 13 Focus our efforts on a particular type of freight.
- 15 **Bureaucracy** (7-point scale: 1 = not at all; 7 = to a great extent)
- 15 This firm emphasizes ...
- 17 Flexibility and decentralized decision making. (RS)
- 17 Control and centralized decision making.
- 19 Routinized processes and formal structures.
- 21 **Customer expectations** (10-point scale: 1 = very low; 10 = very high)
- 21 When you began using this carrier, you probably knew something about them. If you now think back and try and remember, how would you rate your initial expectations?
- 23 Our expectation about this carrier's overall quality was...
- 25 **Customer satisfaction** (mean score of customer ratings)
- 25 To what extent does this carrier live up to your general expectations for them? (1 = much worse than expected; 10 = much better)
- 27 Imagine the perfect motor carrier. How far/close does this carrier come to your ideal? (1 = very far from ideal; 10 = very close)
- 29 Given your experience with this carrier, how satisfied or dissatisfied are you with their performance? (1 = very dissatisfied; 10 = very satisfied)

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<sup>a</sup>Items dropped during scale refinement.

## UNCITED REFERENCES

- 41 Camerer and Vepsalainen (1996); Deshpandé and Webster (1989); Gresov **AU:8**  
 (1989); Quinn and Kimberly (1984)

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