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Implementing Interfunctionally-Coordinated Market Orientation in Industrial SMEs: Lessons Learned in Commodity Markets

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Market orientation was conceptualized by Narver and Slater (1990) as a framework of organizational culture that creates superior customer value through three behaviors, namely, (1) customer orientation (i.e., organizational focus on satisfying customer needs), (2) competitor orientation (i.e., organizational focus on understanding major competitors' strategies), and (3) interfunctional coordination (i.e., organizational focus on disseminating information about customers and competitors among all functional units). Generally speaking, the market-oriented organizational culture positively influences business performance for various types of firms (Homburg and Pflesser, 2000; Matsuno and Mentzer, 2000; Matsuno *et al.*, 2002; Agarwal *et al.*, 2003; Zhou *et al.*, 2009; Kumar *et al.*, 2011). Market orientation has also received a great amount of attention in

the area of small business management (e.g., Kara *et al.*, 2005; Baker and Sinkula, 2009; Martin *et al.*, 2009; Dibrell *et al.*, 2011; Pena *et al.*, 2011; Lado *et al.*, 2013). According to these previous studies, a market-oriented organizational culture is helpful for SMEs to achieve positive outcomes in organizational innovativeness, profitability, and financial performance.

This study focuses on the implementation of market-oriented organizational culture in industrial SMEs (hereafter, "ISMEs") that are manufacturing-centered, operating in the commodity markets in the U.S. According to the U.S. Census Bureau (2010), small- and medium-sized manufacturing firms with less than 500 employees accounted for 89.5% of the 300,000 industrial firms in the U.S. Thus, how well market orientation is implemented in ISMEs can directly impact the majority of the manufacturing industry. The conventional understanding was that a market-oriented organizational culture positively influences the quality of customer relationship, which, in turn, leads to improved business performance (Kirca *et al.*, 2005). However, the understanding of the market-oriented organizational culture in ISMEs was incomplete due to three reasons. First, different patterns have been identified between manufacturing firms and service firms in regard to how market orientation practices affect business performance (Agarwal *et al.*, 2003; Kirca *et al.*, 2005; Sin *et al.*, 2005). By nature, manufacturing-centered firms have a distinctive manufacturing-centered organizational structure. Thus, conventional market orientation practices may not fit a production-dominant business model because manufacturing-centered firms are primarily concerned about production capacity and efficiency (Lynch *et al.*, 2012). Second, from an internal perspective, the marginalization of marketing function and the lack of synergies between functional departments have been experienced by industrial firms (Verhoef and Leeflang, 2009). Third, from a market perspective, customer firms in the industrial sector make rational decisions based on comparison of suppliers' customer value (Moller, 2006; O'Cass and Ngo, 2012), especially when those suppliers are small in size (Pelham, 2000). Commodity goods produced by ISMEs frequently fall upon intensive price competition in the market, and many industrial suppliers survive on price leadership due to this (Dastidar, 2004; Hirata and Matsumura, 2011). In this circumstance, any increase in cost may cause catastrophe for ISMEs in the competition. Due to these unusual situations, it is essential to closely examine the nature of interfunctional coordination in shaping the market-oriented organizational culture for ISMEs competing in commodity markets. Accordingly, the research question was: "What is the nature of interfunctional coordination in ISMEs competing in commodity markets?" Empirically speaking, the study focuses on examining how the level of interfunctional coordination efforts in ISMEs influences their market orientation outcomes.

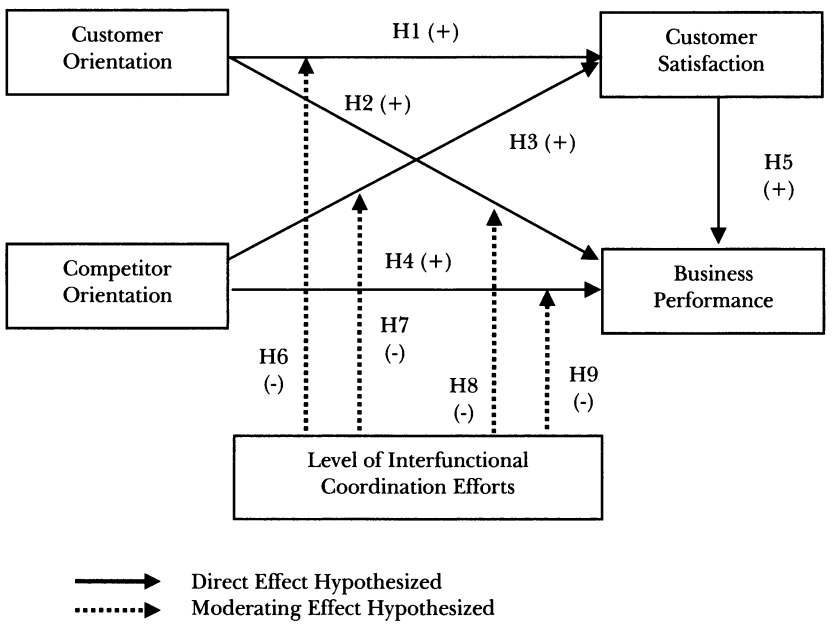
The rest of the study is organized as follows. Following the introduction, the theoretical framework with hypotheses was elaborated to depict the effects of market orientation components in a customer relationship management context. Subsequently, methodological steps, including research instrument development and data collection, were outlined. Based on quantitative data collected from ISMEs, statistical results delineating the outcomes of the three behavioral components of market orientation were reported. Finally, discussion of results, limitations, and future research recommendations were offered.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

While Narver and Slater's (1990) composite scale of market orientation has been used in empirical research, the relationship between the three behavioral components of market orientation and business performance have been examined as well (Han *et al.*, 1998; Im *et al.*, 2008), and notably in SMEs (Gaur *et al.*, 2011). Greater insights into market orientation can be revealed through the investigation of the unique impacts made by the three behavioral components (Voss and Voss, 2000).

Along this venue, an attempt was made to build a theoretical framework to describe the effects of interfunctional coordination within the conventional market-oriented organizational culture in ISMEs (See Figure I). During hypotheses development, the articulation was about the moderating effects of interfunctional coordination based on the level of interfunctional coordination efforts in the downstream business processes. In other words, the arguments were focused on how much interfunctional coordination is conducted from a process perspective, rather than how effective interfunctional coordination is from an outcome perspective.

Figure I
Theoretical Framework



Customer satisfaction was defined as the degree to which market offerings meet customers' expectations, and consider it a fundamental measure of business-to-business relationship quality (Anderson *et al.*, 1994; Anderson *et al.*, 2004; Chandrashekaran *et al.*, 2007). At the core of market orientation, customer orientation places a firm's priority

on satisfying customers (Kohli and Jaworski, 1990). Customer orientation mandates that a firm's organizational culture be centered on customers in order to gain new insights into their evolving needs. As a result, a customer-oriented ISME pays close attention to its contribution in customer firms' value chain, and build competitive advantage based on the contributing capabilities (Day and Wensley, 1988; Blocker *et al.*, 2011). Previous research identifies customer orientation as the most consistent driver of customer value in the business-to-business market (Blocker *et al.*, 2011). As such, an ISME with a customer-oriented organizational culture is able to deliver superior customer value to satisfy customers (Aaker, 1989; Slater and Narver, 1994).

Customer orientation can also positively influence performance through the increase in market share (Day and Nedungadi, 1994). Through fulfilling customer orders accurately and speedily, a customer-oriented organizational culture in ISMEs can help generate financial return in the commodity markets. Thus, a customer oriented organizational culture eventually leads to improved business performance for ISMEs.

H1: *ISMEs' customer orientation positively influences customer satisfaction.*
H2: *ISMEs' customer orientation positively influences business performance.*

Competitor orientation requires that a firm carefully observe its major competitors' strategic intent as well as their strengths and weaknesses (Narver and Slater, 1990). An effective competitive strategy can help industrial suppliers offer superior value to their customers (Qi *et al.*, 2011). Therefore, the competitor-oriented organizational culture helps an ISME focus on responding quickly and effectively to its competitors' strategic move in the marketplace. As such, the firm is able to prepare effective competition-based pricing tactic, and develop new products or upgrade its current products to make the major competitors' offerings obsolete. Both lead to higher customer satisfaction.

Response to competitive challenges can also positively influence performance. Competitor-oriented managers pay more attention to cost (Gatignon and Xuereb, 1997). Other researchers express a similar view, suggesting that competitor-centered firms are capable of using me-too products and low-cost strategy to gain market share (Day and Nedungadi, 1994; Lukas and Ferrell, 2000; Pelham, 2000). Likewise, ISME's competitor-oriented organizational culture eventually helps improve business performance.

H3: *ISMEs' competitor orientation positively influences customer satisfaction.*
H4: *ISMEs' competitor orientation positively influences business performance.*

A positive relationship between a firm's overall market orientation and its customer satisfaction has been frequently observed (Moorman and Rust, 1999; Sanzo *et al.*, 2003; Gainer and Padanyi, 2005; Kirca *et al.*, 2005). A satisfied customer is likely to repurchase due to perceived risk associated with purchasing from new suppliers (Fornell, 1992; Fornell *et al.*, 1996; Verhoef, 2003). Satisfied customers are willing to purchase the product more frequently and in larger volume, and they are more likely to purchase other products offered by the supplier (Garvin, 1988; Reichheld and Sasser, 1990). Thus, high customer satisfaction can lead to improved business performance for ISMEs (Anderson *et al.*, 1994; Reinartz *et al.*, 2004).

H5: *ISMEs' customer satisfaction positively influences business performance.*

Interfunctional coordination was commonly understood as the collaborative efforts across the functional units in serving customer needs (Narver and Slater, 1990). An organizational culture characterized by interfunctional coordination fosters the execution of common organizational goals (Atuahene-Gima, 1996; Gaur *et al.*, 2011), and is conducive to key account management (Tzempelikos and Gounaris, 2013). When managers integrate the functional units to pursue common goals, the synergistic effect ensues (Atuahene-Gima, 1996; Gaur *et al.*, 2011). Thus, interfunctional coordination often shows a positive moderating role on the relationship between a firm's cultural orientation and performance (Gatignon and Xuereb, 1997; Im *et al.*, 2008).

When implementing interfunctional coordination, managers from different functional units are required to meet on a regular basis to share customer information, and together, pay visits to current and prospective customer firms (Narver and Slater, 1990). These interfunctional activities in the business process were proposed as the conventional approach in interfunctional coordination (Narver and Slater, 1990). Although interfunctional customer calls are helpful in obtaining enhanced understanding of customer needs, it is not expected to have a positive moderating effect in ISMEs. In the business-to-business context, customers increasingly prefer a single point of contact provided by the suppliers due to time and effectiveness (Colletti and Fiss, 2006). Serving customers via efforts from a supplier's multiple functional units is less effective to achieve outcomes in customer relationship management because the selling and service processes is more complicated (Colletti and Fiss, 2006). Thus, the level of interfunctional coordination efforts in the customer communication process lessens the positive relationship between customer/competitor orientation and customer satisfaction.

H6: *The level of interfunctional coordination efforts negatively moderates the relationship between customer orientation and customer satisfaction for ISMEs.*
H7: *The level of interfunctional coordination efforts negatively moderates the relationship between competitor orientation and customer satisfaction for ISMEs.*

Customers in the business-to-business commodity markets are highly concerned about the value of offerings industrial suppliers offer (Moller, 2006, O'Cass and Ngo, 2012). In other words, a supplier's capacity of providing key value elements such as quality, availability, and lead-time is extremely important from the perspective of industrial customers. The manufacturing unit can primarily achieve these tasks leading to the fulfillment of customer requirements. When customer decisions focus on tangible advantages of products, the ability of providing customer-expected products is the key to the financial success for ISMEs. Being manufacturing-centered, an ISME's manufacturing unit has strategic importance for the firm (Frankwick *et al.*, 1994). Due to the central role of the manufacturing unit, other functional units are mostly supportive (Wind and Robertson, 1983; Verhoef and Leeflang, 2009).

In this circumstance, a coordinative action requiring simultaneously working with other units may slow down or distract the primary tasks in manufacturing. As a result, the implementation of interfunctional coordination into an ISME's organizational culture may generate higher cost when the manufacturing unit has to be involved in

information gathering and customer calls for the purpose of customer needs investigation or customer service. By the same token, instead of simply getting it done by the marketing unit, conducting analysis and benchmarking of competitors' products using a high level of interfunctional coordination may need more time and resources across the functional units. Cross-unit interactions could cause internal political conflict between the units in an industrial firm, which may negatively influence firm performance (Narayanan and Fahey, 1982; Luo *et al.*, 2006). Previous research showed that organization-wide efforts on customer orientation lessen performance (Sorensen, 2009). Excessive energy and resources spent on customer/competitor orientation across units increase operating costs, which are eventually passed onto customers and lead to decreased customer value in commodity markets (Ulaga and Eggert, 2005, 2006). Therefore, a higher level of interfunctional coordination efforts in ISMEs weakens the positive relationship between customer/competitor orientation and business performance.

H8: *The level of interfunctional coordination efforts negatively moderates the relationship between customer orientation and business performance for ISMEs.*

H9: *The level of interfunctional coordination efforts negatively moderates the relationship between competitor orientation and business performance for ISMEs.*

METHODOLOGY

Research Instrument

Well-established scales in a Likert format with a range from "strongly disagree (1)" to "strongly agree (5)" were used in this study. The customer/competitor orientation scales developed by Narver and Slater (1990) were adopted. The scale consists of six items for customer orientation and four items for competitor orientation. From Narver and Slater's (1990) interfunctional coordination scale, three items measuring the level of interfunctional coordination efforts (i.e., interfunctional customer calls, interfunctional information sharing, and interfunctional resource sharing) were adopted. The other two items were excluded from Narver and Slater's (1990) interfunctional coordination scale. They were intended to measure how important interfunctional coordination is to managers (i.e., functional integration in strategy, all functions contributing to customer value), and did not reflect the activity-based interfunctional field efforts in the downstream business processes. The measure for customer satisfaction was adopted from Ganesan (1994), which assessed a supplier firm manager's perceived customer satisfaction level with respect to the outcomes of the business relationship in the past year, on a four-item scale. The measure for business performance was adopted from Samiee and Roth (1992), which assessed a manager's self-rated business performance of the firm in the past year, on a four-item scale.

Data Collection

The sampling frame for data collection was ISMEs whose primary customers were industrial buyers. Eligible ISMEs for this study met the following four criteria. First, they were manufacturing firms belonging to NAICS code categories 31-33 (i.e.,

manufacturing). Second, they were small- and medium-sized firms with 50-500 employees to meet U.S. Small Business Administration's (2013) SME size standard of a maximum of 500 employees. Third, they were firms with at least $5 million in annual revenue. Last, they must have core functional units in the organizational structure to meet the objective of the study. Surveys were mailed to general managers to solicit responses from a total of 885 ISMEs located in six Midwest states in the U.S. (Illinois, Indiana, Ohio, Missouri, Kentucky, and Tennessee). Two waves of mailing were employed in February and March 2013. Within a three-month period, the number of usable questionnaires returned from the two mailings was 203, constituting a 22.9% response rate. Indicated in the returned questionnaires, the organizational structure based on multiple functional units was applicable to all responded ISMEs. To identify any non-response bias in using mailed surveys, six ISMEs were randomly contacted by phone. They all admitted the general manager was too busy to participate. Following Armstrong and Overton's (1977) suggestions, a series of t-tests were conducted to compare the mean values of the constructs between early and late responses. No significant difference was found. Thus, non-response bias was not an issue.

Common Method Variance

When the same informant reports both independent and dependent measures, the issue of common method bias may be a concern (Van Bruggen *et al.*, 2002). Following Verhoef and Leeflang (2009), an examination of common method bias was conducted in two steps. First, correlations were estimated between the five constructs used in the study and another question about macro-level technological changes included in the questionnaire. Non-significant, low correlations (< 0.15) occurred. Second, an exploratory factor analysis of all the measurement items was conducted. Seven factors were found to explain 69.2% of the variance, but only 15.5% of the total variance was explained if one general factor was chosen. Thus, no evidence of common method bias was found.

Statistical Analysis

The dimensionality of the constructs was assessed through confirmatory factor analysis (Bollen, 1989). One item from the customer orientation construct and one item from the competitor orientation construct did not load on the expected constructs. Other items all showed high factor loadings (> 0.70). Each construct still had at least three items if the items with low factor loadings were deleted. Based on recommended statistical measurement procedure (Spector, 1992) as well as previous example on the exclusion of market orientation items with low factor loadings (Im *et al.*, 2008), the two items were dropped from further analysis. Next, satisfactory GFIs (> 0.90) and high, significant factor loadings (> 0.70) for each of the five constructs were shown (Anderson and Gerbing, 1988; Hu and Bentler, 1999). Average Variance Extracted (AVE) exceeded the suggested threshold of 0.50 for all five constructs (Fornell and Larcker, 1981). In addition, all five constructs described in Figure I were subject to a confirmatory factor analysis together. Based on Hu and Bentler's (1999) criteria, the model showed a good fit to the data (GFI = 0.90, AGFI = 0.88, CFI = 0.92, NFI = 0.90, RMSEA = 0.055). All five constructs had Cronbach's alpha values greater than 0.70, showing high internal reliability (Nunnally, 1978).

Next, following Anderson and Gerbing's (1988) guidelines in discriminant validity testing, paired constructs were subjected to two models of confirmatory factor analysis. The first model allowed the covariance between the two constructs to be unconstrained, while the second model constrained the covariance between the two constructs. Comparing the χ^2 values of the constrained and unconstrained models, discriminant validity was found between all the paired constructs based on the significant χ^2 difference for all the comparisons ($\Delta\chi^2 = 3.84$, d.f. = 1, $p = 0.05$). The validity and reliability results for the constructs were reported in Table 1, and correlations of constructs were presented in Table 2.

Table 1
Validity and Reliability of Constructs

Construct	Factor Loading
Customer Orientation (AVE = 0.61, GFI = 0.92, Cronbach's α = 0.90)	
Customer commitment	0.772
Create customer value	0.801
Understand customer needs	0.731
Customer satisfaction objective	0.854
Measure customer satisfaction	0.736
After-sales service (*dropped from analysis*)	--
Competitor Orientation (AVE = 0.67, GFI = 0.94, Cronbach's α = 0.92)	
Salespeople share competitor information	0.814
Respond rapidly to competitors' actions	0.890
Top managers discuss competitors' strategies	0.737
Opportunities for competitive advantage (*dropped from analysis*)	--
Level of Interfunctional Coordination Efforts (AVE = 0.61, GFI = 0.91, Cronbach's α = 0.89)	
Interfunctional customer calls	0.775
Information sharing among functions	0.782
Share resources with other business units	0.755
Customer Satisfaction (AVE = 0.68, GFI = 0.93, Cronbach's α = 0.91)	
Customers are satisfied	0.887
Customers are happy	0.843
Customers are pleased	0.796
Customers are contented	0.756
Business Performance (AVE = 0.58, GFI = 0.91, Cronbach's α = 0.88)	
Return on investment	0.715
Return on assets	0.762
Sales growth	0.841
Profit growth	0.709

Table 2
Correlation Matrix

	MKTOR	CUSTO	COMPO	COORD	SAT	PERF
Market Orientation (MKTOR)						
Customer Orientation (CUSTO)	0.83 **					
Competitor Orientation (COMPO)	0.61 **	0.63 **				
Level of Interfunctional Coordination Efforts (COORD)	0.43 **	0.33 **	0.29 **			
Customer Satisfaction (SAT)	0.39 **	0.38 **	0.36 **	0.12		
Business Performance (PERF)	0.39 **	0.45 **	0.42 **	0.09	0.13	

** $p < 0.01$ (two-tailed).

RESULTS

Customer Satisfaction

To examine the direct and moderating effects of the independent variables on customer satisfaction, two separate models (Model 1 and Model 2) were examined using maximum likelihood regression. Model 1 was used as a baseline model that included the regression of the three behavioral components of market orientation. Following the hierarchical moderator regression technique (Cohen and Cohen, 1983), Model 2 further included the two interaction terms, interfunctional coordination × customer orientation and interfunctional coordination × competitor orientation. Values of customer orientation, competitor orientation, and interfunctional coordination were mean-centered to reduce multicollinearity (Aiken and West, 1991). All variance inflation factors were less than 1.5, indicating that multicollinearity was not an issue of concern.

In H1 and H3, it was proposed that ISMEs' customer orientation and competitor orientation positively influenced customer satisfaction, respectively. The results showed that customer orientation had a positive effect on customer satisfaction in both models. In Model 1, there was a significant positive relationship ($\beta = 0.24$, $p < 0.05$), and there was also a significant positive relationship in Model 2 when the interaction term was added ($\beta = 0.21$, $p < 0.05$). Thus, H1 was supported. The results also supported the positive effect of competitor orientation on customer satisfaction in both models. Competitor orientation had a significant positive effect in Model 1 ($\beta = 0.21$, $p < 0.05$) and the augmented Model 2 ($\beta = 0.20$, $p < 0.05$). Therefore, H3 was supported.

The level of interfunctional coordination efforts was not related to customer satisfaction in both models ($\beta = 0.04$, $p > 0.10$ in Model 1 and $\beta = 0.03$, $p > 0.10$ in Model 2). The results revealed the weak influence of the level of interfunctional coordination efforts on customer satisfaction, while highlighted the importance of customer orientation and competitor orientation as major drives of customer satisfaction for ISMEs.

In H6 and H7, it was proposed that ISMEs' level of interfunctional coordination efforts negatively moderates the relationship between customer/competitor orientation and customer satisfaction. To test the two hypotheses, Model 2 was used to examine the interaction terms. The interaction effect of customer orientation and interfunctional coordination (CUSTO × COORD) on customer satisfaction was negative and marginally significant (β = -0.20, $p < 0.05$). The interaction effect of competitor orientation and interfunctional coordination (COMPO × COORD) was also negative and marginally significant (β = -0.23, $p < 0.05$). Thus, H6 and H7 were both supported, showing the positive relationship between customer/competitor orientation and customer satisfaction was lessened under higher level of interfunctional coordination activities.

Business Performance

Next, two separate maximum likelihood regression models (Model 3 and Model 4) were used to examine the direct and moderating effects of the independent variables on business performance. As a baseline model, Model 3 was used to estimate the effects of the three behavioral components of market orientation and customer satisfaction on business performance. Model 4 extended Model 3 by including the two interaction terms, interfunctional coordination × customer orientation and interfunctional coordination × competitor orientation. All the independent variables were mean-centered in the regression. The variance inflation factors were less than 1.5, showing the absence of multicollinearity.

In H2 and H4, it was argued that ISMEs' customer orientation and competitor orientation positively influence performance. The results showed that customer orientation has a positive impact on business performance in Model 3 (β = 0.33, $p < 0.01$) as well as in Model 4 (β = 0.30, $p < 0.01$). Results in both models offered support for H2. Further, competitor orientation was positively related to business performance in both regression models (β = 0.31, $p < 0.01$ in Model 3 and β = 0.26 and $p < 0.01$ in Model 2). Results in both models fully supported H4.

The level of interfunctional coordination efforts exhibited a non-significant relationship with business performance in Model 3 (β = 0.04, $p > 0.10$) as well as in Model 4 (β = 0.04, $p > 0.10$). Combining the results for the three behavioral components, it demonstrated that customer orientation and competitor orientation were more important drivers of business performance than the level of interfunctional coordination efforts was. In building and implementing the market-oriented organizational culture by ISMEs, the behavioral component of interfunctional coordination appeared to have no direct effect on business performance.

In H5, it was proposed that customer satisfaction has a positive effect on ISMEs' business performance. However, both regression models showed non-significant effects of customer satisfaction on business performance (β = -0.03, $p > 0.10$) in Model 3 and β = -0.02, $p > 0.10$ in Model 4. Hence, H5 was not supported, indicating customer satisfaction and ISMEs' business performance had weak association.

In H8 and H9, it was proposed that ISMEs' interfunctional coordination negatively moderates the relationship between customer/competitor orientation and business performance. Model 4 estimated the interaction terms together with the direct effects. The interaction effect of customer orientation and interfunctional coordination (CUSTO × COORD) on business performance was negative and marginally significant (β = -0.20, $p < 0.05$). The interaction effect of competitor orientation and

interfunctional coordination (COMPO × COORD) on business performance was non-significant ($\beta = -0.25$, $p < 0.05$). Thus, H8 and H9 were supported. The result showed that the positive relationship between customer/competitor orientation and business performance was weakened under a higher level of interfunctional coordination efforts.

The regression analysis results were reported in Table 3. Overall, eight of the nine hypotheses were supported. The results pointed out the key role of customer orientation and competitor orientation in implementing the market-oriented organizational culture by ISMEs, as the two behavioral components significantly influenced customer satisfaction and business performance in a positive manner. The level of interfunctional coordination efforts did not show a direct effect on the two dependent variables, customer satisfaction and business performance. Rather, it served as a negative moderator, lessening the effects of customer orientation and competitor orientation.

Table 3
Regression Results

Independent Variable	Customer Satisfaction	
	Model 1	Model 2
H1: Cusomter Orientation (CUSTO)	0.24 (2.46) *	0.21 (2.19) *
H3: Competitor Orientation (COMPO)	0.21 (2.14) *	0.20 (2.02) *
Interfunctional Coordination (COORD)	0.04 (0.30)	0.03 (0.26)
H6: CUSTO × COORD		-0.20 (-2.00) *
H7: COMPO × COORD		-0.23 (-2.28) *
R^2	0.14 **	0.19 **
Adjusted R^2	0.13 **	0.18 **
Independent Variable:	Business Performance	
	Model 1	Model 2
H2: Customer Orientation (CUSTO)	0.33 (4.45) **	0.30 (3.95) **
H4: Competitor Orientation (COMPO)	0.31 (4.16) **	0.26 (2.71) **
Interfunctional Coordination (COORD)	0.04 (0.34)	0.04 (0.34)
H5: Customer Satisfaction	-0.03 (-0.30)	-0.02 (-0.19)
H8: CUSTO × COORD		-0.20 (-2.03) *
H9: COMPO × COORD		-0.25 (-2.66) *
R^2	0.17 **	0.21 **
Adjusted R^2	0.16 **	0.20 **

**Significant at $p < 0.01$ (two-tailed test). *Significant at $p < 0.05$ (two-tailed test).
The numbers in parentheses are t values.

DISCUSSION

The purpose of this research was to investigate the nature of interfunctional coordination as a behavioral component of the market-oriented organizational culture for ISMEs competing in commodity markets. How the three behavioral components of market orientation influence relationship outcomes and business performance were depicted, with a focus on the moderating role of the level of interfunctional coordination efforts. Despite that market orientation was highly regarded as a positive paradigm for

business-to-business relationship outcomes (Kohli and Jaworski, 1990; Lings and Greenley, 2009; Singh and Ranchhod, 2004), the findings offered new insights for implementing market-oriented organizational culture for smaller industrial firms, especially on the nature of interfunctional coordination – how the level of interfunctional coordination efforts interact with customer/competitor orientation to influence customer satisfaction and business performance.

Smaller industrial firms live under the shadow of their larger counterparts. Compared to larger firms, ISMEs often face challenges in the competition on R&D, innovation, and the economies of scale. Consequently, value for money and the speed of order fulfillment appear to be crucial aspects in the competition. In commodity markets, price leadership is the key to survival as the price factor is a driving force in industrial buyers' decisions (Hirata and Matsumura, 2011). Furthermore, long-term value-adding service activities are often hard to actualize due to ISMEs' manufacturing-centered transactional business model in the homogeneous market (Kirca *et al.*, 2005). As such, the characteristic of business-to-business relationship tends to be transactional rather than a long-term customer-supplier relationship. In the past, researchers have paid little attention to the unique customer environment and organizational culture in manufacturing-centered industrial SMEs. The findings shed light on how to implement and improve the conventional market-oriented culture in smaller manufacturing firms.

The Moderating Role of Interfunctional Coordination Needs Attention

Conventionally, all three behavioral components of market orientation contribute to creating positive relationship and performance outcomes (Han *et al.*, 1998). However, in understanding how to implement market orientation in ISMEs, the relative contributions of the individual behavioral components have not been carefully examined. For ISMEs, the findings revealed that both customer orientation and competitor orientation positively influence relationship and performance outcomes, whereas the behavioral frequency of interfunctional coordination lessens the positive effects of customer orientation and competitor orientation. The pattern highlighted the importance of avoiding excessive interfunctional coordination in ISMEs in the downstream business processes. An adjusted market-oriented organizational culture should be implemented by smaller manufacturing firms to achieve superior business performance in commodity markets.

Smaller industrial firms should carefully think about the strategic use of interfunctional coordination activities. Always acting customer-oriented and competitor-oriented is helpful for the purpose of increasing financial revenue. However, as shown in the results, the level of interfunctional coordination efforts lessens the positive effects of customer/competitor orientation in commodity markets. When implementing market orientation, ISMEs should be aware of the negative moderating role of interfunctional coordination measured by the level of efforts. The evidence indicated that efforts involving multiple functional units in dealing with customers can incur unnecessary costs and eventually weaken the financial results for ISMEs. Practically, the findings created critical knowledge in how to improve the market-oriented organizational culture in ISMEs and other smaller firms.

According to the conventional measure developed by Narver and Slater (1990), interfunctional coordination included "interfunctional customer calls," "information sharing among functions," "functional integration in strategy," "all functions

contributing to customer value," and "sharing resources with other business units." Among the five, "functional integration in strategy" and "all functions contributing to customer value" were in the strategy aspect, whereas the other three were related to actual field activities. Interfunctional customer calls, or collective customer contact by multiple functional units, may possibly result in more extensive communication with customers. However, when time is used by production engineers and manufacturing staff in interfunctional customer calls, production work and orders may be delayed. It creates excessive interaction requiring an extra amount of time from them. Further, due to high responsiveness and effectiveness, buyers in commodity markets prefer a single point of contact (Colletti and Fiss, 2006). The transactional selling process and service processes through one responsive sales representative can achieve the "ease of doing business" principle in the business-to-business context (Stading and Altay, 2007).

Furthermore, certain interfunctional coordination efforts, such as sharing information and resources among multiple units, may escalate cost while contributing little to customer value in commodity markets. The manufacturing unit has strategic importance for an industrial firm (Frankwick *et al.,* 1994). When firms base customer decisions on tangible advantages of products, ISMEs' financial success depends mainly on cost reduction and other value-adding manufacturing activities to meet customer requirements. Within these ISMEs, the marketing/sales unit usually has expertise in collecting and analyzing customer information for the entire firm so that the manufacturing unit can be customer-oriented (Bondra and Davis, 1996; Hausman *et al.*, 2002; Verhoef and Leeflang, 2009). The coordinating efforts in investigating and fulfilling customer needs are hard to implement because customer information is difficult to transfer across departments (Kogut and Zander, 1992; Maltz and Kohli, 1996). Meanwhile, higher customer cost may be incurred when internal cost increases due to too much energy and human resources spent on customer orientation across units (Ulaga and Eggert, 2005, 2006). These reasons may help to explain why customer satisfaction and business performance decrease when all functional units of an ISME are heavily involved in customer service and contacts. Although interfunctional coordination may be useful in serving key accounts and strategic long-term relationships (Tzempelikos and Gounaris, 2013), the findings concurred with previous research that organization-wide efforts on customer orientation can be adverse because cost overweighs benefits in commodity markets (e.g., Sorensen, 2009).

Currently, many industrial firms use standard measures in firm-wise employee evaluation/bonus systems. Using customer satisfaction level as the yardstick for employee evaluations across diverse units has been a common practice since decades ago (Ruekert and Walker, 1987). This practice can tremendously increase employee focus on interfunctional coordination in customer services. The findings revealed the caveats of this commonly used evaluation system, and question the results of a coordination-oriented organizational culture in ISMEs. It seemed that employee evaluation outcome and bonus may increase, but the outcome for the firm can be adverse if every unit has to deal with customers on the frontline. ISMEs should adjust the customer satisfaction-based standard measures in employee evaluation systems to solve this dilemma.

ISMEs and other small firms should be aware that the findings only suggested a negative moderating effect of the level of interfunctional coordination efforts, but not a negative effect of interfunctional coordination on performance. It is highly possible that

time and expense increase if an ISME requires all the functional units, especially the manufacturing unit, to keep a coordinated pace on customer orientation and competitor orientation. But, interfunctional coordination may be cost-effective if the coordinating efforts bring in sufficient income to offset the expenditures due to communication and collaboration. For example, firm-wise collaboration is beneficial for product innovation because of its cost-effectiveness (Gatignon and Xuereb, 1997; Lukas and Ferrell, 2000). Thus, the practice of interfunctionally-coordinated activities should not be fully denied in ISMEs. Some managerial practices, such as cross-functional team leaders (Sarin and McDermott, 2003), de-departmentalization and open communication systems (Martin *et al.*, 2009), and heavyweight managers for internal coordination (Koufteros *et al.*, 2010), can help ISMEs in implementing interfunctional coordination appropriately.

Transactional Selling Demands More than Customer Satisfaction

In the extant marketing literature, a strong positive relationship between customer satisfaction and firm profitability has been documented (e.g., Anderson *et al.*, 1994; Anderson *et al.*, 1997). Nonetheless, the situation may be different in smaller manufacturing firms because of the unique customer environment surrounding them. Previous research pointed out that customers consistently seek superior customer value when making supplier selection decisions (Moller, 2006; O'Cass and Ngo, 2012). Established business customers still bargain with a supplier aiming for a better deal, or purchase products from another supplier providing a superior offer (Chung *et al.*, 2010; Nair *et al.*, 2011). Nowadays, industrial customers enjoy more choices as the power has shifted from sellers to buyers (Colletti and Fiss, 2006). Customers' value change provides a reason for customers to seek new suppliers and move away from established relationships with old suppliers (Flint *et al.*, 2002). ISMEs may encounter such situations frequently due to the value-seeking behavior of industrial buyers. As a result, customer equity accumulated through customer satisfaction may not lead to better business performance in the short run.

The findings indicate that implementing the market-oriented organizational culture can lead to positive relationship outcomes, but such connection is not guaranteed in the business-to-business markets. The results provide evidence to extant literature about the limited influence of customer satisfaction on customer decisions (Morris and Holman, 1988; Jones and Sasser, 1995; Leuthesser and Kohli, 1995; Bernhardt *et al.*, 2000). As Leuthesser and Kohli (1995) pointed out, the magnitude of relationship between customer satisfaction and business performance in the business-to-business context depends on many internal and external factors. In today's competitive business-to-business market environment, greater customer value brought by a new supplier can be intriguing enough for industrial buyers in choosing the new supplier over an established relationship.

Although the lack of customer satisfaction can cause catastrophe through negative word-of-mouth, satisfied customers do not contribute to financial return in the short run. It is important for ISMEs to understand that customer satisfaction does not guarantee repurchase and improved business performance. As suggested by previous research (Kumar *et al.*, 2011), industrial firms should continuously act market-oriented to keep up competitive advantages in the marketplace, because firms (e.g., late entrants) can find better ways to produce better offerings by learning and benchmarking from competitors (e.g., early entrants). Realizing the limited contribution of satisfied

customers, the findings helped advocate the crucial role of the market-oriented organizational culture for maintaining superior business performance for ISMEs.

Market Orientation Determines Success of ISMEs

The findings differed from the conventional marketing wisdom that customer satisfaction is a critical path to superior performance. The results did not exhibit a mediating role of customer satisfaction in between the components of market orientation and business performance. Consistent with existent research (Jaworski and Kohli, 1993; Kumar *et al.*, 1998; Pelham 1999, 2000), the implementation of two market orientation components had direct and positive relationship with business performance for ISMEs. Thus, it is worthwhile for ISMEs to build a market-oriented organizational culture based on customer orientation and competitor orientation protocols.

ISMEs should keep in mind that innovativeness and quality improvement are common results of having a market-oriented organizational culture (Kirca *et al.*, 2005). While customer satisfaction influences performance through repeated purchase and positive word-of-mouth, quality and innovativeness affect profitability through tangible product advantage and higher price margins (Han *et al.*, 1998; Rust *et al.*, 2002). In the industrial sector, customer satisfaction may have a lagged effect because financial return from satisfied customers often takes time (Anderson *et al.*, 1994). Financial return usually results from transactions at a faster speed based on market-oriented ISMEs' competitive advantage in quality and innovativeness.

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

This study did not examine if the direct and moderating effects were related to ISME's firm size. For example, interfunctional coordination activities seem to be essential for larger manufacturing firms because of the relative difficulty in large-scale organizing and inter-departmental communication. Is the negative moderating effect stronger in micro-sized (e.g., < 25 employees) and small-sized firms (e.g., 50-250 employees) than in medium-sized (e.g., 250-500 employees) firms? The mechanism for interfunctional coordination should be further compared between firms of different sizes. Having such a focus, future research can provide insightful understanding on how to implement interfunctional coordination in different scaled firms. In addition, a list of control variables in the statistical analysis was not obtained. Many industrial firms were reluctant to report objective information associated with financial performance to researchers (Siguaw *et al.*, 1998). In fact, objective information concerning the surveyed firms was often missing from many previous studies on market orientation (e.g., Gatignon and Xuereb, 1997; Im *et al.*, 2008). Future research should fill this void.

In this study, the focus was on examining market-oriented organizational culture in ISMEs belonging to NAICS codes 31-33 across six states in Midwest U.S. Future research should further examine the differences in market orientation based on the impact of industry characteristics on organizational culture. Many successful firms build unique culture upon internal strengths and external market condition, creating a set of beliefs described as "corporate religion" (Kunde, 2000). The external industry characteristics, such as competitive intensity and market turbulence, could be moderating variables in the business-to-business context.

A multi-item construct of customer value in the research framework was not used due to the fact that customer value was included as a measurement item in the customer orientation construct (See Table 1). Market orientation helps firms create superior value (Narver and Slater, 1990), which, in turn, affects customer satisfaction and financial performance (Fornell and Wernerfelt, 1987, 1988; Bolton and Lemon, 1999; Lapierre *et al.*, 1999; Slater and Narver, 1994). Customer value may be an important mediator linking the three behavioral components of market orientation and business performance. Future studies on how market-oriented ISMEs are capable of delivering superior value are valuable. Furthermore, the investigation of the mediating effects can include innovation factors (Vazquez *et al.*, 2001; Ledwith and O'Dwyer, 2009; Ordanini and Maglio, 2009), information systems factors (Jeffers *et al.*, 2008; Kim and Lee, 2010), employee factors (Wei and Lau, 2008), organizational learning factors (Baker and Sinkular, 1999; Hughes *et al.*, 2008), entrepreneurial factors (Atuahene-Gima and Ko, 2001; Matsuno *et al.*, 2002; Baker and Sinkula, 2009), and organizational strategy factors (Lukas, 1999; Matsuno and Mentzer, 2000; Slater and Mohr, 2006). As such, the mechanisms through which market orientation contributes to ISMEs' financial performance can be understood better.

In this study, customer satisfaction was used to represent customer relationship outcomes. However, customer loyalty may be used to measure the quality of relationship (Reichheld and Sasser, 1990; Verhoef, 2003). A satisfaction-loyalty-performance path was suggested by extant literature (Fornell, 1992; Fornell *et al.*, 1996; Reinartz *et al.*, 2004). Hence, future studies should examine the relationship between the three behavioral components and customer loyalty to see if there is a missing bond.

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