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# Supportiveness of Organizational Climate, Market Orientation, and New Product Performance in Chinese Firms

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*Most knowledge development efforts in new product development have focused on Western economies and companies. However, due to its size, rapid growth rate, and market reforms, China has emerged as an important new context for new product development. Unfortunately, current understanding of the factors associated with new product success in China remains limited. We address this knowledge gap using mixed methods. First, we conducted 19 in-depth interviews with managers involved in new product development in 11 different Chinese firms. The qualitative fieldwork indicated that firm behaviors and employee perceptions consistent with the phenomena of market orientation and the supportiveness of organizational climate both are viewed as important drivers of the new product performance of Chinese firms. Drawing on the marketing, management, and new product development literature this study develops a hypothetical model linking market orientation, supportiveness of organizational climate, and firms' new product performance. Direct relationships are hypothesized between both market orientation and supportiveness of organizational climate and firms' new product performance, as well as a relationship between supportiveness of organizational climate and market orientation. Data to test the hypothetical model were collected via an on-site administered questionnaire from 110 manufacturing firms in China. The hypothesized relationships are tested using structural equation modeling. Results indicate a positive direct relationship of market orientation on firms' new product performance, with an indirect positive effect of supportiveness of organizational climate via its impact on market orientation. However, no support is found for a direct relationship between the supportiveness of a firm's organizational climate and its new product performance. These findings are consistent with resource-based view theory propositions in the marketing literature indicating that market orientation is a valuable, nonsubstitutable, and inimitable resource and with similar propositions in the management literature concerning organizational culture. However, this study's findings also indicate that in contrast to a number of organizational culture theory propositions and empirical findings in some consumer service industries, the impact of organizational climate on firm performance in a new product context is indirect via the firm's generation, dissemination, and responsiveness to market intelligence. These results suggest that an effort to improve firms' new product performance by enhancing the flow and utilization of market intelligence is an appropriate allocation of resources. Further, this study's findings indicate that managers should direct at least some of their efforts to*

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*enhance a firm's market orientation at improving employee perceptions of the supportiveness of the firm's management and of their peers. This study indicates a need for further research concerning the role of different dimensions of organizational climate in firms' new product processes.*

## Introduction

In an increasingly dynamic global business environment, understanding how firms can adapt successfully to changing marketplaces through new product development (NPD) is of fundamental theoretical and managerial interest (e.g., Cooper, 1994; Griffin and Page, 1993). Knowledge development efforts in this important domain have centered primarily on firms in North America and Europe, limiting understanding of the factors influencing new product success in emerging and transitional economies (e.g., Batra, 1999). While the size of such economies may account for this relative lack of research attention, China stands out as an exception for three reasons. First, with a gross domestic product (GDP) of over $1 trillion, and with a rate of GDP growth that far exceeds that of other large countries, China ranks as one of the world's most important economies (e.g., Child and Tse, 2001). Second, market-based economic reforms have opened up Chinese markets. As a result, many U.S. and European firms, often in alliances with Chinese partners, now are developing new products in China (e.g., Calantone et al., 1996). Third, with the majority of the Chinese economy now attributable to nonagricultural goods, and with a rapidly growing consumer market, emphasis on the development of new products has increased dramatically (e.g., Li and Atuahene-Gima, 1999; Song and Parry, 1994).

Enhancing understanding of the drivers of new product success in Chinese firms therefore is important. The goal of this article is to identify and to examine empirically important factors associated with new product success in Chinese firms. In accomplishing this, a mixed-methods approach is adopted. China has a very different political, economic, social, and cultural environment to that of Western countries, presenting a unique business environment (e.g., Boisot and Child, 1988; Hofstede and Bond, 1988; Lau et al., 2002), and the literature concerning new product success in China is very limited. The present study therefore begins by using in-depth interviews with Chinese managers to identify market orientation and supportiveness of organizational climate as factors believed to be important in new product success in Chinese firms. Next, the study's fieldwork insights are combined with those available in the management, marketing, and NPD literature to develop a hypothetical model linking supportiveness of organizational climate, market orientation, and new product success in China. Finally, structural equation modeling is used to test empirically this hypothetical model using data collected from 110 Chinese firms via an "administered on-site" survey.

The present study makes two contributions to knowledge in this important domain. First, factors and interrelationships important in understanding new product success in Chinese firms are identified and are verified empirically. This study's empirical results provide new insights concerning how supportiveness of organizational climate, market orientation, and new product performance are connected in the dynamic transitional context of Chinese manufacturing. Second, more broadly, the supportiveness of organizational climate is identified as an important cultural resource associated with market orientation in an NPD context. This supports largely untested resource-based view (RBV) and organization theory propositions concerning the potential value of firms' cultural resources in enabling organizations to behave in ways that allow them to adapt successfully to their environment. The present study's findings also contribute new insights into the relationship between organizational climate and firm performance.

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## Theory Development

In areas of relatively undeveloped inquiry, the use of qualitative in-depth interviews is an appropriate starting point for developing research propositions (e.g., Kohli and Jaworski, 1990; Zaltman, 1997). Nineteen in-depth fieldwork interviews were conducted with managers in 11 different companies in ShenZhen and HuiZhou identified in local business journals as being engaged in new product development. They comprised eight state-owned-companies, two joint-ventures, and one private company. The interviewees included 14 managers; two project leaders; one assistant manager; and two staff employees in research and development (R&D) departments, marketing departments, and administration departments of the companies. While position titles varied, all interviewees held positions with responsibility for new product development. Most interviews were conducted in Chinese and typically lasted one to two hours. Open-ended questions were used focusing on major issues concerning new product performance such as the following: (1) How do managers in this firm think about what constitutes successful new product performance? and (2) What are the internal and external factors in your company that seem to impact new product success and failure? All interviews were tape recorded and subsequently were transcribed.

The fieldwork data suggested two particular areas pertinent to understanding NPD success in China. First, managers identified a number of company behaviors consistent with elements of the concept of market orientation (e.g., Kohli and Jaworski, 1990; Narver and Slater, 1990) as being important determinants of new product success. For example, one manager commented that "in our company, customer benefits are our major concern. We can earn money only when our clients benefit from our products. Understanding clients' needs is not enough for product success. Collecting information about competitors is also very important to understand the market. We have professionals to study our competitors." Another manager said, "In order to understand the needs of our customers our field sales force ask for customer' opinions and chase down any customer information. We also allow our employees to test our new TV model in their home for three months – but they need to comment on the new model after testing." And an R&D manager stated that "we constantly receive information and feedback on new product ideas from different departments, such as production department, quality control department, services after sales department, etc. Our communication among departments is good. R&D people often ask for the opinion of marketing people in new product design." The fieldwork therefore indicates that Chinese managers view market-oriented behaviors regarding the generation, dissemination, and utilization of market information (e.g., Kohli and Jaworski, 1990) as being important determinants of new product success.

This fieldwork insight is broadly consistent with the RBV of the firm that considers firms as somewhat sticky bundles of resources, with resource heterogeneity driving interfirm performance variation (e.g., Day, 1994). Resource-based view theory posits that sustainable competitive advantage derives from firm-specific combinations of resources that are valuable, rare, and difficult to imitate (e.g., Amit and Shoemaker, 1993; Barney, 1991). Consistent with the present study's fieldwork insights, market orientation is identified in the literature as a firm resource that can form a source of sustainable competitive advantage (e.g., Hult and Ketchen, 2001). From this perspective, market orientation is viewed as an important knowledge-based asset that is rare, due to the difficulty and cost of obtaining such market-based knowledge, and is potentially valuable because it offers market-based insights that are not available to other firms (e.g., Hunt and Morgan, 1995).

Second, managers in the present study's fieldwork also identified aspects of the internal environment within their firm as being essential in determining new product success. For example, one product planning manager indicated that "internal environment is very important for new product teams. Motivation influences the speed and the quality of a new product project. People should be happy to go to work. You cannot keep employees happy only with high pay. A positive working environment is very important to keeping them happy—people would stay in a happy environment even without high salary." Another manager commented that "if they [employees] feel good about each other, then they will trust each other, support each other and work together. Personal bonds such as lifestyle and interests have a big impact on that. You cannot force people together. If people do not like each other, they will not want to cooperate with each other." The fieldwork interviews indicated that one aspect of the internal environment viewed as particularly important by Chinese managers in NPD is the degree to which employees perceived

the work climate within the firm to be "supportive." The fieldwork indicated that the elements that seemed most salient in creating such a climate are the perceived support from management and from peers within the company.

While these insights concerning internal climate have not been a focus of attention in NPD literature, the phenomenon being described are consistent with notions of organizational climate that have been identified in organization theory (e.g., Ashkanasy et al., 2000; Denison, 1996; Hellriegel and Slocum, 1974; James and Jones, 1974; Neves, 1988; Schneider and Hall, 1972). *Organizational climate* has been defined as "employees' perceptions of the events, practices, and procedures and the kinds of behaviors that are rewarded, supported, and expected in a setting" (Schneider, 1990, p. 384). Organizational climate therefore concerns the perceptions of employees regarding important work-related aspects of the organization's values (e.g., Lippitt et al., 1985; Ott, 1989). Organizational climate has been demonstrated to have a strong influence on individual and group behavior within an organization (e.g., Abbey and Dickson, 1983; Lawler et al., 1974; Moos, 1987; Pritchard and Karasick, 1973). Consistent with the present study's fieldwork insights highlighting the important role of a supportive organizational climate in an NPD context, RBV theory indicates that firms' cultural resources can constitute an important source of competitive advantage (e.g., Barney, 1991).

Theoretically, the marketing literature suggests that cultural resources, such as a supportive organizational climate, may be important antecedents to behaviors that drive firm performance outcomes in the context of new product development (e.g., Workman, 1993). For example, Moorman (1995) finds that information utilization is a predictor of firms' new product performance but that information utilization itself is fundamentally a "people process" that is strongly impacted by the extent to which firms exhibit a "clan" culture. However, despite the growing research evidence of the importance of organizational norms on information utilization within firms (e.g., Fisher et al., 1997; Moorman et al., 1993) and evidence linking information utilization with new product performance (e.g., Kahn, 2001; Ottum and Moore, 1997), the marketing literature has paid scant attention to organizational climate and its role in information utilization in new product performance.

## Hypotheses

The literature suggests that market orientation is connected with firms' new product performance in three major ways. First, market-oriented firms have superior market information gathering and processing abilities that allow them to learn about marketplace changes quickly and accurately (e.g., Pelham, 1997). This provides a superior knowledge of customers' needs and buying behaviors, market potential, and competition, which facilitates the development and launch of timely new products (e.g., Cooper, 1979; Day, 1994; Li and Calantone, 1998). Second, market orientation involves close and effective cross-functional cooperation (e.g., Narver and Slater, 1990; Wren et al., 2000). Such close cooperation among different functional areas also has been identified in NPD literature as an important antecedent to NPD success (e.g., Atuahene-Gima, 1996; Cooper, 1994). Third, by responding to marketplace changes in increasingly dynamic environments, market-oriented firms deal with greater uncertainty and take greater risks than their less market-oriented counterparts (e.g., Jaworski and Kohli, 1993; Kohli and Jaworski, 1990). The literature indicates that successfully developing new products involves dealing with similar levels of uncertainty (e.g., Olson et al., 1995) and that a willingness to take risks is inherent in the NPD process and has been linked empirically with new product success (e.g., Sethi et al., 2001). This suggests that

*H1: A firm's market orientation is associated positively with its new product performance.*

The literature indicates that supportiveness of organizational climate and market orientation may be connected in three ways. First, the literature suggests that market-oriented companies are characterized by strong connections and communication flows among different functional areas and by an absence of interfunctional conflict (Jaworski and Kohli, 1993; Narver and Slater, 1990). Firms with an organizational climate in which personnel view peers across the organization as being supportive to one another are more likely to be able to establish such strong connections and communication flows among different functional areas. Second, market-oriented firms also are characterized by supportive top managers who empower employees (e.g., Jaworski and Kohli, 1993; Wren et al., 2000). The extent to which a firm has an organizational climate in which employees view their managers

as being supportive therefore is likely to impact the firm's market information-processing behaviors.

Third, the marketing literature indicates that effective and efficient information utilization within organizations depends on user perceptions of the information disseminated and the information providers (e.g., Maltz and Kohli, 1996; Moorman et al., 1992), which in turn are affected by the firm's organizational culture (e.g., Moorman, 1995; Workman, 1993). The management literature indicates that in firms with supportive organizational climates, employees are more likely to perceive work-related information provided as credible and to be disposed favorably to those providing the information, leading to greater information dissemination and utilization (e.g., Mayer et al., 1995; McAllister, 1995). In an NPD context, this suggests that the supportiveness of the firm's organizational climate impacts the extent to which market knowledge is disseminated and is used by new product development teams within the firm (e.g., Moorman et al., 1993; Workman, 1993). This leads us to believe that

*H2: The supportiveness of a firm's organizational climate is associated positively with its market orientation.*

In the organization theory literature, empirical studies directly have linked organizational climate with organizational outcomes such as customer account switching (e.g., Schneider, 1973, 1990) and business performance (e.g., Neves, 1988; Turnipseed, 1988). While organizational climate has received scant attention in an NPD context (Slater and Narver, 1995), the management literature indicates that the supportiveness of organizational climate may be connected directly with firms' new product performance for two reasons. First, an important element of a supportive organizational climate is perceived support from managers—a factor that has been identified as an important predictor of new product success (e.g., Henard and Szymanski, 2001; Montoya-Weiss and Calantone, 1994). Employees involved in new product development who perceive they are being supported by management are more likely to feel comfortable in engaging in the kinds of risk taking that have been linked with successful innovation (e.g., Poolton and Barclay, 1998; Sethi et al., 2001). In addition, supportive organizational climates have been associated with increased organizational commitment of personnel (e.g., Schuster et al., 1997). Stronger commitment may enable those involved in new product development to overcome better common barriers to NPD success such as obtaining required financial and human resources (e.g., Cooper and Kleinschmidt, 1996; Song and Parry, 1997).

Second, another aspect of supportive organization climate, perceived peer support, should enhance the kinds of cross-functional integration associated in the marketing literature with new product success (e.g., Griffin and Hauser, 1992, 1996; Gupta et al., 1986; Song and Parry, 1994). Peer support concerns relationships among employees and their tendency to bond together and help each other (Moos, 1987). Above and beyond its impact on market orientation, such peer supportiveness within an organization is likely to reduce conflict and to enhance cohesiveness and communication within product development teams and between the product development team and the rest of the organization—all of which have been found to be associated directly with superior NPD outcomes (e.g., Henard and Szymanski, 2001; Sethi, 2000; Sethi et al., 2001). This suggests that

*H3: The supportiveness of a firm's organizational climate is associated positively with its new product performance.*

As shown in Figure 1, drawing together insights from the present study's qualitative fieldwork and the marketing, management, and NPD literature, this study's hypothetical model therefore indicates that the new product performance of Chinese firms is

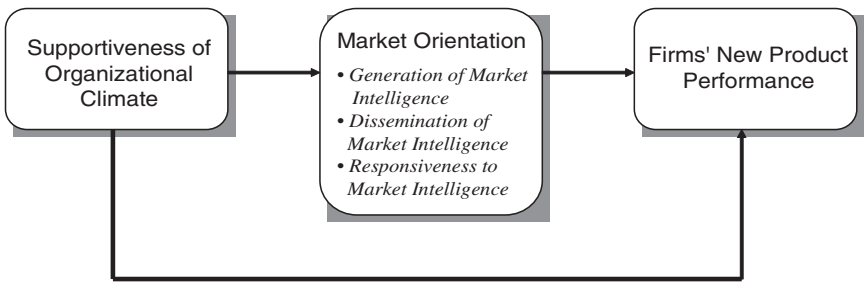


**Figure 1. Supportiveness of Organizational Climate, Market Orientation, and New Product Performance**

associated directly with both their market orientation and the supportiveness of their organizational climate. In addition, it is hypothesized here that organizational climate is also an antecedent of market orientation in Chinese firms. Organizational climate and market orientation previously have not been examined simultaneously in a new product context, yet the literature and this study's fieldwork provide support for all three hypothesized relationships. Overall, this study's model therefore suggests that organizational climate may have both direct and indirect effects on firms' new product performance.

## Research Method

### *Data Collection*

Data were collected via a questionnaire survey of firms in the NanChang, HuiZhou, and ShenZhen provinces of China. To maximize the generalizability of this study's findings, a multi-industry sample was selected. A purposive sampling plan was developed to ensure representation of a wide variety of markets, resulting in a seven industry-type research design comprising (1) computer hardware; (2) pharmaceuticals; (3) optical equipment; (4) consumer electronics; (5) textiles; (6) toys; and (7) food-processing industries. Using a range of government sources and commercial directories, firms were sampled that were engaged in the development and sale of new products and where individuals or groups with responsibility for NPD could be identified. This resulted in a sample of 290 firms that included state-owned companies, joint stock corporations, joint ventures, and private companies. A senior-level manager at each firm was contacted initially by telephone to elicit participation and to identify the most knowledgeable informant, and 127 firms agreed to participate.

To overcome the difficulties of low response rate and high costs of survey research in China (e.g., Calantone et al., 1996), an "administered on-site" method was used to collect questionnaires (e.g., Snow and Thomas, 1994). In all, 110 useable surveys were completed, representing a 44% response rate. The characteristics of the responding firms and managers are contained in the Appendix. The respondents' mean job tenure (7.1 years) and familiarity with their positions (7.42 on a nine-point scale) suggest that this study's key informants had significant experience in their firms on which to draw in providing data. Analyses using the extrapolation approach recommended by Armstrong and Overton (1977) revealed no significant differences between early and late respondents on any of the constructs in this survey, suggesting that nonresponse bias is unlikely to be present in the sample.

### *Measures*

Multi-item scales were used to measure all constructs. The final item sets, response scales, and descriptive statistics for the constructs are exhibited in Tables 1 and 2.

*New product performance*. Consistent with previous studies, the present study used a perceptual measure of new product performance (e.g., Appiah-Adu and Ranchhod, 1998; Pelham and Wilson, 1996). Drawing on insights from qualitative fieldwork, respondents were asked to assess the level of their firm's new product performance relative to its competitors in terms of management satisfaction with new product performance, market strength attributable to new products, and overall new product performance over the past three years using a five-point Likert scale with anchors of "low" and "high."

*Market orientation*. Market orientation was assessed using the scale developed by Kohli et al. (1993). Respondents were asked to assess the degree to which the statements in the market orientation scale described the practices in their firm using a five-point Likert scale with anchor labels of "strongly disagree" and "strongly agree."

*Supportiveness of organizational climate*. The supportiveness of organizational climate was assessed using the work environment scale (WES), a widely used instrument developed by Moos (1987). Respondents were asked to assess the degree to which the statements in the scale described their firm's work environment using a five-point Likert scale with anchor labels of "strongly disagree" and "strongly agree."

*Firm characteristics*. To control for the possible impact of firm characteristics on the relationships of interest, data were collected on firm size (number of employees) and firm age (years of operation) as control variables (e.g., Murphy et al., 1996).

### *Scale Validity and Reliability*

The validity and unidimensionality of the measures was examined by confirmatory factor analyses (CFA)

**Table 1. Measurement Models and Confirmatory Factor Analysis**

| Constructs and Items | Parameter[a] | Standardized Coefficient | *t*-Value[b] |
|---|---|---|---|
| Measurement Model 1 | | | |
| New Product Performance (Cronbach's Alpha = 0.86) | | | |
| *Please compare the firm's performance over the last three years with similar firms on the following dimensions . . .* | | | |
| Management satisfaction with new product performance. | $\lambda_{P1}$ | 0.85 | Scaling |
| Overall new product performance. | $\lambda_{P2}$ | 0.97 | 12.36 |
| Market strength attributable to new products. | $\lambda_{P3}$ | 0.69 | 9.78 |
| Supportiveness of Organizational Climate (Cronbach's Alpha = 0.87) | | | |
| *Please indicate the extent to which you agree or disagree with each statement as it applies to your company's work environment . . .* | | | |
| Employees are friendly and supportive of one another. | $\lambda_{C1}$ | 0.82 | Scaling |
| Management is supportive of employees and encourages employees to be supportive of one another. | $\lambda_{C2}$ | 0.85 | 11.15 |
| There is a lot of group spirit in this organization. | $\lambda_{C3}$ | 0.93 | 11.67 |
| Management is friendly and approachable. | $\lambda_{C4}$ | 0.62 | 8.10 |
| Model Fit: $\chi^2_{(13)} = 8.253$, $p < .827$, GFI = .952, CFI = .980, TLI = .968, IFI = .982, RMSEA = .044 | | | |
| Measurement Model 2 | | | |
| *Please indicate your extent of agreement about how well the statements describe the actual norms in your business . . .* | | | |
| Information Generation (IG) (Cronbach's Alpha = 0.64) | $\gamma_{11}$ | 0.75 | Scaling |
| Meet with customers at least once a year to find out what products or services they will need in the future. | $\lambda_{G1}$ | 0.55 | Scaling |
| Do a lot of in-house market research about current and future customer needs. | $\lambda_{G2}$ | 0.84 | 3.97 |
| Poll end users frequently to assess the quality of our products and services. | $\lambda_{G3}$ | 0.48 | 3.58 |
| Information Sharing (IS) (Cronbach's Alpha = 0.73) | $\gamma_{21}$ | .69 | 2.33 |
| When something important happens to a major customer or market, the whole business unit knows about it in a short period. | $\lambda_{S1}$ | 0.60 | Scaling |
| Data on customer satisfaction are disseminated at all levels on a regular basis. | $\lambda_{S2}$ | 0.73 | 4.77 |
| When one department finds out something important about competitors, it is slow to alert other departments. (R) | $\lambda_{S3}$ | 0.74 | 4.78 |
| Information Responsiveness (IR) (Cronbach's Alpha = 0.72) | $\gamma_{31}$ | .60 | 2.38 |
| The activities of the different departments are well coordinated. | $\lambda_{R1}$ | 0.64 | Scaling |
| Customer complaints fall on deaf ears in this business unit. | $\lambda_{R2}$ | 0.70 | 4.77 |
| When we find that customers would like us to modify a product or service, the departments involved make concerted efforts to do so. | $\lambda_{R3}$ | 0.71 | 4.78 |
| Model Fit: $\chi^2_{(24)} = 30.608$, $p < .165$, GFI = .940, CFI = .966, TLI = .948, IFI = .968, RMSEA = .052 | | | |

[a] $\lambda$ parameters indicate paths from measurement items to first-order constructs; $\gamma$ parameters indicate paths from first-order constructs to the second-order factor.
[b] Scaling denotes $\lambda$ value of indicator set to 1 to enable latent factor identification.

**Table 2. Descriptive Statistics and Correlations (Significance) of the Study Constructs and Control Variables**

| Construct | Mean | Standard Deviation | New Product Performance | Market Orientation | Supportiveness of Organizational Climate | Firm Size | Firm Age |
|---|---|---|---|---|---|---|---|
| New Product Performance | 3.50 | .88 | – | | | | |
| Market Orientation | 3.93 | .58 | 0.38 (.001) | – | | | |
| Supportiveness of Organizational Climate | 3.80 | .79 | 0.41 (.001) | 0.30 (.002) | – | | |
| Firm Size (Employees) | 664.95 | 1531.03 | 0.04 (.721) | 0.12 (.253) | − 0.02 (.813) | – | |
| Firm Age (Years) | 11.63 | 12.15 | − 0.02 (.852) | 0.05 (.654) | − 0.10 (.304) | 0.49 (.001) | – |

using two measurement models of the most theoretically related constructs (Bentler and Chou, 1987). The first model examined supportiveness of organizational climate and new product performance as separate first-order factors from which originate the relevant observed measurement items for each construct. The second model examined market orientation as a second-order factor from which arise the first-order market intelligence generation, dissemination, and responsiveness constructs, from which in turn originate the observed measurement items for each construct. As seen in Table 1, both measurement models fit well with the data as indicated by the following fit statistics: $\chi^2_{(13)} = 8.253$, $p < .827$, GFI = .952, CFI = .980, TLI = .968, IFI = .982, RMSEA = .044 for model 1; and $\chi^2_{(24)} = 30.608$, $p < .165$, GFI = .940, CFI = .966, TLI = .948, IFI = .968, RMSEA = .052 for model 2. Measurement items all loaded onto intended constructs with loadings ranging from .69 to .97 (model 1) and .48 to .84 (model 2), and there was no evidence of cross-loading, indicating convergent validity. Discriminant validity was assessed using two-factor CFA models involving each possible pair of constructs, with the correlation between the two constructs first freely estimated and then constrained to one. In all cases the $\chi^2$ value of the unconstrained model was significantly lower than that of the constrained model, indicating discriminant validity among all of the study's constructs (Bagozzi et al., 1991).

To assess the presence of common method bias, Harman's one-factor method was used, which requires examining the data for the presence of a single factor accounting for the majority of variance among the measures (Podsakoff and Organ, 1986). In fact, in line with the hypothesized factor structure, an exploratory factor analysis of this study's data indicated five factors with eigenvalues greater than 1 and no single dominant factor. The coefficient alphas of the study's constructs ranged from 0.64 to 0.87, indicating acceptable reliability for the constructs. Overall, the constructs therefore exhibit good measurement properties.

## Analysis and Results

Before testing the study's hypotheses, it was confirmed that the results were unlikely to be impacted significantly by firm heterogeneity by examining the relationship between firm size and age and each of the constructs in the hypotheses via regression analyses. Insignificant relationships indicate that these firm characteristics are unrelated to the constructs in the hypotheses. The hypothesized relationships then were tested in a single full-information structural equation model (SEM). The hypothesized model fit the data well as indicated by fit indices of $\chi^2_{(98)} = 111.81$, $p < .161$, IFI = .979, CFI = .978, TLI = .973, and RMSEA = .037. Given the study's relatively small sample size, Bollen and Stine's (1992) procedure was followed by subsequently drawing 1,000 bootstrap samples from the data and by computing the Bollen-Stine *p*-value statistic, which indicates the probability that the discrepancy function in a large normal sample would be as large as the SEM results in the present study's sample (Bollen and Stine, 1992). The Bollen-Stine *p*-value of .751 indicates that the parameter estimates in the hypothesized SEM are unaffected by this study's sample size.

The path coefficients in the SEM support H1, linking market orientation with new product performance (.51, $t = 2.34$), and H2, linking supportiveness of organizational climate with market orientation

(.46, $t = 2.31$). However, the H3 path between supportiveness of organizational climate and new product performance was found to be insignificant (.22, $t = 1.81$). The hypothesized model explains 41% of the variance in the new product performance and 22% of the variance in market orientation of the firms in the data set. Given the insignificant H3 result, a trimmed SEM also was estimated, in which the path between supportiveness of organizational climate and new product performance was removed. The trimmed model fit better with the data than the original hypothesis testing model.[1] With path coefficients of .68 ($t = 2.55$) and .55 ($t = 2.51$), the H1 and H2 paths in the trimmed model were stronger than in the hypothesized model and explained 46% of the variance in new product performance and 30% of the variance in market orientation in the firms in the sample. The Bollen-Stine *p*-value of .725 indicates that the parameter estimates in the trimmed model also are unaffected by the sample size.

Overall, the H1 results support existing marketing theory linking market orientation with new product performance outcomes. This finding supports RBV-based strategic marketing propositions that market orientation is a valuable informational resource that can allow firms to generate significant economic rents and to enjoy superior performance (e.g., Hunt and Morgan, 1995). The H2 results support RBV and organization theory in indicating that cultural resources, such as organizational climate, can be valuable in enabling firms to engage in behaviors that drive desired performance outcomes (e.g., Barney, 1991; Saffold, 1988). Specifically, the study's H2 results indicate the importance of supportiveness of organizational climate in developing the market orientation required for successful new product performance.

However, the H3 results indicate that the impact of organizational climate on new product performance is indirect, being fully mediated by its effect on market orientation.[2] This finding is consistent with market orientation research in which organizational culture, which affects how managers and employees attend and respond to environmental stimuli, has been posited as an important determinant of a firm's ability to

**Table 3. Structural Equation Modeling Results**

| Paths Modeled | | Standardized Coefficient | *t*-Value |
|---|---|---|---|
| Hypothesized Model | | | |
| H1: Market Orientation | → New Product Performance | 0.51 | 2.340 |
| H2: Supportiveness of Organizational Climate | → Market Orientation | 0.46 | 2.311 |
| H3: Supportiveness of Organizational Climate | → New Product Performance | 0.22 | 1.813 |
| Model Fit: $\chi^2_{(98)} = 111.81$, $p < .161$, IFI = .979, CFI = .978, TLI = .973, RMSEA = .037, Bollen-Stine Bootstrapped $p < .751$ | | | |
| Paths Modeled | | Standardized Coefficient | *t*-Value |
| Trimmed Model | | | |
| H1: Market Orientation | → New Product Performance | 0.68 | 2.552 |
| H2: Supportiveness of Organizational Climate | → Market Orientation | 0.55 | 2.509 |
| Model Fit: $\chi^2_{(99)} = 114.973$, $p < .130$, IFI = .975, CFI = .974, TLI = .969, RMSEA = .040, Bollen-Stine Bootstrapped $p < .725$ | | | |

[1] The original hypothesized and trimmed SEMs were run simultaneously as nested models, and the insignificant *p*-value for the model comparison indicated that the trimmed model is a better fit to the data.

[2] An alternative explanation that the effect of supportiveness of organizational climate is moderated by the level of market orientation was eliminated via an SEM with a two-stage least-squares estimator, which revealed an insignificant interaction (Bollen and Paxton, 1998).

process market information in ways that allow it to adapt successfully to its marketplace (e.g., Deshpandé et al., 1993; Homburg and Pflesser, 2000). The lack of a direct relationship between supportiveness of organizational climate and new product performance is also consistent with organization theory indications that organizational culture may impact business performance indirectly by shaping how firms perceive and respond to their environment (e.g., Fiol, 1991; Saffold, 1988; Shrivastava, 1985). However, the lack of a direct supportiveness of organizational climate–new product performance relationship contrasts with previous studies of customer service personnel in service industries where organizational climate has been found to be associated directly with customer performance outcomes (e.g., Schneider, 1973, 1990).

## Implications for Theory and Practice

The present study has three implications for theoretical knowledge concerning firms' new product performance. First, the important role played by supportiveness of organizational climate in determining a firm's market orientation is identified and supported empirically, which in turn explains significant variance in new product success in Chinese firms. Given the size and growing importance of the Chinese market to both Western firms and the global economy, this provides important insights for both researchers and managers. In one respect, the identification of market orientation as an important driver of new product performance in China suggests some similarity between drivers of new product success in China and Western countries (e.g., Atuehene-Gima, 1995). However, supportiveness of organizational climate is not a factor that previously has been identified explicitly as an important driver of market orientation in a new product context in Western countries.

Second, this study's fieldwork interviews and its empirical results indicate the importance of the cultural context of the firm in explaining how firms' engage in market information processing behaviors that enable them to achieve superior new product performance. While both the marketing (e.g., Deshpande et al., 1993) and management (e.g., Barney, 1991) literature posits that organizational culture is a potentially important firm resource, there have been few empirical attempts to examine this proposition. The few previous culture–market information processing studies in the literature either have examined organizational culture using deeper-level competing values theory conceptualizations (e.g., Moorman, 1995) or have sought to uncover specific aspects of market-oriented values outside of the new product context (e.g., Homburg and Pflesser, 2000). The present research identifies the supportiveness of organizational climate, a cultural context variable that has been identified as potentially important in the market orientation literature (Slater and Narver, 1995) but that previously has not been examined empirically, as an important antecedent of firms' market information processing in a new product context.

Third, this study's findings indicate that organizational climate is important in determining new product performance only through its effect on a firm's market orientation behaviors. Previous studies of organizational climate and firm performance have focused on service contexts and the role of customer service personnel in impacting customer outcomes (Schneider, 1973, 1990). In the present context, however, while NPD personnel may interact with customers during the development process, it is ultimately the product itself and the way in which it is marketed that impact customer behaviors over time. These differences suggest that in the context of personnel that do not interact directly with customers and in organizations that market value offerings predominantly centered on a tangible product rather than on an intangible service, organizational climate is only indirectly important in determining firm performance outcomes.

The present study also holds some important insights for managers. While the previous empirical literature has not been conclusive (e.g., Kahn, 2001), these findings suggest that managers' attempts to enhance new product performance by improving the flow and use of market intelligence may be well founded. This research indicates that in these efforts managers should pay careful attention to the "softer" cultural aspects of the organization. In particular, the present findings indicate that managers should work directly on the perceived supportiveness of the firm's organizational climate. This is particularly useful since unlike the deeper-level values and beliefs associated with more abstract conceptualizations of organizational culture, organizational climate is amenable more directly to management control (e.g., Ashkanasy et al., 2000; Denison, 1996). From this perspective, the present fieldwork suggests that firms' training, hiring, and reward and evaluation systems should identify and should facilitate practices

that enhance employee feelings of peer and manager supportiveness in order to enhance market orientation and subsequent new product performance. Specific suggestions for how this could be accomplished may include the following: (1) consideration of the empathetic and social interaction characteristics of potential employees in hiring decisions; (2) encouragement of informal and social interactions between managers and employees; (3) sensitivity training for all personnel; and (4) the identification, evaluation, and rewarding of management and employee behaviors that demonstrate supportiveness for fellow employees.

## Limitations and Directions for Future Research

Three limitations of the present study result from trade-off decisions in the research design, each of which suggests opportunities for future research. First, while it was ensured that firms from a number of different industries were included in this study's sample, the time and resource requirements for collecting valid survey data in China necessarily limited the sample size. While this research represents an important first step in identifying factors associated with new product success in Chinese firms, additional research is required to enhance confidence in the generalizability of these findings. In addition, data from other country contexts are required to examine the extent to which the importance of supportiveness of organizational climate in determining market orientation and, in turn new product performance, is generalizable beyond Chinese firms.

Second, cross-sectional data are relied upon in testing the hypotheses. Importantly, this means that the direction of the relationship between supportiveness of organizational climate and market orientation cannot be ascertained empirically. There is, therefore, a reliance on theory-driven arguments from organization theory supported by fieldwork insights in specifying the causal relationships in this study's hypothetical model. To validate the causal chain hypothesized in this model requires longitudinal data collection and time-series analyses.

Third, while careful attention was given to identifying appropriate informants and ensuring key informant quality, and while no indication of common-methods problems was found, the potential still exists for respondent bias to affect the observed relationships (e.g., Phillips, 1981). Unfortunately, locating additional competent informants willing to provide survey information is challenging. This study's attempt to isolate a second informant in each respondent firm resulted in only eight completed second informant questionnaires. In these eight cases, the analysis indicated that the responses of the two informants were not significantly different from one another, suggesting that respondent bias may not be a significant problem in the data. Nonetheless, collecting data from multiple informants to minimize potential response bias would enhance confidence in the present results.

Above and beyond these limitations, the empirical results indicate that the role of organizational climate in determining firms' market orientation and NPD efforts should be a focus for future research. While this fieldwork led to a focus specifically on the supportiveness of organizational climate, the organizational theory literature posits that this is only one of a number of different dimensions of organizational climate (e.g., Field and Abelson, 1982; Reichers and Schneider, 1990). Future researchers should examine the role of other dimensions of organizational climate identified in organization theory such as involvement, autonomy, work pressure, clarity, control, and autonomy (Turnipseed, 1988) on new product development processes and performance.

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# Appendix
## Sample Characteristics

| | |
|---|---|
| **Firm Characteristics** | |
| Ownership Structure | Percentage of Sample |
| State-Owned Company | 18.2 |
| Joint-Stock Corporation | 17.3 |
| Joint Venture | 25.5 |
| Private Company | 18.2 |
| Collectively Owned Company/Joint Operation | 9.9 |
| Others | 10.9 |
| Industry | |
| Electronic Information | 21.8 |
| Electric Product/Engineering/New Material | 31.9 |
| New Pharmaceuticals/Bioengineering/Chemical | 13.7 |
| Textile | 9.1 |
| Hardware, Package, and Toys | 6.4 |
| Others | 17.1 |
| **Respondent Characteristics** | |
| Respondent Position | |
| General Manager/Director/Factory Director | 33.0 |
| Marketing Manager | 18.3 |
| R&D Manager and Chief Engineer | 23.9 |
| Others | 24.8 |
| | Mean Years |
| Respondent Tenure with Company | 7.10 |
| | 1–9 Scale |
| Respondent Familiarity with Position in Firm | 7.42 |