A few good women—on top management teams

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Received 5 September 2003; accepted 30 September 2004

Abstract

Our study extends the upper echelon framework to gender diversity in top management teams (TMTs), a topic that has received little attention in management. We study the direct impact of representation of women on TMTs on organizational performance. We also study the moderating effects of environmental characteristics on the TMT women–performance linkage. In a sample of 679 firms from the 1998 Fortune 1000 list, our results show a positive relationship between the proportion of women on TMTs and organizational performance. The moderating effects of environmental characteristics, namely, munificence, dynamism, and complexity, are not supported. These results reveal that the role played by top women managers transcends the demands of the environment. Our study has implications for the career development of women. In addition, our results have the potential to generalize to managers from other nationalities.

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Keywords: Women; Top management teams; Performance; Fortune 1000 firms

1. Introduction

During the past two decades, there has been considerable research exploring the impact of upper echelon (top management teams, or TMTs) characteristics on organizational processes and outcomes. This body of work reveals that the TMT is critical to firm success. Since Hambrick and Mason’s (1984) seminal work on upper echelons, empirical studies supporting their propositions have enhanced our understanding of critical constructs and key relationships in this area. One of the earlier issues investigated in this area involves the relationship between TMT demographics and firm performance (Bantel and Jackson, 1989; Murray, 1989; Singh and Harianto, 1989). Studies that examine the impact of TMT characteristics on performance in particular contexts also exist. For example, Norburn and Birley’s (1988) study investigated the impact of managerial characteristics on performance in turbulent industries, whereas Boeker (1997), Michel and Hambrick (1992), Krishnan et al. (1997), and Wiersema and Bantel (1992) examined the implications of TMT characteristics for diversification strategies pursued by firms. All these studies reveal the important role the TMT managers play in meeting the organization’s objectives.

However, there is a dearth of studies involving gender diversity in TMTs and organizational outcomes. Perhaps, one reason could be the absence of women in the upper echelons of the organization (Mainiero, 1994). This is particularly true for large firms, which in the previous decades have long suffered from the “glass ceiling” syndrome, stemming from major physical and psychological barriers to advancement to the top levels of the organization. However, with the changing business landscape of the 1990s, and with some of the old barriers crumbling, women have ascended to the upper echelons of Fortune 1000 firms in recent years (Fortune, 2004). Business Week (2001) reports that women account for about 3.9% of the 4341 highest-paid executives at the 825 companies they analyzed. Hambrick and Pettigrew (2001) state, “the conditions of the modern corporation may require us to take a wider perspective of strategic leadership and a much more inclusive definition of who the leaders are” (pp. 43–44).

Our study extends the upper echelon framework postulated by Hambrick and Mason (1984) to the issue of gender,
an important measure of diversity in TMTs. Drawing on the upper echelon framework and market incentive perspectives, and theories of social psychology such as social identity and power, we explore the following research question: What is the impact of the representation of women on TMTs of Fortune 1000 companies on organizational performance?

2. Theoretical background and hypotheses

2.1. The role of gender diversity in TMTs

During the mid to late 1990s, increased global competition, information technology, and diversity in the work force helped reshape the business environment, and this trend has continued into the 21st century. To effectively cope with changes in the business environment, the organization needs diversity in its TMT (Hambrick and Pettigrew, 2001). TMT diversity is also known as TMT heterogeneity and is defined as the variation in team members’ characteristics (Hambrick et al., 1996). Gender constitutes an important measure of TMT diversity and therefore offers all the benefits that a diverse team has to offer to the organization (Catalyst, 2004). Hambrick et al. (1996) argue that a diverse TMT is better equipped to observe opportunities and threats on multiple fronts, and possesses a broader repertoire of skills and capabilities for superior problem solving and decision making. Although several studies in the previous two decades have examined the implications of TMT heterogeneity for organizational performance, findings are not conclusive. Some researchers have found a positive association between various dimensions of TMT heterogeneity such as educational levels and functional backgrounds on organizational innovation and overall performance (Bantel and Jackson, 1989; Hambrick et al., 1996). Other researchers such as Murray (1989) and Miller et al. (1998) have challenged the notion that TMT diversity yields benefits at no cost and have argued that diversity often comes at the price of social integration. Meanwhile, Keck (1997) and Carpenter (2002) argue that the TMT heterogeneity–performance relationship is likely to be context-driven.

One important factor contributing to TMT diversity is the representation of women on the team. However, to our knowledge, there is no systematic study that examines whether the representation of women on the TMT of Fortune 1000 firms has an impact on organizational performance. A review of previous literature reveals three types of studies in this area. The first set of studies, for practitioners, is statistical in nature and provides data such as the proportion of women represented on TMTs and their implications for organizations (Catalyst, 1996, 1998, 2004). A second type of study focuses on compensation issues and examines whether there are gender-based differences in compensation in the TMT of large organizations (Bertrand and Hallock, 2001). A third type of study examines differences in leadership styles of male and female managers (Eagly and Johnson, 1990). Our study thus fills this important lacuna in the study of TMT characteristics and organizational performance.

Although prior research suggests that there is a price associated with recouping diversity benefits (Murray, 1989; Miller et al., 1998), we argue that the net relationship between TMT diversity (measured in terms of the representation of women on the team) and performance is likely to be positive in the current business environment. We build this hypothesis by drawing on theories of social psychology such as social identity and power, and market incentive perspectives. Social identity theory describes the impact of socialization and categorization on organizational outcomes. That is, managers identify themselves as members of an elite group and are therefore socialized into its norms (Kent and Moss, 1994). Drawing on social identity theory, we argue that the representation of women on the TMT may confer numerous benefits on the organization. First, women are more likely than men to be perceived as leaders by group members in environments that call for a lot of social interaction, which is particularly applicable to organizations today as they compete in an increasingly global market place (Kent and Moss, 1994). Second, the challenges women face on their way up in organizations equip them with the necessary skills to cope with uncertainty in task requirements. In a survey of 55 high-profile female executives, Mainiero (1994) found that women faced five major hurdles during their climb in the corporate ladder; getting assigned to high-visibility projects, demonstrating critical skills for effective job performance, attracting top-level support, displaying entrepreneurial initiative, and accurately identifying what their company valued. While technical skills is likely to be a prerequisite for top-level positions, skills men and women sharpen on their way up the corporate ladder, women have the advantage of having survived the effects of male hierarchies. This unique combination of technical and survival skills may give women a psychological advantage and thereby improve their interactions with peers and subordinates (Tharenou, 2001).

Third, women are more likely to possess a “feeling” cognitive style, a style that emphasizes harmony, compared to their male counterparts. This style is likely to enable women to inspire confidence among peers and subordinates, share information and power, bring people together, and respond to challenges (Hurst et al., 1989). Fourth, women are more likely to adopt a “learning” approach with their networking strategies; they are more likely to seek ties with not just others inside the organization but are also likely to seek extraorganizational relationships with other women so that they are better equipped to overcome gender-related obstacles and learn from others’ experiences (Gersick et al., 2000; Ibarra, 1997). Learning from others’ experiences gives an opportunity to engage in more comprehensiveness,
a process that utilizes an extensive decision process when dealing with immediate opportunities and threats, and thereby generates higher-quality decisions (Miller et al., 1998). Finally, the multiple roles that women play in their personal lives, including marital, parental, or filial, provides them with psychological benefits that sharpen multitasking abilities, and enrich interpersonal and leadership skills (Ruderman et al., 2002). These skills increase comprehensiveness in decision making and enhance organizational performance.

Drawing on theories involving power (Pfeffer, 1981), which hold that decision making in organizations is governed by the power play that occurs among key personnel, researchers argue that there are several differences in the way men and women perceive power. First, men see power in terms of influence and therefore are more likely to use coercive, legitimate, and expert power to accomplish their objectives (Johnson, 1976). On the other hand, women view power in terms of dissemination of information and knowledge, and thus are more likely to facilitate this process. This is especially relevant in the current organizational climate of increased empowerment among employee ranks, which places great demands on information sharing and knowledge (Noe, 1988). Hence, greater representation of women on the TMT can facilitate dissemination of information by weakening barriers to effective social intercourse and lowering the likelihood of subgroup formation (Earley and Mosakowski, 2000). Second, women in top positions command great prestige in the business environment by virtue of their high visibility for their achievements. Hambrick and Pettigrew (2001) discuss the notion of symbolism of executives and they state, "Top executives are a highly visible embodiment of the organization—its strategic direction, values, credibility, and staying power" (pp. 39–40). Their visibility may help women obtain scarce resources from the environment. Third, greater representation of women on the TMT may augur well for treatment of women and other minorities by sending a positive signal to the rest of the organization (Tidball, 1980) and thereby improve the overall work attitudes (Appold et al., 1998). An improvement in work attitudes can lead to a more positive work climate, thereby improving productivity and organizational performance. This is particularly relevant to large firms, which are likely to have greater representation of women and minorities in the organization.

Drawing on a market incentive perspective, which holds that firms have a strong motivation to be efficient and therefore resort to rational behavior, we argue that greater representation of women on the TMT is likely to improve performance because the firm and the industry have the full, unrestricted labor pool of high-skilled executives to choose from (Appold et al., 1998). This is indeed relevant to the environment of the late 1990s where the demand for high-skilled executives far outstripped the supply. Firms that increase the representation of women on the TMT are likely to be more successful because they use all available human resources (Becker, 1971). Based on the arguments presented in Section 1, we argue that the representation of women in the TMT minimizes social identity problems and increases power sharing, which increases organizational performance. In addition, a firm with greater representation of women demonstrates that it has drawn its top executives from a larger labor pool, which can further enhance organizational performance.

**Hypothesis 1.** The greater the proportion of women on the TMT, the better is the performance of the organization.

### 2.2. The moderating role of environment characteristics

Because one of the major functions of TMT managers is to manage the organization’s interface with its environment (Finkelstein and Hambrick, 1990; Shen and Cannella, 2002), it is important to explore how the context in which the firm operates interacts with other key variables including gender diversity. Dess and Beard (1984), in their seminal work, draw on Aldrich’s (1979) environmental dimensions and use three main categories to describe an organization’s task environment. These include munificence, dynamism, and complexity. Munificence has been defined as the extent to which the environment can provide excess resources to support sustained growth (Cyert and March, 1963). Dynamism is defined as the relative instability in an environment arising from interconnectedness among its various elements (Aldrich, 1979). Complexity is conceptualized as the heterogeneity and range of an organization’s activities (Child, 1972).

Subsequent studies have used these three categories to enhance understanding of the implications of upper echelon characteristics for different environments. For example, Wiersema and Bantel (1993) found that munificent environments interact with strategic change to generate TMT turnover. Other studies show that the relationship between TMT demographic characteristics and corporate strategic changes is influenced by industry structure, measured in terms of growth, profitability, concentration (Wiersema and Bantel, 1992), and firm performance (Boeker, 1997).

The presence of women on TMTs of firms operating in munificent environments creates favorable organizational outcomes in several ways. First, the excess capacity available in munificent environments buffers the organization from external and internal threats, including threats of power struggle among managers, thereby providing greater latitude to top managers for strategic planning (Cyert and March, 1963). Second, munificent environments create less stressful situations in organizations, thereby reducing the need for routines, rigid procedures, or costcutting (Yasai-Ardekani, 1989). The availability of this slack provides women with enough resources to execute their plans, without having to resort to politics. This is likely to benefit the organization.
Hypothesis 2a. The positive relationship between women on TMTs and organizational performance will be stronger at higher levels of environmental munificence.

There are also a few studies linking environmental dynamism (measured stable–turbulent) with TMT characteristics. For example, Haleblian and Finkelstein (1993) argue that for firms competing in dynamic environments, larger TMT groups are likely to possess greater information-processing capabilities and decision-making capabilities than smaller teams. In another study, Hambrick et al. (1996) found that in turbulent industries, TMT heterogeneity (measured as heterogeneity in functional backgrounds, education, and tenure) has a positive impact on organizational performance. Finally, Grimm and Smith (1991) found that younger managers and those with less experience are more likely to alter their firms’ strategies in response to changing environmental conditions.

Extending the findings of previous research to gender diversity, we argue that in dynamic environments, greater representation of women on TMTs is advantageous to the organization. Prior research (Eagly and Johnson, 1990; Brett and Stroh, 1999) suggests that women executives are likely to have superior performance in several skill areas including conflict resolution, adapting to change, producing high-quality work, developing one’s capabilities, and motivating and inspiring others. These skills are critical to dealing with unstable environments, thereby alleviating stress among subordinates and improving their productivity. In the long run, this can lead to improved firm performance and profitability (Moskal, 1997). Thus, it is hypothesized that:

Hypothesis 2b. The positive relationship between women on TMTs and organizational performance will be stronger at higher levels of environmental instability.

Research linking environmental complexity and TMTs includes a recent study by Carpenter (2002), which reveals that the positive relationship between TMT characteristics and firm performance is contingent on environmental complexity, measured in his study as a firm’s international strategy. Complex environments require a greater degree of interaction on the part of managers with multiple constituencies with conflicting roles (Dess and Beard, 1984). In addition, information-processing requirements and the need to share information are far greater for firms operating in complex environments (Keck, 1997). Women are better equipped than men to cope with complex environments because they are more likely to share information and power (Appold et al., 1998) and their presence increases the diversity in the TMT—an essential requirement for enhancing information-processing capabilities and providing the momentum for change (Carpenter, 2002; Hambrick et al., 1996). By sharing information and clarifying the expected outcomes, women are more likely to help their colleagues gain an understanding of the complexities in the environment. Women are also more likely to work on promoting consensus in the TMT (Ely, 1995; Noe, 1988), which is essential to success in complex environments. Finally, the multiple roles that women play expand their personal resources and help them to cope better with the varying demands of the environment (Marks, 1977). Thus, it is hypothesized that:

Hypothesis 2c. The positive relationship between women on TMTs and organizational performance will be stronger at higher levels of environmental complexity.

3. Methodology

We draw our sample from the 1998 Fortune 1000 list of organizations. The late 1990s marked the ascendancy of the Internet and global era and provided opportunities for many skilled individuals, especially women, to take up positions of importance in both startups and large organizations. Data on TMT managers were obtained from company proxy statements, 10-K reports, and "Dun and Bradstreet Reference Book of Corporate Management." All individuals with titles above and including senior vice presidents were included in the TMT, consistent with previous research (Geletkanycz and Hambrick, 1997). As most of our data were obtained from 10-K reports and proxy statements for 1998, we could not get the data for all of the measures in the study for several organizations. We also excluded firms that were acquired, privately held, or went out of business during the period under study. Thus, the final sample was 679 organizations. The t tests revealed no significant differences in the means of the revenues of firms in our final sample and firms excluded from the final list. TMT characteristics were collected at time t (1997 yearend) to predict firm performance averaged over t+1, t+2, t+3.

3.1. Independent variables

3.1.1. Women on TMT

Membership of women on the TMT is the major independent variable in the study. To test our hypothesis, we calculated the proportion of women in the TMT. This variable could range from 0 to 1.

3.1.2. Weighted industry performance

As some of the Fortune 1000 companies are very diverse and operate in multiple industries, we needed to norm our dependent variable. Using Compustat business segment data at the three-digit SIC level, we adopted a method consistent with previous literature to compute the weighted average industry performance based on a firm’s level of sales in the industries in which it operated (Barker and Mueller, 2002; Baysinger et al., 1991). We then used the return on asset (ROA) for each of these industry groups because ROA is viewed by many researchers as a stable variable and more indicative of the efficient use of an organization’s facilities (Keck, 1997). We entered this weighted industry average of
performance as the first independent variable in a stepwise regression process.

3.2. Moderating variables

We used measures from prior studies on environment to compute munificence, dynamism, and complexity. Munificence was calculated as the 3-year average sales growth rate of the industry for the period 1994–1997. We used the two-digit SIC levels for industry categories to calculate munificence because executive movements are highly prevalent across major industry groups. Dynamism, which represents the interconnectedness among organizations, was measured as the changes in the number and size of competitors within an industry, consistent with Wiersema and Bantel’s (1993) study. Two measures were used for this variable. For the first measure, we used the value line industry averages to calculate the percentage change in the number of competitors in an industry between 1994 and 1997. For the second measure of dynamism, we calculated the variance in the four-firm concentration ratio, which represents the change in the percentage of total industry sales contributed by the four leading firms of the industry between 1994 and 1997. This information was collected from Compustat. Complexity, which denotes the heterogeneity and range of an organization’s activities, was measured using Jacqumin and Berry’s (1979) entropy measures of diversification. Complexity is the extent of diversification pursued by the firm and is measured as $\sum_i P_i \ln(1/P_i)$, where $P_i$ is the proportion of firm sales in segment $i$ and $n$ is the number of a firm’s business. This information was collected from Compustat.

3.3. Control variables

Based on prior research on TMTs, we included two control variables that are likely to influence firm performance and these are: organizational size (measured as logarithm of firm revenues for the year 1997) and TMT turnover in the organization (measured as the percentage of the TMT members leaving the firm during the 3-year period of 1998–2000). TMT turnover is likely to adversely impact firm performance because it may send negative signals to key stakeholders such as customers, investors, and government agencies that the firm lacks stability at the top level (Krug and Hegarty, 1997).

3.4. Dependent variables

3.4.1. Organizational performance

The performance of the organization was collected from Compustat and measured as the ROA averaged over a 3-year period (1998–2000). To check the robustness of our results, we also replicated our analyses using the return on sales (ROS) as the dependent variable.

4. Results

Table 1 shows the descriptive statistics and Pearson correlations for the major variables in the study. Women constitute about 6.7% of the TMT and 2.8% of the line positions in the TMT, and these results augment previous statistics reported by Catalyst. The average TMT size is 10.87 with a standard deviation of 2.2, consistent with previous studies (Haleblian and Finkelstein, 1993). Of the 679 firms in our sample, 51% (345 firms) had no women on their TMTs, and the remaining 49% (334 firms) had one or more women on their TMTs. Of these 334 firms, 25% of the firms in the sample (163 firms) had women holding line positions. The TMT turnover during the period 1998–2000 is 18%, which is comparable across men and women in the TMT. This average is lower than previous studies on

<table>
<thead>
<tr>
<th>Variables</th>
<th>Means</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational performance</td>
<td>4.54</td>
<td>5.30</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted industry performance</td>
<td>5.26</td>
<td>3.13</td>
<td>0.48***</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TMT turnover</td>
<td>0.18</td>
<td>0.36</td>
<td>0.005</td>
<td>−0.06</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational size</td>
<td>8.21</td>
<td>0.99</td>
<td>0.09*</td>
<td>0.03</td>
<td></td>
<td>0.03</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women on TMT</td>
<td>0.067</td>
<td>0.085</td>
<td>0.15***</td>
<td>−0.06</td>
<td>0.39***</td>
<td>−0.05</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Munificence (sales growth)</td>
<td>10.27</td>
<td>6.0</td>
<td>0.01</td>
<td></td>
<td>0.03</td>
<td>0.06</td>
<td>−0.008</td>
<td>0.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamism (change competitors)</td>
<td>0.01</td>
<td>0.23</td>
<td>0.05</td>
<td>0.11**</td>
<td>0.01</td>
<td>−0.09*</td>
<td>0.05</td>
<td>0.33***</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamism (concentration ratio)</td>
<td>52.2</td>
<td>20.4</td>
<td>0.08</td>
<td>0.19***</td>
<td>−0.03</td>
<td>0.11**</td>
<td>−0.04</td>
<td>−0.08</td>
<td>0.19*</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Complexity (diversification)</td>
<td>0.66</td>
<td>0.44</td>
<td>0.11**</td>
<td>0.17***</td>
<td>−0.08</td>
<td>0.06</td>
<td>−0.13***</td>
<td>−0.09*</td>
<td>−0.12**</td>
<td>0.06</td>
<td>1.0</td>
</tr>
</tbody>
</table>

* $p<0.05$.  
** $p<0.01$.  
*** $p<0.001$.
turnover by Krug and Hegarty (1997), who found a 23.6% turnover rate in their sample. However, this difference can be attributed to both sample size and time period of the study (our sample is much larger and more recent). No multicollinearity problems existed among the variables in our sample, thus supporting the use of multiple regression analysis to test our hypothesis.

Model 1 in Table 2 shows the results of regressing the two control variables and the weighted average of industry performance on organizational performance. The variance explained in the dependent variable is 0.24 and, as expected, the weighted average of industry performance is highly significant in this model ($p<0.001$). Next, in model 2, we entered our major independent variable, namely, the proportion of women on TMT in the equation. Results reveal strong support for Hypothesis 1 ($p<0.001$) and thus corroborate the upper echelon framework and social identity and power theories. The incremental variance explained in the dependent variable is 3%. This is a notable result when considered in conjunction with the fact that our study only examines the performance effects of an element of the TMT, namely, the percentage representation of women. In previous studies on TMT, the incremental change in $R^2$ is of a similar range (Boeker, 1997).

To examine the moderating impact of environmental characteristics, we used hierarchical regression analysis. In the first step, the control variables, independent variables, and environmental variables of munificence, dynamism, and complexity were entered in the equation. These results are depicted in model 3. In the second step, the interactions between the women on TMTs and each of the environmental variables were entered in the equation. For Hypotheses 2a, 2b, and 2c to be supported, the interactions should be positive and significant, and the incremental increase in $R^2$ should be significant. Results in model 4 show no significance in any of the interaction variables. Thus, Hypotheses 2a, 2b, and 2c are not supported. The fact that the environmental variables were found to have no impact on organizational performance may partly be attributed to the sample. Fortune 1000 firms operate in complex economic conditions with a great deal of interdependence among the industries and, therefore, the economic characteristics inherent in the business environment may not vary drastically across companies. Also, it can be argued that the relationship between women on TMTs and organizational performance transcends the demands of the environment, thus providing support for the upper echelon perspective.

The regressions conducted with the ROS as the dependent variable yielded substantively similar results ($R^2=0.26$, $p<0.001$). These consistent results are likely to be driven by the high correlation between ROA and ROS (0.60). Thus, Hypothesis 1 is also supported with the ROS as the dependent variable. To test for outliers, we performed the Cook’s $D$ test to examine the effect of influential observations (Greene, 2000). Our results are robust to the exclusion of influential observations with a Cook’s $D$ statistic greater than 1.0. We examined the standardized regression residuals across the range of the women on TMT variable and found that the variance was constant.

As a sensitivity check, we also estimated four separate regression models in which the interaction term between women on TMT and each of the four environmental variables was included separately. The results were similar to those in model 4. None of these interactions was significant, and the adjusted $R^2$ of these models was not significantly different from model 4.

### Table 2

Results of multiple and moderated regression analysis ($N=679$) dependent variable: organizational performance (ROA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1: control variables</th>
<th>Model 2: independent variables</th>
<th>Model 3: direct effects</th>
<th>Model 4: interaction effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.0 (1.50)</td>
<td>0.0 (1.48)</td>
<td>0.0**</td>
<td>0.0** (1.6)</td>
</tr>
<tr>
<td>Organizational size</td>
<td>0.08* (0.18)</td>
<td>0.09 (0.18)</td>
<td>0.08** (0.18)</td>
<td>0.09**(0.80)</td>
</tr>
<tr>
<td>TMT turnover</td>
<td>0.03 (0.49)</td>
<td>−0.05 (0.53)</td>
<td>−0.05 (0.53)</td>
<td>−0.05 (0.53)</td>
</tr>
<tr>
<td>Industry performance</td>
<td>0.49*** (0.06)</td>
<td>0.49*** (0.06)</td>
<td>0.49*** (0.05)</td>
<td>0.49*** (0.06)</td>
</tr>
<tr>
<td>Women on TMT</td>
<td>0.20*** (2.22)</td>
<td>0.20*** (2.24)</td>
<td>0.20*** (2.4)</td>
<td>0.17 (7.2)</td>
</tr>
<tr>
<td>Munificence (sales growth)</td>
<td>0.003 (0.02)</td>
<td>0.01 (0.04)</td>
<td>0.01 (0.04)</td>
<td>0.01 (0.04)</td>
</tr>
<tr>
<td>Dynamism (change in competitors)</td>
<td>0.004 (0.84)</td>
<td>−0.02 (1.09)</td>
<td>0.004 (0.84)</td>
<td>−0.02 (1.09)</td>
</tr>
<tr>
<td>Dynamism (change in concentration)</td>
<td>−0.01 (0.009)</td>
<td>−0.03 (0.01)</td>
<td>−0.01 (0.009)</td>
<td>−0.03 (0.01)</td>
</tr>
<tr>
<td>Complexity (diversification)</td>
<td>0.04 (0.41)</td>
<td>0.04 (0.50)</td>
<td>0.04 (0.41)</td>
<td>0.04 (0.50)</td>
</tr>
<tr>
<td>Women on TMT x Sales growth</td>
<td>−0.05 (9.87)</td>
<td>0.05 (0.10)</td>
<td>−0.05 (9.87)</td>
<td>0.05 (0.10)</td>
</tr>
<tr>
<td>Women on TMT x Change in competitors</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
</tr>
<tr>
<td>Women on TMT x Change in concentration</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
<td>0.01 (5.37)</td>
</tr>
<tr>
<td>Women on TMT x Diversification</td>
<td>−0.02 (0.39)</td>
<td>−0.02 (0.39)</td>
<td>−0.02 (0.39)</td>
<td>−0.02 (0.39)</td>
</tr>
<tr>
<td>$F$ statistic</td>
<td>73.09***</td>
<td>64.8***</td>
<td>32.5***</td>
<td>21.72***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.24</td>
<td>0.28</td>
<td>0.28</td>
<td>0.28</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.24</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
</tr>
</tbody>
</table>

Numbers denote standardized estimates. Standardized errors in parentheses.

* $p<0.05$.

** $p<0.01$.

*** $p<0.001$. 
Additionally, we also conducted $t$ tests to examine performance differences between the firms that had no women (345 firms) and firms with one or more women (334 firms) on their TMTs. The results of the $t$ tests corroborate our argument that firms with a representation of women in their TMTs (performance mean=5.85) outperform firms with no women on their TMTs (performance mean=3.08) ($p<0.001$). This provides additional support for our argument that membership of women in the TMT improves the performance of the organization.

Finally, we tested for a curvilinear relationship between women on TMTs and organizational performance to validate a recent study by Richards et al. (2004). Our results reveal no such relationship between women on TMTs and performance, thus supporting our argument that this relationship is direct. The findings of these two studies are compared in Section 5.

5. Discussion

This paper significantly contributes to the upper echelon literature by examining the relationship between women on TMTs and organizational performance. To our knowledge, this is the first study that examines the relationship between women on TMTs and organizational performance in Fortune 1000 firms. The support that has emerged in such a large sample lends credence to our argument that membership of women in the TMT confers benefits to the organization. Gender is a more complex, and thus richer, demographic variable than the other demographic variables examined in previous studies such as age, education, functional backgrounds, and tenure because its effects have roots in the socio-cognitive base of the managers. Although not examined in this study, we argue that their management styles and strong personal relationships may enable women to enrich decision making within their TMTs and thereby improve overall performance.

There are notable differences between our study and Richards et al. (2004), which tests for a curvilinear relationship between diversity and performance. Our study spans all industry groups, involves firms in the Fortune 1000 list, employs secondary data, and focuses only on the TMT of the organization. Richards et al. (2004) focus only on the banking industry; draw on small, medium, and large banks; employ survey methods; operationalize management at multiple levels of the organization; and study various relationships in the context of the firm’s entrepreneurial orientation. In this context, Richards et al. (2004) found only a marginal curvilinear relationship between gender diversity and performance. Our study’s major contribution to the field is the finding that there is a direct impact of TMT women on organizational performance in Fortune 1000 firms.

Perhaps, one of the most important questions to emerge from our research is: How do women add value to the organization? Is it through their functional background or age, relative to the men in the TMTs, or their previous work/industry experience? A post-hoc analysis reveals several interesting features associated with our sample. First, the TMT women were relatively younger than their male counterparts (mean age of women=46.5 years; mean age of men=52.5 years). As regards industry experience, about 60% of the firms employing women belonged to 9 of 53 industries that were listed in Fortune, and these include apparel, beverages, entertainment, general merchandizing, healthcare, insurance, publishing, cosmetics, and toys. It would be worthwhile to pursue what resources the women in these industries bring to the table and whether such resources would be coveted in other industries such as advertising, aerospace, engineering, semiconductors, paper, furniture, industrial and farm equipment, electronics, hotels, plastics, metals, motor vehicles, and textiles, which had minimal to no representation of women on their TMTs.

An important issue for consideration is: Can the progress made by women in recent years in large organizations be sustained? In fact, if we examine the trends in the business environment, such as the continued rise and success of mid-level female executives now in their 40s, their number in the upper echelons of the organizations is likely to only escalate (USA Today, 2003). Huitt (1998) argues that the ascent of women in organizations is occurring at a time when organizations are making their transition from the industrial to the information age, an era that is witnessing considerable diversity in the work place. Organizations are creating a climate that is more likely to assimilate cultural differences in order to capitalize on opportunities in the global environment. Organizations operating in this information era are shifting to network and knowledge-based, and holistic- and facilitating-type structures, which are androgynous and more conducive to the management styles of women. These new structures can be witnessed not just in the information technology sector where women have made great strides (InformationWeek Online, 1999), but across even traditional industries that have integrated information technology to improve their competitiveness. Also, there is a rapid increase of women in sales and marketing—functions traditionally held by men (Moncrief et al., 2000). Thus, the new business climate augurs well for the ascent of women in TMTs and its associated performance benefits.

If we examine the latest survey by Catalyst (2004), which reports that firms with increased representation of women in the top positions are likely to financially perform well, our results have major implications for career development of women in large organizations. Career development issues need to be addressed from an organizational perspective as well as an environmental perspective, and should be a part of an organization’s strategy for women when they are at the lower levels. From an organizational perspective, women need adequate mentoring, and opportunities to operate in operational and line functions when they are in the lower and middle levels of the organization. Such opportunities
are more likely to serve as a stepping stone to the upper echelons of the organization. From an external perspective, female managers need opportunities for relocation, pursuing an external labor market strategy and balancing work and family responsibilities if they are to ascend to the top levels of organizations (Brett and Stroh, 1999).

Our study also has important implications for diversity research involving TMTs. Given the paucity of women on TMTs in large organizations, at this stage in the research, our hypothesis warrants only a direct examination of the relationship between the proportion of women on TMTs and performance. In fact, an examination of our sample reveals that even at its highest, the value of the proportion of women on the TMT is only 0.57, which reflects a balanced group of men and women on the TMT (Fenwick and Neal, 2001). All the other organizations in our sample that had women on their TMTs were skewed (80–99%), or tilted (60–79%), in favor of men. Future studies should examine performance differences between tilted, skewed, and balanced TMT groups to gauge the effects of diversity.

There may be alternate explanations for the results obtained in this study. For example, one could argue that it might not be TMT women per se who influence organizational performance; perhaps the kinds of organizations that embrace gender diversity at upper levels are more successful because they promote based on merit rather than stereotypic assumptions of who can or cannot perform. One way to test this argument would be to use panel data and examine performance at two different time periods in organizations, before and after the emergence of women in their TMTs. If the performance of the organization improves during the time period, it would lend further support to our argument that women indeed make a difference.

Our results have several implications for future research in this area. First, using market-based measures of performance to assess the dependent variable may shed additional light on the relationship under study. Second, studies that compare men and women of TMTs of Fortune 1000 firms on different dimensions such as age, functional and educational backgrounds, and tenure would enrich the upper echelon literature. Third, research on other diversity variables such as the representation of managers from other nationalities on the TMTs would further enrich the upper echelon literature. Finally, our study needs to be replicated on other samples including small- and medium-sized firms to understand the performance implications of women on their TMTs. Such studies are likely to form the foundation for understanding the influence of women on organizational outcomes.

Acknowledgment

We are grateful to Dr. Jean McGuire, Associate Editor, and two anonymous reviewers of this journal for their valuable suggestions.

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