

Yaping Gong

The Impact of Subsidiary Top Management Team National Diversity on Subsidiary Performance: Knowledge and Legitimacy Perspectives

Abstract and Key Results

- This study examines the impact of nationality composition within subsidiary top management teams (STMTs) on subsidiary performance. It first gives a review of the multinational team literature. It concludes that nationality diversity is beneficial when it is relevant to a multinational team's task. The study then draws upon two complementary theoretical perspectives: knowledge and legitimacy.
- It proposes that a heterogeneous STMT nationality composition may enhance subsidiary performance with the effect being stronger in subsidiaries of longer years of operation. Hypotheses were tested in a sample of STMTs from Japanese Multinational Corporations. The study finds that STMT nationality heterogeneity was positively related to subsidiary labor productivity. An interaction effect was also found. As the number of years a subsidiary had been in operation increased, so did the effect of STMT nationality heterogeneity on subsidiary performance.

Key Words

Subsidiary Top Management, Teams, Multinational Teams, Nationality

Author

Yaping Gong, Assistant Professor, Department of Management of Organizations, Hong Kong University of Science and Technology, Hong Kong, China.

Manuscript received September 2003, revision received September 2004, final revision received December 2005.

Introduction

The role of the top management team (TMT) in strategic decision-making and firm performance is well documented (Finkelstein/Hambrick 1996). Recently, accelerated globalization has drawn scholarly attention to multinational corporations (MNCs) and the role of the headquarters' TMT characteristics in MNC internationalization and performance (Athanassiou/Nigh 2002, Carpenter/Sanders/Gregersen 2001). Additionally, growing attention has been paid to multinational teams – teams with members from different countries and cultural backgrounds (DiStefano/Maznevski 2000, Earley/Mosakowski 2000, Maznevski 1994a, McLeod/Lobel/Cox 1996, Watson/Kumar/Michaelsen 1993).

Unfortunately, there has been little research on the influence of the nationality composition of subsidiary TMTs (STMTs) on subsidiary performance in MNCs. STMTs may include expatriate parent country nationals (PCNs), host country nationals (HCNs), and, in some cases, third country nationals (TCNs) (Dowling/Welch/Schuler 1999). STMT nationality composition refers to the distribution of PCNs, HCNs, and, in some cases, TCNs in STMTs (Gong 2003a).¹ Due to the globalization of business, the use of nationally diverse teams has increased rapidly (Adler 1997). Between 1995 and 1998, the percentage of companies with non-national directors increased from 39% to 60% (Alexander/Esser 1999). Researchers found that nationality is the dominant sense making vehicle used by members in nationally diverse teams (Salk/Shenkar 2001) and a potent factor that explains variations in beliefs and cognitive schemas (Hambrick/Davidson/Snell/Snow 1998, Laurent 1983). Given the growing utilization of nationally diverse teams and the importance of nationality, this study examines the influence of STMT nationality composition on subsidiary performance.

Literature Review

Top Management Team Literature

The study of STMT nationality composition and subsidiary performance can benefit from three related bodies of research, namely, TMT demography, group diversity, and multinational team research. The Upper Echelon theory suggests that the demographic characteristics of an organization's key decision-makers affect strategy and subsequent performance (Hambrick/Mason 1984). Following Hambrick and Mason (1984) and Pfeffer (1983), scholars have examined the impact of TMT demographic characteristics on organizational performance (Eisenhardt/Schoonhoven

1990), innovation (Bantel/Jackson 1989), strategy (Hambrick/Geletkanycz/Fredrickson 1993), and TMT turnover (Wiersema/Bird 1993). In addition, researchers suggest variables such as environmental uncertainty and complexity may moderate the relationship between TMT heterogeneity and firm performance (Murray 1989, Priem 1990). Researchers note that TMT nationality composition has been largely neglected in the TMT demography literature (Hambrick et al. 1998).

Group Diversity Literature

A number of comprehensive reviews of the group diversity literature are available (e.g., Jackson/May/Whitney 1995, Milliken/Martins 1996, Williams/O'Reilly 1998). Jackson, Joshi, and Erhardt (2003) provide an updated review of recent (1997-2002) group diversity research. The vast majority of the studies (nearly 75%) they reviewed focused on performance outcomes rather than affective reactions and social processes. While diversity was sometimes associated with negative affective reactions, the overall pattern of results was not as clear. Results regarding the impact on performance are also mixed, with the exception of functional diversity which seems to improve certain types of performance. They find little support for the idea that diversity affects performance through its effect on group processes. Several reviews point to potential moderators in the diversity-performance relationship (Jackson 1992, Jackson et al. 2003, Milliken/Martins 1996). Heterogeneous groups tend to perform better than homogeneous groups in creative idea generation and decision-making tasks (Jackson 1992). The negative effect of diversity on social processes may weaken over time (Jackson et al. 2003, Milliken/Martins 1996). Environmental and strategic context are also potential moderators (Jackson et al. 1995, Jackson et al. 2003). For example, Richard (2000) found that racial diversity enhanced firm performance when firms pursued a growth strategy rather than a downsizing strategy. Jackson et al. (2003) found that the vast majority of studies utilized the social identity theory and suggest that new theoretical perspectives might help improve our understanding of the influence of group diversity. Nationality diversity has received limited attention in group diversity research. For example, Jackson et al. (2003) identified only one study (out of 63 during the period of 1997-2002) that examined nationality diversity.

Multinational Team Literature

The multinational team literature is the most relevant to the current study. Scholarly interest in this area has been growing in recent years. While some scholars focus on face-to-face multinational teams (e.g., Thomas/Ralvin/Wallace 1996), others focus on global virtual teams (e.g., Maznevski/Chudoba 2000). The review here

focuses on major studies of face-to-face multinational teams only. In an experimental study, Fiedler (1966) found that culturally and linguistically heterogeneous groups performed at similar levels as culturally and linguistically homogeneous groups on all but highly verbal tasks (i.e., composing recruiting letters). Anderson (1983) found that group cultural heterogeneity was not related to leader satisfaction, leader-member relations, and relations among group members. In a study of student groups performing the prisoner's dilemma game, Cox, Lobel, and McLeod (1991) found that culturally heterogeneous groups demonstrated more cooperative behaviors than all-Anglo groups. Contradicting Anderson (1983) and Cox et al. (1991), Watson and Kumar (1992) found that culturally diverse student groups reported more problems with interaction behaviors, whereas homogeneous groups indicated more facilitating interaction behaviors. In another study of student groups, Watson et al. (1993) found that, initially, culturally heterogeneous groups reported less effective interaction processes and had lower performance than culturally homogeneous groups, but at the end both reported equally effective interaction processes and heterogeneous groups performed better in range of perspectives and alternatives generated.

Thomas, Ralvin, and Wallace's (1996) study is highly relevant to the current study. Thomas et al. (1996) conducted a study using nationally diverse graduate student groups at a Japanese university. Sixteen nationalities including Japanese were involved in the study. The task involved an evaluation of five organizational behavior case studies in an international context. While nationality diversity had a negative relationship with self-reported cohesion and satisfaction and had no relationship with self-reported group effectiveness, it actually had a positive relationship with group performance measured by experts' independent ratings of the quality of case study write-ups. In a controlled experimental study in which student subjects performed a brainstorming task (i.e., to get more tourists to the U.S.), McLeod et al. (1996) found that the ideas produced by ethnically diverse groups were judged to be of higher quality (i.e., more effective and feasible) than the ideas produced by homogeneous groups despite the fact that members of homogeneous groups reported marginally more attraction to their groups than did members of diverse groups. In an experimental study of student groups performing an international expansion decision-making task, Punnett and Clemens (1999) found that nationally diverse groups took significantly longer to reach decisions, and considered significantly more options than did homogeneous teams. Homogeneous Canadian teams ranked home expansion options significantly more attractive than did nationally diverse teams, suggesting that a nationally homogeneous team may not be suitable for managing MNCs' international operations.

While these studies provide insights into multinational team dynamics and performance, several limitations are noteworthy. First, these studies did not examine the impact of TMT national diversity on unit or organizational level performance. Second, most of these studies were conducted in controlled settings using temporary

student groups that existed only for the duration of the studies (e.g., Cox et al. 1991, McLeod et al. 1996, Punnett/Clemens 1999, Watson/Kumar 1992). The resemblance between the conditions that existed in these studies and conditions that exist in ongoing organizational settings is questionable. Student subjects are not forced to integrate into temporary diverse groups in the same fashion as top managers. The consequences of their actions and their foibles do not have an immediacy and impact comparable to those of top managers working for the international operations of MNCs. To conclude, few studies have examined nationally diverse teams in real organizational settings and their impact on unit performance. The objective of this study is to examine the impact of STMT nationality heterogeneity on subsidiary performance.

Existing studies on multinational teams offer some valuable lessons. First, it is important to include an independent and/or objective assessment of performance. While nationality diversity may generate negative subjective feelings as reflected in self-assessment of cohesion, satisfaction, attraction, and group effectiveness, it may actually help improve the quality of ideas generated or case write-ups as assessed by independent experts (McLeod et al. 1996, Thomas et al. 1996). This is in line with Jackson et al.'s (2003) conclusion that "the effects of diversity on affective reactions and social processes occur somewhat independently of the effects of diversity on performance" (p. 813). Second, previous studies suggest that team task is important and question whether nationality is relevant to the team task. In Fiedler (1966), the task of composing recruiting letters, in which heterogeneous groups performed lower than homogeneous groups, involved no international content. Watson et al. (1993) employed case analysis tasks and measured group performance, but it is unclear from their description whether the tasks had any international content. Watson and Kumar (1992) did not use tasks with international content, nor did they measure performance. In Thomas et al. (1996) and McLeod et al. (1996), in which heterogeneous groups outperformed homogeneous groups, tasks involved creative idea generation or decision-making with international contents. In these cases, nationality diversity represented an asset because it brought diverse perspectives and knowledge that can bear upon the tasks with international contents (i.e., analyzing organizational behavior case in the international context versus attracting more foreign tourists to the U.S.). In Punnett and Clemens (1999), the task involved decision-making regarding international expansion, to which nationality is also quite relevant. In the case of STMTs, nationality diversity is quite relevant to the tasks team members perform and the context in which they perform them. Therefore, it is expected that STMT nationality diversity should be beneficial to subsidiary performance. Finally, previous studies point to the potential moderating role of time. It is expected that the positive effect of STMT nationality diversity is greater when subsidiaries have been in operation for a longer period of time. The next section offers specific hypotheses based on knowledge and legitimacy perspectives.

Hypotheses Development

Knowledge, Legitimacy, and Performance

It is worth noting the nature of the environment for subsidiaries and the nature of the tasks facing STMTs. Subsidiaries of MNCs are embedded in multiple environments that include not only the host countries, but also the parent firm and countries (Rosenzweig/Singh 1991). Further, each environment is multi-dimensional in that it has regulative, cognitive, and normative domains, which tend to vary from country to country (Kostova/Zaheer 1999). The decision-making tasks facing STMTs are complex and cross-national in nature because they must simultaneously work with the parent firm and country and respond to local conditions, both of which are critical to the success of subsidiaries.

STMTs must secure knowledge and resources from the parent firm and country (Gupta/Govindarajan 1991). Transferring knowledge and resources from the parent firm improves a subsidiary's technological and managerial capabilities (Downes/Thomas 2000). In particular, Japanese MNCs have distinctive HR practices such as extensive internal job rotation (Tung 1984). These HR practices facilitate the development of firm-specific knowledge and skills that provide a competitive advantage (Barney 1991). Gaining these difficult-to-imitate resources from parent firms is therefore critical for the success of overseas subsidiaries. STMTs must also gain knowledge about local cultural values, customs, market conditions, customer preferences, distribution channels, culturally acceptable management practices, etc. (Luo/Peng 1999). Gaining knowledge from the host country enables STMTs to work more effectively with various local stakeholders.

To cope with the diverse environments and to perform the complex decision-making task, the variety within a STMT must match the variety outside it (Weick 1979). A heterogeneous STMT may be needed to perform the tasks and to enhance subsidiary performance. In a heterogeneous STMT, the specific knowledge that team members have of the host and the parent environments aids subsidiary strategic decision-making and operation (Maznevski 1994b). It also enhances the simultaneous management of local responsiveness (i.e., the subsidiary-host relationship) and global efficiency (i.e., subsidiary-parent relationship). Because each national group has a better understanding of the nuances of language, culture, customs, and perspectives in the related environment, a heterogeneous STMT is better able to recognize information and interpret them accurately (Cohen/Levinthal 1990). In a sense, a subsidiary with a heterogeneous TMT is better linked to external networks, allowing greater access to knowledge and resources that are necessary for managing subsidiary operations effectively. In this case, STMT nationality diversity represents sources of knowledge that are highly relevant to the complex task of managing the subsidiary. As our early review suggests, the diverse knowledge and

perspectives residing in the same team may lead to creative solution generation and high quality decision making (Jackson et al. 1995, Ling 1990, McLeod et al. 1996, Thomas et al. 1996). Based on several case studies of successful multinational teams, Snow, Snell, Davison, and Hambrick (1996) conclude that MNCs use nationally diverse teams to achieve global consistency, local responsiveness, and organizational learning.

Institutional theory provides a complementary perspective. According to institutional theory, organizations are influenced by the pressures arising from the environment, and have to comply with these pressures to gain legitimacy and to survive (Meyer/Rowan 1977, Zucker 1987). Organizations are designed to insure survival by mimicking practices and adopting cultural values and norms from its environment (Zucker 1987). The legitimacy of subsidiaries is the acceptance and /or approval of the subsidiary by its legitimating environment including the host and the parent sides of environments (Kostova/Zaheer 1999). Each subsidiary is faced with the task of establishing and maintaining legitimacy in its host environment and internal legitimacy within the MNC (Rosenzweig/Singh 1991, Westney 1993). A subsidiary is pulled to achieve isomorphism with the local institutional environment, and also face the imperative for consistency with the parent organization (Rosenzweig/Singh 1991). Local isomorphism calls for a STMT composition that is adapted to the local cultural and institutional environment, whereas consistency with the parent side demands adaptation to the parent firm. Thus, having a nationally heterogeneous STMT may be necessary for subsidiaries to gain legitimacy and to survive in their diverse environments. The fact that STMT members are diverse signals the willingness of a subsidiary to comply with stakeholders (e.g., labor authorities, unions, customers, general public, etc.) in both environments. Legitimacy in both environments facilitates the attainment of knowledge and resources from both sources, e.g., technology from the parent firm, and support from local unions and consumers.

The overall argument can be summarized by the term “knowledge-legitimacy”. A nationally heterogeneous STMT enables the subsidiary to obtain knowledge/resources from and gain legitimacy in its diverse environments. Thus, STMT nationality heterogeneity may enhance subsidiary performance. Two reasons further strengthen the argument for a positive relationship. First, TMT diversity is more likely to be positively related to performance in the uncertain/complex environments where adaptability is required. Murray (1989) found that heterogeneous groups facilitate adaptation and therefore are preferable under conditions of environmental change. Priem (1990) suggests that TMT heterogeneity is positively related to performance in dynamic and uncertain environments. As discussed earlier, STMTs are operating in the complex and uncertain international environments where adaptation to multiple environments is necessary. Second, the tasks facing STMTs are complex in nature and require high quality decision-making in the international context. The diverse knowledge and resources of team members with different national back-

grounds are highly relevant to the tasks STMTs are facing and the international context in which they are operating. As stated earlier, nationally diverse teams perform better in creative idea generation and decision-making tasks to which nationality brings relevant knowledge and perspectives (McLeod et al. 1996, Thomas et al. 1996).

This study focuses on the direct relationship between STMT nationality composition and subsidiary performance for two reasons. First, the current study utilizes archival data that do not include process variables. Second, STMT nationality heterogeneity may directly affect subsidiary performance independent of process variables. Several scholars found that heterogeneity affects performance directly and somewhat independently of its effects on processes (e.g., Barsade/Ward/Turner/Sonnenfeld 2000, Smith/Smith/Olian/Sims/O'Bannon/Scully 1994). Jackson et al. (2003) came to the same conclusion after they reviewed 63 recent studies on group diversity. Thus, the following hypothesis is proposed:

Hypothesis 1. STMT nationality composition heterogeneity is positively related to subsidiary performance.

The Role of Subsidiary Years of Operation

Research on group effectiveness suggests that time is a critical dimension in team development and functioning (e.g., Moreland 1985). At the team level, time can be defined as the average tenure of team members in the team. This study takes a different approach by focusing on the number of years a subsidiary has been in operation. Research suggests that to ensure survival and success, nationally diverse teams gradually establish rules, norms, expectations, and roles that all national groups have contributed to, understand, share, and act upon (Earley/Mosakowski 2000). The institutionalized rules and norms then provide grounding rules for interaction with and a shared knowledge basis for learning from others within heterogeneous teams, and thus permit a productive use of diverse knowledge, skills, and perspectives (Earley/Mosakowski 2000, Gong 2003a).

A similar institutionalization process may occur at the subsidiary level. Over time, a subsidiary understands different perspectives better, accumulates more experience of managing host and parent country nationals, and develops a knowledge base for managing diverse nationals. Understanding and experience are distilled and become institutionalized knowledge, which provides explicit or implicit guidance for managing nationality diversity. STMTs suffer membership changes over time. However, the institutionalized grounding rules, norms, and knowledge at the subsidiary level may have a long-lasting impact on STMT functioning because it can sustain STMT member turnover or even the change of the whole STMT. These institutionalized grounding rules, norms, and knowledge allow nationally diverse

STMT members to utilize their expertise in their respective roles at the least, and provide a climate to facilitate the integration of different perspectives at the best. This study focuses on the number of years a subsidiary has been in operation (subsidiary age). While year of operation (or experience) is not a direct measure of learning and institutionalization, it provides a reasonable proxy as suggested by international management scholars (e.g., Luo/Peng 1999). To summarize, the following hypothesis is proposed:

Hypothesis 2. The number of years a subsidiary has been in operation (subsidiary age) moderates the relationship between STMT nationality composition heterogeneity and subsidiary performance such that as the age of a subsidiary increases, the effect of STMT nationality composition heterogeneity becomes more positive.

Research Methods

Surveys of STMTs located in different countries are often difficult to conduct and have low response rates (Harzing 1997). Therefore, this study utilized archival data to test the hypotheses. The primary source of data for this study included the Directory of Corporate Affiliations (LexisNexis Group 2001). This study utilized subsidiaries of Japanese MNCs for two reasons. First, subsidiaries of Japanese MNCs have been less studied in the TMT literature despite their sizable influence on the world economy. Second, information about TCNs is very difficult to obtain. Researchers (Delios/Bjorkman 2000, Peterson/Napier/Shim 1996, Tung 1982) suggest that compared to European and the U.S. MNCs, Japanese MNCs employ very few, if any, TCNs in the TMTs of their overseas subsidiaries. Using Japanese MNCs usually reduces the need to obtain information on TCNs in subsidiaries (e.g., Delios/Bjorkman 2000).

Sample

Data on STMTs were obtained from the Directory of Corporate Affiliations (2001) and the Gale Business Resources online. This study used three criteria for including a STMT in the sample. First, the directory must have information (particularly name and title information) for the CEO/president and other senior managers/directors of the subsidiary. Second, the STMT has at least two top managers/directors. Third, the directory has information on major variables such as subsidiary industry, entry mode (joint venture subsidiary versus wholly owned subsidiary), year of subsidiary establishment, capital investment, sales, and number of employees for the subsidiary.

The final sample had 370 STMTs with a total of 2,290 top managers from 28 Japanese MNCs. The number of executives in the STMTs ranged from 2 to 16 (Mean = 6.19, SD = 3.06).

Coding Scheme

Two Japanese scholars independently judged whether or not top managers were Japanese nationals by name. This method was utilized by Harzing (2001) for her archival data in a study of executive staffing in MNCs. An agreement between the two raters at the STMT level regarding top managers' nationality existed if and only if the coders classified top managers in the team the same. The two Japanese coders agreed on 366 STMTs, representing a 98.9% agreement rate. This indicated the high reliability of the coding. The high level of reliability in coding Japanese names is probably due to the unique nature of Japanese names, which makes it relatively easy to differentiate Japanese names (e.g., Suzuki) from Western (e.g., Smith) and other Asian (e.g., Lee) names.² Disagreements between the coders were then discussed, and final consensus was reached on the disputed names.

In an independent check, top managers' names from 15 STMTs were sent to respective subsidiary firms. Due to the concern about the difficulty in international mailing, only subsidiaries in the U.S. were contacted. This should not be a big concern for two reasons. First, the U.S. is one of the most diverse countries in the world, and poses perhaps the biggest challenge in identifying nationality by name. Therefore, the agreement rate obtained using the U.S. sample is likely to be conservative. Second, the U.S. hosted the largest number of subsidiary executives (45%) in the sample. Six subsidiary CEOs responded to the independent check (a 40% response rate). Results indicated a 100% agreement rate between the coding of the CEOs and that of the two Japanese coders.

Dependent Variable: Subsidiary Labor Productivity

An overwhelming majority of subsidiaries are private firms controlled by MNCs. Subsidiary performance data are notoriously difficult to obtain because they are confidential and parent firms are often reluctant to divulge non-consolidated data (Nitsch/Beamish/Makino 1995). Further, market-oriented performance information such as Tobin's q , which is for public firms, is not available for subsidiaries. With the exception of relatively large subsidiaries, performance information is often not provided at the subsidiary level but aggregated at the MNC level. For the current study, information about sales and number of employees was available for the sample of relatively large subsidiaries. Labor productivity was measured as sales over the number of employees. The logarithm of sales per employee is a widely

used measure of organizational productivity (e.g., Huselid 1995) and was adopted here in analyses.

Independent Variable: STMT Nationality Heterogeneity

At the STMT level, the percentage of PCNs (Mean = 36%) was calculated by dividing the number of Japanese top managers (based on the coding results) by the total number of top managers. Researchers suggest that the number of TCNs is very small and in many cases zero in Japanese MNCs (e.g., Delios/Bjorkman 2000, Peterson et al. 1996, Tung 1982). Thus, the percentage of HCNs was calculated by subtracting the percentage of PCNs from 1. STMT nationality composition heterogeneity was then calculated using Blau's (1977) index of heterogeneity: $(1 - \sum P_i^2)$, where P_i is the proportion of top managers in i th category (i.e., PCNs, and HCNs). Blau's (1977) index has been widely used in organizational demography and group diversity research (e.g., Pelled/Eisenhardt/Xin 1999). A higher score in this index indicates greater nationality heterogeneity. The most diverse STMT has all the national groups with each group taking an equal proportion of the STMT, whereas the least diverse composition has only one national group.

Control Variables

This study controls for subsidiary-specific variables such as *industry* and *size* (*indicated by number of employees*). Industry and size were controlled for because sales and labor productivity would depend on the industry and the size of the subsidiary. *The number of years that a subsidiary has been in operation (subsidiary age)* was controlled for because a subsidiary may gradually learn to operate more effectively in the host country environments and to better manage nationality diversity within the subsidiary. The value for this variable was obtained by subtracting year of subsidiary formation from 2000. One standard control variable in TMT empirical studies is TMT average tenure. STMT average tenure was not controlled for due to the lack of information for computing this variable. *Capital investment* in the subsidiary was controlled for because of its potential productivity-enhancement effect. In the international strategy literature, scholars recognize *entry mode* as a critical factor that affects subsidiary performance: wholly-owned subsidiaries generally outperform joint venture subsidiaries because of their ownership advantages and lower management control costs (Nitsch et al. 1995, Woodcock/Beamish/Makino 1994). Therefore, entry mode was controlled for in this study. Also, income level in a host country can potentially affect subsidiaries' sales volumes in that country. Therefore, *gross national income per capita for the host country* was also controlled for in the study. Information about *host country gross national income*

per capita for year 2000 was obtained from the World Bank website (<http://devdata.worldbank.org>) using the data query function. Finally, because the dataset included multiple subsidiaries for each MNC, MNC dummies were included to control for *MNC-specific effect*.

Results

Table 1 presents means, standard deviations, and zero-order correlations among major variables. Given the relative large variance for capital, number of employees, and gross national income per capita, log transformation of these variables for subsequent analyses is appropriate. Zero-order correlations suggest that STMT nationality heterogeneity was positively related to log labor productivity ($r = 0.14$, $p < 0.01$). Subsidiary age was also positively related to log labor productivity ($r = 0.15$, $p < 0.01$).

Hypotheses 1 and 2 were tested through multiple hierarchical regression analyses. Control variables were included in Model 1, STMT nationality composition heterogeneity in Model 2, and the interaction between STMT nationality heterogeneity and subsidiary age in Model 3. Regression analysis with the interaction term is susceptible to multicollinearity because the interaction term may be highly correlated with the variables of which they are comprised (Aiken/West 1991). Regression estimates are imprecise and signs of regression coefficients may be incorrect when

Table 1. Means, Standard Deviations, and Zero-Order Correlations among Major Variables¹

Variable	Means	SD	1	2	3	4	5	6	7
1. Age	22.09	13.72	-						
2. Capital	79.03	196.95	0.13**	-					
3. Number of employees	1469.71	3906.36	0.13**	0.41**	-				
4. Entry mode	0.81	0.32	0.09*	0.13**	0.03	-			
5. Gross national income per capita	25467.77	10491.06	0.13**	0.15**	0.02	0.23**	-		
6. STMT nationality heterogeneity	0.26	0.20	0.01	0.05	0.04	0.08 [†]	-0.03	-	
7. Log labor productivity	-	0.48	0.15**	0.03	-0.31**	0.14**	0.03	0.14**	-

¹ N = 370. Industry and MNC dummies are not included in the table. Raw means are reported here for capital, number of employees, and gross national income per capita (host country), but the log transformation of these variables are used in calculating correlations and regression analyses.

[†] $p < 0.1$

* $p < 0.05$

** $p < 0.01$, 2-tailed significance

Table 2. Regression Results for Log Labor Productivity¹

	Model 1	Model 2	Model 3
<i>Step 1: Control Variables</i>			
Age	0.11*	0.10*	0.10*
Capital	0.09 [†]	0.09 [†]	0.08
Number of employees	-0.26**	-0.27**	-0.26**
Entry mode	0.07	0.05	0.06
Gross national income per capita (host country)	0.04	0.03	0.03
<i>Step 2: STMT nationality heterogeneity</i>		0.15**	0.16**
<i>Step 3: STMT nationality heterogeneity × age</i>			0.12*
Adjusted Model R ²	0.37**	0.39**	0.40**
R ² change		0.02**	0.01*
N	370	370	370

¹ Standardized regression coefficients are shown. Industry and MNC dummies are not presented in the table.

[†] p < 0.1

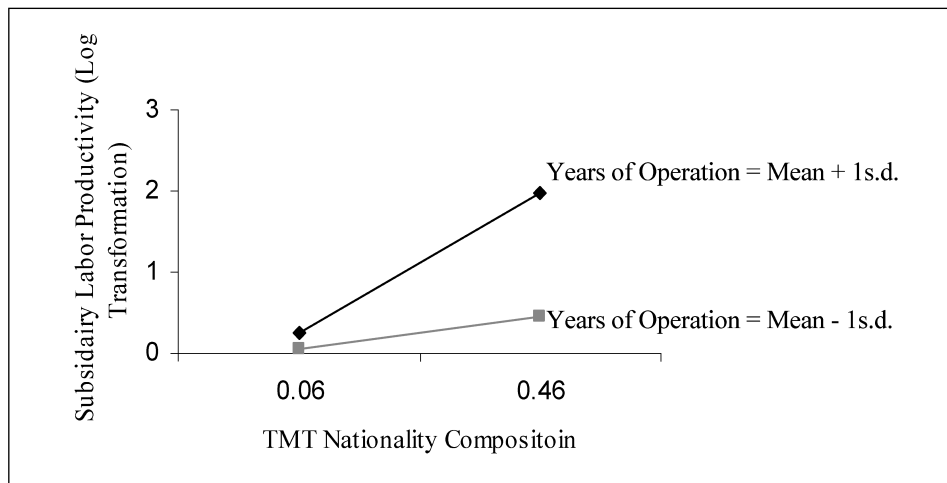
* p < 0.05

** p < 0.01, 2-tailed significance

the problem occurs. Myers (1990) suggests a VIF (variance inflation factor) value greater than 10 as an indication of the presence of serious multicollinearity problem. Initial analyses indicated that there was indeed a multicollinearity problem for the interaction term and its comprising variables. The problem was overcome through Aiken and West's (1991) mean-centering method (for the interaction term and its comprising variables) before conducting the final regression analyses. There was no multicollinearity problem in the final analyses based on the VIF values for the interaction term and its comprising variables.

Table 2 presents the final result for subsidiary labor productivity (log transformation) as the dependent variable. Standardized regression coefficients are presented. Model 2 (main effect model) result suggests that the impact of STMT nationality heterogeneity was positive ($\beta = 0.15$, $p < 0.01$). To assess the practical significance of the impact of STMT nationality heterogeneity, the impact of one-standard-deviation increase in composition heterogeneity on sales was computed while holding total employment and all other variables constant at their means. The result suggests that one-standard-deviation increase in composition heterogeneity raised sales an average of \$76,190 per employee. To conclude, the impact of STMT nationality heterogeneity was significant both statistically and practically, and therefore Hypothesis 1 was supported.

In Model 3 (interaction effect model), the regression coefficient for the interaction term (STMT nationality heterogeneity × subsidiary age) was positive ($\beta = 0.12$, $p < 0.05$). To interpret this interaction effect, the total regression was rearranged into simple regressions of log labor productivity on STMT nationality heterogeneity,

Figure 1. Interaction between STMT Nationality Composition and Years of Operation

given conditional values of year of subsidiary operation (mean + 1 s.d.; mean – 1 s.d.; cf. Aiken/West 1991). As shown in figure 1, the positive effect of STMT nationality heterogeneity on log labor productivity was stronger under the condition of a greater number of years of operation (i.e., mean + 1 s.d.) than under the condition of fewer years of operation (i.e., mean – 1 s.d.). Hypothesis 2 was therefore also supported.

This study also examines the impact of the percentage of PCNs in STMTs. Control variables (subsidiary age, capital, number of employees, entry mode, host country gross national income per capital, industry, and MNC dummies) were entered in Model 1. Percentage of PCNs (logit transformation) was entered in Model 2 and STMT nationality heterogeneity in Model 3. The percentage of PCNs was significant in Model 2 ($\beta = 0.12$, $p < 0.05$). In Model 3, STMT nationality heterogeneity was significant ($\beta = 0.13$, $p < 0.05$), while the percentage of PCNs was no longer significant ($\beta = 0.07$, ns) when STMT nationality heterogeneity was added to the equation.

Discussion and Conclusion

This study supports two broad conclusions: that STMT nationality heterogeneity has a positive impact on subsidiary performance; and that subsidiary age moderates the relationship such that the positive influence of STMT nationality heterogeneity is stronger for subsidiaries with more years of operation. The overall results suggest that a nationally heterogeneous STMT is important for building a successful subsidiary.

This study makes contributions to the multinational team literature and to the TMT demography and group diversity literature. First, this study complements existing studies on nationality heterogeneity of teams. To the best of my knowledge, this is the only study that examines TMT nationality composition in a large number of real organizations - subsidiaries of MNCs. Previous studies either focus on a small number of teams in a small number of organizations (i.e., case studies) (e.g., Snow et al. 1996) or more often temporary student groups (i.e., controlled experimental studies) (e.g., Watson et al. 1993). The focus on STMTs is valuable because of the crucial role of TMTs in strategic decision-making and firm performance. Joining previous studies on multinational teams (McLeod et al. 1996, Thomas et al. 1996), this study finds that STMT nationality heterogeneity is conducive to subsidiary performance when tasks require ideas generation or decision-making in the international context.

Second, this study contributes to the TMT demography and group diversity literature. While multinational teams have become a reality in MNCs and several studies have addressed MNC TMTs in the past decade or so, the study of nationality diversity has been neglected in the TMT and group diversity literature (Hambrick et al. 1998, Jackson et al. 2003, Milliken/Martins 1996). By expanding TMT research to subsidiaries of MNCs, which are embedded in complex and uncertain international environments, this study provides support for Murray's (1989) finding that a heterogeneous TMT facilitates adaptation and thus is preferable under conditions of environmental complexity and uncertainty. Finally, this study contributes to the MNC staffing literature, which has been focused on expatriate PCNs (e.g., Gong 2003b, Harzing 2001) and the impact at the individual level such as expatriate cross-cultural adjustment. This study indicates that the compositional property of STMT can affect subsidiary performance.

Just as most empirical studies, this one has limitations that suggest future research directions in order to improve our understanding of STMTs. First, this study used labor productivity as the performance measure. Different performance measures should be tested in future research. Second, this study used a sample of subsidiaries of Japanese MNCs. Future studies need to expand our understanding to a broader set of MNCs. However, the study's conclusions can be used confidently as the first step in further exploration of the STMT characteristics and their effects on subsidiary performance. Given that Japanese nationals are more likely to treat other national groups as out-groups, which may impede cooperation, learning, and interaction among diverse national groups, the positive results obtained in this study may be conservative. Also, given that the "shadow" management in Japanese subsidiaries may limit the contributions of HCNs, the positive effect of STMT nationality heterogeneity obtained in this study may again be conservative.

Third, future research should examine reverse causality, e.g., that higher subsidiary performance leads to more expatriates in subsidiaries. However, reverse causality is of lesser concern in this study. While the database's STMT data and sub-

subsidiary performance data were published in the same year, STMTs (and thus their makeup) are likely to have been in existence for some time before subsidiary performance information was available for a particular year. Further, when subsidiaries perform well, MNC headquarters may actually reduce control over subsidiaries, including the use of expatriate PCNs (Killing 1983). This should make the subsidiary more homogeneous in terms of nationality composition. Fourth, future studies must examine STMTs in the context of the subsidiary role. Different subsidiaries have different roles, and the need and nature of learning may vary. Fifth, future studies should expand STMT nationality heterogeneity impact in conjunction with other STMT member characteristics such as ethnicity and gender. Finally, future studies should examine the processes through which STMT nationality heterogeneity affects subsidiary performance (Hambrick/Mason 1984).

To conclude, this study provides initial empirical evidence of the influence of STMT nationality composition on subsidiary performance, and makes a number of contributions to the multinational team, TMT demography, and group diversity literature. From a theoretical perspective, this study introduces the legitimacy perspective to understand the impact of STMT nationality composition. Given the unique nature of the environments facing subsidiaries and the salience of STMT in the environments, the legitimacy perspective is in a position to complement the knowledge explanation of the impact of STMT nationality composition on subsidiary performance.

Endnotes

- 1 MNCs of certain nationality employ very few or no TCNs. Tung (1982) reported that none of the Japanese firms in her sample had any TCNs. In a more recent study, Peterson, Napier, and Shim (1996) found that Japanese MNCs used only a small number of TCNs or none. The empirical analysis in this study is focused on the composition of PCNs and HCNs only because TCNs in subsidiaries of Japanese MNCs were minimal or zero.
- 2 Japan is a country that consists of its own “civilization” (Huntington 1996) or “cultural block” (Ronen/Shenkar 1985). All other countries in the world can be grouped with other countries to form “civilizations” or “cultural blocks” (Huntington 1996, Ronen/Shenkar 1985).

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5., überarb. u. erw. Aufl. 2006. 1104 S. Geb. EUR 49,90

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Die Autoren

Prof. Dr. Jean-Paul Thommen ist Inhaber des Lehrstuhls *Organizational Behavior* an der *European Business School (ebs)*, Titularprofessor an der *Universität Zürich* sowie Dozent an der *Universität St. Gallen*.

Prof. Dr. Dr. Ann-Kristin Achleitner ist Inhaberin des *KfW-Stiftungslehrstuhls für Entrepreneurial Finance* und *Wissenschaftliche Direktorin des Center for Entrepreneurial and Financial Studies (CEFS)* an der *TU München* sowie *Honoraryprofessorin* an der *European Business School (ebs)* und *Privatdozentin* an der *Universität St. Gallen*.

Einfach bestellen: kerstin.kuchta@gwv-fachverlage.de Telefon +49(0)611. 7878-626

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