

Cross-National Differences in Corporate Cultures and the Culture-Performance Relationship: a Two-Country Comparison

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Much has been written on the importance of corporate culture to corporate performance. Yet there is a dearth of systematic evidence on the nature of, and potential moderating factors on, this relationship. There also is a lack of reported empirical evidence on whether the nature of the corporate culture-performance relationship varies across countries. Addressing this latter issue is important as firms increasingly operate across national boundaries.

The current study contributes exploratory evidence to these questions. Data on corporate culture, performance, and other company characteristics are collected from 22 Mexican and 33 Taiwanese manufacturing companies. The findings indicate that the aspects of corporate culture most emphasized varies across companies of different sizes, environmental uncertainty, and national origin. Further, both national origin and environmental uncertainty moderate the relationship between several aspects of corporate culture and corporate performance. Of particular significance is that for all aspects of corporate culture where country of origin significantly moderated the relationship with performance, the direction of the country's effect had opposite signs between Mexico and Taiwan.

I. INTRODUCTION

Corporate culture is widely held to affect various corporate performance outcomes, and hundreds of articles have been published on the subject. However, much of the extant writing is speculative rather than based on systematic, scientific evidence. This study contributes empirical evidence aimed at improving understanding of the determinants of corporate culture and its link to performance. Specifically, we: (1) explore the potential influences of company size, national origin and environmental uncertainty on corporate culture and (2) examine how these three variables moderate the relationship between corporate culture and performance.

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A. Size

A major part of extant empirical research on corporate performance (e.g., Govindarajan and Anthony [23]; Govindarajan and Gupta [24]; Merchant [44, 45]) focused on modeling empirically the association among organizational characteristics (e.g., organizational size, uncertainty, technology, competition, decentralization), performance evaluation systems (performance standards/budgets, rewards), and performance. The contingent theory studies found that these organizational characteristics both independently, and interactively with performance evaluation/reward systems, affect performance. Similarly, Chow, Haddad and Toole [9] considered a broader set of organizational characteristics: firm performance and performance evaluation/reward systems variables. They found that the “fit” between a firm’s performance evaluation/reward system and its environment significantly affect its overall performance. Their results also showed corporate performance to be positively related to organizational characteristics, such as size, decentralization, market uncertainty, and financial performance standards.

Size has also been found to shape behaviors and decisions (Lane and Beamish [41]; Nadler and Tushman [47]) and to influence many organizational characteristics, including corporate culture (Hofstede, et al. [35]). There has been some evidence that as firms get larger, they become more bureaucratic (Edwards [15]; Glueck [28]) and develop more extensive and elaborate communication, job analysis, planning, training, appraisal selection, and compensation systems (Hay Associates [31]; Dimick and Murray [14]; Gordon and Cummins [20]). Although these results were obtained in Anglo-American countries, Fisher and Shaw [16] and Shaw, Tang, Fisher and Kirkbride [52] also found that larger firms in Singapore and Hong Kong, respectively, engage in more sophisticated HR practices.

B. Corporate Culture, Industry Environment, and Performance

By and large, available empirical evidence has supported the existence of a corporate culture-performance relationship (Calori & Sarnin [6]; Denison [12]; Gordon [18]; Gordon & DiTomaso [21]; Kotter & Heskett [38]). The reported links are, however, neither consistent nor as strong as most of the speculative work would suggest. Gordon and Christensen [19] observe that some of the inconsistencies across studies may be due to differences in methodology as well as to the inclusion of diverse industries in a given study. Because industries place different demands and constraints on their members (Porter [50]),

companies in the same industry tend to develop common responses (an "industry recipe") to the managerial uncertainties that they face (Spender [58]). A significant aspect of these industry recipes is the existence of widely shared assumptions, which Schein [53] has characterized as the essence of organizational culture. Consistent with this view, Gordon [17] has argued that the environment that an industry creates forces companies within it to adopt certain cultural values in order to survive.

That corporate culture differs systematically across industries has been empirically demonstrated in a number of studies (Chatman & Jehn [7]; Gordon & Christensen [19]; Phillips [49]; Spender [58]). The industry characteristics that influence the development of corporate cultures also have been subject to some investigation. Gordon [17] argued that the industry dimensions identified by Dess and Beard [13], -- dynamism, munificence, and complexity -- can all have an effect upon corporate culture. Chatman and Jehn [7] classified industries on their technology and growth rate and found greater variation in organizational culture across than within industries. Kowalczyk [39] found that the cultures of companies in highly dynamic industries demonstrated greater values for innovation and lesser values for stability than companies in less dynamic industries demonstrated. Evidence also has been reported that industry moderates the corporate culture-performance link (Gordon and Christensen [19]).

Taken as a whole, these studies have provided useful insights into the relations among firm size, industry environment, corporate culture, and corporate performance. They suggest that organizational size and industry environment are strong predictors of corporate culture and that both variables independently moderate the corporate culture-performance link.

C. National Culture

These findings have advanced understanding of the determinants and performance effects of corporate culture. However, they leave unanswered the applicability of extant results across national boundaries. This is an important question in the increasingly globalized economy of today because there is considerable evidence that people of different national origins have different preferences for, and reactions to, management practices and processes (Adler, Doktor & Redding [1]; Bartlett & Ghoshal [5]; Child [8]; Hofstede [33, 36]; Lincoln and Kalleberg [42]). Thus, aspects of corporate culture that enhance performance in one national setting may not be effective, and may even be dysfunctional, in another (Chow, Kato & Merchant [10]; Gutierrez [29]; Hofstede [33]; Lincoln & Kalleberg [42]; Steers [59]). Although several studies have empirically explored the effects of national culture on corporate culture

(Hofstede et al. [35]; Soeters & Schreuder [56]; Schneider [54]), scant attention has been directed at the potential moderating effects of national culture on the linkage between corporate culture and performance. We are aware of only one study in which this relationship has been investigated outside the U.S. (Calori & Sarnin [6]), but the data collected there are not directly comparable to those collected in any of the other studies.

The present study focuses on areas related to the determinants of corporate culture and its link to performance that, in large part, have been the subject of speculation and little systematic empirical research. We empirically investigate the relationship between country and corporate culture, the influence of the internal and external corporate environment on that relationship, and the combination of these factors on corporate performance. In conducting these investigations, the findings of the extant literature can be used to formulate numerous univariate predictions, including a potential overall national culture effect. However, national culture is multidimensional, and its individual dimensions may interact with the other factors in opposite directions. Because the current state of knowledge is inadequate for deriving predictions about how the various cultural dimensions combine to affect the corporate culture-performance link, we adopt an exploratory approach in our study. If the empirical results reveal an overall national culture effect, then they would constitute stronger evidence that national culture needs to be considered in the design of corporate culture and understanding of its effects. As such, despite our not explicitly specifying hypotheses, our findings can contribute toward hypothesis development in future studies.

The remainder of this paper is organized as follows. The next section explains the research method, including the instrument, sample, and data collection procedures. Then the results are presented. The final section provides a discussion of the findings, conclusions, and suggestions for future research.

II. METHOD

A. Instrument

A rich literature exists on the topic of how corporate culture should be defined (e.g., Allaire & Firsirotu [4]; Alvesson [3]; Krenier [40]; Meyerson & Martin [46]; Schein [53]). A review of this literature is beyond the scope of this study. For our purposes, corporate culture will be defined as the set of values relating to how a company manages itself and conducts its business, and that corporate culture is widely shared within the company. Since values influence behavior, we expect that they would be manifest in the set of consistent behaviors (also

referred to as practices) observed throughout an organization.

As with national culture, many alternate ways of operationalizing the corporate culture construct have been proposed. (See Alvesson [3] for a comprehensive review.) Given our cross-national focus, we adopted the 48-item instrument of Gordon and Cummins [20] because it has been successfully employed by the international consulting firm, Hay Associates, to a large number of firms in many countries (Grey & Johnson [27]; Grey & Thone [26]; Grey & Gelfond [25]). This instrument asks respondents to describe the organization as it typically behaves in a variety of areas. This approach to measuring corporate culture is consistent with that employed by Hofstede et al. [35], which concluded from an examination of various approaches to measuring culture that (p.311) "shared perceptions of daily practices... [are] the core of an organization's culture." (For related views, see Louis [43] and Wiener [60].) Eight independent dimensions of corporate culture have been derived from this survey instrument (Gordon & Christensen [19]), which correspond to cultural values described in the literature. Table 1 presents brief explanations of the eight dimensions and the survey items that comprise them. Selected other company data (size, performance, and environmental uncertainty) were collected with a separate instrument. The items that make up this second instrument, as well as their sources, are provided in Table 2.

Table 1
Corporate culture scales and components¹

<u>Scale Name</u>	<u>Description</u>
1. Planning Orientation	This element emphasizes managing in a planful manner and avoiding surprises.
<u>Scale Components:</u>	
Extent to which goals provide a useful context for the firm's everyday functioning	
Extent to which planning for the achievement of goals is formal	
Extent to which company has clear goals	
Extent to which company has defined plans to meet its goals	
Extent to which planning for the achievement of goals is complete	
2. Innovation	This indicates the extent to which individual managers are encouraged to take risks and innovate.
<u>Scale Components:</u>	
Extent to which managers are encouraged to be innovative	
Extent to which managers are encouraged to take reasonable risks	
Extent to which managers are free to act independently	
3. Aggressiveness/ Action Orientation	An emphasis is placed on getting things done, being a pacesetter rather than a follower.
<u>Scale Components:</u>	
Whether or not company is a pacesetter	
Timeliness of decision making	
Innovativeness of decision making	
Overall vitality: sense of urgency and rapid pace of activities	
Responsiveness to changes in business environment	
4. People Orientation	A strong emphasis is placed on concern for and growth of current employees.
<u>Scale Components:</u>	
Success in developing people from within for bigger jobs	
Opportunities for promotion within the company	
Breadth of internal searches to fill a management vacancy	
Opportunities for individual growth and development	

Table 1 (continued)

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- 5. Team Orientation** This refers to the extent that people are encouraged to cooperate and coordinate within and across units.

Scale Components:

Clarity of managers' understanding about the interrelationships of their own jobs with those of others

Extent to which various units truly cooperate with one another

Extent to which various units understand each other's objectives and goals

- 6. Communication** This involves an openness to communicate and allowing others to be knowledgeable, thus enhancing the possibility of participation.

Scale Components:

Awareness of events happening in other areas of the company that might affect how own job is done

Quality of communications downward from above

Quality of overall communications

Quality of lateral communications from people at the same organizational level

- 7. Results Orientation** An emphasis is placed on holding people accountable for clear and demanding end results.

Scale Components:

Personal accountability for end results

Clarity of expected end results

Clarity of the yardsticks used to judge managerial performance

Demands for high levels of performance

- 8. Confrontation** This involves addressing issues openly instead of burying them.

Scale Components:

Extent to which constructive criticism is encouraged

Extent to which open discussion of conflicts is encouraged

¹ Taken from Gordon and Christensen [19]

Table 2
Items on company information survey

Size: Most recent annual sales.

Environmental Uncertainty:¹

- A. Intensity of industry competition for raw materials
- B. Intensity of industry competition for manpower
- C. Number of new products/services marketed in industry in past 3 years
- D. Dynamism of economic and technological environment
- E. Extent that competitors' activities have become less predictable in past 3 years
- F. Extent that customers' tastes have become less predictable in past 3 years
- G. Extent that legal, political and economic constraints have proliferated in past 3 years
- H. Frequency of the emergence of new technologies in the industry
- I. Frequency of the emergence of new products in the industry

Company Performance:²

- J. Long run level of firm profitability
- K. Growth rate of sales or revenue
- L. Financial strength (liquidity and ability to raise financial resources)

¹ Adapted from Khandwalla [37]. Response scale: 1= Of negligible intensity, 7= Extremely intense.

² Adapted from Gordon and Narayanan [22]. Response scale: 1= Very low, 4= About average, 7= Very high.

B. Sample and Procedure

We chose to study companies with Taiwanese and Mexican origins for two major reasons. One is that both countries are becoming increasingly important players in the global economy, and additional understanding of their management practices and preferences would be worthwhile. Second, these countries have rather different national cultures (Hofstede [32, 36]), and a comparison between them would make the effects of national culture more manifest.

Referrals to 35 public manufacturing firms in Taiwan and 22 in Mexico were obtained from several large accounting firms in each country. The nature of the study was explained to the top management of each company, and all agreed to participate. A contact from each company was sent a packet of both survey instruments for distribution within his/her company. Based on suggestions of the contact persons, each company in Taiwan received 23 corporate culture and 5 company information questionnaires, while each company in Mexico received 30 of the former and 3 of the latter. The contact from each company was asked to distribute the corporate culture survey to middle managers of at least department head rank and the company information questionnaires to top-level managers. Envelopes were provided with the survey instruments so that respondents could seal them for anonymous return. Two weeks later the companies were re-contacted to collect the completed forms.

A total of 407 (50.6%) completed corporate culture questionnaires and 116 (66.3%) company information questionnaires were collected in Taiwan. The corresponding numbers for Mexico were 340 (51.5%) and 36 (54.5%). All 35 Taiwanese and 22 Mexican companies provided usable data on both questionnaires. These sample firms varied in sales from US\$313,000 to over US\$3 billion, with much greater variability in Mexico than in Taiwan and a significant difference between the medians ($p=.022$) with Taiwan having the larger. All of the companies engaged primarily in manufacturing, with both national samples covering a similar and wide range of industries.

III. RESULTS

A. Reliabilities

The subject of reliability in this study has two aspects. First, since the unit of analysis in this study is companies and not individuals, it is important to assess whether there is sufficient consensus among the respondents from each company. The second issue is the more traditional one of the reliability of the scales created: Do they measure coherent phenomena or are some of the items within a scale unrelated to others?

To address the first issue, coefficient alphas were computed within each company, treating individuals as items and questions as people. Thus the alphas reflect the average degree of agreement between all pairs of people computed across all culture items. Because of low reliabilities, two companies in Taiwan were eliminated from any further analyses. In each of 20 out of the remaining 33 Taiwanese companies, from one to three individuals were eliminated because their inclusion significantly lowered the alpha for the company. The

alphas for all companies in the final sample were in the acceptable range of .60 or above as suggested by Nunnally [48].

Before computing coefficient alphas for the corporate culture scales, the responses were standardized within each company, following the procedure described by Gordon and Christensen [19]. In this way, when companies are compared on a value, they are compared on the basis of how intensely the value is held in a company when measured against the strength of its other values. This "centering" process within each company helps to eliminate the halo effects of morale or overall satisfaction level, which might raise or lower all responses within a company across all questions. Such an effect would produce spuriously high reliabilities as well as potentially spurious correlations with performance since people tend to give "high" ratings to most characteristics of high-performing companies. Table 3 presents the results of the reliability analysis, using the standardized scales.

Table 3
Scale Reliabilities for Each Country

Corporate Culture Scale	Mexico	Taiwan
Planning	.75	.90
Innovation	.76	.72
Aggressiveness	.56	.88
People Orientation	.71	.84
Team Orientation	.64	.76
Communication	.53	.84
Results Orientation	.74	.86
Confrontation	.66	.54
Number of Companies	22	33

The Taiwanese reliabilities all exceed the .60 cutoff except that for Confrontation ($\alpha=.54$). The Mexican reliabilities are generally lower than those obtained in Taiwan, and two of the reliabilities are problematical (Aggressiveness and Communications; $\alpha=.56$ and $.53$). We can only speculate on the reasons for these low reliabilities. One possibility is that the particular societal value structures involved are not totally amenable to measurement by a system developed in the U.S.. In their work with a U.S.-based survey, Hofstede and Bond [34] reported substantial differences in strength of values across countries; but there was no indication that the actual value structures were different although that possibility may not have been investigated. The main problem with the low reliabilities is that they will tend to attenuate observed relationships with other variables, such as environmental uncertainty or performance.

B. National Origin, Firm Size, Environmental uncertainty, and Corporate Culture

Using current annual sales as a measure of size, both Mexican pesos and Taiwanese dollars were first converted to U.S. dollars; then a logarithmic transformation was performed to make the distribution more normal in form. As a measure of a key aspect of industry environment we created an Environmental Uncertainty scale by summing the responses of items A through I (Table 2). The Cronbach alpha reliability for this scale was .90 for Mexico and .85 for Taiwan and the mean values were 5.20 and 4.75, respectively. A dummy variable was created for country (Mexico=0, Taiwan=1); and a multiple regression, including the independent effects and two-way interactions, was run separately for each of the corporate culture scales as the dependent variable. The results are presented in Table 4.

Table 4
Coefficients from regressions of firm size, environmental uncertainty, and country on corporate culture (p values in parentheses)

Corporate Culture Scale	Constant	Country	Lnsiz	Envir. Uncert.	Country X Lnsiz	Country X Envir.	F	Adj R ²
Planning	.124 (.394)	-.193 (.065)	-.161 (.675)	-.079 (.557)	.053* (.000)	-.063 (.827)	7.21* (.001)	.19
Innovation	.116 (.444)	.522 (.155)	.054 (.098)	.008 (.952)	-.058* (.001)	.185 (.488)	4.46* (.017)	.12
Aggressiveness	2.010* (.028)	-1.105* (.034)	-.027* (.05)	-.439* (.014)	.392 (.352)	.266* (.011)	7.61* (.000)	.33
People Orientation	-.090 (.506)	-.252 (.104)	.231 (.172)	.152 (.240)	-.433* (.005)	-.184 (.245)	8.62* (.005)	.13
Team Orientation	-.155* (.000)	-.158 (.255)	-.216 (.116)	-.016 (.911)	-.283 (.368)	-.178 (.198)	2.55 (.116)	.03
Communication	2.107* (.037)	-1.028 (.093)	-.103 (.467)	-.394 (.045)	-.112 (.507)	.194 (.097)	6.69* (.001)	.17
Orientation	-.065 (.597)	.073 (.653)	-.049 (.780)	.037 (.784)	.031* (.027)	.071 (.665)	5.21* (.020)	.07
Confrontation	-.059 (.131)	-.204 (.139)	-.145 (.294)	.059 (.672)	-.258 (.590)	-.203 (.142)	1.00 (.425)	.00

* Significant at the 0.05 level.

Table 4 shows that when the influences of size and environmental uncertainty are taken into account, there are national influences on five of the eight corporate culture scales: Innovation, Aggressiveness, People Orientation, Planning, and Results Orientation. Only Team Orientation, Communication, and Confrontation show no national effects. Table 5 shows the country means for each of the eight corporate culture scales. Three scales are significantly different between Mexico and Taiwan as assessed by t-tests ($p=.05$). These are Innovation and People Orientation, both of which are higher in Mexico, and Aggressiveness, which is higher in Taiwan.

Table 6 provides the cell means for small vs. large Taiwanese and Mexican companies on the four corporate culture scales with significant country-by-size interactions. Plots of these cell means are provided in Figures 1 to 4. In these figures as well as in others to follow, the median value of each variable is used to dichotomize the sample on size.

Table 5
T-tests of mean corporate values between Mexico and Taiwan

		Mean	t-value	2-tail Sig.
Planning	Mexico	.245		
	Taiwan	.271	-.28	.781
Innovation	Mexico	.047		
	Taiwan	-.171	1.98	.053
Aggressiveness	Mexico	-.098		
	Taiwan	.114	-3.03	.004
People Orientation	Mexico	-.072		
	Taiwan	-.399	3.13	.003
Team Orientation	Mexico	-.085		
	Taiwan	-.191	1.34	.185
Communication	Mexico	.024		
	Taiwan	.024	.00	.997
Results Orientation	Mexico	.117		
	Taiwan	.257	-1.40	.168
Confrontation	Mexico	-.010		
	Taiwan	-.168	1.27	.210

Table 6
Mean levels of corporate culture for small vs. large Taiwanese and Mexican firms: corporate culture scales with significant country by size interactions

Corporate Culture Scale	Country	Company Size	
		Small	Large
Planning	Taiwan	0.109	0.490
	Mexico	0.205	0.296
Innovation	Taiwan	-0.048	-0.337
	Mexico	0.066	0.058
People Orientation	Taiwan	-0.326	-0.498
	Mexico	0.099	-0.191
Results Orientation	Taiwan	0.175	0.368
	Mexico	-0.022	0.179

Figures 1-4 reveal that the forms of the company size effect differ across corporate culture scales. Planning and Innovation differ only slightly between small and large Mexican companies (Figures 1 and 2); but in Taiwan, Planning increases, while Innovation decreases, substantially with company size. On the other hand, People Orientation differs little between small and large Taiwanese companies but in Mexican companies, larger companies are significantly less People Oriented (Figure 3). Finally Figure 4 shows that Results Orientation increases with company size in both Taiwan and Mexico and in roughly equal proportions.

Figure 1
Mean levels of planning in Taiwan and Mexico across company sizes

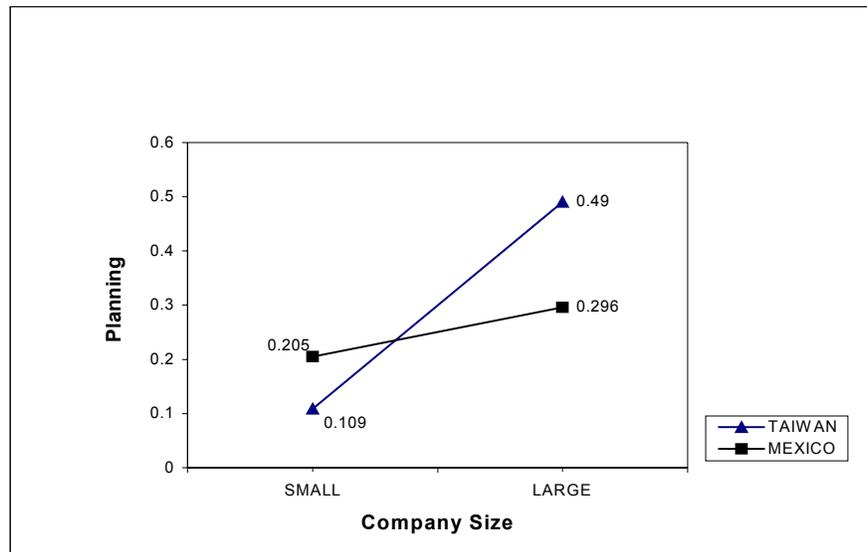


Figure 2
Mean levels of innovation in Taiwan and Mexico across company sizes

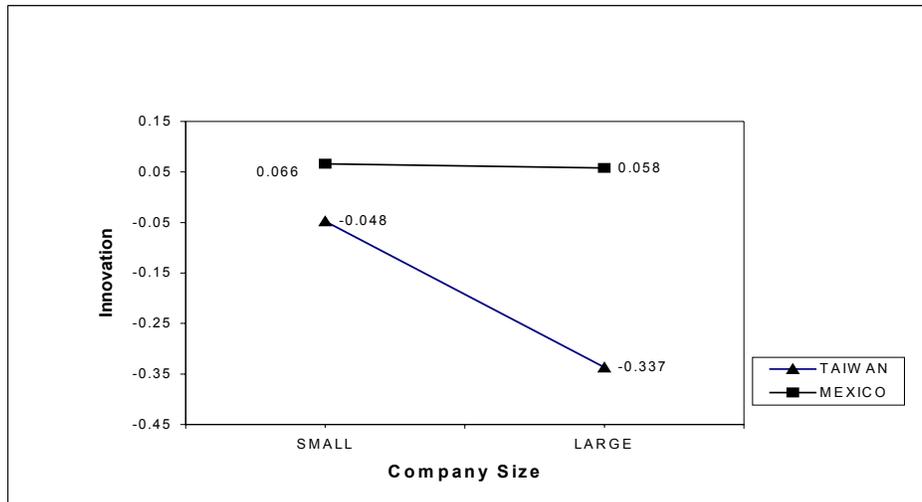


Figure 3
Mean levels of people orientation in Taiwan and Mexico across company sizes

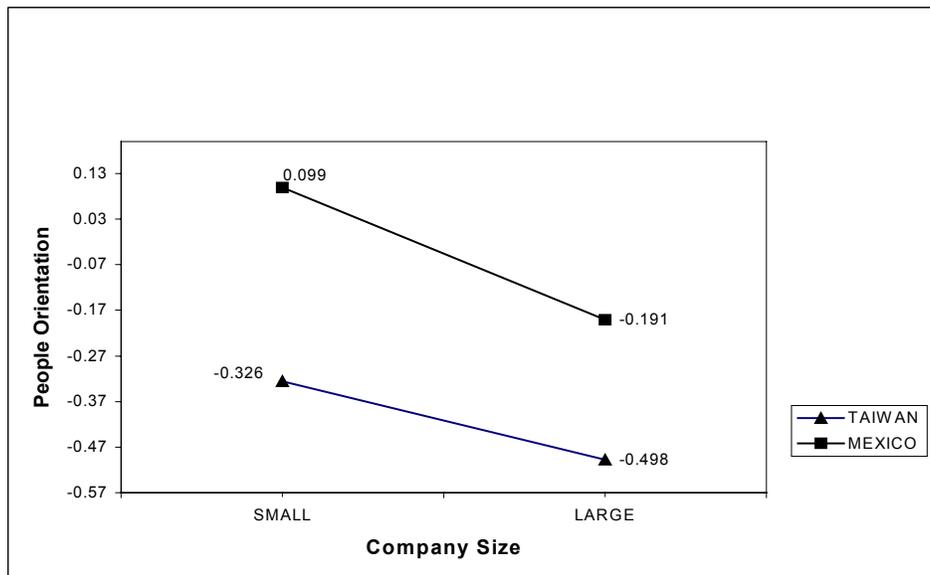


Figure 4
 Mean levels of result orientation in Taiwan and Mexico across company sizes

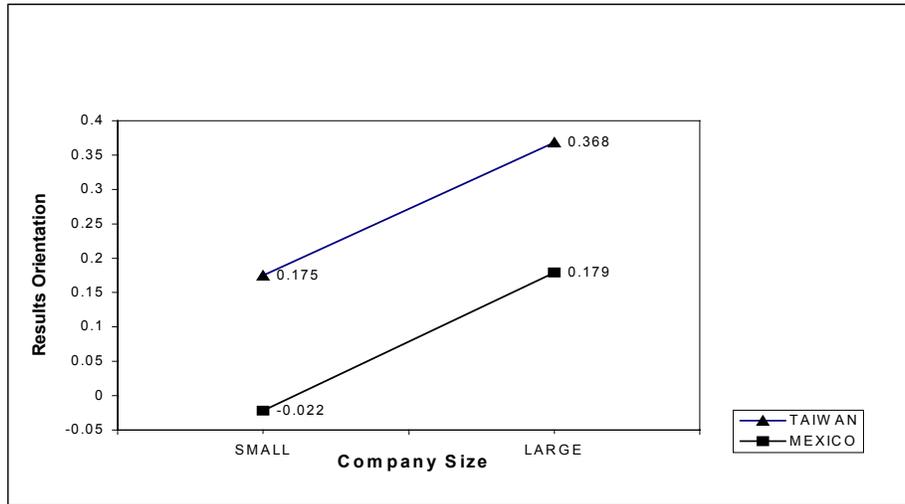
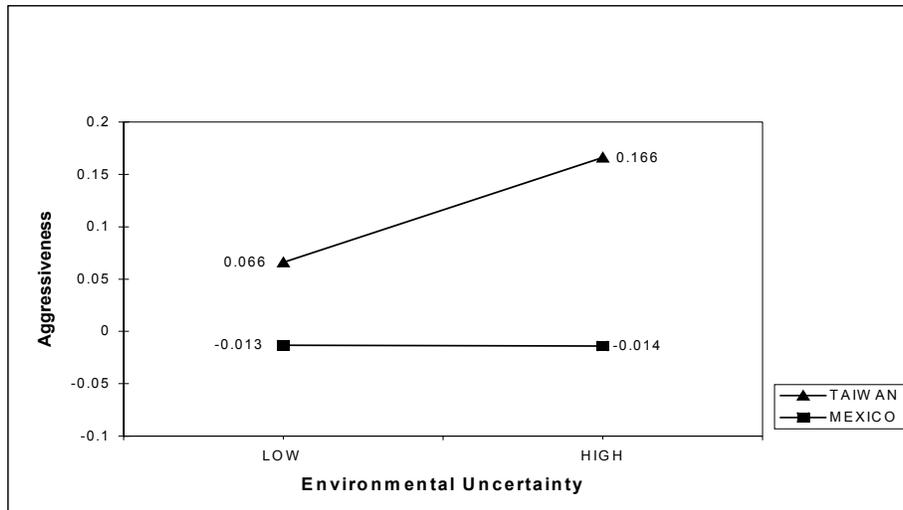


Figure 5
 Mean levels of aggressiveness in Taiwan and Mexico across levels of environmental uncertainty



Aggressiveness is the corporate cultural characteristic that calls for the greatest care in its interpretation since it is significantly related to country, size, environmental uncertainty, as well as a country by environmental uncertainty interaction. The relationship of aggressiveness to size and environmental uncertainty individually is negative so that in larger companies, and where there is greater environmental uncertainty, there are less aggressive corporate cultures. However, as Figure 5 shows, the interaction between aggressiveness and environmental uncertainty is quite different between the two countries. Among Taiwanese companies, those facing high environmental uncertainty have more aggressive corporate cultures while there is little difference among Mexican companies across levels of environmental uncertainty.

Taken as a whole, the analyses presented in this section reinforce the role of national origin in the development of corporate cultures. They also identify the importance of size and environmental uncertainty as contributors to this development, either independently or jointly with the national influence.

C. National Origin, Company Size, Environmental uncertainty and the corporate Culture-Performance Relationship

Given the previously reported influences of national origin, company size, and environmental uncertainty on corporate culture, it is reasonable to expect that these variables also might moderate how corporate culture is related to corporate performance. To explore such influences, we constructed a performance scale from two out of the three items listed under this heading in Table 2, namely, long-run level of profitability and financial strength (liquidity and ability to raise financial resources). We attempted to include the question on long-term growth, but it did not correlate with the other questions and its inter-rater reliability in Mexico was too low (.47) to be acceptable as a stand-alone criterion. Scale averages were computed for each firm across items and respondents, thus producing a summary performance score for each company. The reliability of the performance scale was .74 for Mexico and .66 for Taiwan, and the respective mean values were 4.46 for Mexico and 5.10 for Taiwan.

Performance was used as the dependent variable in eight separate multiple regressions. Each regression focused on one of the eight corporate culture scales. Also included as independent variables were Insize, environmental uncertainty, country, as well as all two-way interactions. Table 7 shows the regression results, and Table 8 presents the correlations among the variables.

Table 7 indicates that there are significant corporate culture-performance relationships in both countries and that these relationships differ between the countries. Three corporate culture scales -- Team Orientation,

Communication, and Results Orientation -- have no main or interactive effects on performance. Three of the remaining five corporate culture scales -- Planning, Aggressiveness, and Confrontation -- have both significant main and interaction effects. Country and environmental uncertainty have significant main effects in all cases, while firm size has no significant main or interaction effect.

Given the earlier results on the relations among country, company size, environmental uncertainty, and corporate culture, some multicollinearity among the independent variables is to be expected. This is borne out by the pattern of significant correlations in Table 8. Thus, the insignificant main effect for Communication may have been due to its significant correlation with environmental uncertainty (Table 5), which has a significant main effect on performance (Table 7). Such correlations undoubtedly mask some of the corporate culture-performance linkages, but interesting patterns still emerge. For example, while Planning is significantly related to the country-by-size interaction (Table 5), it still has a significant main effect on performance alongside country, in addition to having a significant interaction effect with environmental uncertainty (Table 7). Similarly, Confrontation is not significantly related to country, size, or environmental uncertainty (Table 5), but its link to performance is significantly moderated by country.

The higher mean rating of performance among Taiwanese companies (5.10 vs. 4.46 for the Mexican companies) very likely reflects the higher performance of the Taiwanese economy as a whole. But because the performance measures are based on self-assessments, we cannot rule out the possibility of a country bias in these responses (i.e., Mexican and Taiwanese managers favoring different parts of the response scale). However, there is no a priori reason to expect such biases, even if they existed, to be systematically related to the “centered” corporate culture scales used in this analysis.

When the two countries are combined, there is higher performance in those industries where there is greatest environmental uncertainty. This is consistent with the fact that rapidly growing industries tend to produce greater and more rapid changes in technology, distribution, products, etc. As mentioned earlier, firm size had no main or interactive effect.

Table 7
Coefficients from regressions of corporate culture, country, firm size, and environmental uncertainty on performance (p values in parentheses)

Corporate Culture Scale	Constant	Culture Scale	Country	Lsize	Envir. Uncertainty	Culture Scale X Country	Culture Scale X Lsize	Culture Scale X Envir.	F	Adj R ²
Planning	-.163 (.445)	4.070* (.012)	.940* (.000)	.018 (.873)	.790* (.000)	.203 (.673)	-.089 (.687)	-.766* (.019)	14.38* (.000)	.50
Innovation	.702 (.302)	-1.064 (.318)	.794* (.000)	-.025 (.814)	.566* (.000)	-.849* (.010)	-.138 (.568)	.208* (.039)	14.36* (.000)	.50
Aggressiveness	1.975* (.010)	-8.802* (.001)	.628* (.005)	.040 (.696)	.365* (.004)	1.603* (.012)	.261 (.355)	1.341* (.007)	13.83* (.000)	.55
People Orientation	.511 (.434)	.502 (.682)	.625* (.000)	.057 (.573)	.644* (.000)	-.865* (.002)	.132 (.660)	.220* (.016)	16.43* (.000)	.54
Team Orientation	.417 (.552)	-.244 (.433)	.973* (.000)	.103 (.338)	.598* (.000)	.298 (.096)	-.241 (.162)	-.249 (.340)	16.18* (.000)	.46
Communication	.586 (.409)	-.030 (.777)	.881* (.000)	.058 (.587)	.578* (.000)	.011 (.913)	-.088 (.407)	-.050 (.633)	21.85* (.000)	.44
Results Orientation	.586 (.409)	-.151 (.567)	.881* (.000)	.038 (.733)	.578* (.000)	-.046 (.856)	.092 (.389)	.058 (.588)	21.85* (.000)	.44
Confrontation	.953 (.165)	.958* (.039)	.735* (.000)	.048* (.000)	.534 (.640)	-.864* (.011)	-.190 (.488)	-.800 (.519)	14.41* (.000)	.50

- Significant at the 0.05 level

Table 8
Correlations among variables (p values in parentheses)

	Planni ng	Innova- tion	Aggress- iveness	People Orient.	Team Orient.	Commu- - nication	Results Orient.	Confron- tation	Country	Size
Innovation	-.353 (.008)									
Aggressiveness	.007 (.960)	-.397 (.003)								
People Orientation	-.276 (.041)	.160 (.245)	-.193 (.158)							
Team Orientation	-.252 (.064)	-.140 (.307)	-.002 (.991)	.004 (.977)						
Communication	-.072 (.601)	.088 (.521)	-.168 (.221)	-.148 (.281)	.066 (.634)					
Results Orientation	.269 (.047)	-.186 (.175)	.133 (.333)	-.310 (.021)	-.121 (.379)	-.433 (.001)				
Confrontation	-.480 (.000)	.221 (.105)	-.363 (.007)	.116 (.399)	.107 (.436)	.102 (.460)	-.281 (.037)			
Country	.038 (.781)	-.263 (.053)	.384 (.004)	-.395 (.003)	-.181 (.185)	.001 (.997)	.189 (.168)	-.172 (.210)		
Size	.407 (.002)	-.040 (.775)	-.309 (.023)	-.110 (.430)	-.216 (.116)	-.102 (.462)	.167 (.228)	-.146 (.294)	-.206 (.134)	
Environmental Uncertainty	-.002 (.988)	.073 (.595)	-.092 (.474)	.183 (.182)	.014 (.914)	-.200 (.144)	.051 (.713)	.029 (.836)	-.347 (.009)	.199 (.149)

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Country has a significant moderating effect for four corporate culture scales: Innovation, Aggressiveness, People Orientation, and Confrontation. Environmental uncertainty by corporate culture interactions is significant for four corporate culture scales: Planning, Innovation, Aggressiveness, and People Orientation. Tables 9 and 10 shed further light on the nature of these interaction effects. The former reports the mean performance of Taiwanese and Mexican companies with high vs. low levels of four corporate culture values. The latter gives these means for companies with high vs. low levels of environmental uncertainty. Plots of Table 9 means are provided in Figures 6-9.

The country by corporate culture interactions exhibit two different patterns. Those for Innovation, People Orientation and Confrontation have a convergent shape, as illustrated in Figures 6, 7 and 9. For all three of these corporate culture scales, Taiwanese firms low on the scale outperform those with high values, but the opposite pattern holds among Mexican firms. Figure 8 shows that the interaction effect between country and Aggressiveness has a divergent pattern. Taiwanese firms that are low on this corporate culture scale perform lower than their counterparts high on the scale, and the opposite is observed among Mexican firms. Note that regardless of the form of the corporate culture by country interaction, a shared feature is that the country effect is opposite in sign (i.e., not just a relative difference in slopes of the same sign) between Mexico and Taiwan.

Separate plots are not provided for the interaction effects involving environmental uncertainty (Table 10). Those with Planning, Innovation and Aggressiveness have the same convergent pattern as Figures 6, 7, and 9 with the firms high on uncertainty having higher mean levels of performance (i.e., the line representing the Taiwanese firms). The interaction between People Orientation and uncertainty has the same divergent pattern as Figure 8, again with higher uncertainty firms outperforming those low on this environmental characteristic.

Table 9

Mean levels of performance for Taiwanese and Mexican firms with low vs. high levels of corporate culture: corporate culture scales with significant interactions with country

Corporate Culture Scale	Country	Level of Corporate Culture	
		Low	High
Innovation	Taiwan	5.321	4.846
	Mexico	4.273	4.636
Aggressiveness	Taiwan	4.927	5.244
	Mexico	4.523	4.386
People Orientation	Taiwan	5.360	4.804
	Mexico	4.295	4.614
Confrontation	Taiwan	5.384	4.779
	Mexico	4.364	4.545

Table 10

Mean levels of performance for low vs. high environmental uncertainty firms with low vs. high levels of corporate culture: corporate culture scales with significant interactions with environmental uncertainty

Corporate Culture Scale	Environmental Uncertainty	Level of Corporate Culture	
		Low	High
Planning	Low	4.542	4.188
	High	4.600	4.750
Innovation	Low	4.640	4.500
	High	4.990	5.123
Aggressiveness	Low	4.823	4.559
	High	5.130	5.724
People Orientation	Low	4.600	5.013
	High	5.100	5.036

Figure 6
Mean levels of performance in Taiwan and Mexico across levels of innovation

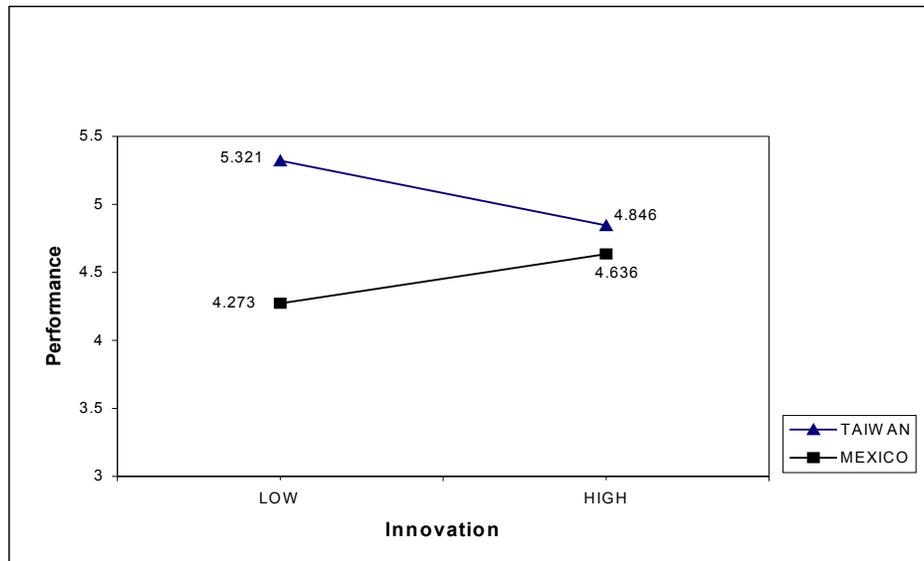


Figure 7
Mean levels of performance in Taiwan and Mexico across levels of people orientation

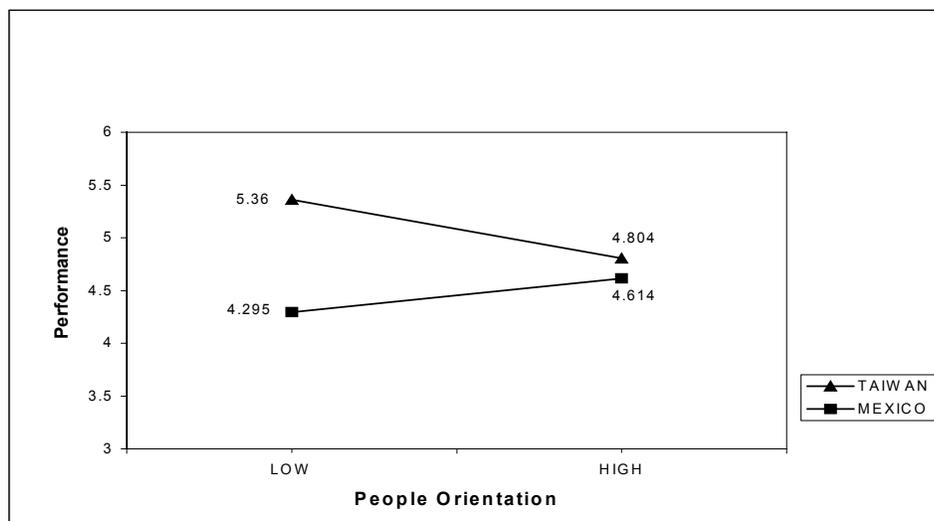


Figure 8
 Mean levels of performance in Taiwan and Mexico across levels of aggressiveness

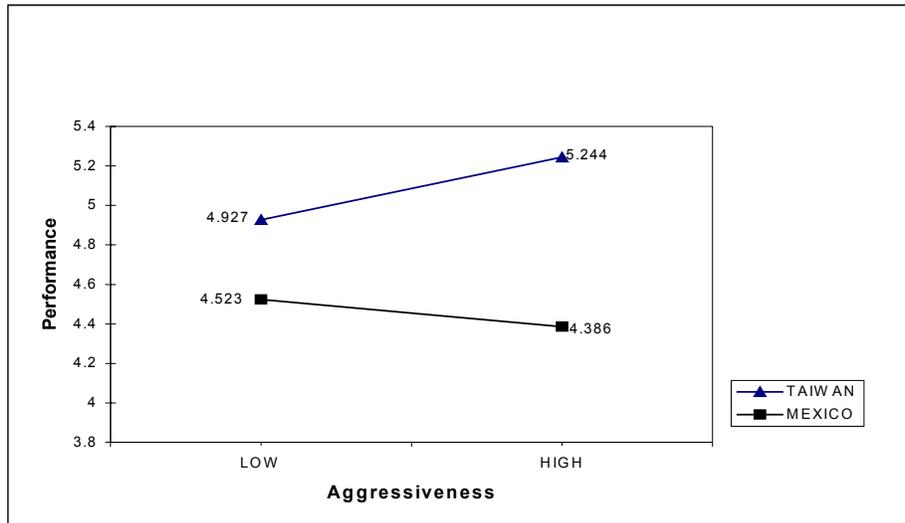
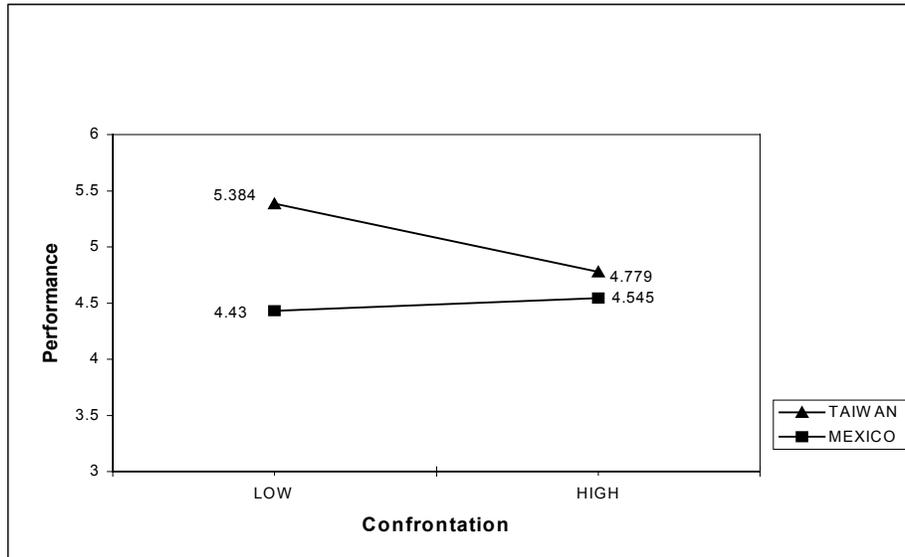


Figure 9
 Mean levels of performance in Taiwan and Mexico across levels of confrontation



IV. DISCUSSION AND CONCLUSIONS

This study has contributed empirical evidence on the relationships of corporate culture with national origin as well as relationships between corporate culture and company size, competitive environment, and corporate performance. Not only did we find that the corporate cultural aspects most emphasized differed from country to country, but we also found that they related to corporate performance in different ways. This finding is a useful addition to the literature because while the linkage between national and corporate cultures has been suggested by others (Hofstede [33]; Rieger & Rieger [51]; Schneider [54]), there is a lack of empirical data for forming firm conclusions on this proposition. Indeed, Hofstede and his co-authors, who initially seemed to come to that conclusion (Hofstede & Bond [34]), later minimized the national influence (Hofstede, et al. [35]).

Clearly, a corporate culture does not evolve in a vacuum. It reflects the environmental uncertainties that management must learn to deal with. A company like Microsoft must constantly scan its environment to stay on top of swiftly moving technologies that can render its core business obsolete very rapidly. But the need for such an innovative and quickly adaptable culture may not be critical for an oil company that plans for an eight-year elapsed period from the time it bids on a lease to explore new fields to when it has a producing well in place. Corporate culture also reflects the size of a company and may be modified as the company grows. The "Friday beer blast" culture of Apple Computer fit a small, relatively new company in which it was not uncommon for all employees to know one another. But as Apple grew in size and experienced the need for more formal and extensive management, control, and communication systems, the small-company culture was no longer adequate for its business needs.

Of the variables examined in this study, the most pervasive influence on corporate culture seems to be national origin. This study has not only demonstrated that corporate culture differed quite significantly as a function of national origin but also found moderating effects of national origin on the link between corporate culture and corporate performance. To the extent that the findings of this study are valid (we shall discuss the measurement problems below), they support the need for caution in applying corporate culture findings across national borders.

It is clear that the study has many limitations, not the least of which is the size and nature of the samples. The practical difficulties of mounting a study where data must be collected from multiple employees within a company, yet each company represents only one observation are daunting, so much so

that Siehl and Martin [55] have suggested that such studies not be attempted. When viewed in this context, despite this study's limitations, it has provided useful empirically based information concerning cross-national culture/performance relationships as well as expanded the available knowledge of cross-national cultural differences.

Another potential limitation is comparison of the measurements across countries as an instrument that is developed in one culture may not fit another. Yet, to develop a different instrument for each culture would render the measurements incomparable cross-sectionally, whether the cultures relate to countries, companies, or units within a company. The lower Mexican reliabilities may reflect the fact that while the words on the questionnaires were accurately translated from the English, some of the concepts may have no exact counterparts in Mexican culture. It would seem highly desirable that in future research, instruments that are used cross culturally be evaluated against similar data formulated within each culture. The problems here are indeed daunting, but in the opinion of the present authors, the importance of the issues involved make efforts to overcome them worthwhile.

Perhaps the biggest limitation of this study is that, while it has detected systematic relationships, it has not provided explanations for them. This applies both to the linkage between national and corporate culture and the moderating effect that national culture has on the relationship between corporate culture and performance. As an example of the difficulty with explicitly linking national and corporate cultures, consider the finding that Innovation was higher in Mexico than in Taiwan. Using the oft-used taxonomy of national culture proposed by Hofstede [32, 36] (see Cragin [11], Harrison et al. [30], Sondergaard [57] for reviews), this directional difference is consistent with Mexican culture's higher Individualism and its attendant emphasis on personal initiative. Yet Mexican culture also is higher on Hofstede's Power Distance and Uncertainty Avoidance, and both of these cultural values imply the opposite: a preference for adherence to rules and directives from superiors. The potential for different aspects of national culture to have countervailing effects on corporate culture suggests that further work is needed to discover the specific linkages and their relative degrees of influence. Similar unanswered questions remain regarding how each aspect of national culture moderates the linkage between corporate culture and performance, why such moderating effects are observed for certain corporate culture scales but not for others, and why the moderating effects are of different directions.

To conclude, findings on the factors that constrain and/or influence both corporate culture, as well as the relationship between corporate culture and performance, can be of great value to corporate executives in the current global economic environment. This study has provided findings on the effects of

national origin, firm size and environmental uncertainty on these relations, thus suggesting the importance of paying attention to these factors in the design of mechanisms to develop corporate culture. But much is yet to be learned about why particular aspects of corporate culture seem to be performance-relevant in one country or type of environment and not in another and, more importantly, how their effects come about. Discovering the drivers of variations in these relationships can enable corporate leaders in all countries to better identify desirable changes in corporate culture and ways to achieve them.

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