Journal of Global Initiatives: Policy, Pedagogy, Perspective

Volume 7
Number 2 *Pervuvian Trajectories of Sociocultural Transformation*

Article 10

December 2013

Culture and Innovation in Peru from a Management Perspective

Gregory J. Scott
CENTRUM Catolica, Pontificia Universidad Catolica del Peru, gscott@pucp.pe

Ian Chaston
CENTRUM Catolica, Pontificia Universidad Catolica del Peru, ichaston@pucp.pe

Journal of Global Initiatives
Volume 7, Number 2, 2012, pp.127-141

Culture and Innovation in Peru from a Management Perspective

Gregory J. Scott and Ian Chaston

Political stability, macro-economic caution, and the aggressive pursuit of free trade have enabled Peru to emerge as one of the fastest growing economies in Latin America. This economic expansion has created heightened interest in the evolution of corporate culture and its influence on firm performance. This paper examines organizational performance in relation to the influence of cultural values on innovation by means of a survey of upper level managers. Analysis of the survey results indicates that there was a positive relation between innovation and power distance and uncertainty. Survey findings show no relationship between innovation and individualism nor innovation and masculinity. Practical implications indicate that the cultural values of declining power distance and lower aversion to uncertainty may influence the effective implementation of an innovation strategy in firms operating in Peru.

Introduction

The global banking crisis triggered by massive defaults in the sub-prime mortgage market in the United States followed by the emergence of the sovereign debt crisis in the European Union have combined to result in the longest economic downturn since the Great Depression of the 1930s. Although the adverse impact of this recession has been greatest in the industrialized nations, many emerging economies have also been affected by the global downturn. In the case of Latin America, these developments come in the wake of massive privatization schemes, domestic market liberalization, and free trade agreements (Reficco & Ogliastri, 2009) all designed to make their respective societies more competitive now and in the years ahead. Nevertheless, many countries in the region and their respective firms have had difficulty in sustaining economic growth in the face of declining demand for goods and services in their key markets in Europe and North America.

Drucker (1985) posited that post-war business survival rates were likely to be highest among firms which engaged in innovation. Other studies have also concluded that innovation focusing upon creating new products and services during a recession will assist firms to emerge from an economic downturn in a much stronger position (Trott, 1998). Most organizations engaged in developing new products traditionally maintain a relatively "closed" system in order to retain ownership of proprietary knowledge. Chesbrough (2003) posited "open innovation" is more effective because it provides access to new knowledge. Brettel, Engelson, and Heinemann (2008) concluded that the success of innovation will be influenced by how national cultures impact the internal behavior of organizations.

The vast majority of management research has focused on firms located in industrialized economies such as the United Kingdom or United States. Hence the question arises whether theories concerning innovation and the influence of cultural values on the innovation process are as equally applicable to firms based in an emerging economy. The purpose of this study is to examine this question in the context of the recent performance of companies in Peru.

Recent Trends in Peru

Few nations have experienced the extreme changes in government economic policy, social, and political upheaval, and shifts in business environment that Peru has witnessed over the last four decades (Jaramillo & Silva-Jáuregui, 2011). The country transitioned from military dictatorship in the 1970s to nearly 15 years of terrorist activity beginning in the early 1980s accompanied by hyperinflation that reached over 7000% in the early 1990s (Murakami, 2007). In 1991, these developments gave way to a government policy of aggressive privatization and the pursuit of free trade (ADEX, 2005; González Vigil, 2009). A wave of foreign investment followed and has continued up to the present (de Althaus, 2007; Dube, 2011). In the new millennium political stability, macro-economic caution and the aggressive pursuit of free trade enabled Peru to emerge as one of the fastest growing economies in Latin America (Tello & Tavara, 2010). This economic expansion has created heightened interest in the evolution of corporate culture and its influence on firm performance (de Althaus, 2007; Flores & Ickis, 2007; Quiroz, 2008; Gil, 2009; Jaramillo & Silva-Jáuregui, 2011).

Different Dimensions to Culture

Culture influences peoples' attitudes, beliefs, and decision making (Aycan, 2000). Several taxonomies exist in relation to measuring culture but possibly the most common taxonomy used in marketing is that of Hofstede (Coviello & Jones, 2004). Hofstede (2001) posited that culture has four critical dimensions, namely, power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity. Power distance refers to the degree of centralized decision structures and the use of formal rules (Trianus, 1994). Uncertainty avoidance looks at whether difficult situations are to be engaged, tolerated, or avoided. The individualism-collectivism dimension reflects the extent to which the interests of an individual or a group are afforded more importance. Masculinity-femininity defines the degree to which a society is dominated by such masculine values as achievement and self-assertiveness versus feminine values such as discretion, modesty, and tolerance.

There is significant variation in national cultures across the world. As illustrated in Table 1, Peru, similar to other South American countries, has a high score for power, low scores for uncertainty and individualism, and a high score for masculinity. This contrasts with the relatively low scores for power, high scores for uncertainty and individualism, and a low score for masculinity in Western industrial democracies. Inglehart and Abramson (1999) posited that the existence of cultural differences between nations is attributable to the influence of economic development on the priority given certain

values. As rising incomes lead to feelings of greater security, for example, a materialist emphasis diminishes to be replaced with more post-materialist goals. Unlike the emerging economies in Asia, however, Peru and other South American countries have a high score for masculinity.
Table 1

Table 1: Scoring Dimensions of National Cultures for Selected Countries

Country	Power	Uncertainty	Individualism	Masculinity
Peru	64	42	16	87
Argentina	63	28	23	86
Brazil	69	49	38	76
UK	35	66	89	35
USA	40	62	91	46
Malaysia	104	50	26	36
Singapore	74	48	20	8

Source: www.geer-hofstede.com (accessed September 2, 2011)

Innovation and Uncertainty

Although Peru's economy has grown in recent years, the prospects for further growth remain less certain in view of the overall state of the world economy. The country remains heavily reliant upon mining and agricultural exports—two sectors which exhibit volatility in both demand and prices (Anonymous, 2009). One of the features of markets during periods of economic uncertainty is that the majority of firms tend to adopt a survival strategy of seeking to reduce operating costs and to compete on the basis of lower prices (Bacot, Hartman, & Lundberg, 1992). Building upon theories generated by the Austrian School of Economics (Schumpeter, 1934), Drucker (1985) posited that successful managers exploit innovation to provide an effective response during periods of economic uncertainty. This viewpoint has been validated by studies of firms which survive a recession (Ghemawat, 1993; Trott, 1998). The importance of innovation has recently been endorsed by a survey of over 1,000 CEOs (IBM, 2008). In the face of the worst recession since the 1930s, their view was that survival and growth are dependent upon sustaining innovation and embedding an entrepreneurial culture across their organizations.

These observations provide the basis for the following hypothesis:
H1: *The sales performance of firms in Peru will be higher among those manifesting a greater engagement in innovation.*

Innovation and Culture

Ulijn and Weggeman (2001) and Westwood and Low (2003) demonstrated that successful innovation requires specific antecedents with culture being an important determinant. High power distance is associated with hierarchies and rigid controls. This can

reduce the level of information sharing inside the organization (Van Evergingen & Waarts, 2003). In cultures that exhibit lower power distance there tends to be better communication which enhances the sharing of ideas.

These observations provide the basis for the following hypothesis:
H2: *There is a positive relationship between declining power distance and innovation in firms operating in Peru.*

Innovation is associated with greater tolerance of uncertainty. In those cultures which use rules to minimize ambiguity, this value can create barriers in the development of new ideas. An aversion to uncertainty may also mean employees tend to avoid proposing new solutions (Williams & McQuire, 2005).

These observations provide the basis for the following hypothesis:
H3: *There is a positive relationship between decreasing uncertainty aversion and innovation in firms doing business in Peru.*

Emphasis on collectivism leads to focus on sustaining group agreement and cohesiveness. In individualistic cultures, greater value is placed on the freedom of the individual (Waarts & Van Everdingen, 2005). Innovation is often associated with the actions of the individual who is prepared to challenge convention (Chaston, 2009). Individualism can also assist radical innovation, as demonstrated by Shane (1992) who found a positive correlation between the inventions patented and individualism.

These observations provide the basis for the following hypothesis:
H4: *There is a positive relationship between increasing individualism and innovation among firms in Peru.*

Highly masculine cultures are dominated by values such as achievement, independence, and personal success. As innovation involves risk, it would seem reasonable to assume high levels of innovation are likely to occur in masculine societies. However, Williams and McQuire (2005) and Shane (1993) found no correlation between economic creativity and masculinity. One possible reason is that in feminine societies there is a focus on conflict avoidance and trust. Hence Nakata and Sivakumar (1996) proposed feminine societies create environments which assist employees more effectively in coping with the uncertainties associated with innovation.

These observations provide the basis for the following hypothesis:
H5: *There is a no relationship between masculinity and innovation in firms operating in Peru.*

Open Innovation

Chesbrough (2003) posited that there are two approaches to the management of innovation; namely, (i) the traditional practice of keeping all information confidential and all activities confined to staff inside the organization, and (ii) an emerging new philos-

ophy which he labelled "open innovation" in which the organization shares information with external entities and perceives innovation as a collaborative activity. All innovation involves generative learning which leads to the acquisition of new knowledge (Kuratko, Hornsby, Naffziger, & Montagno, 1993; Lundvall 1998; Oguz, 2001; Popper & Lipshitz, 1998). Huang, Wang, Tseng, and Lee (2010) posited that open innovation leads to business growth by permitting organizations to leverage more ideas from a variety of external sources. Freel (2006) concluded that open innovation enhances the probability that firms will achieve business growth by developing new products or production technologies. Christensen, Olesen, and Kjaer (2005) concluded open innovation is influenced by (i) firms' position in their market system, (ii) the position of products on the Product Life Cycle Curve, and (iii) the potential scale of opportunities for value added. Although open innovation provides access to more ideas, Birkinshaw, Bouquet, and Barsoux (2011) noted the costs of open innovation can be considerable.

Chesbrough (2003) suggested companies' approach to open innovation can be described as existing on a continuum ranging from a low to a high degree of "openness." Lichtenthaler (2008) concluded that openness seems to rise with the degree of emphasis on radical innovation. Chesbrough (2007) posited that in the current economically uncertain world open innovation may foster the evolution of new strategies which are more appropriate for ensuring organizational survival.

Theories concerned with the benefits of open innovation suggest the following hypothesis:

H6: *In Peru, the performance of firms will be higher among those engaged in open innovation.*

Lowering Power Distance and Uncertainty Avoidance

Jaworski and Kohli (1966) and Slater and Narver (1995) concluded market-oriented organizations exploit new sources of knowledge to outperform their competitors. Wiklund and Shepherd (2002) proposed participation in business networks offers access to new knowledge. This perspective is shared by Chen, Duan, Edwards, and Lehaney (2006), Niehaves (2010), Mohannak (2007), Moensted (2010), and Ojala and Tyrvained (2009). They posited that the creation of new knowledge from collaborative activities is critical in ensuring an adequate response to changing external environments. Lindsay (2005) and Palacios, Gil, and Garrigos (2009) determined that knowledge acquisition was especially critical in innovation management in knowledge-intensive organizations.

Kenworthy (1995) and Lundvall (1998) concluded that national culture and corporate culture may influence the willingness of organizations to collaborate in the development of new products or processes. Tellis, Prabhu, and Chandy (2009) confirmed this perspective in a cross-cultural study of open innovation processes across 17 countries. Wang and Rafiq (2009) noted that in entrepreneurial collaboration, there is a critical need to integrate learning styles such that all participants are able to effectively incorporate new knowledge from external sources. For the process to be effective there is a necessity for a high level of trust between the collaborators (Lundvall, 1998). A

hierarchical structure and a rules-based approach is an obstacle to the achievement of trust.

These perspectives lead to the following hypothesis:
H7: *In Peru, power distance will be lower in firms involved in open innovation.*

Van der Meer (2007) concluded that a key reason why many Dutch firms avoided involvement in open innovation was their perception that this was a high-risk activity. Firms felt collaboration increased the probability that confidential information would become known to competitors. Lazzarotti, Manzini, and Pellegrini (2010) reached a similar conclusion in relation to Italian firms.

These perspectives lead to the following hypothesis:
H8: *In Peru, there is a lower level of uncertainty aversion in firms involved in open innovation.*

Saussois (2003) suggested that information technology has the potential to greatly assist inter-organizational knowledge sharing. In his view, a critical aspect of process design is to ensure individuals have the freedom to interact with individuals both inside and outside the organization.

This conclusion provides support for the following hypothesis; namely:
H9: *There is a higher level of individualism in firms in Peru involved in open innovation.*

Masculinity is considered to be reflected in a greater emphasis on achievement and personal success whereas in contrast feminism is believed to reflect an orientation towards minimizing conflict and resolving differences of opinion. Chaston (2009) concluded that trust is critically influenced by collaborators achieving consensus in determining appropriate actions.

This perspective provides the basis for the following hypothesis; namely:
H10: *There is a lower level of masculinity in those firms operating in Peru involved in open innovation.*

Capturing the Perceptions of Managers

Commercial databases in Peru tend to be limited in their coverage of certain sectors and firms within sectors. Hence, we decided to survey higher level private and public sector managers enrolled at CENTRUM, the Catholic University of Peru's post-graduate school of business administration. To measure cultural values, we used the survey tool developed by Hofstede (2001). It measures power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity. In doing so, we assumed respondents' values are a reasonable indication of the values of the organizations where respondents are employed. As the basis of our assumption, we postulated

that higher level manager/respondents are at a point in their career where their values are (a) reasonably compatible with their place of employment and (b) have a relatively strong influence over the values of the work force they interact with at the company.

To assess organizational performance, we utilized the technique validated by Chaston and Mangles (1997). In doing so, we asked respondents to comment on average sales growth over the last three years on a five-point scale ranging from "sales declined by more than 10%" through to "sales increased by more than 10%." To determine involvement in innovation, we followed Brettel et al.'s (2008) advice that in international research, the measure of entrepreneurial orientation developed by Covin and Slevin (1998) is an appropriate tool. Respondents are provided with a five-point scale ranging from "very strongly disagree" through to "very strongly agree." This scale assumes a conservative versus an entrepreneurial orientation exists as a continuum. A higher score indicates an entrepreneurial orientation and can be assumed to be more heavily involved in the exploitation of innovation as a strategy for optimizing performance. The scale is not intended to measure absolute values. Instead, strength of entrepreneurial orientation, hence degree of involvement in innovation is assessed in relation to whether an organization has a higher or lower score relative to the mean score for the entire sample.

Most studies of open innovations have been of a qualitative nature (Van de Meer, 2007). This situation creates an obstacle for researchers because there is a lack of accepted survey tools for empirically assessing organizations' involvement in open innovation. An exception to this generalization was a study of Italian firms undertaken by Lazzarotti et al.'s (2010). Their measurement of participation in open innovation involved examining the purpose, aims, and rationale for involvement using a five-point scale ranging from "strongly disagree" to "strongly agree." In our study, we used the following questions to provide the basis for calculating the overall mean of the level of open innovation within an organization:

A: The purpose of the organization's involvement in open innovation
   1. Expand skills, competences, or creativity
   2. Expand the organization's base of competence
   3. Increase the capability to generate ideas
   4. Increase the internal flexibility of the organization

B: The aims of open innovation involvement
   1. Reduce or share the risks of innovation
   2. Reduce or share the costs of innovation

C: The rationale for involvement in open innovation
   1. Achieve technological leadership
   2. Improve performance by means of innovation
   3. Refine or revise products/services through innovation
   4. Gain access to new expertise
   5. Focus greater emphasis on more radical forms of innovation

The scale is not intended to measure absolute values. Instead similar to the entrepreneurial orientation scale, the degree of involvement in open innovation is assessed in relation to whether an organization has a higher or lower score relative to the mean score for the entire sample. Those firms whose score is greater than the overall mean

score are assumed to be more involved in open innovation than firms whose score is less than the overall mean score.

Survey Results

We received usable responses from 239 individuals. Our visual inspection of the data indicated variation between respondents from different sectors of industry. However, we found that an ANOVA to assess variation by sector was not statistically significant at $p<0.05$. Hence, we used all of the survey forms in the subsequent analysis.

We also found that Cronbach alpha scores for the variables which constitute the entrepreneurial orientation scale were greater than 0.7. Hence, we could use all the variables to calculate the overall mean employed in the regression analysis (Hair, Anderson, Tatham, & Black, 1998). The overall mean value for entrepreneurial orientation was 2.84. As shown by the results in Table 2 the regression analysis of sales performance and entrepreneurial orientation was not statistically significant at $p=<0.05$

Table 2: Regression Analysis Results

Regression Analysis	Adjusted R^2	Mean square	F	p	t
Sales performance in relation to entrepreneurial orientation	0.001^{ns}	0.32	1.139^{ns}	0.28	15.44^{ns}
Entrepreneurial orientation in relation to power distance	0.105*	8.38	28.89*	0.04	10.89*
Entrepreneurial orientation in relation to uncertainty avoidance	0.03*	2.30	7.92*	0.04	12.41*
Entrepreneurial orientation in relation to individualism-collectivism	0.004^{ns}	0.58	1.99^{ns}	0.34	21.94 ns
Entrepreneurial orientation in relation to masculinity-femininity	0.01^{ns}	0.37	1.26^{ns}	0.33	20.81 ns

*= significant at $p=<0.05$; ns = not significant

We then generated Cronbach alpha scores for the variables which constitute Hofstede's four dimensions of culture. They were all greater than 0.7. The overall means for power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity were 2.57, 1.157, 2.42 and 1.74, respectively. As summarized in Table 2 the regression analysis of entrepreneurial orientation, power distance, and uncertainty avoidance were both statistically significant at $p=< 0.05$ In contrast, our regression analysis of entrepreneurial orientation, individualism-collectivism, and masculinity-femininity were not statistically significant at $p=< 0.05$.

We next calculated Cronbach alphas to test the reliability of the multiple measurement variables associated with assessing open innovation. All values were greater than 0.70 which allowed us to use them in our subsequent regression analysis. The mean scores for purpose, aims, rationale, and behavior were 3.29, 2.82, and 3.08, respectively, yielding an overall mean score for open innovation of 3.11. We then carried

out a regression analysis of sales performance in relation to involvement in open innovation and as shown in Table 3. The result turned out to be statistically significant at $p=< 0.05$.

Table 3: Regression Analysis Results

Regression Analysis	Adjusted R^2	Mean square	F	p	t
Sales performance in relation to open innovation	0.13*	0.32	4.02 *	0.04	9.42*
Open innovation in relation to power distance	0.10*	9.30	32.06*	0.04	12.08*
Open innovation in relation to uncertainty avoidance	0.03*	2.60	8.95*	0.04	13.90*
Open innovation in relation to individualism-collectivism	0.005 ns	0.65	2.23 ns	0.36	24.35 ns
Open innovation in relation to masculinity-femininity	0.02 ns	0.41	1.40 ns	0.35	23.10 ns

*= significant at $p=<0.05$; ns = not significant

The mean value of 3.11 for open innovation provides a mid-point for the degree of involvement in this activity. We assumed that firms with a mean for open innovation of less than 3.11 have a low level of involved collaborative innovation. The means for power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity in relation to involvement in open innovation were 2.57, 1.27, 1.91, and 2.63, respectively. As summarized in Table 3, the regression analysis of open innovation, power distance, and uncertainty avoidance were both statistically significant at $p=< 0.05$ In contrast, our regression analysis of open innovation and individualism-collectivism and masculinity-femininity were not statistically significant at $p=< 0.05$.

Discussion and Conclusions

The regression of business performance in relation to entrepreneurial orientation which was used as a measure of innovation was not statistically significant at $p=<0.05$. Thus, our survey results do not support the hypothesis H1 that *the sales performance of firms in Peru will be higher among those manifesting a greater engagement in innovation.* Although Georgellis, Joyce, and Woods (2000) posited that entrepreneurship leads to higher business growth, our results were unable to validate this viewpoint in relation to Peruvian firms. Instead, we interpret the implication of our findings to mean that under prevailing circumstances a more conservative managerial orientation in Peru can be just as effective for achieving business growth. Furthermore, we would suggest that one possible explanation for this business behavior that contradicts espoused management theory is that in emerging economies, where export performance is reliant upon the sale of commodities, firms can achieve adequate business growth by focusing on optimizing the effectiveness and efficiency of their current operations. Hence, seeking

to enhance the productivity of existing operations has greater appeal than engaging in the inherently more risky activity of innovation (Chaston, 2009).

The results of our regression analysis of entrepreneurial orientation which was used as a measure of innovation in relation to power distance was statistically significant at p=<0.05. Hence, our survey result appears to support the hypothesis H2 that *there is a positive relationship between declining power distance and innovation in firms operating in Peru.* This finding is similar to the results and conclusions of research carried out by Williams and McQuire (2005) and Shane (1993). They posited that as power distance declines, this usually leads to improved communication across functional and hierarchical boundaries which, in turn, enhance innovation activities.

Our regression analysis of entrepreneurial orientation which was used as a measure of innovation in relation to uncertainty avoidance was statistically significant at p=<0.05. Hence, our result appears to support the hypothesis H3 that *there is a positive relationship between decreasing uncertainty aversion and entrepreneurial orientation in firms doing business in Peru.* In effect, our finding suggests that in Peru, firms' aversion to uncertainty decreases as organizations become increasing involved in innovation. This outcome is consistent with Herbig and Dunphy's (1998) perspective that acceptance of uncertainty is necessary in order to undertake the riskier activities associated with developing new products.

Our regression analysis of entrepreneurial orientation, which we used as a measure of innovation, in relation to individualism-collectivism, was not statistically significant at p=<0.05. Hence, this finding does not support the hypothesis H4 that *there is a positive relationship between increasing individualism and innovation among firms in Peru.* This result is contrary to Waarts and Van Everdingen's (2005) suggestion that higher levels of individualism have a positive influence over innovation. Their viewpoint is that as the collectivism declines, employees are more able to propose ideas which are different from the thinking of others. We would suggest that one possible argument to explain the current study's result is that collectivism among firms in Peru assists individuals working with others in their organisations to share, develop and critique new ideas in a supportive environment.

When we regressed entrepreneurial orientation--which we used as a measure of innovation, in relation to masculinity-femininity, the result was not statistically significant at p=<0.05. This finding would appear to support the hypothesis H5 *there is a no relationship between masculinity and innovation in firms operating in Peru.* Our finding also concurs with those of Williams and McQuire (2005) and Shane (1993) who found no correlation between economic creativity and masculinity.

The regression of sales performance in relation to open innovation was statistically significant at p<0.05. Thus, our survey results support the hypothesis H6 that *in Peru, the performance of firms will be higher among those engaged in open innovation.* This conclusion is supportive of Freel's (2006) perspective that open innovation can assist firms achieve business growth by being involved in the collaborative development of new products or services.

The regressions for power distance and uncertainty avoidance in relation to involvement in open innovation were statistically significant at p=<0.05. It seems reasonable to conclude these results support the hypotheses H7 that *in Peru, power dis-*

tance will be lower in firms involved in open innovation and H8 that in Peru, *there is a lower level of uncertainty aversion in firms involved in open innovation.*

Our conclusion concerning hypothesis H7 is consistent with Lundvall's (1998) perspective that to be effective, there needs to be a high level of trust and commitment between the collaborating organizations. This can only occur where firms have (a) reduced their hierarchical structures and (b) a rules-based approach to defining employee tasks. Our interpretation of the result concerning hypothesis H8 is that it indicates that companies in Peru engaged in open innovation do exhibit lower uncertainty aversion. This outcome supports Chesbrough's (2007) perspective that acceptance of uncertainty is necessary because only then will the organization be prepared to engage in the high-risk activity of knowledge sharing.

The regression for individualism in relation to involvement in open innovation was not statistically significant at $p=<0.05$. Hence this study cannot support hypothesis H9 that *there is a higher level of individualism in firms in Peru involved in open innovation.* The inability to validate hypothesis H9 concerning the expectation of higher levels of individualism in Peruvian firms involved in open innovation corroborates Wang and Rafiq's (2009) findings. They identified open innovation as being reliant upon both intra- and inter-firm project teams. For these activities to succeed, employees must accept collectivism in order to reach consensus for the resolution of problems.

The regression for masculinity-femininity in relation to involvement in open innovation was not statistically significant at $p=<0.05$ which means our study's findings could not validate hypothesis H10 that *there is a lower level of masculinity in those firms operating in Peru involved in open innovation.*

Lazzarotti et al. (2010) concluded successful open innovation requires firms to give less priority to their own performance and to adopt an orientation to sustain commitment toward all other organizations. We would contend that this probably explains why in the case of firms in Peru involved in open innovation, our findings do not support hypothesis H10 that a relationship exists between a lower level masculinity and open innovation in these organizations.

Management Implications

Trott (1998) concluded that during periods of economic uncertainty, firms would be well-advised to focus on innovation. Firms such as Apple and Google certainly provide strong support for this perspective. However, our current study raises doubts over whether innovation leading to higher business growth in emerging economies is always a valid concept. Rather, our results suggest that for firms located in emerging economies like Peru, focusing on optimizing current operations is equally, if not more appropriate. Hence, when advising on appropriate management practices for firms in emerging economies, perhaps equal emphasis should be given to managing current operations and being engaged in innovation.

Our findings also suggest that managers in emerging economies need to recognize that certain aspects of culture will influence organizations engaged in closed or open innovation. This is because the results further validate that innovation is enhanced in those organizations able to reduce power-distance and accept higher uncertainty. Col-

lectivism-individualism and feminine-masculinity can also influence organizational processes. However, our current research findings suggest that in the context of an emerging economy like Peru these values have little influence on open innovation at the current stage of development.

Lastly, our observations are based upon a single study in a single country. Hence, further research is needed in Peru as well as other emerging economies to further determine the validity of the findings from this study and their applicability in other emerging economies. In that regard, one question for future research is as emerging economies like Peru continue to expand, incomes improve, and middle managers gain more training and experience, will their possible desire for greater participation in decision-making translate into a more collectivist approach to management with an associated reduction in power distance and a positive impact on open innovation and business performance?

References

ADEX (Asociación de exportadores del Perú). (2005). TLC con Tailandia se suscribirá en mayo del 2006. *Perú Exporta, 324*, 28-29. Retrieved from http://cendoc.esan.edu.pe/buscar/infoworld.exe/[in=search.in]?rg=25&boolean1=-TEM=exportaciones%20%20%20%20%20%20%20%20%20&datos=cendoc&h1=2101&total=85

Anonymous. (2009, September 2). Peru's economy has shrunk but it should escape recession. *The Economist,* p. 23.

Aycan, Z. (2000). Cross-cultural industrial and organizational psychology: contributions, past developments, and future directions. *Journal of Cross-Cultural Psychology, 31*(1), 116–128. doi: 10.1177/0022022100031001009

Bacot, M. L., Hartman, S. J., & Lundberg, O. H. (1992). Adaptive strategies and survival in an environment dominated by economic decline. *Journal of Applied Business Research, 9*(1), 34-44. Retrieved from http://journals.cluteonline.com/index.php/JABR/article/view/6092/6170

Birkinshaw, J., Bouquet, C., & Barsoux, J. L. (2011). The 5 myths of innovation. *Sloan Management Review, 52*(2), 40–53. Retrieved from: http://sloanreview.mit.edu/the-magazine/2011-winter/52210/the-5-myths-of-innovation/

Brettel, N., Engelson, A., & Heinemann, F. (2008). The new entrepreneurial ventures in a globalised world. *Journal of International Entrepreneurship*, 7, 88-110. doi: 10.1007/s10843-008-0033-7

Chaston, I. (2009). *Entrepreneurship in Small Firms.* London, England: Sage.

Chaston, I., & Mangles, T. (1997). Competencies for growth in SME sector manufacturing firms. *Journal of Small Business Management, 35*(1), 31-40.

Chen, S., Duan, Y.J., Edwards, S., & Lehaney, D. (2006). Toward understanding inter-organizational knowledge transfer needs in SMEs: insight from a UK investigation. *Journal of Knowledge Management, 10*(3), 6-13. doi: 10.1108/13673270610670821

Chesbrough, H. W. (2003). The era of open innovation. *Sloan Management Review, 44*(3), 35-41. Retrieved from http://sloanreview.mit.edu/the-magazine/2003-spring/

Chesbrough, H. W. (2007). Why companies should have open business models. *Sloan Management Review, 48*(2), 22-28. Retrieved from http://sloanreview.mit.edu/the-magazine/2007-winter/

Christensen, J. F., Olesen, M. H. & Kjaer, J. S. (2005). The industrial dynamics of open innovation—evidence from the transformation of consumer electronics. *Research Policy, 34*(10), 1533-1549. doi: 10.1016/j.respol.2005.07.002

Coviello, N., & Jones, M. (2004). Methodological issues in international entrepreneurship research. *Journal of Business Venturing, 19*(4), 485-508. doi:10.1016/j.jbusvent.2003.06.001

Covin, J. G., & Slevin, D. P. (1998). The influence of organizational structure on the utility of an entrepreneurial top management style. *Journal of Management Studies, 25*(1), 217-237. doi: 10.1111/j.1467-6486.1988.tb00033.x

de Althaus, J. (2007). *La Revolución Capitalista en el Perú*. Lima, Peru: Fondo de Cultura Económica.

Drucker, P. F. (1985). *Innovation & Entrepreneurship: Practice and Principles*. New York, NY: Harper & Row.

Dube, R. (2011, July 15). Peru's May GDP expands 7.1% versus year ago. *Wall Street Journal*, pp. 2.

Flores, J., & Ickis, J. (2007). La responsabilidad social en Cementos Lima, y sus efectos en la creación de valor para el negocio y en la gestión de riesgo. In J. Flores, E. Ogliastri, E. Peinado-Vara, & I. Petry, (Eds.) *El argumento empresarial de la RSE: 9 casos de América Latina y el Caribe* (pp. 165-187). Washington D.C.: BID (Banco Interamericano de Desarrollo) and INCAE Business School.

Freel, M. (2006). Patterns of technological innovation in knowledge intensive business services. *Industry and Innovation, 13*(3), 335-359. doi: 10.1080/13662710600859157

Georgellis, Y., Joyce, P., & Woods, A. (2000). Entrepreneurial action, innovation, and business performance: the small independent business. *Journal of Small Business and Enterprise Development, 7*(1), 7-17. doi: 10.1108/EUM0000000006801

Ghemawat, P. (1993). The risk of not investing in a recession. *Sloan Management Review, 34*(2), 51-59. Retrieved from http://sloanreview.mit.edu/the-magazine/1993-winter/

Gil, V. (2009). *Aterrizaje minera. Cultura, conflicto, negociaciones y lecciones para el desarrollo desde la minería en Ancash, Perú*. Lima, Perú: Instituto de Estudios Peruanos (IEP).

González Vigil, F. (2009). El TLC China-Perú: Una negociación exitosa. *Punto de Equilibrio, 101*, 30-31. Retrieved from http://www.up.edu.pe/ciup/Paginas/JER/Detalle.aspx?IdElemento=153

Hair, J. F., Anderson, R. E., Tatham, R L., & Black, W. C. (1998). *Multivariate Data Analysis*. Englewood Cliffs, NJ: Prentice Hall.

Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, institutions, and organizations across nations* (2nd Ed.). Thousand Oaks, CA: Sage Publications, Inc.

Herbig, P., & Dunphy, S. (1998). Culture and innovation. *Cross Cultural Management, 5*(4), 13-21. doi: 10.1018/13527609810796844

Huang, T., Wang, W. C., Ken, Y., Tseng, C., & Lee, C. (2010). Managing technology transfer in open innovation: the case study in Taiwan. *Modern Applied Science, 4*(1), 2-11. Retrieved from http://www.ccsenet.org/journal/index.php/mas/article/view/6943

IBM (2008). *The Enterprise of the Future*. International Business Machines Corporation. Retrieved from: www.ibm.com/gbs/uk/ceostudy

Inglehart, R., & Abramson, P. R. (1999). Measuring postmaterialism. *The American Political Science Review, 93*(3), 665-677. Retrieved from http://www.jstor.org/stable/10.2307/2585581

Jaramillo, F. C., & Silva-Jáuregui, C. (2011). (Eds.) *Perú en el umbral de una nueva era. Lecciones y desafíos para consolidar el crecimiento económico y un desarrollo más incluyente. Notas de política Vol. 1*. Lima, Perú: Banco Mundial. ISBN 978-9972-2739-7-1

Jaworski, B. J., & Kohli, A. K. (1966). Market orientation review, refinement and roadmap. *Journal of Market Focused Management, 1*(2), 119-135. doi: 10.1007/BF00128686

Kenworthy, L. (1995). *In Search of National Economic Success: Balancing Competition and Cooperation*. London, England: Sage.

Kuratko, D. F., Hornsby, J. S., Naffziger, D. W., & Montagno, R. V. (1993). Implementing entrepreneurial thinking in established organizations. *S.A.M. Advanced Management Jour-*

nal, *58*(1), 28-37. Retrieved from http://www.questia.com/library/1G1-14320103/implement-entrepreneurial-thinking-in-established

Lazzarotti, V., Manzini, R., & Pellegrini, L. (2010). Open innovation models adopted in practice: an extensive study in Italy. *Business Excellence, 14*(4), 11-23. doi: 10.1108/13683041011093721

Lichtenthaler, U. (2008). Open innovation in practice: an analysis of strategic approaches to technology transactions. *IEEE Transactions on Engineering Management*, *55*(1), 148-157. doi: 10.1109/TEM.2007.912932

Lindsay, V. J. (2005). The development of international industry clusters: a complexity theory approach. *Journal of International Entrepreneurship, 3*, 71-97. Retrieved from http://link.springer.com/search?query=V+J+Lindsay&search-within=Journal&facet-publication-title=%22Journal+of+International+Entrepreneurship%22#page-1

Lundvall, B. (1998). Why study national systems and national styles of innovation? *Technology Analysis and Strategic Management*, *10*(4), 407-421. doi: 10.1080/09537329808524324

Moensted, M. (2010). Networking and entrepreneurship in small high-tech European firms: an empirical study. *International Journal of Management, 27*(1), 16-32. Retrieved from http://www.internationaljournalofmanagement.co.uk/2010/2010-1.html#a2

Mohannak, K. (2007). Innovation networks and capability building in the Australian high-technology SMEs. *European Journal of Innovation Management, 10*(2), 236-245. doi: 10.1108/14601060710745279

Murakami, Y. (2007). *Perú en la era del chino*. Lima: Instituto de Estudios Peruanos Center for Integrated Area Studies, Kyoto University. ISBN 9972-51-160-X

Nakata, C., & Sivakumar, K. (1996). National culture and new product development: an integrative review. *Journal of Marketing, 60*(1), 61-72. doi: 10.2307/1251888

Niehaves, B. (2010). Open process innovation: the impact of personnel resource scarcity on the involvement of customers and consultants in public sector BPM. *Business Process Management Journal*, *16*(3), 377-393. doi: 10.1108/14637151011049412

Oguz, F. (2001) How entrepreneurs learn? A practical interpretation. *METU Studies in Development*, *28*(1/2), 183-202. Retrieved from http://www2.feas.metu.edu.tr/metusd/ojs/index.php/metusd/article/view/128

Ojala, A., & Tyrvained, P. (2009). Impact of psychic distance to the internationalization behavior of knowledge-intensive SMEs. *European Business Review, 21*(3), 263-271. doi: 10.1108/09555340910956649

Palacios, A. D., Gil, I., & Garrigos, F. (2009). The impact of knowledge management on innovation and entrepreneurship in the biotechnology and telecommunications industries. *Small Business Economics, 32*(3), 291-312. doi: 10.1007/s11187-008-9146-6

Popper, M., & Lipshitz, R. (1998). Organizational learning mechanisms: a structural and cultural approach to organizational learning. *Journal of Applied Behavioral Science*, *34*(2), 161-79. doi: 10.1177/0021886398342003

Quiroz, A. (2008). *Corrupt circles: A history of unbound graft in Peru*. Washington, D. C.: Woodrow Wilson Center. ISBN 978-0-8018-9128-1

Reficco, E., & Ogliastri, E. (2009). Empresa y sociedad en América Latina: Una introducción. *Academia, Revista Latinoamericana de Administración, 43*, 1-25. Retrieved from http://www.doaj.org/doaj?func=abstract&id=543264&recNo=1&toc=1&uiLanguage=en

Saussois, J. (2003). Knowledge management in government: an idea whose time has come. *OECD Journal on Budgeting*, *3*(3), 105-120. doi: 10.1787/budget-v3-art18-en

Schumpeter, J. (1934). *The Theory of Economic Development*. Boston, MA: Harvard University Press.

Shane, S. (1992). Why do some societies invent more than others? *Journal of Business Venturing, 7*(1), 29-46. doi: 10.1016/0883-9206(92)90033-N

Shane, S. (1993). Cultural influences on national rates of innovation. *Journal of Business Venturing, 8*(1), 59-73. doi: 10.1016/0883-9206(93)90011-S

Slater, S. F., & Narver, J. C. (1995). Marketing orientation and the learning organisation. *Journal of Marketing, 59*(3), 63-74. doi: 10.1509/jmkg.73.1.3

Tellis, G. J., Prabhu, D. J. C., & Chandy, R. K. (2009). Radical innovation across nations: the pre-eminence of corporate culture. *Journal of Marketing, 73*(1), 3-23. doi: 10.1509/jmkg.73.1.3

Tello, M. D., & Tavara, J. (2010). Productive development policies in Latin American countries: The case of Perú , 1990-2007. *IDB Working Paper Series No. IDB-WP 129*. Washington, D.C.: Inter-American Development Bank.

Trianus, H. (1994). *Culture and Social Behaviour*. New York, NY: McGraw-Hill.

Trott, P. (1998). Growing businesses by generating genuine business opportunities: a review of recent thinking. *Journal of Applied Management Studies, 7*(2), 211-223. Retrieved from http://www.readabstracts.com/Business-general/Growing-businesses-by-generating-genuine-business-opportunities-a-review-of-recent-thinking.html

Ulijn, J., & Weggeman, M. (2001). Towards an innovation culture: what are its national, corporate, marketing and engineering aspects. Some experimental evidence. *The International Handbook of Organizational Culture and Climate* (pp. 487–517). London, England: Wiley & Sons, Ltd.

Van der Meer, H. (2007). Open innovation—the Dutch treat: challenges in thinking in business models. *Creativity and Innovation Management, 16*(2), 193-204. doi: 1111/j.1467-8691.2007.00433.x

Van Everdingen, Y. M., & Waarts, E. (2003). The effect of national culture on the adoption of innovations. *Marketing Letters, 14*(3), 217-232. doi: 10.1023/A:1027452919403

Waarts, E., & Van Everdingen, Y. (2005). The influence of national culture on the adoption status of innovations: an empirical study of firms across Europe. *European Management Journal, 23*(6), 601-610. doi: 0.1016/j.emj.2005.10.007

Wang, C. L, & Rafiq, M. (2009). Organizational diversity and shared vision: resolving the paradox of exploratory and exploitative learning. *European Journal of Innovation Management, 12*(1), 86-101. doi: 10.1108/14601060910928184

Westwood, R., & Low, D. R. (2003). The multicultural muse, culture, creativity and innovation. *International Journal of Cross Cultural Management, 3*(2), 235-259. doi: 10.1177/14705958030032006

Wiklund, J., & Shepherd, D. (2002). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal, 24*(13), 1307-1318. doi: 102/smj.360

Williams, L. K., & McGuire, S. J. J. (2005). Effects of national culture on economic creativity and innovation implementation. Proceedings of the Symposium of International Society for New Institutional Economics: The Institutions of Market Exchange, 22-24 September, Barcelona.