Innovation, learning and performance in a resource-rich emerging economy

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This paper compares the performance of firms in resource-rich sectors of the Peruvian economy with that of businesses operating in service sectors. Data were acquired through a survey of overwhelmingly middle managers working in Peru. According to the survey findings, the performance of firms in the resource-rich sectors appeared to be uninfluenced by innovation or involvement in organizational learning. In contrast, firms in the service sectors not only exhibited an innovation orientation and involvement in learning but also reported higher sales growth. The conclusions of the study are that firms operating in the resource-rich sectors of Peru’s economy do not appear to benefit from engaging in innovation or learning at this point in time, whereas such activities are advantageous for service sector businesses. The originality of the paper is the coverage of how the performance of firms in an emerging economy may be influenced by innovation and learning, and how this relationship may be influenced not just by the type of economy but also by the sector in which the firms are operating.

Keywords: performance, learning innovation, emerging economy

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Introduction

Drucker (1985) posited that post-war business survival rates were likely to be highest among firms which engaged in innovation. Trott (1998) concluded that innovation in the face of a major change in market conditions will assist firms to emerge from an economic downturn in a much stronger position than their less innovative competitors. In relation to exploiting innovation, Slater and Narver (1995) posited this involves organizational learning in order to acquire and exploit appropriate new knowledge from both within and outside the organization. Senge (1990) proposed that a clear relationship exists between the failure of organizations and their inability to learn from experience. Hamel and Prahalad (1994) concluded that the learning process must be translated into the acquisition of new knowledge that can be used to upgrade core competences.

The vast majority of studies on organizational learning and innovation management is based on research carried out on firms located in industrialized economies such as the UK or USA. Hence the question arises whether theories concerning the relationship between performance, learning and innovation derived from such studies are also applicable for organizations doing business in emerging economies. The purpose of this study is to examine this question in the context of companies operating in different sectors of the Peruvian economy.

Innovation and learning

Schumpeter (1934) argued that innovation provides an effective response to economic uncertainty during a major economic downturn. His view was validated in the context of post-war economies by studies of firms in the US which survived a recession through reliance upon innovation (Gilbert, 1990; Ghemawat, 1993). 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, they contended that survival and growth is dependent upon sustaining innovation and embedding an entrepreneurial culture across their organisations.

Many of the emerging economies in South America have been less impacted by the recent global downturn than most Western industrialized nations. These commodity and mineral-rich countries have continued to benefit from strong demand for their products in the world’s two fastest growing emerging economies, India and China. However, the longer-term prospects for sustained growth in some of these same commodity-exporting countries remain uncertain due to the volatility of demand for primary products (The Sunday Times (London), 2011). Hence for countries such as Peru seeking a steadier and sustained economic development, movement towards placing greater emphasis on the exploitation of innovation would appear to be a beneficial.

Argyris and Schön (1996) proposed that the performance of firms can be weakened by solving problems merely by relying on past experience and accumulated knowledge. They referred to this approach as ‘single-loop’ or a lower-
level learning style. In their view, successful organizations are those which engage in ‘double-loop’ learning. This involves the acquisition and utilization of new knowledge which, when linked with existing understanding, can be used to generate more effective solutions. The adoption of this latter style of learning offers the benefits of permitting organization to be more versatile, flexible and adaptive. Chaston (2004) posited that firms utilizing double-loop learning tend to achieve superior organizational performance. Huang et al. (2010) argued that open innovation leads to business growth by permitting organizations to leverage more ideas from a variety of external sources.

Innovation is a creative process which involves individuals engaging in some form of generative learning involving the acquisition of new knowledge (Popper & Lipshitz, 1998). New knowledge when linked with existing understanding and business experience results in the generation of new ideas that often run counter to prevailing conventions within an industry. Kuratko et al. (1993) proposed that the role of learning in successful innovation involves acquiring new knowledge about facts, principles and capability. Kenworthy (1995) and Lundvall and Nielsen (2003) concluded that national and corporate culture may influence the willingness of organizations to engage in innovation. Palacios, Gil and Garrigos (2009) concluded that knowledge management and learning is a critical factor influencing the level of entrepreneurial behavior in the biotechnology and telecommunications industries. Mohammek (2007) and Moensted (2010) believe that high-technology firms which focus heavily on exploiting innovation to achieve a competitive advantage have a greater need for involvement in organizational learning than firms operating in low technology sectors.

The process whereby new knowledge is acquired is known as ‘organizational learning.’ Day (1994) proposed that in market-driven firms this process involves (i) open-minded inquiry, (ii) widespread information distribution inside the organization, (iii) mutually informed mental models guiding market interpretation, and (iv) ensuring all staff have access to what has been learned. Senge (1990) posited that organizations can only begin to develop and implement growth strategies when the process is based upon a ‘systems thinking’ approach.

In order to facilitate learning for all members of staff, Pedlar, Burgoyne and Boydell (1991) posited that firms need to create a ‘learning organization’. The benefits of being a learning organization include: 1) the acquisition of new knowledge, 2) the more effective utilization of existing knowledge, and 3) a much clearer understanding of both internal and external environments. Participation by all staff promotes effective information interchange. This is often enhanced by involving individuals and entities external to the organization. Key outcomes are the promotion of systemic thinking, creation of an organizational memory and where necessary, redefinition of individual and corporate mental models. Pedlar et al., concluded that creating a learning organization is a lengthy and resource-demanding activity which can take several years. Slater and Narver (1995) posited that the existence of a strong market orientation is a key cultural foundation upon which a learning organization is based.

Learning in emerging economies

Although there is a wealth of evidence in the literature concerning the benefits of innovation and learning in industrialized countries, this topic has received only limited coverage in emerging economies. Furthermore, the bulk of this emerging economy research has focused on how the acquisition of new knowledge can enhance the performance of firms in Asia.

Lundvall and Nielsen (2003), for example, proposed China’s success can be attributed to the country moving towards becoming a ‘learning economy.’ Huang and Chu (2010) noted that links that Asian firms make with their customers in Western markets can catalyze learning and result in more innovation. The influence of overseas customers generates interactive learning between organizations. It also internalizes learning within the supplier organizations. Liu and Vince (1999) noted that such learning from overseas customers involves a two-step process. Suppliers must first understand that differences exist between the cultures of their respective organizations. Then they must seek to manage these differences when creating effective systems inside their own organizations.

Child (1994) identified three levels of learning in his analysis of Asian firms. The first level is technical. It involves the acquisition and implementation of basic managerial processes. The second level is the introduction of new operating systems and procedures. In the final level, the Asian firm acquires capabilities in the area of strategic management. Child concluded that until learning moved towards higher or double-loop learning, there can be few expectations that the firms in an emerging economy will achieve any improvement in overall business performance.

Ordóñez de Pablos (2006) proposed that another source of learning is the arrival of large multinationals in an emerging economy. Their entry can prompt local firms to recognize the need to acquire new knowledge in order to remain competitive. Welsh, Alon and Falbe (2006) concluded that firms in emerging economies often only act to enhance performance when confronted by competition from Western companies. A common response is to become more innovative by introducing new technology and investing in upgrading workforce capabilities.

Notwithstanding, Welsh et al. (2006) also noted that the pressure for change among domestic service sector firms such as banks and retailers in an emerging economy is somewhat different from than that confronting firms engaged in exporting primary commodities. This is because the latter’s orientation towards learning and innovation is strongly influenced by the nature of demand and the attitudes exhibited by their largest overseas customers. In
contrast the behavior of domestic service sector firms is usually determined by local consumer attitudes which have often been altered as the result of market entry by new, more innovative service providers from Europe and the USA. Poolthong (2009) confirmed this perspective in the context of the impact of large, international banks entering Asian markets. Their arrival prompted local banks to invest in innovation in order to develop new services and to upgrade service quality.

Maharajh and Heitmeyer (2005) echoed these findings by observing that many studies on innovation in firms in emerging economies have focused on the business practices of local companies in the Far East. They point out that far fewer studies of this nature are available on firms operating in South America where increasing national wealth has been generated through the extraction and export of natural resources. Maharajh and Heitmeyer went on to examine the impact of the entry of large American and European retail chains such as Wal-Mart and Carrefour into domestic markets in the South American region. The arrival of these multinationals prompted established domestic retailers to acquire new knowledge in an effort to remain competitive. In the case of Chile, however, research has shown that the impact of overseas entrants was less pronounced as major local chains had already begun modernizing their operations and upgrading customer service levels prior to their arrival (Bianchi & Mena, 2004).

These various observations gleaned from the literature on the activities of service sector firms provide the basis for the following null hypotheses:

H1 An innovative orientation has no influence on the performance of firms operating within the banking and retail sectors of an emerging economy.

H2 Double-loop learning has no influence on the performance of firms operating the banking and retail sectors of an emerging economy.

H3 Organizational learning has no influence on the performance of firms operating within the banking and retail sectors of an emerging economy.

The resource curse and innovation

Ever since Adam Smith, economists have been interested in the pace of economic growth in different countries. Hence, they have sought to identify which pathways can most effectively contribute to increasing the wealth of nations. Some analysts of some resource-rich emerging economies heavily dependent on natural resources have found that over the last 50 years these nations tended to grow more slowly than those countries with fewer resources and that instead needed to generate exports through the creation of manufacturing industries (Sachs, 1997). This observed outcome of lower economic growth in spite of abundant natural resource endowments has become known as the ‘resource curse.’

Various attempts have been made to determine whether a particular set of factors that can explain this phenomenon (Auty, 1993). One theory is that rapid growth in a natural resource sector generates very high revenues. Consequently, there is little interest, hence attempt to stimulate growth in other sectors of a nation’s economy.

Lederman and Maloney (2007) rejected the theory that economies with abundant natural resources are typically associated with a less-skilled labour force, limited physical capital accumulation and poor productivity. Rather, they support Dunning’s (2005) conclusion that a contingency approach should be utilized when seeking to determine whether the resource curse exists in a given country. In effect, variations in the availability of natural resources and their impact on the growth of each nation’s wealth reflect and thus are contingent upon differences in political history. Further support for a contingency approach for determining the presence of a resource curse has been provided by studies on the political climate in different emerging nations. This body of research suggests that in non-democratic nations there is a tendency for wealth to be retained by the political elite and not invested in promoting more broad-based economic development (Karl, 1997; Ross, 1999; Haber & Mendalo, 2011).

Although the issue of a resource curse has fostered considerable effort by different researchers, much less attention has been given to whether an abundance of natural resources has any impact on the level of innovation within those firms involved in exploiting those resources. Ballard and Banks (2003) and Eugenio and Calfucura (2010) have suggested that in resource-rich industries such as mining in emerging economies, the low technology and long-established operational processes will result in firms exhibiting relatively low levels of innovation. Muscio, Nardone and Dottore (2010) concluded that in the extractive industries innovation only tends to emerge in response to factors such as rising labor costs. Thus, for example, high labor costs in the Australian coal mining industry led to the introduction of new technology whereas similar technology has not yet been widely adopted in developing countries with abundant supplies of cheap labour such as India or China (Bowden, 2004). Lower levels of innovation are also found to occur in markets where there is minimal customer pressure for the introduction of more technologically advanced products or production processes (Malerba & Orsenigo, 1997; Van den Ende & Dolfsm, 2005).

Another dimension to the issue of innovation in firms engaged in the extraction of natural resources involves the increasing pressure they face from key stakeholders to exhibit greater environmental responsibility in their operations in emerging economies (Jones, 1995; Amaeshi & Amao, 2009). Mining is an industry which can be hugely damaging to local environments. As a result, in recent years there has been increasing pressure on large Western multinationals to exhibit higher levels of environmental responsibility (Dashwood, 2007). Many multinational mining companies are attempting to improve the
environmental footprint of their operations. One apparent disincentive, however, to greater environmentally-friendly innovation in emerging economies by multinational firms is that it can create a cost differential relative to locally-owned mining operations that often remain less concerned about protecting the environment (Hillestad, Xie & Haugland, 2010; Guadamillas-Gómez & Donate-Manzanares, 2011). Schmidheiny (2006) concluded that local companies in emerging economies do tend to be less concerned about the impact of their operations on the environment. Newbold (2003) contends that many governments in these countries are less inclined to demand that the operations of domestic firms be accompanied by major efforts to minimize the adverse impact on local communities. Others have noted that officials in emerging economies may not always have the knowledge, training, or experience to do so (Velásquez, 2006; Gil, 2009). An added complication many multinationals face is that the largest customer for many of the world’s minerals is China, a country which appears to be relatively less concerned about suppliers exhibiting greater environmental responsibility (Xu & Yang, 2010).

Weyzig (2006) suggested a number of factors such as culture, per capita income and the stage of industrialization will determine the degree to which innovations intended to protect the environment or assume broader social responsibility are accepted in emerging economies. Possibly one of the most critical issues at the level of the individual firm is whether there exists a perception among senior managers that the learning and innovation required to change current business practices will result in improved organizational performance. Ho, Vermeer and Zhao (2006) concluded that the degree of emphasis placed upon environmental and community-related initiatives by firms in an emerging economy is also determined by the level of concern with these issues exhibited by domestic consumers.

These various observations provide the basis for the following null hypotheses:

H4 An innovative orientation has no influence on the performance of firms operating within resource-rich sectors of an emerging economy.

H5 Double-loop learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy.

H6 Organizational learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy

Innovation and learning in Peru

A decade of political stability, macro-economic caution and free trade has enabled Peru to emerge as one of the strongest economies in Latin America (de Althaus, 2007; Tello & Tavara 2010; Scott, 2011). The primary wealth generation components of Peru’s economy are agriculture, fish meal and mining. An abundant supply of mineral resources has been the most important factor in sustaining a strong export performance over the last decade. The mining industry, and most especially the copper producers, has significantly benefitted in recent years from China’s ever-increasing demand for metals and other primary commodities (de Althaus, 2007; Anon., 2008). Given the boom in commodity prices, firms operating in Peru’s resource-rich industries have faced few pressures to invest in innovation to enhance productivity because labor costs have remained relatively low. In addition, until fairly recently there has been relatively limited government pressure to reduce the adverse environmental impact of their operations (The Economist, 2009; Gil, 2009). Instead, public policy focused on encouraging foreign direct investment to revive the economy from its virtual collapse in the late 1980s (Murakami, 2007).

Peru’s economy grew by 9% in 2008, driven in part by higher world prices for minerals and metals (Oxford Economics, 2009; Gonzalez Vigil, 2009; Tello & Tavara 2010). In 2009 Peru was one of the few countries that avoided a period of negative economic growth (IMD, 2010). However to partly offset the adverse effects of the global slump in commodity markets, the government increased public sector spending. By 2010 a recovery in global demand for minerals led to increased exports and in 2011 Peru again enjoyed strong economic growth (Dube, 2011).

Over the last ten years improving economic and political stability, plus rising per capita incomes led to a number of major American and European service providers--especially in the banking and retailing sectors--to expand their operations in Peru (Blind & Jungmittag, 2004). In the banking sector, major overseas banks such as Santander, HSBC and Citibank entered the market (LatinFinance, 2010). Within the retail sector established supermarket chains such as Wong and Supermercados Peruano have been forced to defend their market position following the arrival of food retailers such as Tottus and Makro. As a consequence, and similar to other South American countries, domestic service providers in Peru have needed to place greater emphasis on the exploitation of learning and innovation to expand their service portfolios, upgrade internal processes and enhance service quality (Nepomuceno & Porto, 2010; Valenzuela, 2010).

Research aims and methodology

Much of the literature on learning and innovation is based upon studies of firms located in industrialized economies. Hence the question arises of whether theories concerning the importance of learning are as equally applicable in firms based in a resource-rich emerging economy. This study examines the role of learning and innovation in relation to the performance of firms in Peru. In that context, the analysis focuses on companies engaged in (a) the extraction of natural resources and (b) the provision of banking or other retail services.
The limited availability of commercial databases in Peru led to the decision to survey overwhelmingly middle and a few senior managers currently enrolled in the Catholic University of Lima’s post-graduate programmes in business administration. These individuals were chosen because they were considered more likely to be familiar with the day-to-day activities of the firm, hence the organization’s approach to innovation than the CEO or CFO; more likely to report frankly about firm operations than those at the very top of the organizational hierarchy and therefore more image conscious; and because it was possible to conduct the surveys not only in Lima but also in three provincial cities to capture a broad cross-section of managers working in different sectors, in different parts of the country. All the surveys were completed in the classroom and anonymously to foster both completeness and candour by the individuals involved.

To assess organizational performance the study utilized the same technique as Chaston and Mangles (1997); namely measuring average sales growth over the last three years on a five-point scale ranging from ‘sales declined by more than 10 percent’ through to ‘sales increased by more than 10 percent’. To determine the level of innovation exhibited by respondents’ firms, the multi-attribute entrepreneurial orientation scale developed by Covin and Slevin (1988) was utilized. The scale is not intended to measure absolute values. Instead, the degree of involvement in innovation is assessed in relation to the mean score for the entire sample.

To determine the degree to which firms are utilizing single-versus double-loop learning the research utilized the scale developed by Sadler-Smith and Badger (1998). At one end of scale respondents are engaged in single-loop learning. At the other extreme, the bias is towards double-loop learning. In terms of measuring involvement in organizational learning, Dibrell, Down and Bull (1996) used a grounded theory approach to observe the learning process within American and European corporations. Chaston, Badger and Sadler-Smith (1999) utilized their framework to develop a multi-attribute scale to provide the basis for generating an empirical value for involvement in organizational learning. Degree of involvement in organizational learning is also assumed to exist on a continuum.

Results

Usable responses were received from 70 individuals employed in the resource-rich sectors of agriculture, fishing and mining and 114 individuals employed in either consumer banking or retailing. A visual inspection of the data indicated some degree of variation between respondents working in different resource-rich sectors, but an ANOVA to assess variation was not statistically significant at p<0.05. Hence data from all firms in the resource-rich sector were combined together in subsequent data analysis activities. A similar outcome was noted in relation to firms operating in consumer banking and retailing.

Cronbach alphas were calculated to test the reliability of the multiple measurement variables associated with assessing entrepreneurial orientation, learning style and organizational learning. All values for all three scales were greater than 0.70. Hence all variables could be used to calculate the overall means utilized in subsequent regression analyses (Hair et al., 1998). The respective mean scores for entrepreneurial orientation, learning style and organizational learning for firms operating in the resource-rich sectors are summarized in Table 1.

Table 1: PLS path analysis: Male versus female

<table>
<thead>
<tr>
<th>Area of Analysis</th>
<th>Mean of Firms Operating in Resource Rich Sectors</th>
<th>Mean of Firms Operating in Service Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial</td>
<td>4.56</td>
<td>4.21</td>
</tr>
<tr>
<td>orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning style</td>
<td>2.55</td>
<td>2.61</td>
</tr>
<tr>
<td>Organizational</td>
<td>3.14</td>
<td>3.10</td>
</tr>
<tr>
<td>learning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Linear regression analysis was used to examine the relationship between business performance and entrepreneurial orientation using the SPSS statistical package. In the case of firms operating in resource-rich sectors, the regression was not statistically significant at p<0.05. A similar result was found for a linear regression analysis aimed at testing the relationship between business performance, learning style and involvement in organizational learning (Table 1). In contrast, a regression analysis of business performance in relation to entrepreneurial orientation, learning style and involvement in organizational learning among service sector firms were all significant at p<0.05 (Table 2).
The regression analysis of business performance in relation to entrepreneurial orientation, learning style and involvement in organizational learning in relation to firms operating within resource-rich sectors of an emerging economy supports the null hypotheses H4 that double-loop learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy and H6 that organizational learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy. These conclusions are supportive of Ballard and Banks’ (2003) and Eugenio and Calfacura’s (2010) view that in resource-rich sectors such as mining in emerging economies, participant firms can be expected to exhibit a relatively low level of involvement in innovation and the exploitation of new knowledge to further enhance business performance. This apparent low level of innovation and learning can probably be explained by Muscio et al., (2010) perspective that initiatives to upgrade productivity or develop improved products are perceived as unimportant in firms involved in the exporting of commodities in countries such as Peru.

Management implications

The results of this study suggest that established theories concerning the benefits of innovation and learning to achieve higher business growth may not always be valid in the context of firms operating in the resource-rich sectors within an emerging economy. Industrialization and rising consumer incomes in countries like China and India will probably ensure strong demand for minerals and agricultural products from producer nations in Sub-Saharan Africa and South America. Hence when recommending the most appropriate management practices relevant to firms based in the resource-rich sectors of an emerging economy seeking to sustain business performance, equal emphasis might well be given to the benefits of exploiting conventional technologies and existing managerial capabilities to improve, if not optimize organizational performance.

In closing, some qualifying comments are in order. First of all, these results are for one country, two sets of sectors, for a particular point in time, and based on the perceptions of a particular group of informants. Given that, our findings suggest that it would be extremely useful to see the results for several emerging economies, across and within multiple

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**Table 2: PLS path analysis: Male versus female**

<table>
<thead>
<tr>
<th>Regression Analysis</th>
<th>Adjusted R²</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource rich firms’ performance in relation to entrepreneurial orientation</td>
<td>0.014</td>
<td>0.093</td>
<td>0.073</td>
<td>0.79</td>
<td>9.27</td>
</tr>
<tr>
<td>Resource rich firms’ performance in relation to learning style</td>
<td>0.015</td>
<td>0.67</td>
<td>0.058</td>
<td>0.82</td>
<td>8.95</td>
</tr>
<tr>
<td>Resource rich firms’ performance in relation to organizational learning</td>
<td>0.013</td>
<td>0.186</td>
<td>0.16</td>
<td>0.72</td>
<td>9.47</td>
</tr>
<tr>
<td>Service sector firms’ performance in relation to entrepreneurial orientation</td>
<td>0.49</td>
<td>11.94</td>
<td>9.72</td>
<td>0.002</td>
<td>10.89</td>
</tr>
<tr>
<td>Service sector firms’ performance in relation to learning style</td>
<td>0.25</td>
<td>6.83</td>
<td>5.43</td>
<td>0.021</td>
<td>15.10</td>
</tr>
<tr>
<td>Service sector firms’ performance in relation to organizational learning</td>
<td>0.23</td>
<td>6.38</td>
<td>4.93</td>
<td>0.03</td>
<td>8.13</td>
</tr>
</tbody>
</table>

**Discussion and conclusions**

The regression analysis of business performance in relation to innovation among Peruvian consumer banking and retail operations was statistically significant at p<0.05. Hence this research does not support the null hypotheses H1 that innovation has no influence on the performance of firms operating the banking and retail sectors of an emerging economy. This conclusion is supportive of the limited number of studies undertaken on service sector firms in South American emerging economies. Namely, involvement in innovation assists local firms to respond to increasing competitive pressures generated by new market entrants from abroad (Bianchi, 2009; Nepomuceno & Porto, 2010; Valenzuela, 2010).

The regression analyses of business performance in relation to learning style and involvement in organizational learning among Peruvian consumer banking and retail operations were both statistically significant at p<0.05. Hence, it seems reasonable to conclude that this study cannot support the null hypothesis H2 that double-loop learning has no influence on the performance of firms operating the banking and retail sectors of an emerging economy or H3 that organizational learning has no influence on the performance of firms operating the banking and retail sectors of an emerging economy. This outcome is supportive of the view expressed by Maharajh and Heitmeyer (2005) that domestic service providers need to engage in the acquisition and exploitation of new knowledge in order to defend themselves against the large, often industrial-nation, multinationals that are increasingly seeking to expand their operations in South America.

The regression analysis of business performance in relation to entrepreneurial orientation, learning style and involvement in organizational learning in relation to firms based in Peru’s resource-rich sectors of the economy were not statistically significant at p<0.05. On the basis of this result it seems reasonable to conclude that this research supports the null hypotheses H4 that an innovative orientation has no influence on the performance of firms operating within resource-rich sectors of an emerging economy, H5 that double-loop learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy and H6 that organizational learning has no influence on the performance of firms operating within resource-rich sectors of an emerging economy. These conclusions are supportive of Ballard and Banks’ (2003) and Eugenio and Calfacura’s (2010) view that in resource-rich sectors such as mining in emerging economies, participant firms can be expected to exhibit a relatively low level of involvement in innovation and the exploitation of new knowledge to further enhance business performance. This apparent low level of innovation and learning can probably be explained by Muscio et al., (2010) perspective that initiatives to upgrade productivity or develop improved products are perceived as unimportant in firms involved in the exporting of commodities in countries such as Peru.
sectors, over a considerable number of years to get a more definitive assessment of the relation between performance, innovation and learning, and the implications for management in developing countries.

Going forward the pressure to innovate is likely to increase, perhaps, more intensely in certain sectors than in others. Aside from actual or potential competitors, firms will have to deal with changing perceptions of the various stakeholders that influence and are affected by their performance (Amofa, 2004). For that reason firms may need to adopt a stronger commitment to innovation and learning in order to improve their future capability to protect the natural environment (Amofa, 2004; Borger & Kruglianskas, 2006) and to reconcile that with, as Pedlar et al. (1991) noted, a move towards becoming an effective learning organization can take several years to fully implement. In the case of Peru, firms engaged in exploiting natural resources have become increasingly aware over the last few years that the country’s own inhabitants are beginning to expect firms to exhibit a much higher level of environmental responsibility (Rénique, 2009). Hence firms in the country’s resource-rich industries can expect tighter controls over their activities within the foreseeable future.

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