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An Empirical and Modeling Approach to Knowledge Management Practices in South American Organizations

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1. Introduction

The following chapter explores Knowledge Management (KM) practices in some South American organizations operating in Spanish speaking countries: Argentina, Bolivia, Chile, Colombia, Ecuador, and Peru. More specifically, empirical results are confronted to a functional KM guideline based on balanced scorecard architecture and used as a diagnosis tool. Some fundamental KM issues are previously discussed.

A dominant trend within researchers and practitioners is to relate Knowledge Management (KM) with innovative organizations, their sustainable economic growth, and the development of information management systems (e.g., Maier and Hadrich, 2006, Salojärvi et al., 2005, Tedmori et al., 2006). Technological innovation has for example been cited as a major reason for the current interest in knowledge management (Bouthillier and Shearer, 2002). According to this dominant perspective, in the "knowledge era" in which we are, the ways intangible assets are managed and converted into actionable knowledge contribute to organizational learning, competitive advantage, and organization's overall success (e.g., Dorey and Gobat, 1996, Roos et al., 1997, Senge, 2006).

Based on well established cognitive psychology findings on learning and memory Nonaka and Takeuchi (1995) described the two fundamental categories of knowledge found in organizations: on the one hand tacit knowledge that is distributed among the personnel and which is hard to articulate. On the other hand, explicit knowledge which can be codified and that will eventually contribute to feed technological systems such as data bases, and expert systems. Converting tacit into explicit actionable knowledge is one important challenge faced by any KM program (see Toledano O'Farrill, 2011); this being particularly true in the South American context.

However, there are still many gaps for a global theoretical scheme on KM dynamics. This is currently reflected in the existence of a variety of concepts and methods surrounding KM research. For instance Andriessen (2008) showed that metaphors are largely used to conceptualize knowledge in a KM context (Andriessen, 2008). For example Andriessen (2006 cited by Andriessen, 2008) found a list of 22 metaphors used by researchers and practitioners to describe what knowledge is (for example "knowledge as capital" or "Knowledge inventory"). As Andriessen explains, the use of metaphors to describe

knowledge isn't a bad thing though it can easily bring up misunderstandings and lack of conceptual consistency. Our view is that this "KM black box" shouldn't be considered as a limitation but rather as a stimulating opportunity to enlarge a multidisciplinary field - encompassing computer science, to human, social, and administration sciences, as reflected in the variety of topics covered by this book.

The work presented hereafter is less focused on theoretical implications regarding KM but is more oriented to day to day KM practices inside South American organizations. Specifically, the following section explores the structural and management factors that constrain – or favor, KM practices.

2. Structural and management requirements for KM deployment

Less widespread is the study and understanding of the constraints underlying knowledge creation and sharing inside organizations. This is particularly true in South American organizations. These organizational requirements are among others based on organizational values and culture, management and leadership practices, motivational incentives, size, and technology availability (Ko et al, 2005). It seems important to emphasize that most research in KM consider these requirements as granted or given a priori. Therefore one of the direct questions addressed in this chapter is: how do these organizational constraints affect KM practices and deployment inside South American organizations?

Firstly, regarding the organizational values only an effective organizational culture can promote the deployment of systematic KM practices as employees' skills and only motivation isn't self sufficient. For that reason explicit efforts to cultivate a knowledge sharing culture are essential (De Long and Fahey, 2000). Past research has focused on organizational, social, motivational, and technical factors that favor or inhibit knowledge sharing. The complexity to act over these factors explain some of the difficulties encountered by managers in creating knowledge mindsets and effective and sustainable KM programs in their organizations (see Smith et al., 2010, De Long and Fahey, 2000). Mindsets can be associated to mental models acting as cognitive filters that influence decision making processes (Smith et al., 2010).

Secondly, promoting knowledge mindsets, cultures and knowledge sharing values isn't sufficient if other important organizations structural factors are ignored. One of them that to our knowledge hasn't yet been considered in the KM literature is organizational justice. The organizational justice concept refers to the personnel's fairness perception regarding the equity in distributions (e.g., rewards allocation), the fairness of organizational procedures (e.g., assessment evaluation, types of labor contracts that are offered) and the fairness in interactions (e.g. treatment made by a manager or the shared information; Adams, 1963; Leventhal, 1976; Bies and Moag, 1986) If one of these three dimensions is perceived as unfair it will act on employee's motivation and loyalty and thus affect the knowledge sharing and transfer process independently of the existence of explicit KM values in the organization. A secondary variable to consider is the size of the organization that has an effect in the existence of KM practices: the bigger the organization, more likely it is to exhibit KM practices whether these are implicit or explicit (Matzkin, 2008).

Hence, the above dynamics (i.e.: bottom-up and top-down information and knowledge flows, knowledge sharing mindsets, values, and a number of structural variables) are essential to generate the necessary capacity for openness in order to transform tacit into actionable explicit knowledge. It must be added that though the role of culture and values is

difficult to measure its impact in the organization is clearly perceived by top managers in their day to day work (De Long and Fahey, 2000).

When the antecedent conditions exist in the organization it affects positively the management style of a business unit or team management by creating the conditions to generate knowledge mindsets at different levels of the organization (Smith et al., 2010; Zhu and Sun, 2010). As a matter of fact, in what sense does management style interact with KM practices? Management sends strong signals for example by supporting mechanisms of socialization, empowerment, mentorships, talent retention programs, training, face-to-face communication, and networking practices. Nonaka and Takeuchi (1995) illustrate many business cases showing the impact of management practices in team building and business processes and performance. These core management mechanisms have also been positively correlated with job satisfaction, performance, and motivation (Gelade, 2003; Ryan et al., 1996, Spreitzer et al., 1997, Abdul Hamid and Sulaiman 2011), settling the basis for an appropriate learning environment (Eriksen, 2010). Consequently, at a more operative level, many empirical data show how successful KM practices in organizations relate to the existence of core management styles and cultures (Zhu and Sun, 2010).

Finally when considering technology, although it is widely admitted that technical issues of electronic collaboration aren't a sufficient condition in order to manage knowledge and generate actionable processes, day to day evidence experienced by managers and employees show the strong impact they have in knowledge sharing (Newell et al., 2006; Nonaka and Takeuchi, 1995). This is understandable considering that the bigger is the organization, information and knowledge are widely dispersed and wherever it is needed it is not always accessible or is time costly to get it. Therefore the presence of intranets, ERPs, and collaboration devices inside the organization is another evidence of the existence of knowledge sharing mindsets.

At this point of the discussion only internal factors such as values, organization's characteristics, management style, and technology, have been considered as facilitating or constraining factors in KM practices. Byounggu and Heeseok (2003) correctly assume that external factors, such as industry types are also likely to constrain KM practices in organizations. Certainly, industry types (e.g.; manufacturing, financing, and service) require different KM styles and needs. This being said, we now turn to analyze the current situation of KM practices in South American organizations

3. Knowledge management in South America

In a snapshot, Bolivia, Ecuador, Peru and Colombia are considered geographically and culturally as Andean countries sharing many cultural traits as a common pre Hispanic past. Chile and Argentina are two distinct countries that have higher economic weight, income, and share similar human development index according to UNPD (2010) statistics. These 6 countries represent a population of about 161.4 million inhabitants.

Unlike an European perspective on KM where knowledge is considered a prominent factor of production and source of competitive advantage (see Tome 2011), the South American context presents significant differences with the European one. Literature on KM practices in South America exist though it is largely widespread with a strong emphasis in rural, social, educational, and cultural aspects that are mostly concerned with the nonprofit sector (e.g. Michel et al., 2010, Matzkin 2008, Ferreira and Neto, 2005). In Spanish speaking countries only a small number of published empirical researches on KM are available in

English and are limited to a few countries. For this reason the current work aims to present a global picture of KM management practices in some South American organizations starting from little or no data.

South American organizations are an interesting field of research for a better understanding of the diversity and scopes of existing KM practices in organizations outside North America and Europe. Firstly, we believe that South America represents many organizational contexts specific to developing countries characterized by deficient levels of innovation (this is measured by the number of patents fillings per country, see for example WIPO 2007 and EPO 2010), of human capital, and in many cases limited financial resources. Therefore in a South American context, efficient KM practices could profitably help organizations to fulfill their objectives despite their structural deficiencies. Secondly, according to World Bank statistics the past ten years have been quite profitable in terms of economic growth (this is measured in GDP, World Bank 2010) for the majority of South American countries. As a result, it inserted the region into the globalized economy generating high levels of investments from international firms that export their knowhow, and that has probably affected the way organizations are managed in the region. Thirdly, as Europe, South America is irregular in terms of local cultures (i.e.; traditions, population's origin, and beliefs), levels of economic development, and regarding political lines followed by governments (i.e., free trade economic models versus State controlled economy ones).

In the case of Colombia, 46 percent of the 50 organizations that have been surveyed by Baquero and Schulte (2007), consisting of a mix of educational, public, and private organizations, were planning to develop KM practices in a span of time of 2 years. The authors report that very few of these organizations had values systems and cultures that facilitated knowledge sharing practices. Additionally, most of the organizations had not heard about programs that were specifically intended to promote employee retention within their organizations as only 14 percent had policies in this field (Baquero and Schulte, 2007). As for the technology factors the surveyed organizations were not very familiar with information systems that specifically support knowledge and information sharing. For example prior to 2003 less than 37 percent of the organizations had used any of the following technologies: group/collaboration tools, search engines, document management/taxonomy, and intranet portals. In average about 20 percent of these organizations planned to implement in a future time these technologies. Baquero and Schulte (2007) conclude that their results, from a global perspective, suggest that the level of adoption of KM practices in Colombia's private, public and academic sectors is very low and that not many organizations have implemented KM policies and strategies. Finally, as to management practices among the organizations that have KM practices, the authors report that most of these practices are under the responsibility of the executive management team. Only 23 percent were under the supervision of the Human Resource manager.

Data on KM practices in Peruvian organizations are found in Matzkin (2008) although the analysis is mostly focused on the nonprofit sector. In the research participated 106 managers from Peruvian nonprofit organizations, public organizations, and profit organizations contributing in social development programs. The first impressive result was that the level of KM awareness among managers from public, profit, and nonprofit organizations was only 51.9 percent. In other words, near of 1 out of 2 of the surveyed managers had at that time never heard of KM. Although KM values and cultures haven't been directly addressed in this study, the low level of KM awareness suggests very low levels of explicit KM culture and values in these Peruvians organizations. Nonetheless moderate to upper levels of

implicit KM practices were found in public, nonprofit, and profit organizations. The implicit knowledge practices were quantified on six components: (1) the use of strategic management methodologies such as key performance indicators; (2) the existence of internal procedures used to improve management and processes; (3) the existence of systemized practices consisting in keeping a written track of work processes; (4) considering the personnel suggestions to improve processes; (5) the use of professional email to share information; (6) and the organization's e-learning practices. The author suggested that despite the existence of some KM practices, these could not however be coordinated in order to achieve explicit strategies for organizational learning since they remained in the realm of the implicit. Finally, an important structural problem was observed in the surveyed organizations that consisted in high employee turnover which was related to the precariousness of the personnel labor status. Important turnover rates prevent organizations and their employees to profit and share experiences, knowledge, and management practices. In particular, it was found that employees working in bigger organizations had more long term labor contracts than those working in smaller organizations (Matzkin 2008).

In Argentina a survey conducted in 2000 revealed that 83 percent of the surveyed managers knew what KM was about, thus showing a high level of KM awareness (Leclic 2002). Two years after the survey it was found that the majority of firms that had planned to implement a KM program didn't do so mainly for budget restrictions. For Argentina (except the previous study), Chile, Bolivia, and Ecuador no reliable published KM indicators specific to organizations were found.

Taken as a whole, the limited amount of information that is available shows the following facts:(1) medium to upper levels of KM awareness were observed in different South American countries, (2) medium levels of KM practices exist in public and (non)profit organizations; (3) when KM practices exist these remain mainly implicit limiting the foundation of KM mindsets and KM values; (4) structural variables (e.g., labor turnover, organizations size, limited use of technology, budget restriction) constrain KM practices and the development of KM mindsets and values; (5) in the Colombian case, executive management handled the implementation of KM.

4. A practical guideline for exploring KM in South America

The above sections have set a conceptual framework for exploring KM practices in South American organizations. In this section we present a KM process guideline based on that framework. The aim of this guideline is two-fold: first, to set a practical tool that can be used by local managers in their day to day work to develop KM mindsets and strategies similar to what Berrelleza and Matzkin (2009) have achieved for the Peruvian construction sector; secondly to confront the below empirical results to a conceptual framework and model. Our guideline is based on a balanced scorecard architecture. A balance scorecard is a strategic planning and performance management system used to monitor and align business processes with strategy that also includes non financial measures (Kaplan and Norton, 1993) We share Kalpic's and Bernus (2006), Bose and Thomas (2007), and Berrelleza and Matzkin (2009) analysis for whom a business process modeling (i.e., here a balanced scorecard) can be seen as a tool for knowledge management that allows the transformation of informal into formal knowledge which facilitates its externalization and sharing.

The guideline has 4 layers labeled: External factors, Learning and growth, Business processes, Customer satisfaction, and Expected financial results (see Figure 1).

4.1 External factors

This layer (not represented in our diagram) relates to Byounggu's and Heeseok's (2003) external factors that are mediated by industry types. Other socio-cultural factors should be considered such as country´s specificities regarding business management regulations and legal variables (Baker & McKenzie, 2008). For example in most European countries training is regulated by laws that make mandatory organizations to spend a minimal amount of budget and working hours to train their employees. This is not the case in some South American countries. External factors although important remain difficult to quantify but should nevertheless be kept in mind.

4.2 Learning and growth

This layer relates to the above structural factors that act over employee's motivation, job satisfaction, and the organization's internal processes over their human capital. This layer is concerned with the human resource management strategies of the organizations.

Recruiting and training boxes: The organization sends signals about what is important through its recruiting priorities, and promotions. An important aspect of sustainable success has to do with talented people, that's why these boxes are especially important. Recruiting mistakes at this stage have consequences in the following boxes.

Employee satisfaction box: They learn to understand just how much they are worth, and what they can give to the workplace. They become intellectually-stimulated, and emotionally-engaged. They must have a high sense of empowerment in order to be able to make decisions.

Less turnover box: Low turnover keeps your employees longer, they feel more secured, and thereby reduces the loss of intellectual capital from people leaving the company.

4.3 Business processes

This layer focus on core management variables that describe how organizational values and mindsets are implemented in a day to day basis and whether they will favor (or not) the emergence of a knowledge sharing culture in the business units.

Innovation in processes & products box: KM saves money and time by not reinventing the wheel for each new project. In this layer management has to identify different processes that should be improved to increase value and customers' satisfaction.

Knowledge tools box: Increases productivity by making knowledge available more quickly, sharing information using technology and (in)formal communication channels. The existence of documents which describe key processes will help in avoiding mistakes in operation processes.

4.4 Customer satisfaction

This layer relates to internal and external customer satisfaction which is largely dependent on the outcomes of the "business processes" layer. This layer should help companies to identify their specific market segment and to determine core measures that will describe the successful outcomes of a well-formulated and implemented strategy (Bose and Thomas, 2007).

Customer retention: Customers are more demanding than ever, hence relationships with them are now becoming more complex. This specific box will help organizations to determine indicators and metrics that help them to retain customers.

Customer satisfaction box: This box is just a consequence of the previous outcomes of the
"business processes" and customer retention.

4.5 Expected financial results

How can we measure the current and future value of knowledge management? This is a
question this guideline can help us solve. This layer sets the financial results and standards
that the organization wants to achieve leveraging over the different variables of the
guideline.
We present a possible path (out of many) that could impact positively in the financial results
of organizations.

4.6 Path

In the *learning and growth layer*, the model starts with a correct selection, recruitment, and
hiring process. This is the point to begin with, if we don't have the right people, with the
right skills in the right place, with the appropriate labor contract, the probability of success
will be reduced. The right people must be trained and mentored, and this learning process
should be become continuous and endless (Senge, 2006). Then, as the guideline in Figure 1
shows, if companies have well trained people there will be a positive impact in the sense of
belonging and in job satisfaction. People usually talk about being part of something larger
than themselves, of being connected, of being generative (Senge, 2006). If low turnover rates
exist, it means that the company has few leaves and dismissals. The interactions of these
variables lead to a virtuous cycle that contributes to the emergence of a learning culture
inside the organization. To make this possible an appropriate management style is needed
(business process layer). Management practices and values should favor bottom-up
communication channels and use appropriate management methodologies that will allow
discussing improvements and innovations over processes and products and impact
positively in the ROI and ROE of companies. Another expected impact is that this process
will impact positively in customer satisfaction and retention and finally in the financial
results of the company. This is possible if management values and practices fit the human
resource management strategies and vice versa.
This model can be been seen as a chain of cause and effect that may impact directly and
positively in the financial results of a company no matter its size and industry type. The
failure or success of using this guideline depends in the ability of the company to be aware
of changes in its internal and external environments in order to reformulate or adapt the
current scorecard and its indicators. By this mean the objective of the model is to show that
KM is not just a source of costs or a "romantic" theoretical concept. Three short business
cases belonging to South American organizations are presented in the "Results" section.

5. Methodology

Data was collected through an online standardized questionnaire from 88 middle and high
level managers attending MBA programs and from the authors' corporate contacts living in
6 South American countries. The questionnaire was inspired from the one used by Matzkin
(2008), the above theoretical framework, and formulated in order to explore KM practices in
regard of the organizations' structural variables and core management practices. Another
aim of the questionnaire was to test the pertinence of the KM guideline presented above
by applying it to three different organizations taken from our sample. The questionnaire
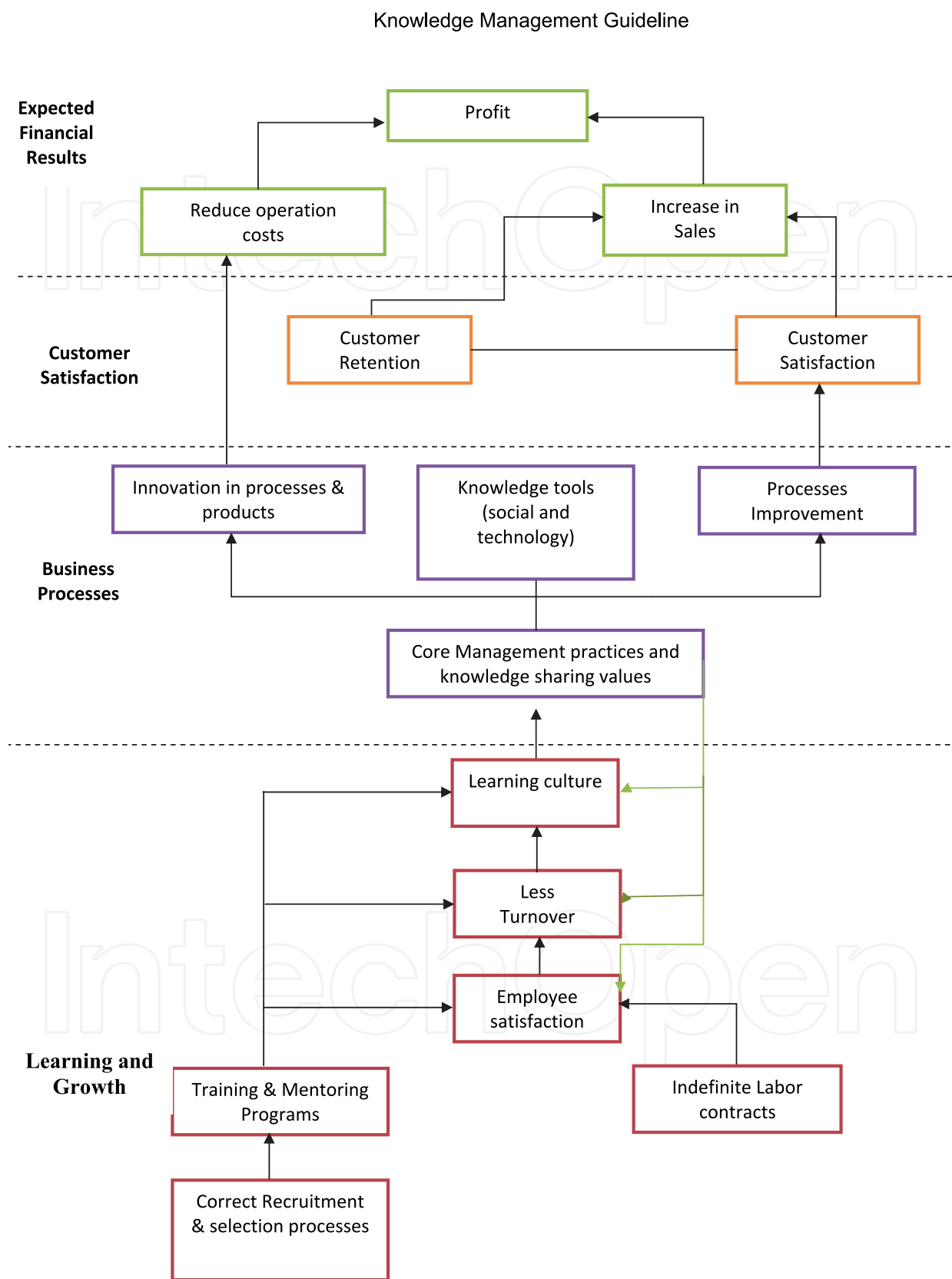
Knowledge Management Guideline

Fig. 1. Knowledge management guideline

included closed questions concerning familiarity with knowledge management, knowledge sharing, use of technology, and managing practices in their organizations. Some questions allowed open text fields that enabled respondents to add qualitative information.

The survey was conducted in August 2011 and the response rate was of 30%, slightly more than what is usually found in research using a survey methodology (e.g., Athanassiou et al., 2002; Corso et al., 2006; Salojärvi et al., 2005, Baquero and Schulte, 2007). 3 questionnaires were rejected as they were returned incomplete or respondents were no more working in South America.

5.1 Sample's descriptive information

Table 1 shows the characteristics of the sample. Most respondent were from Peruvian (55.29%) and Colombian (24.70%) organizations thus limiting meaningful comparisons between countries (see below for a discussion on that point). Another important characteristic of the sample was that most of the surveyed managers worked in large (more than 500 employees) organizations (56.47%). Additionally, Peruvian and Colombian organizations covered all industry types whereas the remaining countries covered only some of them. Finally, more than 88% of the surveyed managers worked in private organizations, about 8% in public ones, and just a small part were from nonprofit organizations (3.53%). In summary, the typical respondent's ID was a manager working for a large profit organization.

			Type of Organization		Size					
Country	N	Non profit	Public	Profit	≤20	≤50	≤100	≤500	> 500	Industry type
Argentina	6	0	0	6	0	1	0	3	2	Energy, Education
Bolivia	2	0	0	2	1	0	0	0	1	Bank, Education
Chile	3	1	1	1	0	0	0	1	2	Telecomunication, Education
Colombia	21	0	0	21	1	3	2	1	14	All types covered
Ecuador	6	0	1	5	0	0	2	1	3	Banking, Telecomunication, Retail
Peru	47	2	5	40	4	3	9	5	26	All types covered
Total	85	3	7	75	6	7	13	11	48	
Total (%)	100	3.53%	8.23%	88.24%	7.06%	8.24%	15.29%	12.94%	56.47%	

Table 1.

Because of the sample's size and its unequal number of respondent per country we decided not to perform country comparisons. However this did not limit the reach of results considering these two facts: in the first place, as presented in the "Knowledge Management in South America" section, Bolivia, Colombia, Ecuador, and Peru are Andean countries with many cultural similarities. In the second place, many of the globalized companies that operate in South America cluster their operations by sub regions. The Andean sub region generally includes Bolivia, Colombia, Peru, Ecuador and sometimes even Chile. Hence, there was an overlap both from a cultural point of view and from a business one. Argentina would be the only exception but not enough data was collected to make a separate analysis.

The following paragraphs analyze KM practices in organizations connected to the structural, core management, and values factors.

6. Results

6.1 Structural, core management, and value variables

Table 2a summarizes results relating to the structural factors of the surveyed organizations. In this dimension one of the key questions was related with the nature of labor contracts of

Table 2a
Structural Variables

Labor Contract		Turnover Perception	
Permament	Period	High	Low
80.00%	20.00%	36.47%	63.53%

Table 2b
Core Management and Values

Training perception			Talent Retention Program		Mentoring and Coaching Programs		Knowledge sharing Values		Bottom-Up Improvements	
Poor	Fair	A plus	Yes	No	Yes	No	Yes	No	Yes	No
32.94%	35.29%	31.76%	25.88%	74.12%	45.10%	54.90%	69.41%	30.59%	70.59%	29.41%

Table 2c
Information Management Variables

KM program		Knowledge Sharing Methods	Intranet		Process Classification Methods		Strategic Management tools	
Yes	No	Yes	Yes	No	Yes	No	Yes	No
37.65%	62.35%	57.65%	76.47%	23.53%	85.88%	14.12%	58.82%	41.18%

Knowledge Sharing Methods: Yes 57.65%, No 42.35%

Table 2. a, b, c

the employees. As stated above high turnover rates limit knowledge sharing practices and mindsets as the human resource life cycle is shorter (Eriksen, 2010). Overall data show that 80% of the surveyed organizations offer formal permanent labor contracts to their employees. 20% of the labor contracts are temporary ones, which durations do not exceed six months to a 1 year. This result isn't surprising if we consider that most of respondents work in important multinationals where labor conditions have higher standards compared to what is usually observed in South America. We performed a statistical test in order to check whether the size of the organizations had an effect on labor contracts types but no significant difference was observed $x^2_{(4)} = 3.61 p > .20$.

A complementary variable related to the previous one was the "turnover perception" managers had on their organizations. Considering Table 2a there is a positive descriptive relation between the existence of permanent labor contracts and lower turnover rates as 63.53% of managers perceived a low turnover rate. Here too, the turnover perception didn't differ significantly according to the size of the organizations ($x^2_{(4)} = 1.37 p > .20$). Yet, a third of managers (32.94%) perceived high turnover rates. This latter percentage could possible constrain, not only KM practices, but also have an effect on the perceived organizational justice inside organizations (see "Business cases" section below).

The next results analyze core management practices and KM sharing values existing inside organizations, such as: training perception, talent retention programs, mentoring or coaching programs and knowledge sharing activities. (see Table 2b)

Training strategies are important not only for organizational learning but also for employee's motivation. Although 40% of the surveyed managers ignored the amount of training budget that their organizations spent on an annual basis, 35.92% considered that their organizations had fair interest in training their employee, and up to 31.76% believed that in their organizations there was a very high interest in training. Hence, about two thirds (67.05%) of managers have a neutral or very positive perception regarding training matters. Only a small third of them (32.94%) considered that their organizations showed a low interest in training issues. When comparing the perceptions on training with organization's size once more no significant difference was observed ($x^2_{(8)} = 10.33 p > .10$). However an ad hoc comparison that consisted in contrasting medium sized and big organizations (i.e.; 100 employees and more) versus small organizations (less than 50 employees) was marginally significant ($x^2_{(2)} = 5.84 p = .054$). This tendency is consistent with previous results observed in Peruvian nonprofit organizations (Matzkin, 2008) and with the idea that bigger organizations have more resources to budget training activities compared to smaller ones.

Along with training, talent retention programs contribute to organizational learning (Zhu et al., 2010) and represent a management leverage on employees. An expected good management practice consists in retaining and developing talented workers. Surprisingly for 74.12% of the managers their organizations lacked of such programs. Qualitative data reported by managers indicated that it wasn't uncommon to see good elements quit their jobs as the organization didn't value their skills, training, and knowledge (e.g. many reported quitting after following an MBA program). The remaining 25.88% reported sophisticated talent retention programs managed by the human resource department and team managers. For this variable a size effect was found ($x^2_{(3)} = 8.56 p > .05$; less than 100 employees organizations versus those of more than 100 employees): the bigger the

organization, the more it had talent retention programs. This result is consistent with the above one on training where bigger organizations tend to have more training budgets. Nonetheless, the observed low proportion of talent retention programs is a concern since it can turn into another source that might affect the perceived organizational justice of employees. If companies have high turnover rates, they should be worried about keeping their talented people by developing long-term talent strategies in order to keep their intellectual capital inside the company.

Another core management factor relating to training and talent retention was "coaching and mentoring" practices. It was expected that a team or business unit manager would favor this knowledge transmission practice among his subordinates. Descriptive results show that in only 45.10% these knowledge sharing activities exist in the surveyed organizations. As for above, the existence of these practices seem to be related to organization's size, particularly in bigger organizations ($x^2_{(4)} = 13.10 \, p < .05$, and $x^2_{(3)} = 12.60 \, p < .01$ when comparing less than 100 employees organizations versus those of more than 100 employees).

A final core management question related to the existence of "bottom-up" communication channels favored by managers to collect information in order to generate organizational improvements. 70.59% of the surveyed managers reported the existence of these practices in their organizations. This result can be related to organizational openness to share knowledge and to empower employees in decision making. This view is supported by the fact that 69.41% of the respondent indicated that knowledge sharing values were supported in their organizations.

Altogether these first results on structural variables, management practices, and knowledge sharing values report that the surveyed South American organizations showed medium to upper levels of good practices regarding some of their human resource management policies. For example, the labor contracts they offered to their employees were globally acceptable considering the region's standard, and turnover rates were moderate. Observed structural information appeared to be independent from organization's size. Perceptions over management and values showed more conventional practices. Although perceptions on training and bottom-up communication channels were globally positive, results showed low levels of talent retention programs, mentoring and coaching practices. Therefore it appears that organizations seem not to be linking training, mentoring and talent management into a coherent organizational learning scheme.

6.2 Information and explicit/implicit knowledge management practices

The following analysis focus on information sharing, KM practices, and technology use (see Table 2c).

Firstly, similar to results reported by Baquero and Schulte (2007) for Colombia, Matzkin (2008) for Peru, and Leclic (2002) for Argentina, very few organizations – only 37.65%, have implemented or are considering implementing formal KM programs. Additional qualitative information showed that managers weren't very acquainted with the formal KM programs when these existed inside their organizations. Many of them related them to a variety of training projects, interdisciplinary teams, communities of knowledge, or specific publications. Of interest was to observe that managers considered that KM programs were in priority more useful to improve internal management issues (69.41%) than to improve products and services delivered to their stakeholders. This result is consistent with Matzkin (2008) who reported a similar fact in Peruvian organizations.

Secondly, when we focus on how organizations manage information and knowledge, 57.65% of the managers reported that their organizations made use of methodologies such as focus and quality circles and discussion groups. This result is independent from organization's size and is once more very similar to the one reported by Matzkin (2008) in Peruvian organizations. In the same range of results, only 58.82% of organizations made use of strategic performance management tools as balanced/sales scorecards or Key Performance Indicators. The use of such performance management tools are global indicators of knowledge sharing practices since the pertinent use of these methodologies suppose intensive collaborations between different hierarchical and functional levels inside an organization. In contrast to previous results, 85.88% of the managers responded that their organizations had written documentation of all their processes to help them solve problems, perform projects, and in some cases to facilitate corporate communication. For these variables, organization's size was marginally significant ($x^2_{(4)} = 8.95, p = 0.062$). An ad hoc comparison that contrasted organizations with less than 100 employees with those of 100 and more employees reached significance level ($x^2_{(3)} = 7.50, p = 0.05$). This tendency was expected since bigger organizations, because of their size and structure, need more formal procedures to store and spread information efficiently.

Thirdly, when focusing on technology, 76.47% of the surveyed managers reported that their organizations had an intranet to facilitate information sharing. In relation with the previous result, bigger organizations made more use of intranets than smaller ones: ($x^2_{(4)} = 23.8, p < .001$). Finally, 67.14% of the organizations have or plan to implement e-learning methodologies (this result isn't shown in Table 2c). For this criterion no significant difference was found according to organizations' size. These results show higher use of technology in organizations compared to what was reported some ago years by Baquero and Schulte (2007).

Overall results indicate low levels of explicit KM practices in South American organizations and are consistent with the levels found by Baquero and Schulte (2007) in Colombia and Matzkin (2008) in Peru. Yet, the existence of implicit knowledge management practices in these organizations should not be underestimated although managers are not always aware they are managing them. The implicit knowledge management practices were measured using an additive model based on the tested components. Composite measure methods have been widely used in knowledge management literature and have shown interesting insights to the research data (e.g., Garcia-Olaverri et al. 2006, Matzkin, 2008, and Salojärvi et al., 2005). The implicit knowledge management index (IKMI) varied from 0 to 1: the higher the score, the higher the level of implicit knowledge management practices. The composite score included seven components and were given similar weights as in Matzkin (2008): (1) talent retention programs; (2) mentoring and coaching programs; (3) Knowledge sharing values; (4) bottom-up communication channels; (5) the use of strategic methodologies similar to the Balanced Scorecard; (6) the existence of systemized practices consisting in keeping a written track of work processes; (7) and the organization's e-learning practices. Results are presented in Figure 2 and show medium levels of implicit knowledge management practices across organizations with IKMI ranging from .37 to .64. IKMI levels seem to increase with the organization's size. However a one way anova didn't show any significant difference when comparing organization's sizes. A Student t test that compared the higher and lower index (.64 Vs. .37) was marginally significant $t_{(12)}$ = 2,14p = .053 suggesting that size does have a marginal effect on implicit practices but no source of

systematic variation was observed. The implications of these results are considered in the "Discussion" section.
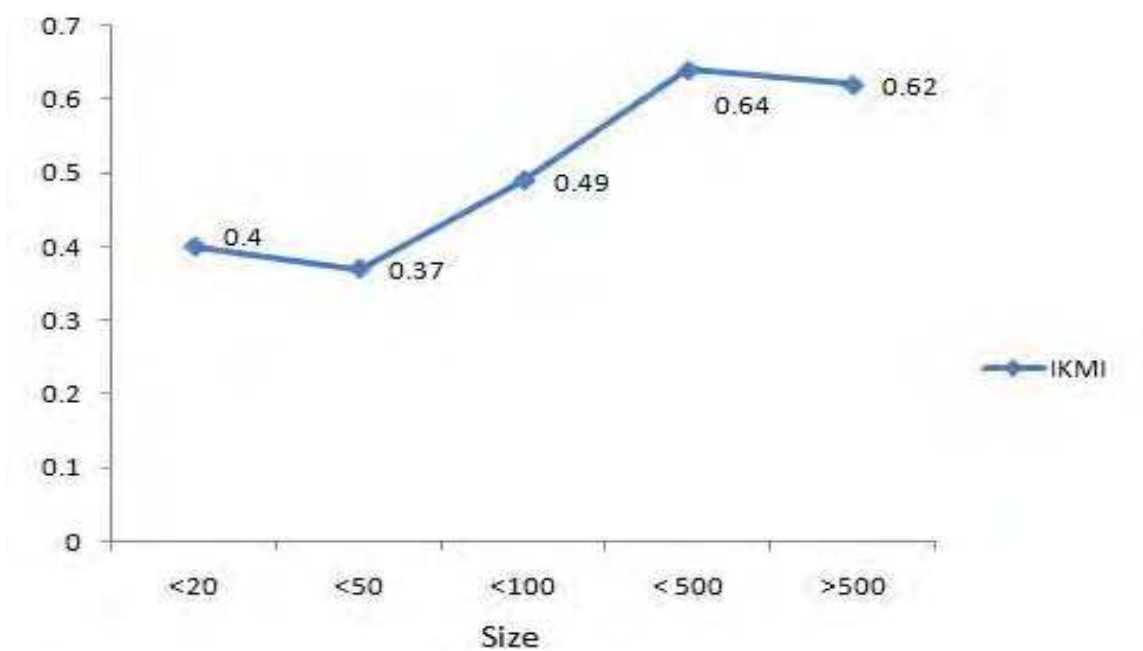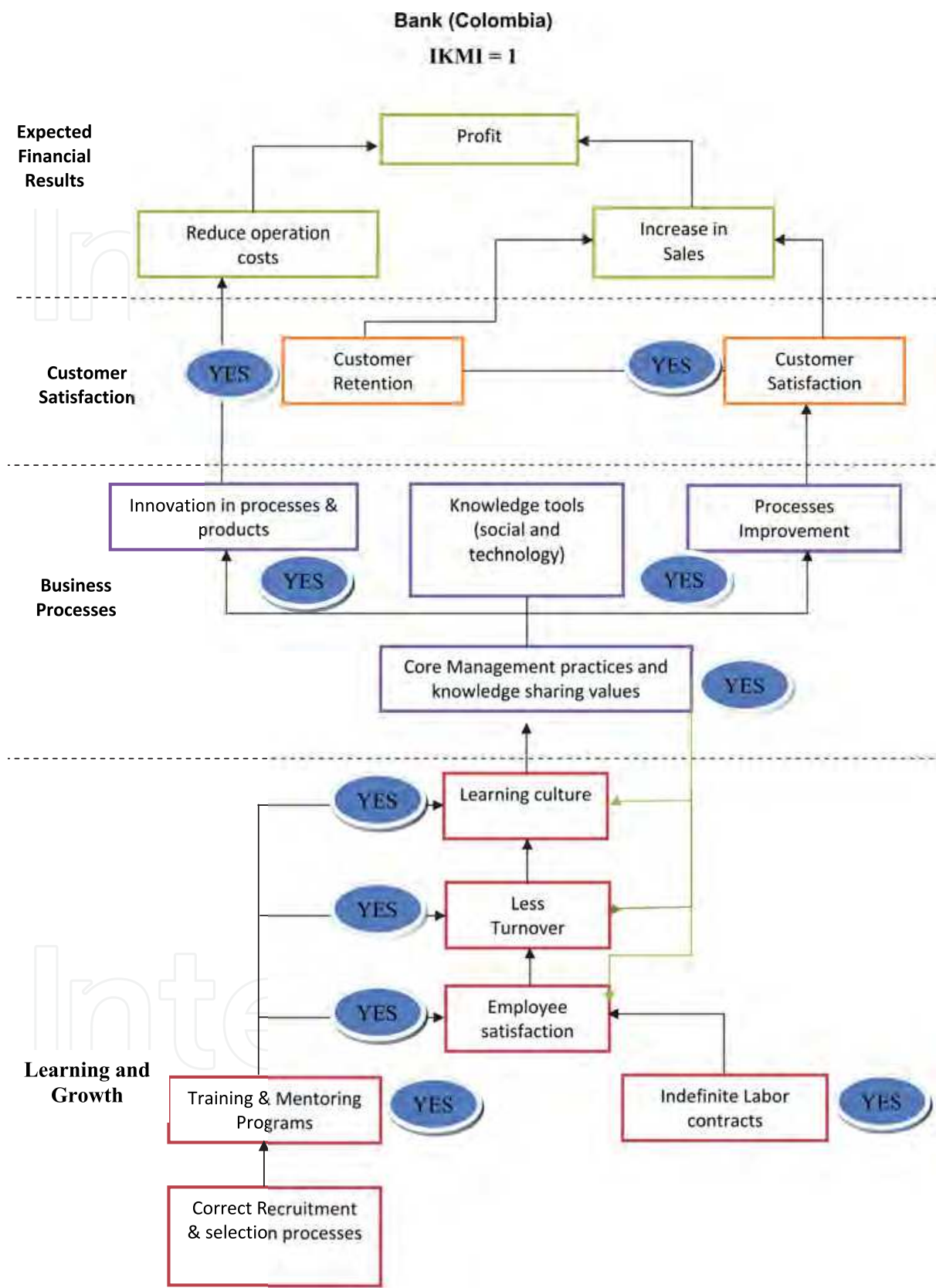

Fig. 2. Levels of IKMI in function of size
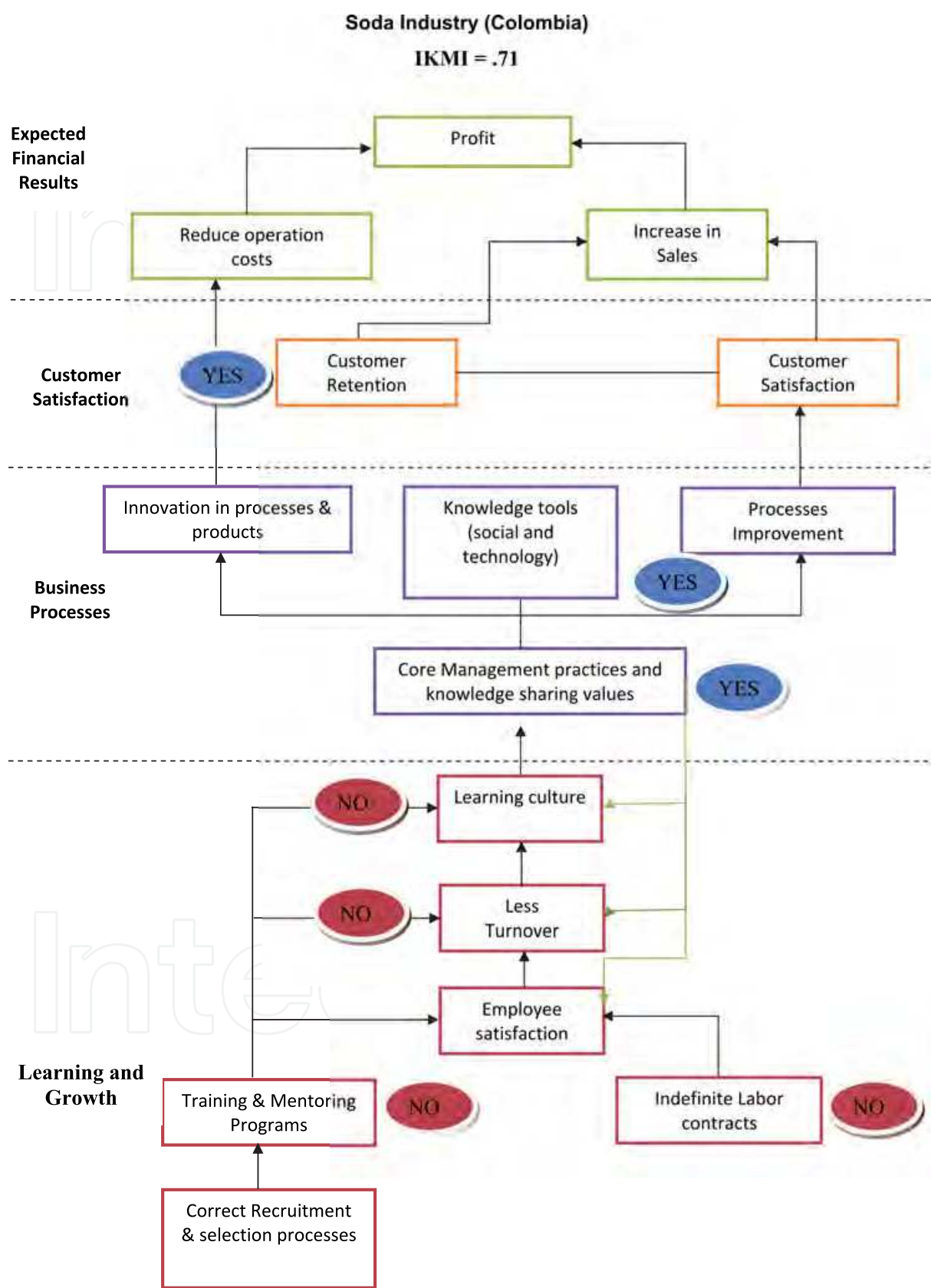
6.3 Business cases

In this section three businesses taken from the sample were analyzed through the KM guideline described above (see Figure 1 knowledge management guideline, and Case 1, Case 2, and Case 3 below). These examples illustrate three different situations that show how the interaction between management practices, values, and structural variables lead to different outcomes regarding the knowledge management practices that are observed in these organizations. From a KM perspective, case 1 represents an ideal situation where "leaning and growth" and "core management and values" layers are aligned. Case 2 illustrates the dissociation between management knowledge oriented values with the existing human resource policies applied by the organization. Case 3 represents a more traditional hierarchically managed organization type that has not yet developed many knowledge mindsets. It should be mentioned that the three cases represent successful organizations leaders in their market. An alternative way to make use of this model (not used in the cases below) is to set specific indicators and goals to reach for each box. These two different uses are of course complementary.
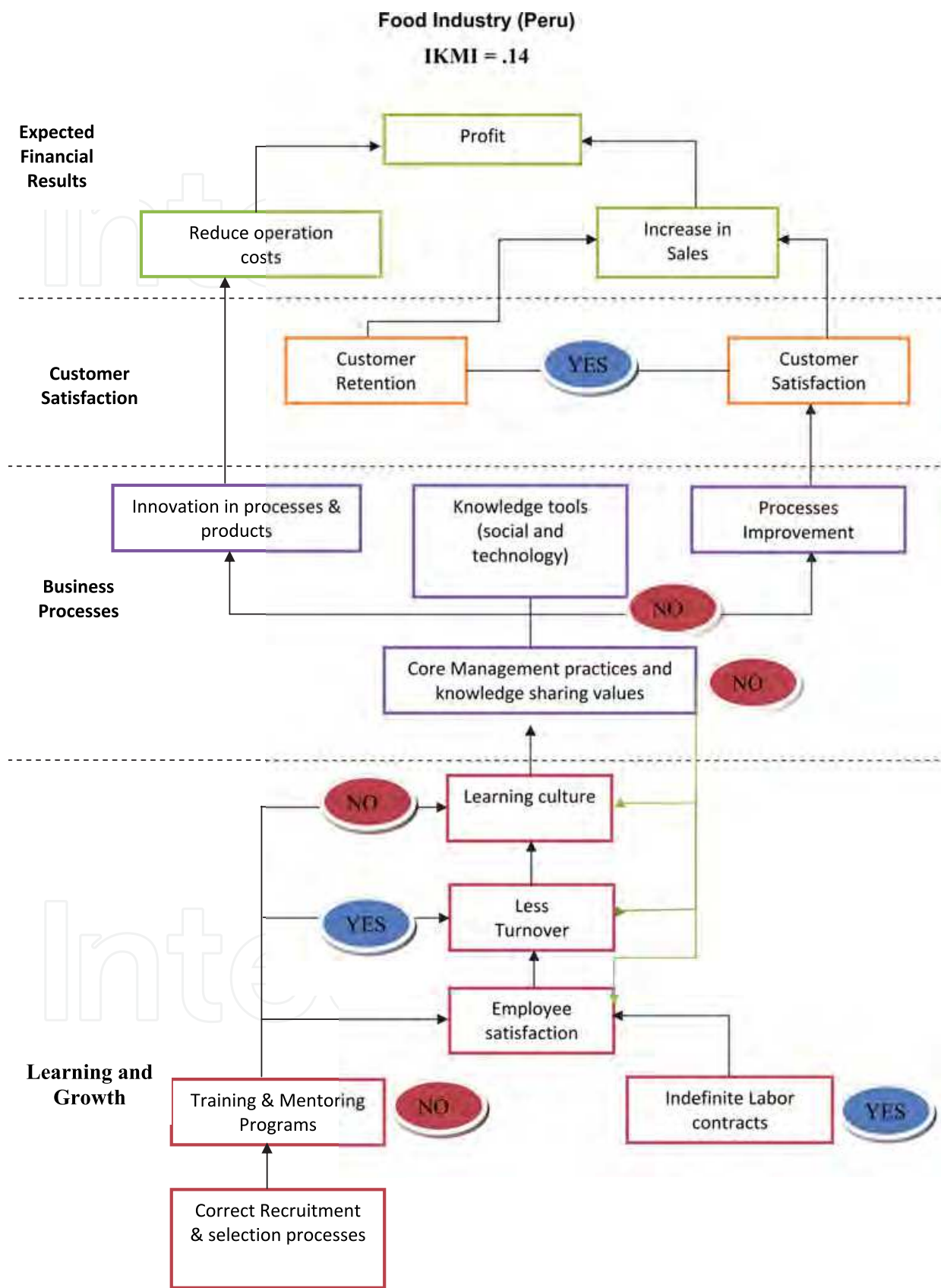
Case 1 (Bank)

The company is an important bank of Colombia (more than 500 employees). The "learning and growth" layer shows that important structural variables such as having "permanent labor contracts" and a low "labor turnover" rate interact with "employee's satisfaction" and forms a firm basis for the development of a "learning culture". The manager from that company confirmed that the bank had a high interest in training employees along with mentoring and coaching activities. When analyzing the "business processes" layer, the bank's core management practices and values (bottom-up communication channels, empowerment, performance evaluation, talent retention, methodologies) favor the use of

Case 1.

Soda Industry (Colombia)

IKMI = .71

Case 2.

Food Industry (Peru)

IKMI = .14

Expected Financial Results

Customer Satisfaction

Business Processes

Learning and Growth

Profit

Reduce operation costs

Increase in Sales

Customer Retention — YES — Customer Satisfaction

Innovation in processes & products

Knowledge tools (social and technology)

Processes Improvement

NO

Core Management practices and knowledge sharing values

NO

Learning culture

NO

Less Turnover

YES

Employee satisfaction

Training & Mentoring Programs

NO

Indefinite Labor contracts

YES

Correct Recruitment & selection processes

Case 3.

"knowledge tools" and the conditions for improving "business processes and products" on a formal and documented basis with the support of the employees (learning and growth layer). Financial evidence show that bank is leader in its market and was ranked in the top 10 of the 2010 "Great Place to Work" ranking. This case shows how structural, cultural factors, core management and practices interact and support the materialization of a KM culture or at least mindsets. The measured IKMI was of 1.

Case 2 (soda industry)

This is a major company in the Colombian soda market (more than 500 employees). This case is interesting since in one hand, it shows that in the "business processes" layer, the company has appropriate sharing values and management practices. For example, bottom-up communication channels, collaborative working methodologies (e.g. focus groups, quality circles) to solve problems and improve business processes; there is an intranet to share information. On the other hand, the "learning and growth" layer shows that important structural and learning factors are not aligned with management decisions and mindsets. The company has high turnover rates, many non permanent labor contracts, and training isn't a priority. Although no information was available, employee satisfaction is probably affected as is the perceived organizational justice. This is a clear example of dissociation between management, which pushes to create sharing knowledge mindsets in the company, and the reality of the human resources practices that are unable to sustain the conditions to support the emergence of a learning culture. In order to implement efficient KM practices some structural changes seem necessary. In this company, the human resource strategies aren't entirely aligned with the observed management actions and values. This being said, the company still has a dominant market share as it distributes renowned sodas (although the brand owner could decide not to renew the distribution agreement with his Colombian partner). The measured IKMI was of .71

Case 3 (food industry)

The company is one of Peru's giant in the food industry (more than 500 employees). The company presents a traditional business management approach focused on a hierarchical top-down management style. At the "learning and growth" layer the company is concerned by the labor conditions of the employees as permanent labor contracts seem to be the norm and the manager who was surveyed reported a low turnover rate. It is not known whether globally employees experiment job satisfaction but the company shows little concern in training, learning and growth aspects. Moreover, no talent retention program exists. The "business processes" layer shows a management style not apparently concerned in asking employees to participate in the improvement of business processes and products innovation. No explicit sharing knowledge methodologies, values, or mindsets were reported. This hierarchical configuration in the management style constrains the organization's openness and its shift toward a KM culture. External factors as industry type might contribute to this business profile. The measured IKMI was of .14

7. Conclusions

Despite the important limitations of the sample (in size and unequal distribution per country) and the explorative nature of this research, the above results contribute in four ways to the understanding of KM practices in South American organizations and in particular the factors that favor or constrain these practices.

7.1 A global approach

First of all, the present work compiles new data on KM from six South American countries, a region where information and publications are scattered and very sparse. To our knowledge it is the first statistical based research that attempts an integrative approach of KM practices in South American organizations from Andean countries, in addition to Argentina and Chile, settling a reference for further research. Certainly future research on this topic will need larger and more balanced samples and clearly establish what is meant by cultural and other possible differences between the countries. As a matter of fact, to what extent are KM practices modeled by differences existing between South American countries? We believe that the foremost differences between countries do not rely on organizational processes determined by cultural specificities but rather on differences based upon organizations' structural basis (e.g., types of labor contract and working conditions of employees) some of which are imposed by labor and employment Law background that are specific to each country (Baker & McKenzie, 2008). Regarding the diversity in management practices many culture specific research have been done (e.g., Gerhart and Fang, 2005) but it is also true that many multinationals tend to favor their own management culture over the country´s specificities.

7.2 Stability in KM practices in South America

A second contribution was to empirically replicate some results on KM practices in Colombia and Peru reported by Baquero and Schulte (2007) and Matzkin (2008). Four years after their research were published, the present results show that explicit KM practices remain sparse in South American organizations and are limited to big organizations; despite the genuine interest proclaimed by many managers over this matter. Budget reasons are chiefly put forward by managers to explain why KM programs don't take off in the region (Baquero and Schulte, 2007; Leclic, 2002) Perhaps a fundamental reason is that knowledge and innovation aren't in South America important factors of production contrary to what happens in Europe, North America, and is some Asian regions (see Tome, 2011 for an European insight on this subject). In addition to this, external factors such as industry type as other business regulations probably shape the KM practices that are observed (Byounggu and Heeseok, 2003). In relation with the use of technology a majority of organizations whether they are small or big have an intranet and are familiar with e-learning practices. According to the industry type some organizations use sophisticate databases and information management systems. Results we report regarding the use of information technology are slightly higher than those reported at the time by Baquero and Schulte (2007).

Considering overall results, in the past years possibly knowledge sharing mindsets have increased and spread throughout South American organizations though explicit KM practices didn't seem to have evolved in a significant way. Nonetheless moderate levels of implicit knowledge management practices were observed. According to results the levels of practices were marginally higher in bigger organizations. A majority of organizations - but not all, widely use modern management styles that imply some knowledge sharing methodologies (e.g., quality circles, bottom-up communication channels, performance indicators, flat structures, etc.). As shown in the business case N°2, KM practices are much less effective (i.e., not converted into actionable knowledge) if they are not supported by the appropriate management of the human resource (i.e., recruitment, talent retention, labor contracts, etc.). Actual KM practices in South American organizations reflect that most

organizations have little awareness (or concern) in seeing and/or seeking the relation between KM and organizational strategy development. We believe an integrative approach in research is necessary in order to obtain a global picture on KM practices in South American organizations. To this global approach, inquiring at a business level is a complementary source of knowledge.

7.3 KM guideline: A diagnosis method

The third and fourth contributions of this research to KM understanding in South American organizations rest upon the proposal of a KM guideline inspired on a balanced scorecard. This guideline is supported by the theoretical framework presented above and puts emphasis on the structural, core management practices, and values that favor or constrain the emergence of knowledge sharing mindsets inside organizations. The three business cases showed that the guideline resulted being a pertinent global diagnosis methodology that can be used to understand KM practices in the organization. Integrated to the guideline, the IKMI composite score gave a general quantification of the organizations implicit KM practices. As a complementary analysis, next step should consider specific quantifiable goals to reach for each of the model's box. Future empirical data on KM practices could generate positive changes to this guideline in its actual form. Furthermore, the implicit knowledge management index should be improved.

7.4 Future research directions

A key issue that was not addressed in this work related to investigate who inside organizations has the responsibility of KM programs, practices, and budget? This information could enlighten the dynamics of the emergence of knowledge sharing mindsets within organizations. Similarly, this line of research could also give more input on the constraints that exist behind the development of KM practices. Complementary to KM, future research could benefit from the study of "organizational unlearning" processes (see Fernandez et al., 2011; Becker, 2005; Holan et al. 2004). Empirical research on this subject could probably generate more hypotheses on the reasons why many South American organizations fail to implement sustainable KM cultures. Finally from a pragmatic perspective, upcoming research will have to dissert and be able to quantify the benefits that KM practices effectively bring to South American organizations; not only on a profit basis but also on employees satisfaction and well being. For this reason comparative research on KM practices that would contrast different regions of the world will undoubtedly generate promising expectations vis-à-vis our global understanding of KM.

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Due to the development of mobile and Web 2.0 technology, knowledge transfer, storage and retrieval have become much more rapid. In recent years, there have been more and more new and interesting findings in the research field of knowledge management. This book aims to introduce readers to the recent research topics, it is titled "New Research on Knowledge Management Applications and Lesson Learned" and includes 14 chapters. This book focuses on introducing the applications of KM technologies and methods to various fields. It shares the practical experiences and limitations of those applications. It is expected that this book provides relevant information about new research trends in comprehensive and novel knowledge management studies, and that it serves as an important resource for researchers, teachers and students, and for the development of practices in the knowledge management field.

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