Faculty International Human Capital as a Resource of Competitive Advantage in Business Schools. The Case of a Mexican Private School

1. Introduction

In the era of global economy, knowledge-based services, such as universities are becoming important sectors of the service industry, since they play a key role in creating and disseminating knowledge through teaching, research, and related services that cross domestic borders providing a myriad of opportunities for theoretical and empirical research (Javalgi & Grossman, 2014).

The provision of excellent service by frontline employees is an important means whereby many firms develop sustained competitive advantage (Schneider & White, 2004). Human capital, defined as a unit's composition of employees' knowledge, skills, and abilities (KSAs), can be a particularly critical determinant of a unit's service provision. According to the resource-based view (Barney, 1991; Wernerfelt, 1984), resources that are rare and valuable create competitive advantage, but resources that are also inimitable and non-substitutable create sustained competitive advantage (Barney, 1991).

In fact, Styles, Patterson and La (2005) found that professional reputation, high levels of technical skills among staff, and international experience are important international performance drivers for service firms.

Moreover, the presence of professional staff and personnel responsible for specific aspects of internationalization is seen as highly important in achieving internationalization. In many countries, internationalization activities are now recognized as highly specialized activities that require professional staff with proper academic training and years of international education experience (Paige, 2005).

In an industry as labor-intensive as higher education, the effective use of human resources is critical (Smith & Ferris, 1990). Unfortunately, most of the research on higher education internationalization has focused on the organization per se, and not on their faculty. Additionally,

most of the instruments developed to measure internationalization are for the whole institution and their faculty section considers only certain aspects as research, or they are highly customized for a specific institution. In as much as no instruments were found to measure faculty internationalization for a business school in a Latin-American context, there exists the need to design one that helps to determine faculty´s human capital resource (international knowledge, skills, and abilities) as a source of competitive advantage for institution´s internationalization process.

Human resources can be viewed as potentially valuable, rare, and non-substitutable resources because they are scarce, specialized, and hold tacit knowledge (Coff, 1997). Thus, study human capital accumulations is challenging because it is difficult to identify the precise aspect of the advantage and to replicate how it was assembled (Shaw, Park & Kim, 2013).

The objective of the study is to determine/identify the faculty`s human capital resources (knowledge, experience and skills) that represent a sustained competitive advantage for business school's internationalization according the Resource-Based View theory (RBV) and Strategic Human Resource Management (SHRM) literature. Additionally, we identify and describe faculty groups according their international profile, since we wanted to offer different recommendations according group characteristics. In order to do so, we analyzed knowledge service studies together with higher education literature with the purpose of creating a questionnaire regarding several aspects of faculty internationalization such as: 1) organization and participation of student´s abroad academic trips and courses; 2) English skills; 3) professional experience outside Higher Education Institutions (HEI); 4) employment of technological tools (chats, forums, and videoconferences) for internationalized courses; 5) participation on research activities (publication, conferences, memberships, research projects, etc.); 6) visiting professor activities; 7) academic degrees and training abroad; and 8) participation on home internationalization activities.

The unit of analysis consists of the professors from the University of Monterrey Business School. We had 83 participants from a total of 111 academics. We selected principal components analysis (PCA) and multiple correspondence analysis (MCA) in order to reduce the number of variables and grouped them in factors. Afterwards, we choose the two-step cluster analysis technique in order to group faculty according to international factors obtained from the PCA and

MCA together with other demographic faculty variables such as type of contract, and academic department.

We want to answer the question: What are the faculty's international human capital resources (knowledge, skills, and experience) that represent a resource of sustained competitive advantage for University of Monterrey's (UDEM) Business School internationalization process?

The study contributes to the employment of the RBV theory and SHRM literature with the aim of analyzing faculty internationalization KSAs as a mean of sustained competitive advantage for business school's internationalization process. Moreover, it contributes to the very inexistence and almost theoretical contributions regarding faculty internationalization in higher education research. In addition, the study contributes to human capital research regarding the debate about the firm-specific skills vs. firm-general skills as a sustained competitive advantage (Campbell, Coff, & Kryscynski, 2012).

The value of this paper for directors in private higher education institutions located in a similar context (e.g. Latin America) is that they can employ the proposed instrument in order to determine which faculty´s knowledge, skills and experience represent a source of sustained competitive advantage for the business schools internationalization process, allowing schools to align internationalization initiatives and strategies. Additionally, HR executives may detect which professors play an important role in the success in the internationalization process, analyze their group belonging characteristics and offer them development options and opportunities in order to make them stay in the business school. Additionally, for Human Resource managers in higher institutions, this study could complement faculty´s profile and CV information for institutional career developing plans. They might also consider the internationalization involvement as an element for job promotion. For faculty, this research contributes to create better awareness among academics concerning their actual status regarding internationalization, as well as career planning and aspirations.

The study is organized as follows: first, we provide the theoretical conceptual framework; second, we describe the study methodology; third, we describe the obtained results; fourth, we present a discussion section regarding the general vs. firm specific human capital resources; fifth, our conclusions, limitations and future research lines are presented.

2. Conceptual framework

2.1. Human capital as a resource for sustained competitive advantage

The notion that sustained competitive advantage of organizations can be driven by the accumulation of high quality human resources is prevalent in the literature (e.g., Coff, 1997, 2002; Coff & Kryscynski, 2011; Ployhart, Weekley, & Baughman, 2006; Prahalad, 1983). The focus on human capital as a source of competitive advantage has intensified the need for organizations not only to understand and win the talent war (Gardner, 2005), but to an understanding of tighter integration in the fields of strategic management and strategic human resource management (SHRM) often through the lens of the resource-based view (RBV).

The RBV states that a firm develops competitive advantage by not only by acquiring but also developing, combining, and effectively deploying its physical, human and organizational resources in ways that add unique value and are difficult for competitors to imitate (Barney, 1991). The RBV serves the SHRM field in two ways: 1) it emphasize the role of human resources in questions of strategy, raising the importance of research and practice in SHRM, and 2) it encourages a more relevant focus for HRM, away from the HR practices themselves and toward their effect on firm resources (Wright, Dunford, & Snell, 2001).

Barney (1991) in his seminal paper regarding the RBV theory, establishes that firms possess three different types of resources: 1) physical capital resources, 2) human capital resources, and 3) organizational capital resources. Since our unit of analysis is faculty, we will focus on human capital resources, which according to the author consist of training, experience, judgment, intelligence and relationships of individual managers. These resources can be a source of competitive advantage when they implement a value creating strategy not simultaneously

implemented by any current or potential competitor. Moreover, they represent a sustained competitive advantage when current and potential competitors are unable to duplicate that strategy.

In fact, Barney (1991) argued that sustained competitive advantage derives from the resources and capabilities a firm controls that are valuable, rare, imperfectly imitable, and not substitutable. Valuable resources exploit opportunities and/or neutralizes threats in a firm´s environment. Rare, denotes the rare resources in firm´s current and potential competition. Imperfectly imitable resources are due to: 1) unique historical circumstances of a firm´s founding (e.g. firm facilities, organizational culture, a group of scientists); 2) casual ambiguity, happening when all competing firms and the firm itself has an imperfect understanding of the link between the resources controlled by a firm and a firm´s competitive advantages; and 3) social complexity, occurs when only a few competing firms have a special characteristic as reputation and quality recognition. Finally, substitutability, means that a firm's resources require a source of sustained competitive advantage in that there must be no strategically equivalent valuable resources that are themselves either not rare or imitable.

Strategic HRM researchers suggest that investments in HRM practices enhance the key elements of sustained advantage found in the RBV. Organizations can use training, sophisticated selection, financial incentives, and other practices to increase the value, rareness, non-substitutability, and inimitability of the human capital pool. In high investment organizations, HRM practices are used as tools for building a workforce that creates competitive advantage (Delery & Shaw, 2001). In contrast, in low investment organizations, HRM practices do little to develop long-term human capital; the organization treats the workforce as a commodity and gives individuals little opportunity or ability to create sustained competitive advantage. Instead, such organizations pursue advantage by other means such as superior technology, finances, or physical resources (Delery & Shaw, 2001). In our case, business schools can be viewed as a high investment people organization since it is an educational service, where faculty and administrative employees play an important role in the service production and delivery.

In fact, service employees are considered core employees because their performance adds value to their firms and they represent the largest group of non-managerial employees (Batt, 2002;

Delery & Shaw, 2001; Osterman, 1994). Service employees fill roles spanning the boundary between a firm and its customers. The provision of service is fairly unique in that it involves direct interaction with customers and co-production. A customer's service experience is "consumed" in conjunction with its manifestation by employees, which makes service behavior intangible. Customer service employees thus have a strong influence on customer satisfaction, loyalty, and purchase behavior (Liao & Chuang, 2004; Lovelock & Wirtz, 2004; Schneider, White, & Paul, 1998).

The provision of excellent service by frontline employees is an important means whereby many firms develop sustained competitive advantage (Schneider & White, 2004). Human capital, defined as a unit's composition of employees' knowledge, skills, and abilities (KSA), can be a particularly critical determinant of a unit's service provision (Ployhart, Van Iddekinge & Mackenzie, 2011).

Professionals gain knowledge through formal education (articulable) and through learning on the job (tacit). Articulable knowledge can be codified and thus can be written and easily transferred (Liebeskind, 1996). Tacit knowledge is not articulable and therefore cannot be easily transferred. Tacit knowledge is integral to professional skills (Teece, Pisano & Shuen, 1997). As a result, tacit knowledge is often unique, difficult to imitate and uncertain. Professionals who provide services are often required to have extensive education and training prior to entering their fields. This education and training usually provide a high level of articulable knowledge in the field of specialty together with the tacit learning on the job activities (Hitt, Bierman, Shimizu, & Kochhar, 2011).

Human capital resources are represented by training, experience, skills, relationships, and insight of individual managers and employees in a firm. Similarly, human capital is defined as the know-how, information, and general capabilities that employees bring to bear on behalf of the firm through their employment relations (Galunic & Anderson, 2000). Capabilities and/or professional knowledge and skills are specific stemming from past experience/practice that allow organizations to perform certain tasks (Hitt, Bierman, Uhlenbruck & Shimizu, 2006). In addition, employee´s

skills and international experiences are important as firms enter new markets, expand the scale and scope of existing markets/regions, and increase revenue (Javalgi & Grossman, 2014).

Brooking (1996) considered human capital the most dynamic employee-related capital within organizations, which comprises six categories: 1) educational levels, 2) job-related licenses/qualifications, 3) job-related knowledge, 4) job potential, 5) personality traits, and 6) job-related abilities. More recently, Yen (2013) measured the human capital of top members' management teams in banks based on: imitation ability, open-mindedness/vision, experiences, professional knowledge, professional skills, execution, and functional diversity. Yen´s (2013) results revealed that at the individual level, knowledge, education, skills, and abilities are the most important elements in human capital.

Human capital researchers (Becker, 1964; Becker, 1993; Flamholtz & Lacey, 1981) argue that human capital is composed of generic and specific human capital, since employees can develop either general skills that are easily transferable to other firms or firm-specific skills that are valuable within the focal firm but harder to apply elsewhere. Generic human capital is defined as human capital resources that are valuable and transferable across a variety of firms. The most common examples of general human capital are the skills gained through education and general business experience. For example, all firms have the potential to accrue equal value from acquiring employees with knowledge of general management, the ability to apply financial rations, or general cognitive ability. Specific human capital is defined as human capital resources that are tied to a particular industry or context or to a particular firm and has little relevance to other industries/contexts or firms. It refers to worker-level knowledge, skills and abilities that have limited applicability outside the focal firm. For example, the knowledge of how to use a particular technology used only by one firm or knowledge of a firm´s policies and procedures provide value to that firm but usually would not be valuable to other firms.

Human capital theory specifies three principles (Becker, 1964; Tsang, Rumberger & Levine, 1991): a) investment in employee development in terms of skills and knowledge is justified only when future productivity exceeds the cost; b) firms should invest in employee firm specific

skills and knowledge, whereas general skills should be developed by the employee; c) organizations need to protect their human capital from being transferred to other firms.

General skills are important because, they are necessary for maintaining competitive parity and gives employees employability in the market. Furthermore, a firm can gain competitive advantage through obtaining the highest level of general skills (e.g. having a great visionary leader in the company).

Even though, Barney and Wright (1998) argue that greater potential for sustainable competitive advantage stems from investments in firm-specific skills. These skills cannot be easily duplicated by competitors, they provide value to the firm, but they are not easily marketable by the employees who possess them. Firms can accomplish this through investing in constant training and development of employees to perform work processes and procedures that are specific to the firm. So, the firm gathers the advantages from these firm-specific skills while providing employees with the opportunity for growth and development.

Specific human capital has also been divided into industry/context specific and in firm specific context. Industry/context human capital is specific for certain context or industry (e.g., industry experience, functional experience, general management experience) (Kotter, 1982) and utilized across similar contexts (Amit & Schoemaker, 1993). Yet firm specific human capital is specific for certain companies or institutions (e.g., context specific experience, firm specific procedures, routines, and practices) and are not usually appreciated by other companies or institutions (Hatch & Dyer, 2004; Le, Kroll, & Walters, 2013). Firm specific human capital is that which can be applied to a particular firm. This, firm specificity is one potential isolating mechanism since firm-specific resources cannot be redeployed in other organizations. Hence, firm-specifics have been closely tied to the theory of competitive advantage as a driver of distinctive capabilities (Amit & Schoemaker, 1993).

Thus, human capital ranges from highly generalized knowledge and skills to context specific knowledge and skills to sets of knowledge and skills that are applicable only in a single firm creating “isolating mechanisms” (Dyer & Singh, 1998, p. 671) and resulting in resource

heterogeneity and resource immobility (Barney, 1991) that lie at the core of a firm's competitive advantage (Rumelt, 1984). This is the reason not all forms of human capital resources are considered equally important. In fact, Barney and Wright (1998), mentioned that generic human capital is expected to be valuable and potentially rare, but unit-specific human capital is expected also to be inimitable and nonsubstitutable. Thus, several authors argue that only unit-specific human capital is considered to be capable of creating sustained competitive advantage (e.g., Hatch & Dyer, 2004). However, general human assets can be the source of advantage if they are rare, have no strategic substitutes, and retainable over time (Coff, 1997).

Finally, many scholars have been critical of resource-based scholarship for being ambiguous about temporal dynamics and using cross-sectional models (e.g., Armstrong & Shimizu, 2007; Priem & Butler, 2001). These criticisms are particularly relevant to the service industry, where human capital resources tend to be highly dynamic.

2.2. The importance of faculty internationalization in the service and higher education literature

Given the reliance on knowledge intensity embodied in a professional workforce, the service literature emphasizes the importance of internal knowledge embodied in human capital. Malhotra (2003) argues that it is the combination of the individual (personal contacts, relationships and host-country knowledge of individual employees), team, and organizational knowledge within the firm that constitutes a source of advantage when internationalizing.

Previous business studies have conceptualized human capital as intangible capabilities or resource endowment that significantly influences the firm´s international performance (Cavusgil & Naor, 1987; Javalgi & Todd, 2011). Other empirical studies have shown that individual/decision maker characteristics such as employees´ international experiences and foreign market knowledge influence international performance of firms (Cavusgil & Naor, 1987; Ruzzier, Antoncic, Hisrich & Konecnick, 2007). Recently, Javalgi and Grossman (2014) found that among the most important variables for an MBA program, internationalization was human capital (measured by faculty experienced in teaching internationally), together with program reputation, attitude of management toward internationalization, and host market attractiveness.

According to higher education literature, global impact has challenged faculty members to think about internationalization in the context of their respective disciplines and has influenced how they engage in the process of internationalization and, specifically, how they internationalize their curriculum (Agnew, 2013). Still, the student body has become more international in composition and orientation, demanding a more international experienced faculty (Elliott & Robinson, 2012). Furthermore, faculty members are also assuming new roles for research-intensive universities as part of team-oriented, cross-disciplinary, and international partnerships.

Egron-Polak and Hudson (2014) reported in The International Association Universities Global Survey that faculty members are ranked in third place as the most important international driver of internationalization just after the head of the institution and the international office. Actually, faculty is considered as the key asset of any educational institution and clearly of market oriented business schools since it is the faculty who translate the well-designed mission and curriculum into the global competency of students (Ma & Trigo, 2011).

Definitely, having an international professoriate is important in global business schools (Lorange, 2003). Faculty who participate in short-term overseas teaching assignments contribute to their own institutions´ internationalization process in teaching, research, and service opportunities (Bao & Ferrara, 2009).

Other benefits for home institutions having faculty teach in another country are: 1) faculty development and enhanced learning for students, greater cultural awareness, 2) gaining intercultural experience, becoming more tolerant to different views, bringing new ideas, inspirations, benchmarks, creating contacts for research activities, and 3) professors return re-motivated for changes and with fresh ideas (Clinebell & Kvedaravičienė, 2013)

Specifically, personal benefits for faculty when teaching internationally are: 1) career advancement, 2) new contacts, 3) new experience, 4) extra money, 5) good practices to be implemented in the home institution, 6) benefits to CV from a number of entries, 7) many friends

and experiences, 8) more contacts for research purposes, and 9) experiencing different learning environments/standards (Clinebell & Kvedaravičienė, 2013).

Unfortunately, most of the research on the topic of higher education internationalization has been directed at organizational internationalization (Sanderson, 2008). This has left a significant gap in the literature with respect to how internationalization is understood or engaged in at the level of the individual faculty member.

Moreover, historically, the term "internationalization" has most often referred to the physical mobility of faculty (and students) across national borders. This is the reason that most previous literature on faculty internationalization is mostly descriptive. On the other hand, the majority of the investigations consider as a unit of analysis faculty working on American, British or Canadian educational institutions.

Academic publications have studied faculty internationalization from different perspectives. Richardson and McKenna (2003) explore the decision of 30 British academics in four different countries to take an overseas appointment and how they evaluate that appointment in retrospect in terms of upward career mobility. Agnew (2013) examines how faculty members think about internationalization in the context of their respective disciplines, arguing that the ways in which faculty members think about internationalization may influence how faculty members engage in the process of internationalization and how to internationalize their curricular content. Finkelstein, Walker, and Chen (2013) developed and tested a theoretical framework for explaining faculty decisions to add an international dimension to their academic activity. Friesen (2013) explore the understanding and motivations of five Canadian faculty members toward their involvement in institutional internationalization strategies. Jiang and Carpenter (2013) investigate the difference in the process of higher education internationalization across faculties in a UK university and identify faculty-specific factors through evaluating the four faculties. Finally, Salt and Wood (2014) examine the staffing issues likely to be faced by UK universities as their international campus presence grows on the basis of the experience of establishment multinational enterprises (MNEs).

2.3. Tools and elements for assessing faculty internationalization

In most countries worldwide, interest in evaluation of the performance and quality of higher education has exploded during the past 20 years. Internationalization has become an increasingly important aspect of higher education and continues to move from the margins to the center of the academic enterprise.

In fact, directors of higher education institutions are increasingly striving to internationalize their institutions for economic, political, academic, and sociocultural rationales (Hudzik, 2011), and thus, need to assess and monitor their efforts. At the same time, both public and private educational institutions are being held increasingly accountable by stakeholders such as parents, community, and the society itself, giving rise to the importance of conducting performance assessments (including internationalization assessment) in higher education institutions (Brennan & Shah, 2000). In particular, the assessment of internationalization is important in several contexts: as a component of overall institutional performance; to judge the effectiveness of an institution's internationalization strategy; to benchmark with other institutions to compare with past and future performance; and to improve internationalization programs and practices (Green, 2012).

Beerkens et al. (2010) pose three important interrelated developments as causes of the increased demand for better data on internationalization: 1) internationalization has become a more complicated and more comprehensive process, 2) the emergence of an accountability culture in higher education based on evaluations, and 3) as indicators to profile institutions as a result of increased global competition including rankings and league tables in higher education.

In the past years, we have witnessed a strong growth in the number of tools and studies that aim to identify the ultimate manner to assess internationalization (de Wit, 2010). This fact is particularly valid for instruments developed by national higher education associations in order to provide a comprehensive instrument for home institutions with a section for faculty. Additionally, there are faculty internationalization instruments/approaches developed by universities and academic researchers. Unfortunately, tools for measuring/describing specifically faculty´s internationalization are scare, and sometimes vague and incomplete. For these reasons, we searched

for literature (international studies/reports, academic investigations and institutional documents) focused on measuring/describing faculty internationalization variables that help us to identify faculty´s KSAs involved in internationalization.

Instruments developed by national higher education institutions regarding internationalization can be found in Brazil, United States, Canada, Europe, Oceania, and Asia. The University of Sao Paulo in Brazil published a study regarding the Brazilian Academic Profession (Balbachevsky et al., 2009). Developments in the US involve the work of Altbach (1996) for the Carnegie Foundation studying the American Academic Profession, Green and Olson (2003) research for the American Council on Education (ACE), the most recent American Council on Education study (ACE, 2012), and the International Business Education Index (IBEX) questionnaire developed by Hult and Motz (2012). In Canada the Association of Universities of Canada (AUCC) (2014) has recently published a report regarding universities' internationalization processes. In Europe, important contributions can be found in Germany (Brandenburg & Federkeil, 2007), Norway (Vabø, 2010), Netherlands (Netherlands Flemish Accrediting Association NVAO, 2011; Netherlands Organisation for International Cooperation Nuffic, 2012), Belgium (Netherlands Flemish Accrediting Association NVAO, 2011), and United Kingdom (Locke & Bennion, 2010). There is also an increasing interest in Australia (Coates et al., 2009) and New Zealand (McInnis, Peacock, Catherwook & Brown, 2006). In addition, higher education institutions from Asia are also very interested in measuring the internationalization efforts of their intuition, an example is Japan (Research Institute for Higher Education RIHE, 2008). Other international efforts conducted by international organizations that have considered several countries in their studies are Kogan and Teichler (2007) for UNESCO, Green (2012) for the International Association of Educators (NAFSA) and Egron-Polak and Hudson (2014) for the International Association of Universities (IAU).

There are also some academic papers where authors describe the internationalization process of institutions and faculty located in Taiwan (Chin & Ching, 2009), Japan (Arimoto, 2010; Huang, 2009; Paige, 2005), China (Ma & Trigo, 2011), United States (Cort, Das, & Synn, 2005; Dewey & Duff, 2009; Javalgi & Grossman, 2014), and Canada (Knight, 2004). Moreover there are doctoral theses in the USA studying faculty internationalization perceptions (e.g. Clark, 2013;

Criswell, 2014), and academic studies considering institutions from various countries (Kwok & Arpan, 2002). Finally, institutional efforts, mainly from US universities have also been studied (Agudelo et al., 2014; California State University, 2008; Central Connecticut State University, 2009; Pynes, Pubantz, Schmitz & Campo, 2011; University of Minessota Duluth, 2013).

In order to analyze all faculty internationalization variables found in literature, we developed a table with the study´s variables, the scale employed, and the author´s name and publication year (table 8). Faculty international measures were grouped according to the following areas: 1) foreign languages, 2) research activities, 3) teaching activities, 4) support on students' study abroad programs, 5) participation in internationalization home activities, 6) professional experience outside HEI, 7) education and training, and 8) awards and honors.

Table 1 Faculty internationalization measures.

Element	Variables	Scale	Author(s) (year)
Foreign languages	**Foreign language master/proficiency** 1) Have you give classes in a foreign language in the past three years? 2) Do you speak a language other than English?, 3) In what non-English language(s) do you have competency and how would you describe your level of foreign language ability? 4) Describe your foreign language skills, 5) Number and proportion of faculty who are multi-lingual, 6) Out of all staff members in the unit, what is the proportion with a command of at least one foreign language at level C1 or C2 of the Common European Framework of Reference for Languages? Out of all positions in the unit, what proportion has foreign language skills as a requirement?; In a given year, what proportion of the unit's academic staff members follows a foreign language course in a language other than English? 7) How would you evaluate staff members´ international experience, intercultural competences and language skills, 8) What is your level of proficiency in a language other than English?	1) Yes/No 2) Yes/No) 3) The foreign language and the level (from basic to fluent) 4) Description of foreign language skills 5) Number and proportion 6) Proportion 7) Likert scale (unsatisfactory, satisfactory, good or excellent) 8) Likert scale (basic, intermediate, fluent).	1) Balbachevsky, Schwartzman, Novaes, Felgueiras & Birkholz (2009) 2) California State University (2008) 3) Central Connecticut State University (2009) 4) Dewey & Duff (2009) 5) Green (2012) 6) IMPI (2012) 7) NVAO (2011) 8) University of Minessota Duluth (2013)

Element	Variables	Scale	Author(s) (year)
Research activities	**International publishing** 1) Have you researched outside of the US?, 2) How many scholarly contributions have you completed in the past 3 years?, 3) Proportion of your work is published abroad, 4) Number of international publications per researcher, 5) Have you conducted research abroad?, 6) Have conducted international research abroad?, 7) How many international publications do you have? , 8) Percentage of international research collaboration, 9) Do you are highly involved on research? , 10) Number of articles or books published abroad, 11) Have you published articles? , 12) How many publications do you have outside your country? , 13) Do you published internationally?, 14) List all the scholarly contributions that you have completed in the past three years?, 15) Have your participated in a semester- or year-long study abroad programs, including internships, research projects, and coursework, 16) Have you participated in collaborative international research?, 17) Have you conducted research or engaged in other professional activity in your discipline outside the United State?, 18) What percentage of all scientific articles published by Norwegian researchers were co-authored by international colleagues?	1) Yes/No 2) Number 3) Proportion 4) Number 5) Yes/No 6) Yes/No 7) Number 8) Percentage 9) Yes/No 10) Number 11) Yes/No 12) Number 13) Yes/No 14) Number 15) Yes/No 16) Yes/No 17) Percentage	1) Agudelo, et al., (2014) 2) Arimoto (2010) 3) Balbachevsky et al. (2009) 4) Brandenburg & Federkeil (2007) 5) California State University (2008) 6) Cort, Das & Synn, (2005) 7) Dewey & Duff (2009) 8) Egron-Polak & Hudson (2014) 9) Finkelstein et al. (2013) 10) Huang (2009) 11) Hult & Motz (2012) 12) Locke & Bennion (2010) 13) Nuffic (2012) 14) RIHE (2008) 15) Pynes, et al. (2011) 16) University of Minessota Duluth (2013) 17) Vabø (2010)
Research activities	**International research projects** 1) Have you done international research collaboration in the last 3 years?, 2) Do you have done research collaboratively with international colleagues, 3) Number of international research projects with international cooperation partners, 4) Do you have high involvement in research?, 5) Have you conduct joint research initiatives , 6) Out of all the researchers in the unit in a given year, what	1) Yes/No 2) Yes/ No 3) Number 4) Yes/No 5) Yes/No 6) Proportion 7) Yes/No 8) Yes/No	1) Balbachevsky et al. (2009) 2) Bennion & Locke (2010) 3) Brandenburg & Federkeil (2007) 4) Finkelstein & Chen (2013) 5) Knight (2004) 6) IMPI (2012) 7) Locke & Bennion (2010) 8) Vabø (2010)

Element	Variables	Scale	Author(s) (year)
	proportion has spent at least one semester conducting research abroad at any point in time during their period of employment at the unit?, 7) Does your primary research has an international scope or orientation?, 8) Do you do co-authorship research?		
Research activities	**International conferences** 1) Percentage of faculty who travel to meetings or conferences abroad, 2) Have you attended to academic international conferences abroad? , 3) Number of international conference contributions per professor/researcher, 4) Have you given a paper at an international conference? , 5) Have you attended a conference outside of the US?, 6) How frequent do faculty members attend international conferences and seminars? , 7) How many faculty participated in conferences?, 8) Have you attended to an internationally oriented meeting or conference?, 9) In a given year, out of all of the unit's academic staff members, what is the proportion that attends at least one international conference or seminar?, 10) How many international conferences and seminars have you attended?, 11) Have you attended to conferences? , 12) What percentage of faculty have participated in international conferences or other meetings? 13) How many conferences have you attended in the last ten years?	1) Percentage 2) Yes/No 3) Number 4) Yes/No 5) Yes/No 6) Likert scale (never to very frequent) 7) Number 8) Yes/No 9) Proportion 10) Number. 11) Yes/No 12) Percentage 13) Number	1) ACE (2012) 2) Agudelo, et al., (2014) 3) Brandenburg & Federkeil (2007) 4) California State University (2008) 5) Cort et al. (2005) 6) Criswell (2014) 7) Dewey & Duff (2009) 8) Hult & Motz (2012) 9) IMPI (2012) 10) Knight (2004) 11) Pynes, et al., (2011) 12) University of Minessota Duluth (2013) 13) Vabø (2010)
Research activities	**Serving on an international academic board or committee, reviewer or editor** 1) In a given year, out of all of the unit's academic staff members, which proportion of the academic staff members are a committee or board member of an international academic or professional association? 2) Have you served as a peer reviewer, member of national/international scientific/boards/bodies, or as an editor of	1) Proportion 2) Yes/No 3) Yes/No	1) IMPI (2012) 2) Locke & Bennion (2010) 3) RIHE (2008)

Element	Variables	Scale	Author(s) (year)
	journal/books series? 3) Have you served as a member of national/international scientific committees/boards/bodies?		
Research activities	**Membership of international academic or professional association** 1) Are you member of an international benchmarking initiative/club?, 2) Do you belong to an international business association?, 3) In a given year, out of all of the unit's academic staff members, which proportion of the academic staff members are members of at least one international academic or professional association?, 4) Have you served as a member of national/international scientific/boards/bodies?	1) Yes/No 2) Yes/No 3) Proportion 4) Yes/No	1) Brandenburg & Federkeil (2007) 2) Cort et al. (2005) 3) IMPI (2012) 4) Locke & Bennion (2010)
Research activities	**International funding to conduct research** 1)Have you received international funding to conduct research or present a paper abroad?	1) Yes/No	1) California State University (2008)
Teaching activities	**Taught abroad as visiting professor** 1) Percentage of faculty teaching at institutions abroad, 2) Have you taught outside of the US?, 3) Have you taught abroad?, 4) Have you participated in international teaching?, 5) Have you have short term or long term appointments as visiting instructor?, 6) Have you taught for a short-term term (least 3 months) period abroad in the previous year? 7) How would you evaluate teaching of courses abroad?, 8) In a given year, what proportion of researchers in the unit goes abroad as visiting researchers for some period of time?, 9) Percentage of business school faculty experienced in teaching internationally in the MBA program, 10) What percentage of faculty have teaching experience outside the U. S.?	1) Percentage 2) Yes/No 3) Yes/No 4) Yes/No 5) Yes/No 6) Yes/No 7) Likert scale(1 not important, 5 very important) 8) Proportion 9) Percentage 10) Percentage	1) ACE (2012) 2) Agudelo, et al., (2014) 3) Cort et al. (2005) 4) Criswell (2014) 5) Dewey and Duff (2009) 6) Egron-Polak & Hudson (2014) 7) Kwok & Arpan (2002) 8) IMPI (2012) 9) Javalgi & Grossman (2014) 10) University of Minessota Duluth (2013)

Element	Variables	Scale	Author(s) (year)
Teaching activities	**Technology employed for courses** 1) Have your institution offered workshops on using technology to enhance international dimensions on teaching, 2) Do you employ technology for internationalizing your courses?	1) Yes/No 2) Yes/No	1) AUCC (2014) 2) Pynes, et al., (2011)
Teaching activities	**Hosting visiting international faculty** 1) What percentage of faculty hosted visiting international faculty? 2) Have you lived with or hosted an international guest?	1) Percentage 2) Yes/No	1) ACE (2012) 2) Pynes, et al., (2011)
Teaching activities	**International students in class** 1) When I have international students in my classes, I encourage them to share their experiences?, 2) Do you have international students in the class(es) you teach?, 3) Have you worked with international students?	1) Yes/No 2) Yes/No 3) Yes/No	1) California State University (2008) 2) Clark (2013) 3) Pynes, et al., (2011)
Teaching activities	**Incorporated international/global topics in courses** 1) Do you incorporate international/global topics in to one or more of your courses?, 2) Do you teach international related coursework?	1) Yes/No 2) Yes/No	1) California State University (2008) 2) Pynes, et al., (2011)
Support on students´ abroad programs	**Traveling with students for an academic purpose (course, visit)** 1) Percentage of faculty leading students on study abroad programs, 2) I have taken students abroad on a faculty-led study abroad class 3) I have led a student study abroad program. 4) I have led undergraduate students on study abroad, 5) Have you led students abroad?	1) Percentage 2) Yes/No 3) Yes/No 4) Yes/No 5) Yes/No	1) ACE (2012) 2) California State University (2008) 3) Cort et al. (2005) 4) Hult & Motz (2012) 5) Pynes, et al., (2011)
Participation on internationaliza-tion home activities	**Organize events with international scholars, performers** 1) I have organized events with international scholars, performers, 2) In a given year, what proportion of international conferences are organized	1) Yes /No 2) Proportion 3) Yes/Partly/No	1) California State University (2008) 2) IMPI (2012) 3) Nuffic (2012)

Element	Variables	Scale	Author(s) (year)
	by the unit's staff members?, 3) Do you organize international conferences?		
Professional experience outside HEI	**International professional experience outside HEI (company, consulting, social service agencies, politics)** 1) Have you participated in service activities outside of the US?, 2) Number of professors with international professional experience outside the HEI; Proportion of professors with international professional experience outside the HEI relative to the total number of professors, 3) Where you in peace corps?, 4) Percentage of faculty members with at least one year experience working abroad, 5) Have you worked in an international position (e.g., overseas assignment, internationally oriented position for a firm in the U.S., etc.)?, 6) Out of all the researchers in the unit in a given year, what proportion engages in at least three months of professional experience abroad?, 7) Importance of faculty´s international activities in consulting, 8) Have you participated in service activities abroad?	1) Yes/No 2) Number/Proportion 3) Yes/No 4) Percentage 5) Yes/No 6) Proportion 7) Likert scale (1 not important,/ 5 very important) 8) Yes/Partly/No	1) Agudelo, et al., (2014) 2) Brandenburg & Federkeil (2007) 3) California State University (2008) 4) Egron-Polak & Hudson (2014) 5) Hult & Motz (2012 6) IMPI (2012) 7) Locke & Bennion (2010) 8) University of Minessota Duluth (2013).
Education and training	**International degrees earned** 1) Have you earned at least one degree outside United States?, 2) Number of professors who gained their doctoral degree abroad?, 3) Did you study abroad as a student?,4) Did you participated in a study abroad program as student? Have you attended international business educational workshops/seminars?, 5) Do you have pre-professional international studies?, 6) Number and proportion of faculty and staff educated outside the United States , 7) Proportion of Japanese faculty members that had earn their doctoral degrees in other countries, 8) What proportion of staff members in the	1) Yes/No 2) Yes/No 3) Yes/No 4) Yes/No 5) Yes/No 6) Number and proportion 7) Proportion 8) Proportion 9) Percentage 10) Yes/Partly/No 11) Yes/No 12) Yes/No	1) Agudelo, et al., (2014) 2) Brandenburg & Federkeil (2007) 3) California State University (2008) 4) Cort et al. (2005) 5) Dewey & Duff (2009) 6) Green (2012) 7) Huang (2009) 8) IMPI (2012) 9) Locke & Bennion (2010) 10) Nuffic (2012) 11) Pynes, et al., (2011)

Element	Variables	Scale	Author(s) (year)
	unit obtains a full degree abroad?, 9) Percentage of British professors who studied for their doctorate abroad, 10) Does your institution employs researchers with a foreign higher education degree?, 11) Have you studied abroad?, 12) Do you studied abroad?		12) University of Minessota Duluth (2013)
Awards/Honors	**International awards or honors** 1) Does your institution offer recognition awards specifically for international activity? 2) Have you received international awards /honors?, 3) Does your institution offers specific awards for international activities or partnerships?, 4) Have you received a Fulbright or other international exchange award?, 5) Do you think that faculty members who engage in internationalization should receive granted awards, honors and other professional recognitions?, 6) Does your institution offer a recognition award(s) specifically for international activity?	1) Yes/No 2) Yes/No 3) Yes/No 4) Yes/No 5) Likert scale (strongly disagree to strongly agree) 6) Yes/No	1) ACE (2012) 2) Agudelo, et al., (2014) 3) AUCC (2014) 4) California State University (2008) 5) Criswell (2014) 6) Hult & Motz (2012)

Source: Self-devised.

Most of the revised instruments and literature measure internationalization at an institutional level, and their faculty section consider only one topic (e.g. research), or were highly customized for a certain institution, and none of them were developed for a Latin American context. Since no instruments were found to measure faculty internationalization for a business school in a Latin-American context, there was a need to design one.

This instrument will be helpful in our research to identify faculty`s human resources (general and specific) to further analyze their possible consideration as a source of competitive advantage or sustained competitive advantage for the business school.

In the next section we will explain the methodology and the selection of faculty´s internationalization variables that help us to describe faculty´s human resources (general and

specific) to further analyze their possible consideration as a source of sustained competitive advantage for the business school.

3. Methodology

The unit of analysis is UDEM´s Business School faculty. The University of Monterrey (UDEM) is a Mexican private university, recognized worldwide for its internationalization initiatives[1], especially at a student level[2], and for its national (FIMPES, ANUIES)[3] and international accreditations obtained (SACS)[4] and in process of obtaining (AACSB)[5]. Furthermore, institutional strategic internationalization plan, establishes faculty mobility and resource development as one of its five general elements.

The present investigation employs Churchill´s (1979) approach in order to develop a faculty questionnaire that exhibited content validity (Haynes, Richard & Kubany, 1995). We began our research with a review of RBV, human capital, services and faculty internationalization literature (books, articles, studies, reports, and doctoral thesis), together with internationalization instruments, and UDEM`s business school secondary data (e.g. annual reports, strategic internationalization plans). According to Worthington and Whitaker (2006) survey questions and constructs should be developed based on an examination of the literature in order to enhance content validity of a survey.

Thereafter, we decided to include two methods of indicator validation: a selection of academic deans and a panel of experts, in order to select indicators based on the practice and theory. We conducted qualitative interviews with UDEM´s Business School Dean, Academic Department Deans (Accounting and Finance, Administration and Economics), Internationalization Department

[1] 2009 Heiskell Award for Innovation in International Education for its Strategic Plan for the Internationalization of UDEM.
[2] Intercultural competence coursework program where bachelor students take three cocurricular courses before, during, and after the study abroad experience
[3] FIMPES = Federation of Private Mexican Institutions of Higher Education, ANUIES= Mexican Association of Universities and Institutions of Higher Education.
[4] SACS= Southern Association of Colleges and Schools.
[5] AACSB= Association to Advance Collegiate School of Business.

Dean, and Internationalization Department Coordinator, in order to seek information about various aspects of the internationalization of faculty (e.g. elements, measurements). Additionally, we sent the instrument to an international group of higher education experts. The expert group was formed by nine academics and practitioners in the field as showed in table 9. They were asked to review the questionnaire´s content and to rank, in a scale from "not relevant" to "highly relevant", each segment of the questionnaire. Their recommendations were highly appreciated and allowed us to have a more accurate and valid instrument. We employed an expert sampling, because we wanted to have a sample of persons with known or demonstrable experience and expertise in higher education internationalization (Beerkens et al., 2010). Moreover, expert review can provide feedback that will further enhance the content validity of the survey items (Worthington & Whitaker, 2006).

Table 2 List of experts on higher education.

Name	**Institution**	**Main responsabilities regarding internationalization**
Jocelyne Gacel-Avila	University of Guadalajara (Mexico)	She has a Ph.D. in Higher Education specialized in Internationalization of Higher Education and is currently a professor and researcher at the University of Guadalajara. She's author and coordinator of more than 14 books and 70 scientific publications. She is considered a world expert on internationalization of higher education. Coordinator and author of the World Bank publication: "Higher Education in Latin America: The International Dimension." She has collaborated or been a part of the following institutions: IMHE, OCDE, CONAHEC, AMPEI, UNESCO, NAFSA, World Bank, ACA, among others.
John K Hudzik	Michigan State University (USA)	He is a NAFSA Senior Scholar for Internationalization. A former Vice President in Global Engagement. and Dean of International Studies and Programs.

Name	Institution	Main responsabilities regarding internationalization
Nico Jooste	Nelson Mandela Metropolitan University (South Africa)	He is the Senior Director of the Nelson Mandela Metropolitan University International Education Office. He was selected by AIEA as an International Education Provocateur, placing him on the list of recognized world leaders in the field of Higher Education and Internationalization.
Hans de Wit	Universita Cattolica Sacro Cuore in Milan, (Italy) School of Economics and Management of the Amsterdam University (Netherlands)	He is the director of the Center of Higher Education Internationalization at the Universita Cattolica Sacro Cuore in Milan, Italy and a professor of Internationalization of Higher Education at the School of Economics and Management of the Amsterdam University of Applied Sciences. He's also a private consultant of the De Wit International Higher Education Consultancy.
Francisco Marmolejo	The World Bank	Dr. Marmolejo is the World Bank's Lead Tertiary Education Specialist and Coordinator of its Network of Higher Education Specialists. He serves as the World Bank's focal point on the topic of higher education, and provides advice and support to country-level related projects. He has conducted doctoral work at the National Autonomous University of Mexico (UNAM).
Betty Leask	La Trobe University (Melbourne, Australia)	She is currently a Pro Vice-Chancellor teaching and Learning. She has a Doctorate in Education, is member of the following associations: Australian National Teaching Fellow, Editor-in-chief of Journal of Studies in International Education, Honorary Visiting Fellow at the Centre of Higher Education Internationalization, Visiting Professor at Leeds University, and Chair of IEAA Research Committee.
Darla K. Deardorff	Duke University (Durham, North Carolina, USA)	She is currently an executive director of the Association of International Education Administrators (a national professional organization based at Duke University), where she is a Research Scholar in the Program in Education. Her doctorate degree is on international education.

Name	Institution	Main responsabilities regarding internationalization
		She has published five books including as editor of The Sage handbook of Intercultural Competence.
Jos Beelen	Hogeschool van Amsterdam, School of Economics and Management, Centre for Applied Research on Economics & Management (CAREM) (Amsterdam, Netherlands)	He is currently a full time professor at the Amsterdam University of Applied Sciences, some of his publications are about mobility, and internationalization of curriculum. He also wrote a book in 2007 for the European Association for International Education (EAIE) called Implementing Internationalisation at Home.
Elspeth Jones	Leeds Beckett University (United Kingdom)	She is currently: Emerita Professor of the Internationalization of Higher Education and International Education Consultant. Honorary Visiting Fellow and member of the Scientific Committee at the Center for Higher Education Internationalization at the Università del Sacro Coure, Milan, Italy. Chair, Board of Directors NCUK. Visiting Professor, University of Zagrab. Visiting Professor, Edge Hill University. Editorial board member, Journal of Studies in International Education.

Source: Self-devised.

In the next stage of the research design, results of the qualitative research and expert opinions were combined with the extant literature. An initial draft of the questionnaire was tested through interviews with three professors, one from each academic department (Accounting and Finance, Administration, and Economics). Selection of participants was based on their internationalization activities. Particular emphasis was given to clarity, validity, and relevance issues. Based on Worthington and Whitaker (2006), pilot studies provide feedback that will further enhance the content validity of the survey items.

3.1. Sample

The sample for this study includes faculty members across UDEM´s Business School who taught undergraduate and postgraduate students during spring 2014 semester. Participants include full-time and part-time professors, as well as, faculty having an administrative position.

Data was collected using an email structured self-administered questionnaire (appendix IV). Researchers argue that the merits of this technique are that the respondents are free to respond to the items in the questionnaire in terms of time constraint and content; and the respondents are not under the control of the researcher as compared to face-to-face interviews (Arokiasamy, Ismail, Ahmad & Othman, 2011). The questionnaire was sent on March 2014 to all 111 faculty members across the Business School. The purpose of data collection was explained on the cover of the questionnaire together with instructions and assurance of the confidentiality of the data collected (appendix II). The language used in the instrument was Spanish.

Participants were contacted via telephone and electronic mail communications. Several reminding emails with the instructions and the instrument, were sent to faculty. Email senders included the researcher in charge of the investigation and the business school`s director. Additionally, a printed letter asking for faculty full-time participation was placed in full-time faculty offices. Finally, reminding telephone calls were sent to those who had not completed the instrument for any reasons. The study received eighty three responses (answered questionnaires), from a total of one hundred and eleven professors, producing a response rate of 74.77 per cent.

3.2. Operational measures

The questionnaire considers faculty human capital resources (general and specific) involved in internationalization activities, and faculty general characteristics. Questions, type of human capital resource, and scales, showed in table 10 and 11, are based on literature review (table 8). Scales employed consisted of a yes/no answer, a frequency answer from 1= Never to 4=5 or more times (according to the frequency of international activities carried out by UDEM´s professors), and other quantitative variables expressed by a number (e.g. number of intentional publications).

Table 3 Faculty internationalization human resource variables.

Topic	Variables	Type of human capital resource General vs. specific (industry vs. firm)	Scale
Support in students abroad programs	Organization of courses abroad for students	Firm-specific	1= Never, 2= 1-2 times, 3= 3-4 times, 4= 5 or more times
	Organization of academic trips abroad for students	Firm-specific	
	Participation on academic trips abroad for students	Firm-specific	
English skills	English level	General	1= I don´t know it, 2= Basic level, 3= Intermediate level, 4= Advanced level
	Taught courses in English	General/Industry-specific	1= Yes, 2= No
Professional experience outside HEI	International experience outside HEI (companies, consulting projects, social service, politics, etc.)	General	1= Yes, 2=No
Employment of technological tools	International chats as a tool for internationalizing your course	Specific (firm and industry)	1= Yes, 2=No
	International forums as a tool for internationalizing your course	Specific (firm and industry)	
	International videoconferences for academic purposes	Specific (firm and industry) and General	
Participation in research activities	Number of international academic papers published	Industry-specific	Number
	Number of international books/chapters published	Industry-specific	Number
	Number of international conferences attended as speaker	Industry-specific	Number
	Served at an international professional committee as a reviewer of editor	Industry-specific	1= Yes, 2=No
	Member of an international professional or academic organization	Industry-specific	
	Participation with students on international projects	Specific (firm and industry)	
	Participation with colleagues on international research project	Industry-specific	
Visiting professor	Visiting professor	Firm-specific	1= Yes, 2=No
	Visiting professor hosting	Firm-specific	
Degrees and training abroad	Post-doctorate Doctorate Master	Industry-specific Industry-specific General	1= Yes, 2=No

Topic	Variables	Type of human capital resource General vs. specific (industry vs. firm)	Scale
	Seminars, Courses, Certifications Language courses	General General	
Home internationalization initiatives	Organization of international conferences	Firm-specific	1= Yes, 2=No
	Participation on COIL programs	Firm-specific	

Source: Self-devised.

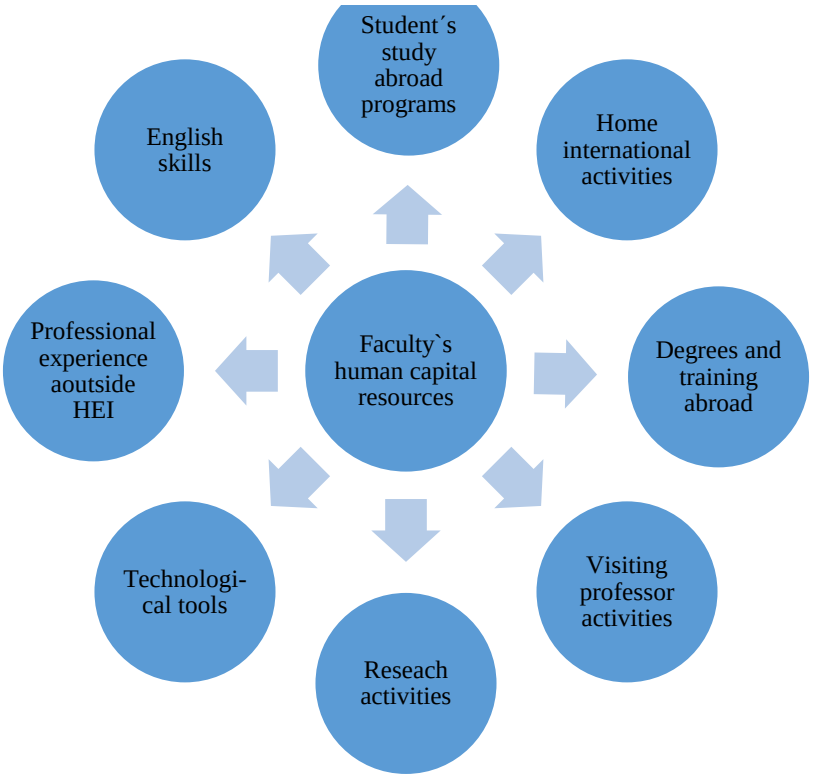
Table 4 Faculty general characteristics variables.

Variable	Scale
Nationality	1= Mexican 2= Foreigner
Number of class(es) taught in the semester Spring 2014	Number
Academic Department	1= Accounting/Finance 2= Administration 3= Economics
Type of contract	1= Full-time 2= Part-time
Gender	1=Female 2= Male
Age	1= 20-29 years old 2=30-39 years old 3=40-49 years old 4=50-59 years old 5= 60-69 years old 6= 70 or older
Last earned academic degree	1= Doctorate degree 2= Master degree
Working places	1= Educational institutions 2= Private enterprise 3= Government 4= Non-profit organization 5= Own business 6= Freelancer
Number of years working at UDEM´s business school	1= Less than 1 year 2= From 1 to 5 years 3= From 6 to 10 years 4= From 11 to 15 years 5= From 16 to 20 years 6= More than 20 years
Number of years as a teacher	1= Less than 1 year 2 = From 1 to 5 years 3= From 6 to 10 years 4= From 11 to 15 years 5= From 16 to 20 years 6= More than 20 years

Source: Self-devised.

Next, based on literature review and information obtained from UDEM`s Business School, we present a selection of variables extracted from table 8 that are related to faculty knowledge, skills and abilities for conducting international activities. They are show in figure 3.

Figure 1 Faculty human capital resources involved in the internationalization process of UDEM´s Business School.



Source: Self-devised.

Participation in students study abroad programs

Higher education studies and academic literature usually consider faculty participation on student´s study abroad programs, as part of the internationalization activities carried out by universities (ACE, 2012; California State University, 2008; Cort et al., 2005; Hult & Motz, 2012; Pynes, et al., 2011). In our study, we also consider the organization of the study abroad program, since there are faculty´s skills and abilities involved in this process also. We employed three variables: 1) the academic trips abroad that faculty organize but do not go, 2) the academic trips and courses were professors travel with a group of students, and 3) the courses abroad that faculty organize but do not go (usually during summer for undergraduate and graduate students and other intensive courses for graduate students only).

In the case of UDEM Business School, the organization of academic trips is usually the responsibility of the business school`s International Department and the faculty, but it is the

professor who usually establishes the relation (via telephone and emails) with the company, the institute or the place that students will visit, as part of a course or as part of an academic trip.

Faculty participation on academic trips is related to a visit to a certain place that a group of students have a special interest in. Professors´ participation on foreign courses resides on accompanying a group of students for a summer course abroad. We consider both faculty type of participations (trips and courses) due to fact that there are few faculty that participates on these activities and must of the time are the same professors.

The organization of courses taught abroad is usually the responsibility of administrative staff (academic program directors) that are also faculty that teach in the business schools. We wanted to separate the organization of academic trips that are usually short term voyages (one week) to the organization of a course abroad, since we consider the activities and abilities involved in each activities varies.

We selected the aforementioned variables in order to illustrate faculty´s human resources involved in the organization and participation of students´ academic trips and courses. In this case we can detect relational skills, together with a process knowledge that involves firm internal procedures and routines. These human resources have been categorized as firm-specific human resources since they are carried out internally by a group of people and using certain resources that make these activities very specific for a certain institution.

English skills

According to studies, proficiency of a foreign language together with the experience of teaching in a foreign language are used indicators of faculty´s foreign language skills (Balbachevsky, et al., 2009; California State University, 2008; Central Connecticut State University, 2009; Dewey & Duff , 2009; Green, 2012; IMPI, 2012; NVAO, 2011; University of Minessota Duluth, 2013).

For our research, the mastery of English as a foreign language was chosen among several options. We also asked for the mastery of other foreign languages (French, Italian, Portuguese, and German), but very few professors were proficient in other foreign languages and none of them have employed foreign languages other than English for academic or professional purposes. For this reason, we just considered the English. Additionally, English is the most common language in Business for teaching and researching, and is usually the first second language of Mexican faculty due to geographical proximity. Moreover, teaching a course in English at the institution or elsewhere was also taken into consideration, since it is highly related to the academic profession and to the English proficiency.

Both variables are related to the knowledge that faculty have regarding English as a foreign language. Additionally, teaching in English is also related to faculty skills and abilities to conduct such activity.

According to human capital literature, English is considered a general human capital element since it is utilized in other institutions and firms, even though in the case of higher education faculty, the majority of the time English is highly specialized and technical according the discipline and this sometimes will set English as an industry human capital element, together with the ability to teach in a foreign language.

Professional experience outside HEI

Besides teaching abroad or conducting research abroad, there are some faculty that have professional experience outside higher education institutions that ask for certain skills and knowledge but also have given them general business knowledge, skills and abilities that can be highly appreciated by business school students. This is the reason several studies have asked their faculty about their participation abroad in a wide range of activities as: international company projects, consulting projects, service agency missions, among others (Agudelo, et al., 2014; Brandenburg & Federkeil, 2007; California State University, 2008; Egron-Polak & Hudson, 2014; Hult & Motz, 2012; IMPI, 2012; Locke & Bennion, 2010; University of Minessota Duluth, 2013).

In our study, we first asked faculty separately to indicate if they have experience abroad with company projects, consulting projects and social services activities. But some of the answers, especially regarding social service participation, were not representative. For this reason, we grouped them into one question which was asking if faculty had professional experience outside higher education institutions. We consider the international experience outside of HEI important because it gives faculty the knowledge, skills and abilities to give better classes at the university based on contemporary business practices and examples. This human capital resource is categorized as general, since it is transferable across other firms and business schools.

Employment of technological tools

The employment of technological tools in academic activities is sometimes very helpful for internationalizing a course (Pynes, et al., 2011). There are several other tools such as international forums, chats, videoconferences, and wikis. Faculty needs to obtain certain knowledge and skills in order to employ them in their courses.

With the aim of measuring the employment of technological tools as a means of internationalizing a course, we asked faculty about their employment of forums, chats and videoconferences (the selection of this tools is used because they are the most employed technological tools among professors at UDEM´s Business School).

The fact that faculty employ a technological tool for internationalizing a course, demonstrate their knowledge and technical skills regarding the technology employed internally in the business school as technological platforms, together with the ability to manage the different tools that these technologies possessed. The human capital resources involved here are firm-specific and in some cases industry-specific if there are a group of educational institutions employing the same technological tools or platforms.

Participation in research activities

Faculty research activities are the most common variables considered in literature. Authors have studied the number of publications, conferences, research projects, service to international academic boards or committees, and the membership of international academic or professional association (e.g. Agudelo, et al., 2014; Arimoto, 2010; Balbachevsky et al., 2009; Brandenburg & Federkeil, 2007; California State University, 2008; Cort et al., 2005; Dewey & Duff, 2009; Egron-Polak & Hudson, 2014; Finkelstein et al., 2013; Huang, 2009; Hult & Motz, 2012; Locke & Bennion, 2010; Nuffic, 2012; RIHE, 2008; Pynes, et al., 2011; University of Minessota Duluth, 2013; Vabø, 2010).

Our research activities were divided into two groups according to variable type (quantitative and qualitative). The quantitative research activities (ratio variables) are related to the number of academic articles and books published, together with the number of international conferences attended. The qualitative research activities (dichotomous variables) consist of faculty participation in international professional committees such as a reviewer or editor, the membership of international organizations, and the involvement on international research projects with other academic partners and students.

The aforementioned variables expressed the knowledge, skills and abilities that professors need in order to conduct those research activities. These variables are considered as industry-specific human capital resources due to the fact that they are highly valuable in the market of higher education, but not in other firms or industries in the market. The collaboration on research projects with students sometimes can be considered as firm-specific human capital resource since it is an internal activity with internal processes and resources that can be very unique.

Visiting professor

In higher education institutions, faculty may teach abroad as a visiting professor (ACE, 2012; Agudelo, et al., 2014; Cort et al., 2005; Criswell , 2014; Dewey & Duff, 2009; Egron-Polak & Hudson, 2014; Kwok & Arpan, 2002; IMPI, 2012; Javalgi & Grossman, 2014; University of

Minessota Duluth, 2013) or receive a visiting professor from abroad to teach part or an entire course, or conduct research that works very close to the home faculty (ACE, 2012; Pynes, et al., 2011).

We considered both activities, the fact that a professor spends time as a visiting professor at an institution abroad, and also hosting a professor from abroad at UDEM, since both are carried out by UDEM´s faculty and are internationalization activities that require particular KSAs embedded in faculty human capital.

Faculty who practice these activities have to coordinate their activities (teaching/research activities) with the hosting institution, so they are considered as firm-specific human resource skills.

Degrees and training abroad

The academic degrees and training abroad give faculty the tools to conduct a wide range of activities at the university and in their professional life in general. This is the reason that researchers have studied them in terms of their impact in an institution's internationalization (Agudelo, et al., 2014; Brandenburg & Federkeil, 2007; California State University, 2008; Cort et al., 2005; Dewey & Duff, 2009; Green, 2012; Huang, 2009; IMPI, 2012; Locke & Bennion, 2010; Nuffic, 2012; Pynes, et al., 2011; University of Minessota Duluth, 2013).

According to Ion (2014), factors associated with successful careers for women researchers are: training for research, interest and motivation, the choices that they have made throughout their careers, the different stages in their academic careers, the time spent abroad, and the role of 'mentors' in assisting the development of their academic profile.

In our questionnaire, we asked faculty to indicate whether they had studied their master or doctorate degree abroad, or if they did post-doc studies abroad; we also included all professional courses, seminar and certifications abroad, together with language courses abroad. The education abroad variables exemplify the knowledge, skills and experience that faculty acquire through these

studies. Except for the PhD and post-doc studies, the rest are general human capital resources, deployable across diverse types of firms and institutions. PhD and post-doc studies are industry-specific human capital resources, since they are highly valuable and transferrable at other educational institutions or organizations.

Home internationalization activities

There are several international activities in which faculty participate at home institutions (California State University, 2008; IMPI, 2012; Nuffic, 2012). In the case of UDEM, professors participate in the organization of international events as congresses and workshops. Additionally, some of them participate on Collaborative Online Programs (COIL), which consists of teaching a course at a home institution in collaboration with a professor of a foreign institution, sharing program content and having online sessions through the course. Moreover, these variables describe the knowledge, skills and experience to conduct international activities at home.

These activities involve the coordination of internal administrative and academic departments, together with intuition's procedures and practices, making them a firm-specific human capital resource.

We decided not to include in the study several international variables shown in table 8. Some of these variables are the international research awards, since only one professor had obtained such recognition and because they are the result of a certain international activity (international research) and not the activity per se; we did not consider international research funds since none of the professors had obtained international funds from an international organization; additionally, having international students in class or including international topics in courses were not considered since they did not help to discriminate among faculty, since the majority of respondents indicated that they had international students in their classes and included international topics in their courses. These are more international variables related to curriculum internationalization than faculty internationalization.

In addition to the aforementioned variables, we asked faculty other general questions related to nationality, number of classes taught, type of contract, gender, age, last earned academic degree, work experience, number of years at UDEM´s business school and number of years as a professor. Table 11 shows these variables.

3.3. Statistical techniques

Regarding statistical techniques, the first stage of the study uses two Factor Analysis techniques: Principal Components Analysis (PCA) and Multiple Correspondence Analysis (MCA) in order to examine the interrelationships between the aforementioned variables and then to explain them in terms of their common underlying dimensions (factors). PCA was employed to summarize the information contained in the full set of research quantitative (ratio) variables into a small number of subsets of factors. MCA was used to group the remaining qualitative (dichotomous and ordinal) variables. The second stage uses the factor scores as continuous variables and faculty characteristics (department and contact) as categorical variables to conduct a Two-Step Cluster Analysis and contingency analysis in order to describe the characteristics of each faculty group.

4. Results

The purpose of the study is to identify faculty human capital resources involved in internationalization process of UDEM business school and to determine if they may represent a sustained competitive advantage for the school. Additionally, we wanted to describe the faculty groups according to their common international human capital resources. Principal component analysis, multiple correspondence analysis and cluster analysis have been applied to faculty human capital resources collected through a questionnaire.

In terms of respondents´ profiles: 47 % were males and 53% females, 69 % were part-time professors and 31% were full-time academics, 28% were professors from the Accounting/Finance Department, 59% from Administration and 13% from Economics. Only 6% of the professors were foreigners. Additional information reveals that 57% of the faculty is less than 50 years old; 76% have a master degree and 24% have a PhD; 83% mentioned they have international experience in

companies and 45% indicated they have their own business. Up to 47% of the participants are relatively new in the business schools since they have not been teaching more than 5 years in the institution. Finally, academics teach approximately two courses per semester.

In the following, we will describe the steps used when applying statistical techniques. First, we wanted to have a valid instrument that measures what it is intended to measure. In order to accomplish instrument validity, the scale employed in this study was based on the extant literature, on experts' opinions and a pre-test of the instrument. Construct validity was determined by examining the correlations among variables making up the construct and convergent validity was examined through factor analysis and simple correlations.

Factorial Principal Component Analysis was first conducted with varimax rotation to determine how the research numeric variables (number of published papers, number of published books o chapters, and number of conferences attended) loaded on the research construct. One factor regarding research activities (tables 2.5-2.9) was extracted from the analysis. The Eigen value of the factor was greater than one. The total cumulative variation explained by the three variables was 66 percent. KMO Bartlett´s measure was .663 and literature indicates that a value greater than 0.5 is acceptable (Kaiser, 1974). Bartlett´s test is highly significant ($p < 0.001$), and therefore, factor analysis is appropriate (table 12).

Table 5 Principal component analysis. KMO and Bartlett´s test.

KMO and Bartlett´s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.663
Bartlett´s Test of Sphericity	Aprox. Chi-square	54.788
	gl	3
	Sig.	.000

The reliability score is a measure of the internal consistency of the items making up the construct. It was assessed by coefficient alpha, which according to table 13 was .657, very close to

.70 recommended by Nunnally (1978). Even though smaller values than .70 in coefficient alpha are accepted in exploratory research where a small alpha score can be due to a reduced number of questions (Johnson & Wichern, 2007).

Table 6 Internal consistency analysis.

Reliability Statistics

Cronbach´s Alpha	N of Items
.653	3

The communalities, represent the proportion of each variable's variance that can be explained by the factors. According to communalities (table 14) before and after extraction, we can say that 60.5% of the variance associated with the number of publications in journals variable is common, or shared, variance. Another way to look at these communalities is in terms of the proportion of variance explained by the underlying factors. Variables with high extraction values, as num_conferences (.735) are well represented in the common factor space, while variables with low values are not well represented. In this example, we don't have any particularly low values.

Table 7 Principal component analysis. Communalities.

Communalities

	Initial	Extraction
Num_int_pub_journals	1.000	.605
Num_book_or_chapters	1.000	.631
Num_conferences	1.000	.735

Extraction Method: Principal Axis Factoring.

The total variance explained in table 15 shows the Eigen values associated with each factor; it also presents the variance explained by that particular linear component and also the Eigen value in terms of the percentage of variance explained; so, factor 1 explains 65.698% of the total variance.

Table 8 Principal component analysis. Total variance explained.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.971	65.698	65.698	1.971	65.698	65.698
2	.607	20.237	85.935			
3	.422	14.065	100.000			

Extraction Method. Principal Component Analysis.

The component matrix presented (table 16) contains the loadings of each variable onto each factor. The SPSS has extracted one component with three components: 1) num_conferences (.857), 2) num_book_or_chapters (.794), and num_int_pub_journals (.778). In fact, results were similar to Vabø, (2010) who report that from 1991 to 2000 there has been a substantial increase in all types of professional journeys (conferences, guest lectures, study and research visits, peer reviews, research co-operation), although they are mostly related to conferences and research collaboration.

Table 9 Principal component analysis. Component matrix.

Component Matrix[a]

	Component
	1
Num_conferences	.857
Num_book_or_chapters	.794
Num_int_pub_journals	.778

Extraction Method: Principal Axis Factoring.

a. 1 factor extracted.

Based on the PCA regarding the quantitative research variables, we can state that the skills and abilities involved in the presentation of a study in an international conference, the international academic publications on journals and the books or book chapters published by faculty, are highly valued in the higher education market, and for this reason they are industry-related human resource competitive advantage elements for UDEM Business School.

Afterwards, we conducted a Multiple Correspondence Analysis (MCA) for the rest of the categorical variables related to the KSAs: the participation and organization of students abroad programs, English proficiency, the experience of teaching in English, professional experience outside HEI, employment of technological tools (chats, forums and videoconferences), participation on the rest of research activities, participation as a visiting professor, hosting a visiting professor, academic degrees and training abroad, and participation on home internationalization activities.

Multiple Correspondence Analysis (Jobson, 1992; Lebart, Morineau, & Wardwick, 1984; Tenenhaus & Young, 1984) is a factor analysis method, which summarizes a set of categorical variables into a small number of orthogonal variables. Graphical displays are used to summarize the proximities between the subjects and to show the associations between the categorical variables. The subjects are represented in two-dimensional graphic displays (axes). Additionally, it is

particularly relevant in studies where qualitative data is collected, and often paired with quantitative data (Aktürk, Gün, & Kumuk, 2007).

According to MCA results (table 17), the total cumulative variation explained by the two dimensions was 38.15 percent 24.78 the first dimension and 13.36 the second one. The reliability was assessed by coefficient alpha, which was .855 for the first dimension and .691 for the second dimension.

Table 10 Multiple correspondence analysis. Model summary.

Model summary

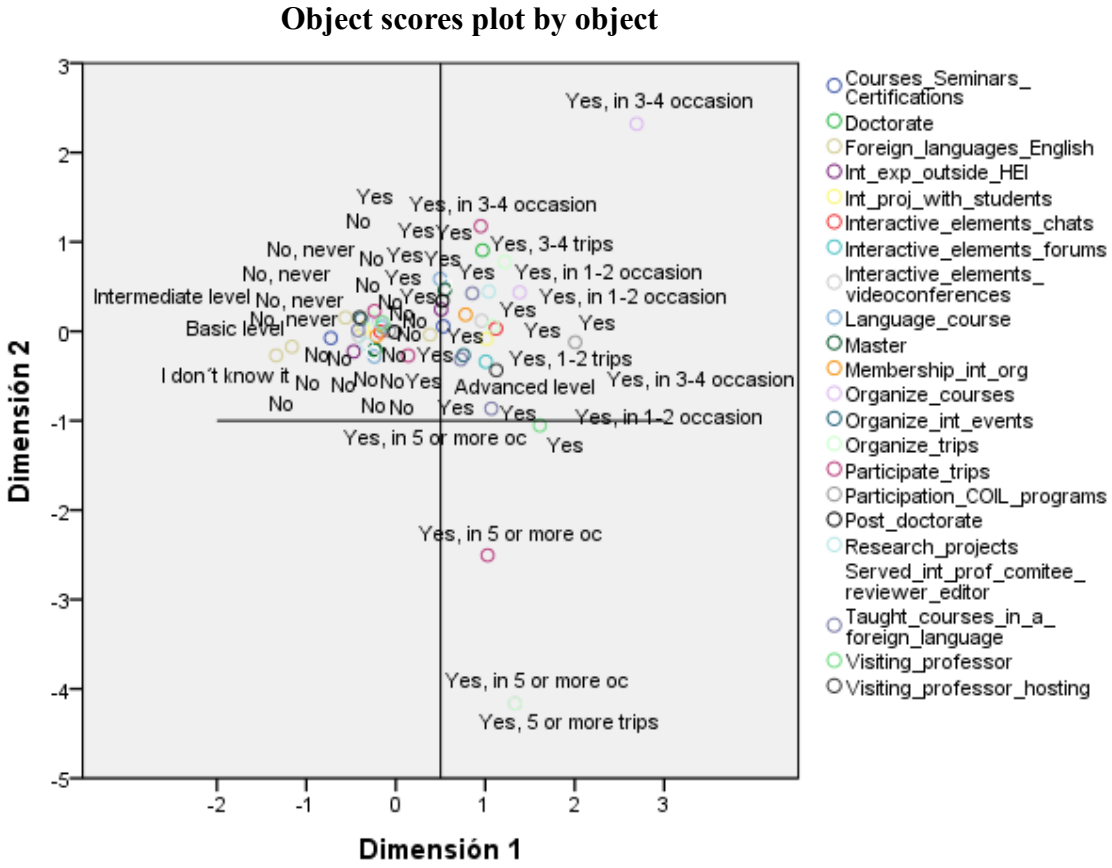
Dimension	Cronbach´s Alpha	Variance Accounted For		
		Total (Eigenvalue)	Inertia	% of Variance
1	.855	5.452	.248	24.781
2	.691	2.941	.134	13.368
Total		8.393	.381	
Mean	.798[a]	4.196	.191	19.075

a. Mean Cronbach´s Alpha is based on the mean Eigenvalue.

In the Object scores plot by object figure (figure 4), the first dimension (the horizontal axis) discriminates the "yes" from the "no" answers. This can be observed in the plot since "yes" answers are on one end of the horizontal axis and the "no" answers are on the other. It reflects the international activities that faculty carry out or not, that reflect the human capital resources needed to achieve those activities. The second dimension (the vertical axis) first separates the variables related to firm-specific human capital resources as the organization and participation of courses and trips abroad from the rest of the objects; and second, if we look at the variables with values below zero, these include student-faculty interaction variables all specific human capital resources such as: visiting professor, international projects with students, the use of forums in classes, the organization of international events, the participation on COIL programs, teaching on English, and

faculty organization and participation in students` abroad trips. The other consideration, regarding more student-related activities may be a distinctive feature of the university, since it is a private, medium size university that fosters a close relation between students and professors.

Figure 2 Multiple correspondence analysis. Object scores plot by object.



The discrimination measures (table 18) show the variance of the quantified variable in that dimension. It has a maximum value of 1, which is achieved because the object scores fall into mutually exclusive groups and all object scores within a category are identical. In our case all discrimination measures are lower than 1. The first dimension has the largest average discrimination, and in our case, as it was already mentioned, is the one that separates the “yes” answers from the “no” answers; the second dimension has the second largest average discrimination and in our study is the separation of the student-faculty interaction variables from the rest.

The discrimination measures plot (figure 5) shows that the first dimension is related to the interactive elements videoconferences, visiting professor hosting and courses seminars certifications variables. These variables have large discrimination measures on the first dimension and small discrimination measures on the second dimension. Thus, for these variables, the categories are spread far apart along the first dimension only, showing a relation with teaching activities in the case of the employment of videoconferences and hosting a visiting professor for teaching a course or part of it, and training based on the courses, seminars and certifications that faculty completed abroad. Additionally, the skills beyond these activities are related to relational skills, and communication skills for the case of videoconferences and professor visiting hosting and training and education, showing somewhat of a group of general skills beyond these activities, even though they are industry and specific human capital resources.

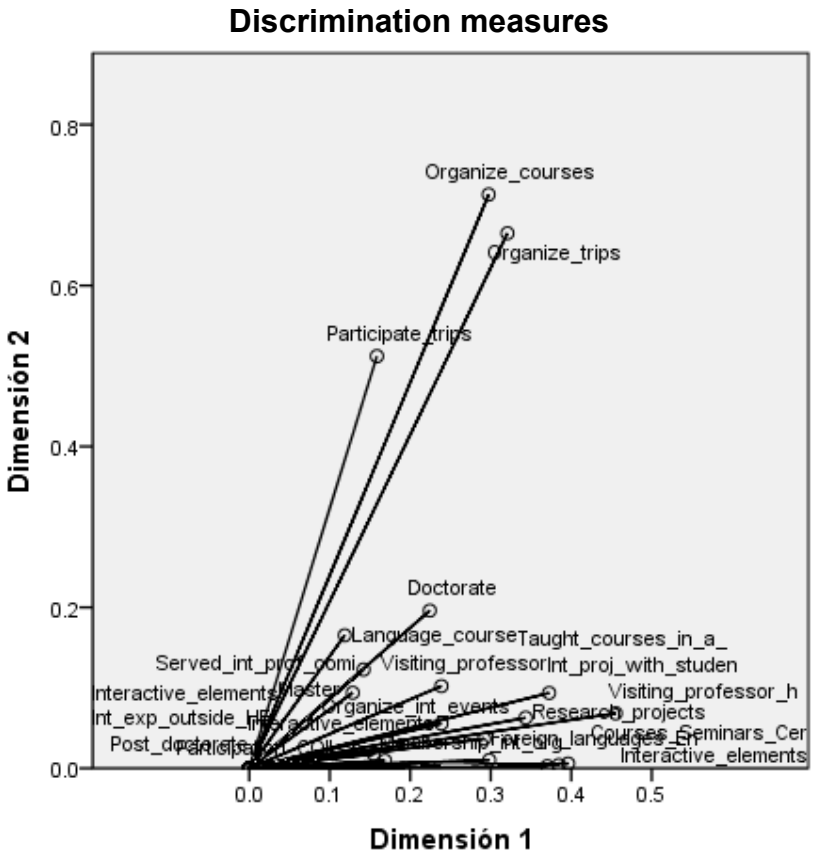
Moreover, this first dimension is also related to other, teaching, research and education variables that had a lower value. The first group of variables is teaching courses in English (.373), international projects with students (.370), and research projects (.343). The second group will be composed of: foreign language English (.298), organization of international events (.292), and international experience outside HEI (.239). The third group is: employment of chats (.192), membership of international organizations (.168), employments of forums (.155), participation on COIL programs (.151), and master degree (.129) (table 18).

Participating in trips, organizing courses, and organizing trips have a large value on the second dimension but a small value on the first dimension. As a result, participating in trips is the closest to the second dimension, agreeing with the observation from the object scores plot that the second dimension seems to separate the faculty that participate on the trips and courses abroad from the rest. These variables are firm-specific human resources and carried out by a certain group of faculty.

Visiting professor, doctorate, and language courses have relatively similar values on both dimensions, indicating discrimination in both the first and second dimension. The variables served

in international professional committee as reviewer or editor and post-doctorate, located very close to the origin, does not discriminate at all in the first two dimensions.

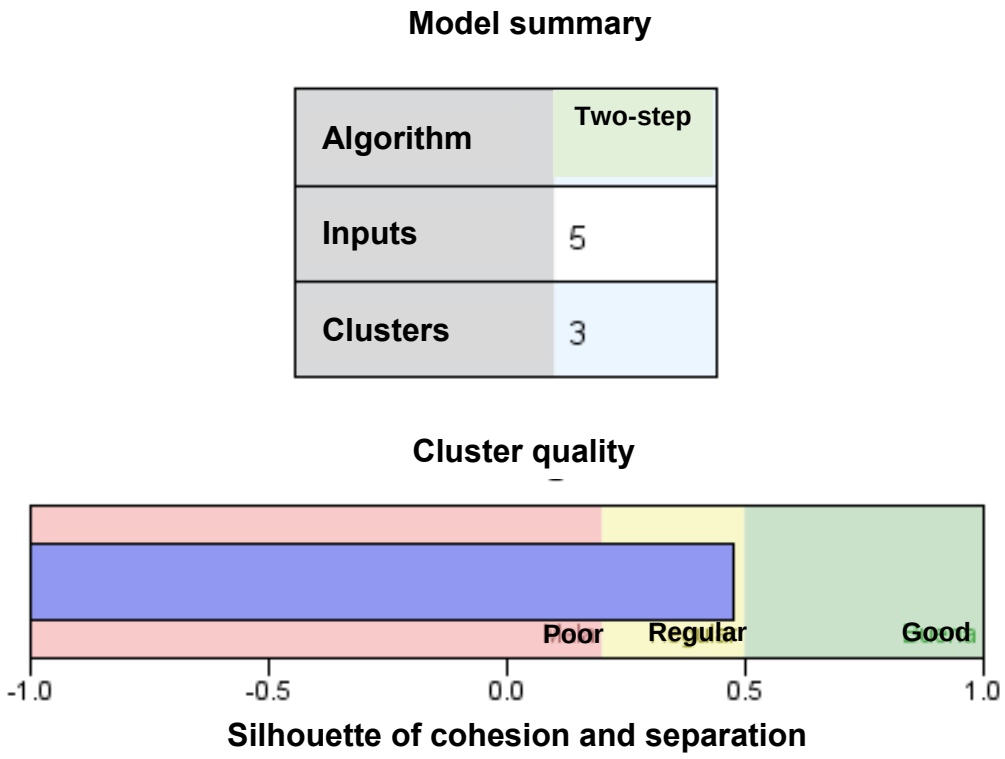
Figure 3 Multiple Correspondence Analysis. Discrimination measures plot.



Afterwards, we did a two-step cluster analysis in order to reveal natural groupings (or clusters) from the data set, and due to the fact that this technique allowed us to create clusters based on both categorical and continuous variables, and the selection of the number of clusters is automatic. We employed the three factors extracted from the PCA and MCA. We add two demographic variables (contract and department), in order to better explain clusters groups. Other demographic variables: nationality, gender, age, level of education, number of years working at UDEM and number of year as a teacher were not considered since they affect negatively the in overall cluster model quality.

The model summary figure (figure 6) indicates that three clusters were found based on the five input features that we selected. The silhouette measure of cohesion and separation is a measure of the clustering solution´s overall goodness-of-fit. In our case, the cluster quality chart indicates that the overall model quality is 0.5, which is a fair, almost good solution. Results (table 18) show that the largest cluster has 37.3% of the clustered cases, and the smallest 30.1%. The number of cases in each cluster is very similar: 27 in the first, 25 in the second, and 31 in the third, which is good.

Figure 4 Two-step cluster analysis. Model summary.

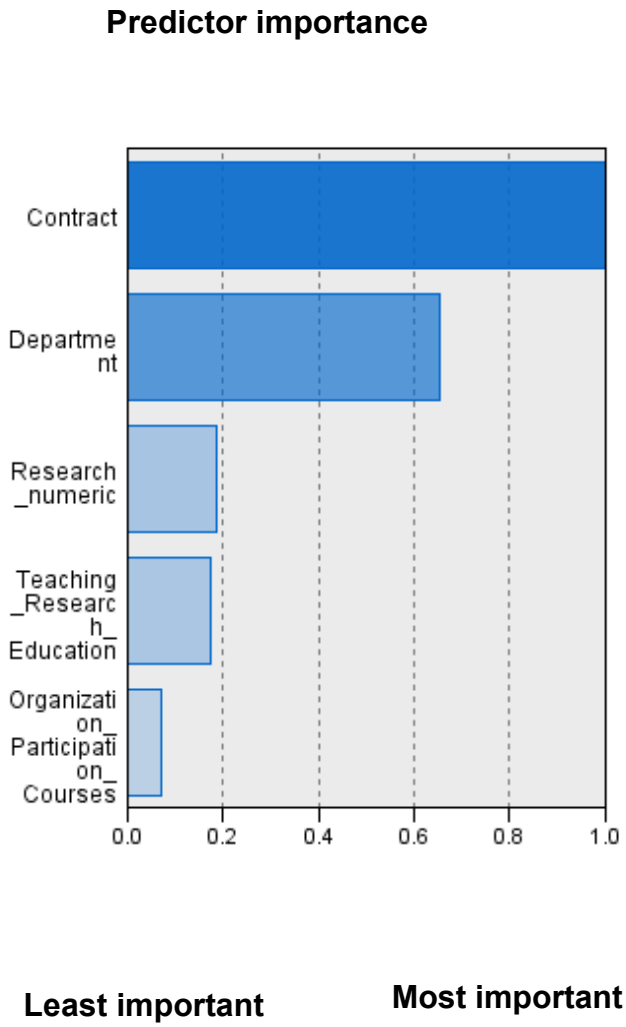


Discrimination measures	Dimension		Mean
	1	2	
Taught_courses_in_English	.373	.094	.23
Foreign_languages_English	.298	.010	.154
Served_int_prof_comitee_reviewer_editor	.142	.123	.132
Research_projects	.343	.063	.203
Membership_int_org	.168	.010	.089
Visiting_professor	.239	.102	.170
Int_exp_outside_HEI	.239	.055	.147
Post_doctorate	.007	.003	.005
Doctorate	.224	.196	.210
Master	.129	.094	.111
Courses_Seminars_Certifications	.385	.004	.194
Language_course	.119	.165	.142
Int_proj_with_students	.370	.003	.186
Visiting_professor_hosting	.455	.068	.262
Participation_COIL_programs	.151	.001	.076
Interactive_elements_forums	.155	.018	.086
Interactive_elements_chats	.192	.000	.096
Interactive_elements_videoconferences	.396	.006	.201
Organize_int_events	.292	.037	.164
Organize_courses	.297	.713	.505
Organize_trips	.321	.665	.493
Participate_trips	.159	.512	.335

Total	5.452	2.941	4.196
% of Variance	24.781	13.368	19.075

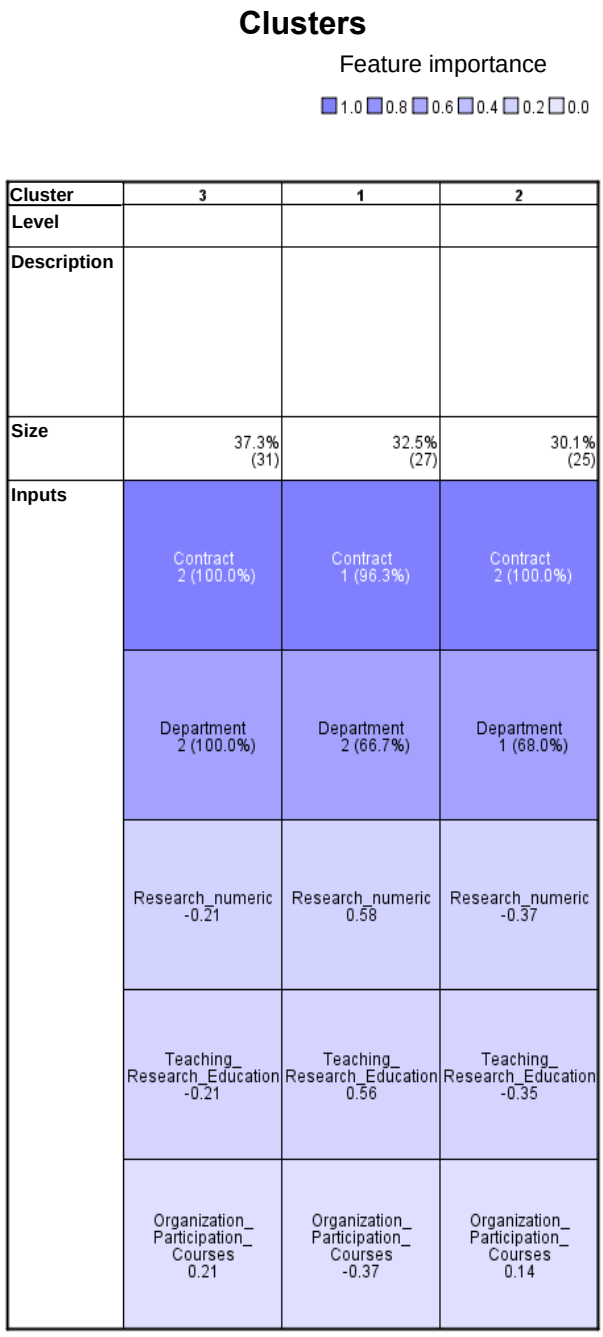
The predictor importance figure (figure 7) shows an overview of the variable's overall importance for the clustering solution. For our study, this is the order of predictor importance: 1) contract, 2) department, 3) research_numeric, 4) teaching_research_education, and 5) organization_participation_courses. This means that faculty international activities may vary according their type of contract (full-time vs. part-time) and academic disciplines (academic department). This may be the reason that the majority of the faculty of cluster 1 are full-time professors sharing a high research activity, compared to cluster 2 and 3 where part-time professors opt for other types of activities.

Figure 5 Two-step cluster analysis. Predictor importance.



The cluster figure (figure 8) presents the structure of the revealed clusters sorted from left to right by cluster size, so they are currently ordered 3, 1, and 2. We can see a description of the three clusters, including their relative sizes. Furthermore, the output shows each clustering variable´s mean values across the three clusters as well as their relative importance. Darker shades denote the variable´s greater importance for the clustering solution. Comparing the results, we can see that the most important variable for each of the clusters is contract, followed by department, research numeric, teaching research education, and organization participation courses trips.

Figure 6 Two-step cluster analysis. Clusters.



According to cluster figure (figure 8) and tables 19, 20, and 21: faculty in cluster 1 (column 2) are full-time professors; the majority from the Administration Department (66.7%), are researchers that used to publish and present their work in international forums, and who are highly involved in other research and teaching activities; they also have degrees from abroad, but they do not participate in courses and trips abroad with students. They possessed industry-specific human resources together with other firm-related human resources (e.g. international projects with students, organization of international events). Faculty in cluster 2 (column 3) are part-time professors, mostly from the Accounting/Finance Department (68%), who used to participate in trips and courses abroad with students and do not volunteer for research activities or other teaching or training activities. They are faculty with a low firm-specific human capital resources. Faculty in cluster 3 (column 1) are also part-time professors, all from the Administration Department (100%) they participate actively on the trips and courses abroad with students. They are considered as possessing a higher level of firm-specific human capital resources.

Table 12 Two-step cluster analysis. Distribution of cases.

Distribution of cases in clusters

		N	% of Combined	% of Total
Cluster	1	27	32.5%	32.5%
	2	25	30.1%	30.1%
	3	31	37.3%	37.3%
	Combined	83	100.0%	100.0%
Total		83		100.0%

Table 13 Two-step cluster analysis. Cluster count according academic department.

Department

		Accounting/Finance		Administration		Economics	
		Count	Percentage	Count	Percentage	Count	Percentage
Cluster	1	6	26.1%	18	36.7%	3	27.3%
	2	17	73.9%	0	0.0%	8	72.7%
	3	0	0.0%	31	63.3%	0	0.0%
	Combined	23	100.0%	49	100.0%	11	100.0%

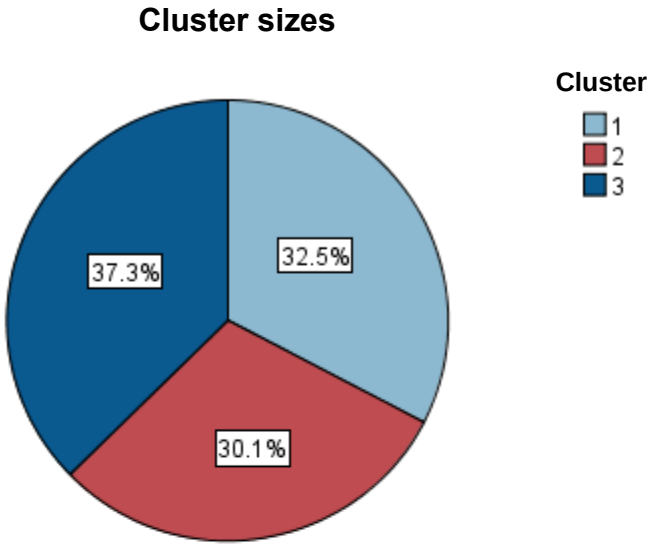
Table 14 Two-step cluster analysis. Cluster count according type of contract.

Contract

		Full-time		Part-time	
		Count	Percentage	Count	Percentage
Cluster	1	26	100.0%	1	1.8%
	2	0	0.0%	25	43.9%
	3	0	0.0%	31	54.4%
	Combined	26	100.0%	57	100.0%

The cluster size (figure 8) shows the frequency of each cluster. Each slice in the pie reveals the number of records assigned to the cluster. In our case, 32.5% (27) of the records were assigned to the first cluster, 30.1% (25) to the second, and 37.3% (31) to the third. Information regarding the size of conglomerates of the two-step cluster analysis is also showed on figure 9.

Figure 7 Two-step cluster. Size of conglomerates.



Size of Smallest Cluster	25 (30.1%)
Size of Largest Cluster	31 (37.3%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	1.24

In order to offer a better description of each cluster we compared the belonging cluster group data of faculty with the rest of the nominal variables not included in the cluster such as nationality, gender, age, degree, years working at UDEM´s Business School, and years working as a teacher employing contingency tables, together with chi-square or Fisher test.

Result should be interpreted based on Fisher´s exact test p values and not Chi square analysis, when more 20% of the expected counts cells are less than 5 and all individual expected counts are 1 or greater" (Yates, Moore & McCabe, 1999, p. 734).

According to results we cannot interpret and use the cells in the contingency tables of the rest of the nominal variables -mentioned above -, to describe cluster groups, since their chi-square p value or Fisher p value were higher than .05. P value results are the following: nationality (Fisher p= .177), gender (chi-square p= .451), age (Fisher p= .176), degree (chi-square p= .153), number of years working at UDEM (Fisher p= .227), and number of years as teacher (Fisher p= .435).

5. Discussion: Faculty general human capital resources vs. specific human capital resources and their consideration as a sustained competitive advantage

Many strategy scholars have suggested that resources and capabilities may take the form of knowledge and skills that are embedded in people (e.g. Coff, 1997; Hatch & Dyer, 2004). According to Lepak and Snell (1999) employees own their own human capital; firms seek to protect themselves from the transfer of their human capital investments to other firms; this is the reason why human resource researchers argue that investments in the development of generic skills are incurred by workers, whereas investments in firm-specific training are incurred by the firm (Becker, 1964; Flamholtz & Lacey, 1981; Schultz, 1961). On the other hand, the resource-based view of the firm emphasizes the strategic relevance of knowledge based competencies (human capital) in terms of their direct link to achieving and sustaining a competitive advantage; core competencies should be developed internally while other may be outsourced; core competencies are those that are valuable, rare, inimitable and nontransferable (Barney, 1991; Prahalad & Hamel, 1990; Wernerfelt, 1984).

However, human capital is not owned, or even fully controlled by the firm. Employees are free to quit and take their human capital to alternative employers. As a consequence, human capital can be isolated only to the extent that employees have little ability or willingness to leave the firm (Campbell et al., 2012). In fact, firms may lose their most critical assets if employees become dissatisfied, underpaid, or unmotivated (Coff, 1997). The threat of turnover is even more serious

for general human assets. In human capital theory it is assumed that general skills are traded in competitive labor markets (Becker, 1993). Thus firms should bid up wages so that the profits flow to workers rather than stockholders. However, if firms are able to control turnover, they may still be able to achieve an advantage. This threat of turnover is so serious that some believe that general skills cannot be a source of advantage, suggesting that specificity is a requirement for strategic assets (Amit & Schoemaker, 1993). However, general human assets can be the source of advantage if they are rare, have no strategic substitutes, and the firm can retain them over time (Coff, 1997).

The importance of limiting employee mobility in supporting competitive advantage has led strategy scholars to emphasize firm-specific human capital. The logic underlying this assumption is that firm specific-skills have limited applicability to other firms, resulting in a large difference between the use value of workers´ firm-specific skills in the focal firm and the use value of these same skills in alternative firms. The low use value affects the wages that alternative firms are willing to pay for these skills in the labor market; thus, these skills have low exchange value. Similarly, because general human capital is broadly applicable, it has high exchange value. The assumed low exchange value of firm-specific human capital in the labor market creates a dilemma for workers.

According to Becker´s (1964) investment framework, workers can choose to invest in either firm-specific or general skills. Thus firm-specific skills represent foregone investment in general skills. By investing in firm specific skills, workers increase their value to their employers, without accompanying increases in their exchange value in the labor market. If the focal firm pays workers a portion of their increased use value from firm-specific human capital (Becker, 1964), then workers face a dilemma when considering a move. External employers can offer compensation that reflects the exchange value of workers´ human capital, but the focal firm can offer compensation up to the use value of their human capital (both firm specific and general). If general human capital has a constant value across firms but firm-specific human capital has a higher value at the current employer, a moves requires sacrificing both the compensation for firm-specific skills and the opportunity costs. The logical conclusion is that firms can retain workers with firm-specific human capital for less than the full use value. However, such skills do not necessarily prevent mobility. It

is assumed that workers may move if they are willing to accept reduced wages (Campbell et al., 2012).

Campbell et al (2012) mention that from a strategic perspective, firm-specific human capital potentially functions as an isolating mechanism in two ways. First, workers with firm-specific human capital are less likely to leave voluntarily, and, therefore, they are less likely to take valuable general knowledge and capabilities to rival firms. Second, even when these workers do leave voluntarily, the firm-specific human capital they take with them cannot be perfectly deployed and utilized in rival firms. In other words, relying on firm-specific human capital enhances a firm´s ability to sustain advantage both because workers are less likely to leave and because, even if they do leave, they cannot easily apply their firm-specific knowledge elsewhere.

Interestingly, while strategy scholars typically assume that general human capital cannot be a source of competitive advantage, strategic human resource management scholars have acknowledged that general and industry-specific skills may lead to firm performance (Somaya, Williamson, & Lorinkova, 2008; Zenger, 1992). Such human capital can be valuable and rare and, thus, is important in its own right, but this literature does not theoretically link general human capital to sustained competitive advantage. Some argue that firms´ ability to attract and retain such workers represents their human resource practices and systems that may hold workers in place regardless of specificity (e.g. Lepak & Snell, 1999). In fact Lazear (2009) claims that general human capital creates more value than firm-specific human capital, when the incremental wage attributable to firm-specific skills is quite small, and, consequently, the productivity difference required for rivals to poach employees with firm-specific skills is also small. In this context the firm-specific human capital may not limit employee mobility.

According to the RBV sustained competitive advantage conditions that a resource must be valuable, rare, imperfectly imitable and not substitutable, together with human capital literature regarding the type of human capital resources (general vs. specific), and the Campbell et al. (2012, p.385) model entitled “Human Capital-Based Competitive Advantage Framework”. We have analyzed the three faculty clusters and determine if they represent a competitive parity resource, a

competitive advantage resource or a sustained competitive advantage resource (Barney and Wright, 1998) for UDEM Business School internationalization process.

Faculty in cluster 1 are valuable for the institution since they provide it with international recognition in rankings and accreditations, together with academic respect when faculty presents their work on international forums or publish their research in well-recognized publications. Additionally, they carried out other teaching activities that are firm-specific as the participation on international projects with students and the organization of international events. It may not be a rare resource since other business schools have faculty involved in research, but may be other institutions do not have faculty with a research background which is also involved in other firm-specific activities and possess international experience outside HEI. It is somehow imitable, even though the academic production of each business schools differs according to department objectives, research centers, among others; and the organization culture and history plays an important role here, since UDEM lately has focused its efforts on home internationalization activities as COIL programs, making this a differentiating element with other intuitions. Finally, in a certain way, UDEM´s faculty may be substitutable by other professors that have a research profile, but they cannot be totally substitutable due to the other firm-specific tasks that this group of faculty possesses.

This group of professors possesses general and specific (industry and firm) human capital resources. Their general human capital resources that make them valuable in the market are their English level, their professional experience outside HEI, and their academic degrees (MBAs and other business masters), and their foreign courses and certifications. Their industry specific human capital resources that make them valuable in the higher education market are their capacity to teach courses in English, their research activity (publications, conferences) and their academic degrees (PhD and post-doctorate). Finally, they possess firm-specific human capital resources as the employment of technological tools in their courses, their participation on students´ research projects, their visiting professor activities and their collaboration on home internationalization initiatives as the organization of international events and COIL programs. We think that this faculty cluster can offer competitive parity and competitive advantage for UDEM. Moreover, when certain firm facilities, organization culture or faculty reputation are involved in certain activities, they it

can be imperfectly imitable, and a highly recognized faculty may not be substitutable, ending with a sustained competitive advantage resource for the institution.

Professors in cluster 2 can be considered valuable for the institution's internationalization process, since they exploit the opportunities outside by finding and organizing student foreign courses and trips. They are not rare since they are professors working for local/international companies in the city of Monterrey, even though they can be rare in the sense that not all professors want and have the knowledge and skills to travel with students. They can be imitable and substitutable for other professors with higher education experience, although there are firm specific skills and firm knowledge processes and facilities that can be difficult to obtain from new professors. Additionally, it is difficult to find professors working for an important company or owning a business (part-time faculty), with pedagogical skills for teaching higher education courses. Here is where internal training took relevance. This cluster of professors possessed certain human capital skills that offer competitive parity for UDEM Business School internationalization process, since other competitors offer foreign courses and trips for their students; and in certain occasions they may be a source of competitive advantage when they are valuable and rare at the same time.

Faculty in cluster 3 possessed valuable firm-specific human resources since they participate more actively than professors in cluster 2 in the organization and participation on students´ foreign courses and trips, making this a differentiating element for UDEM business school internationalization. These professors are not rare, but may be difficult to imitate and substitute since they possess certain skills to conduct such activities, and because professors in cluster 1 are not interested in participating in these type of activities. Like cluster 2, faculty in cluster 3 participate on the students´ foreign courses and trips and give the business school competitive parity and in some cases competitive advantage.

According to Campbell et al. (2012), business school faculty members at a top university who invest heavily in case writing expertise resemble the traditional firm-specific and general capital logics, where workers have portfolios of highly firm-specific skills that are not transferable, the market correctly evaluates the external value of those skills, and there is a high level of supply-

side factors that make the firm desirable to workers. Here the complementary assets of the business school allow the school to create more value from the faculty member´s case writing skills than other institutions. If the faculty member´s investment in case writing corresponds to a smaller investment in research, the external demand for his skills may decrease. However, if the professor enjoys case writing and the status attached to the university, he may prefer to stay, regardless of external demand for his human capital. In this case supply and demand are aligned. This is a strong case of sustained competitive advantage. This example is helpful to study our faculty´s firm-specific human capital resources related to internationalization (e.g. employment of technological tools, participation on students´ research projects, visiting professor activities and collaboration on home internationalization initiatives), since they can be a source of sustained competitive advantage, based on the consideration that workers with firm-specific knowledge are less likely to leave voluntarily and their firm-specific human capital is not easily apply in other institutions (Campbell et al., 2012).

In contrast, well known researchers tend to have highly transferable skills that are easily observable (number of published papers); therefore their value in alternative organizations is relatively predictable. Here the human capital would not be isolated. Again, the supply and demand factors are aligned but this time they both promote the mobility of human capital. In this scenario, according to Campbell et al. (2012), workers have portfolios of highly transferrable skills. The market correctly values these skills, and there are no supply side factors causing the workers to want to stay in their current firms. In the case of UDEM business school, faculty that are involved in research activities also participated in other firm-specific internationalization activities. This fact makes them think twice before considering to move to another institution. Even though there is always the risk that this type of faculty are highly "attractive" for other higher education institutions. As a result the faculty member leaves the current position for a better opportunity in a top-ranked business school.

On the other hand, general human capital as a source of sustained advantage can be possible when workers with general human capital can be effectively isolated when the market incorrectly values that human capital and when supply-side factors cause workers to want to stay in their current firms (Campbell et al., 2012). When general human capital is undervalued in the labor

market and when workers prefer to stay at their focal firm, the focal firm is well positioned to realize advantages from that human capital. In our study, this may be the case of faculty with industry experience, but other business schools did not recognized the potential of these professors and the institution´s conditions and opportunities make him/her want to stay.

We can conclude that faculty specific-human capital resources in the case of UDEM Business School may represent a competitive advantage, and in certain cases a sustained competitive advantage. The present study also recognizes that higher education market value more the general and industry human resources than firm-specific resources. So we think that UDEM business school should focus on developing more firm-specific skills on faculty of cluster 1, so they can think twice before leaving the institution and the school should attract and retained part-time professors with a business profile who are willing to collaborate on firm-specific skills, that bring a sustained competitive advantage for the business school internationalization process.

6. Conclusions, limitations and future research lines

In keeping with Resource Based View (RBV) and human capital literature, there are some contributions that have indicated that human capital may represent a sustained competitive advantage for a firm or institution. The higher education literature on this issue has ignored faculty human capital resource as a source of competitive advantage and as an important element on the institutional internationalization process. This paper originates from the need to have an instrument to identify the internationalization activities that express faculty human capital resources and describe them in terms of faculty clusters.

We conducted our research in the University of Monterrey (UDEM) located in Monterrey, N.L., Mexico, and the research is based on a survey of a sample of 83 faculty members. Moreover, principal component analysis (PCA) was used to obtain main research dimensions (academic articles publishing, books and book chapters publishing, and conferences attended), and multiple correspondence analysis (MCA) used to detect and explore relationships between teaching, research and student study abroad programs participation and organization variables. One PCA dimension was identified (research numeric), and two MCA dimensions were retained (teaching

research education, and organization participation courses trips. The clustering analysis with object scores method was used to identify groups sharing similar characteristics, together with two demographic variables (department and contract).

Our results led to the definition and identification of three faculty groups in UDEM according their human capital resources related to internationalization. The first cluster is formed with full-time professors, most of them women, from the Administration department; they have a research profile since they used to publish and attend international academic forums. In addition, they also are involved in international research projects and used to participate in international teaching activities. An important characteristic is that most of them possess an academic degree or course certificate from abroad. Definitely, they are not interested in participating in student academic courses and trips, even though they possess general and specific (firm and industry) human capital resources that may represent a sustained competitive advantage for the business school internationalization process.

In the second cluster, all faculty members are part-time professors from the Accounting/Finance and Economics departments. They used to participate in the trips and courses abroad with students and do not wish to volunteer for research activities or other teaching or training abroad activities. This cluster has firm-specific human capital resources that may offer a competitive parity or a competitive advantage for the institution.

The third cluster is formed by part-time Administration department professors. This group, similar to cluster two, participates actively in the trips and courses abroad with students and for this reason they can also provide a competitive parity or a competitive advantage for the business school.

In this respect the main conclusions emerging from this chapter are concerned with the understanding of the importance of the human capital resources beyond each internationalization activity carried out by faculty. It is further concluded that UDEM´s business school needs to recognize that the human capital resources (general and specific) that may represent a competitive advantage are different for each faculty cluster and all of them have a reason to be there. In fact,

Lepak and Snell (1999) mention that it is important to note that not all employees possess skills that are equally unique and/or valuable to a particular firm (Stewart, 1997). Although it may be the case that some firms manage all employees the same way, regardless of their value and uniqueness, and others make significant distinctions in the methods they use for different skill sets. So, just as there may be no universally best set of HR practices for every firm, we proposed some recommendations for business schools´ faculty.

For example, faculty human capital resources in cluster one, where faculty is highly involved in research activities, are quite different from the human capital resources of clusters two and three, where professors had prior participation in student study abroad programs. Both human capital resources beyond those activities are relevant for the institution, since it is interested in producing research outputs, but also to impact student internationalization. Faculty is the perfect element to conduct these kinds of tasks. Even though we point out that human capital resources beyond cluster 1 are diverse, since they possess general and specific human capital resources that may constitute a sustained competitive advantage for the business school, but always with the risk of faculty moving from one institution to another carrying with them most of their human capital (research knowledge, experience, personal contacts).

From this observation, we establish that UDEM faculty possess more general and industry/context human capital elements than business school specific ones. We draw this conclusion because the higher education market has very narrowed and specific internationalization activities which differ from other institutions (companies, government, etc.). These facts make for very unique human capital resources that will vary according to an institution's mission and strategic plans.

Limitations in this study are associated with the sampling, the generalization of the study, which is limited to a given private business school in Mexico, and it may not represent the total population. In addition, scales of variables differ and are not similar in each group of internationalization activities (research, teaching, and training). Finally, the author is a faculty member of the business school. As a result there is the possibility of researcher bias. To mitigate

potential bias, the researcher has made attempts to base the selection of the factors of interest on the review of literature and practitioners

Future investigations may evaluate the presented variables to determine if they are also relevant for other contexts, especially for Latin American private business schools. Additionally, qualitative interviews may provide a discovery-oriented environment to better understand the human capital resources involved in the internationalization activities context together with a psychological test. Researchers need also to study conditions under which general human capital may be a sustained competitive advantage for a business school. Moreover, research is needed to study other faculty human capital resources that impact other areas apart from the internationalization and provide the greatest potential to differentiate an institution from its competitors.

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