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Entrepreneurship perception in higher education. A comparative study among Students, Faculty Members and Directors*

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• **Abstract (descriptive):** *A set of variables affects the building of a university ecosystem fostering an entrepreneurial culture among students. The purpose of this study was to assess the perceptions of students, faculty members and directors of Higher Education Centers in the region of Coquimbo, Chile with respect to entrepreneurship, taking into account diverse variables in order to establish significant differences in these perceptions that could affect institutional policies or actions, which may ultimately have an impact in regional development. The descriptive study performed on a sample of twelve Higher Education institutions revealed significant differences between the perceptions of academics and students on the influence of the following variables: infrastructure; networking; institutional experience; skills; risk-taking. Likewise, the directors showed significant differences in their appreciations of the relative importance of the variables: teaching strategies; academic skills; government programs and strategies covering students and/or academics.*

Key words: entrepreneurship, higher education, business administration education, business skills, perception tests (Eric Thesaurus).

Percepción del Emprendimiento en Educación Superior. Estudio comparativo entre Estudiantes, Equipos Académico y Personal Directivo

• **Resumen (descriptivo):** *La construcción de un ecosistema universitario que genere una cultura emprendedora en sus futuros profesionales, se ve influenciada por una serie de variables que fomentan su desarrollo. Nuestro objetivo en este estudio es evaluar las percepciones que tienen los sujetos estudiantes, los equipos académico y el personal directivo de los Centros de Educación Superior en la región de Coquimbo, Chile, respecto al emprendimiento, considerando diversas variables a fin de poder establecer la existencia de diferencias significativas en dichas percepciones, que pueden incidir en las políticas de estas instituciones o en las acciones al interior de ellas, las que finalmente impactan en el desarrollo regional. El estudio descriptivo que realizamos*

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sobre una muestra de doce centros de educación superior, permite concluir que existen diferencias significativas en la percepción entre sujetos académicos y estudiantes en las variables que influyen; estas son: infraestructura, networking, experiencia institucional, competencias del sujeto estudiante y capacidad frente al riesgo. Así mismo, los directores y directoras presentan diferencias significativas en las variables estrategias de enseñanza, competencias de académicos y programas y estrategias de gobierno tanto con estudiantes como con personal académico.

Palabras clave: Emprendimiento, educación superior, educación en gestión de empresas, habilidades de negocios, pruebas de percepción (Tesaurus Eric).

Percepção do empreendedorismo no ensino superior. Estudo comparativo entre estudantes, acadêmicos e diretores

• **Resumo (descritivo):** A construção de um ecossistema universitário que promova uma cultura empreendedora em seus futuros profissionais se vê influenciada por uma série de variáveis que fomentam o seu desenvolvimento. O objetivo deste estudo é avaliar as percepções dos estudantes, dos acadêmicos e dos diretores dos centros de educação superior na região de Coquimbo, Chile, a respeito do empreendedorismo, considerando diversas variáveis, a fim de estabelecer a existência de diferenças significativas nessas percepções, que podem afetar as políticas dessas instituições ou as ações dentro delas, o que acaba impactando no desenvolvimento regional. O estudo descritivo realizado sobre uma amostra de doze instituições de ensino superior permite concluir que existem diferenças significativas na percepção entre acadêmicos e estudantes em relação às variáveis as quais influenciam, essas são: infraestrutura, networking, experiência institucional, competências do estudante e capacidade frente ao risco. Da mesma forma, os diretores apresentam diferenças significativas nas variáveis estratégias de ensino, competências acadêmicas e de programas e estratégias governamentais tanto para estudantes como para acadêmicos.

Palavras-chave: empreendedorismo, educação superior, educação em administração de empresas, habilidades de negócios, testes de percepção (Thesaurus Eric).

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1. Introduction

Entrepreneurship

The word entrepreneurship comes from the French word entrepreneur, which means being ready to make decisions or to begin something. Richard Cantillon first introduced the modern concept, which defines an individual who takes risks in conditions of uncertainty, and thus divides the producers of the economic market into “hired workers”, receiving salaries, or fixed incomes, and “entrepreneurs”, who receive variable and uncertain earnings. Joseph Schumpeter first referenced the term to refer to those entrepreneurial individuals and business men that generated instabilities in markets of goods and services with their economic activities (Rodríguez-Ramírez, 2009). An entrepreneur, then, is someone who discovers,

evaluates and exploits profitable opportunities, taking into account the risk and being alert to the opportunities and need for innovation (Roberts & Woods, 2005, cited in Guzmán-Vásquez & Trujillo-Dávila, 2008). In the past, different visions have arisen with respect to the phenomenon of entrepreneurship. More than half a century ago, Schumpeter identified an entrepreneur as an initiator of change and as a generator of new opportunities, acting as an unbalancing force that will establish a new balance (Rodríguez-Ramírez, 2009). However, to authors like Ludwig von Mises, Friedrich Hayek and Israel Kirzner, who belong to the Austrian school of economic thought, an entrepreneur tends to balance the markets, emerging as an answer to a group of errors and lost opportunities within the current market, that is, as a response to a state of balance (Castillo, 1999).

According to Stevenson and Jarillo (1990), the phenomenon of entrepreneurship is studied under three main focuses: 1) considering what happens when the entrepreneur acts; 2) considering why the entrepreneur acts; and 3) considering how the entrepreneur acts. On the other hand, Timmons and Spinelli (2009) propose a model of establishing an enterprise based on three pillars: the market, people and resources. These three factors interact with one another and necessarily contemplate the effect of people in sustaining enterprises, and ideas are filtered or they transform into opportunities, needed resources are determined and are evaluated based on various alternatives. This author maintains that entrepreneurs are not born, they are made, and that an individual can acquire the motivation for entrepreneurship during any stage of life.

Since the 80s, the generation of university research has drastically increased in many aspects such as patents, licences and the creation of spin-off companies. Changes originally occurred in the United States, and subsequently throughout the world to eventually increase the commitment of transforming scientific discoveries into business opportunities (Astebro, Bazzazian & Braguinsky, 2012). Nowadays, universities have a fundamental role in establishing and developing an economy that is oriented at entrepreneurship, since they represent the main source of new knowledge (Yildirim & Aşkun, 2012).

Public Policy

Notwithstanding the foregoing, public policy should recognise that young people aspire to two things: formal education and employment (Reyes-Terrón & Elizarrarás-Hernández, 2013). If the employment problem is not suitably dealt with, its consequences could lead to lower incomes, social marginalisation, and criminal activities (De La Hoz, Quejada & Yáñez, 2012). For this reason, government policies and strategies are in place which seek to address this issue (Rodríguez, 2004, Gallo & Molina, 2012). There are also market solutions, such as entrepreneurship, which offers the best chance of creating a substantial and positive

change in the configuration of poverty (Bruton, Ketchen & Ireland, 2013), and is a milestone on the path to economic progress, contributing greatly to the quality and future hope of a sector, the economy, or even a country (Ribeiro & Jun-Huang, 2013).

In the last few years, however, Chile has become a country with high entrepreneurial activity, as stated by the Bulletin of Entrepreneurship (División de Estudios, 2012), published by the Ministry of Economy in Chile, with Chile ranking 15th in the world with respect to new enterprises, and as the country with the most entrepreneurship activity in Latin America. These results show that for every 1000 inhabitants of employment age (15 to 64 years old), 4.13 companies are created per year. In order to encourage this conduct, government policies that facilitate new enterprises, or policies that support the growing and maturing stages, have been instrumental, highlighting the new approved law on January 23rd of 2013 which allows the creation of an enterprise in one day at no cost. Similarly, according to the Global Entrepreneurship and Development Index (Gedi), which captures the contextual function of the entrepreneurial spirit between countries, closing the gap in terms of differences in development, Chile ranks at number 26 among the 71 most important countries (Zoltán & László-Szerb, 2010).

Higher Education and Entrepreneurial Environment

During the last two decades, Chile has grown at a much faster pace than other countries belonging to the Organization for Economic Cooperation and Development (OECD). Between 1986 and 2007, the GDP per capita increased an average of 4.3% per year, in comparison with 2.2% in other regions belonging to the OECD (Oede, 2011). Despite this data, there is a social unrest with the current education model, which produces and perpetuates social inequality. Chile appears as the country with the highest socio-economical segregation, reflecting mostly in secondary school, where there is 50% less socio-economic diversity than in other member countries of the

OECD. As well, the country is emphasized for the significant participation of private funding in primary, secondary and most importantly, university education, which reaches 84.5% of the total. (Oyarzún, 2012). The higher education system in Chile is made up of State universities, private universities, professional institutes (P.I.) and technical training centers (T.T.C.), with 1,184,805 students, including undergraduate and postgraduate levels. Undergraduate students comprise 94.1% of total registered students in 2013, and postgraduate students make up 3.9%. In terms of education institutions, 12.2% correspond to T.T.C, 28.1% to P.I., and 59.7% to universities (Sies, 2013).

Currently, the relationship between education and entrepreneurship is a topic that is pending in Chile. According to the Global Entrepreneurship Monitor (GEM), experts are in agreement that knowledge and development of skills related to entrepreneurship are not sufficiently encouraged, in either elementary or secondary school (Poblete & Amorós, 2013). In regards to higher education, the situation is not as critical as in previous stages of schooling. However, 3 out of 4 experts consider that the dedication of universities and educational centers in encouraging an entrepreneurial spirit and in creating enterprises is far from adequate, focusing on technical aspects rather than promoting core aspects that will inspire entrepreneurship.

The results are similar in the region of Coquimbo. Soria (2013) has shown that regional experts perceive a lack of focus in primary and secondary school in terms of promoting and teaching behaviour conducive to entrepreneurship, such as entrepreneurial spirit, creativity and knowledge about the market. However, higher education curriculums, specifically in administration and business, have a positive assessment. In regards to this, and with the aim of supporting the educational scope in the Region of Coquimbo, Corfo (Corporación de Fomento de la producción) offers the support network for entrepreneurship, where diverse programmes oriented at encouraging entrepreneurship from an early school age exist. In addition, there are numerous instances to develop programmes related to the

encouragement of entrepreneurial activities and integrate them with higher education centers, as is the case of the Río Arteaga Foundation, which makes a great contribution to the encouragement of an entrepreneurial culture in school-aged students.

Up until now, within the factors that explain business success in the Region of Coquimbo, university and technical training are inversely related (Soria, 2013). This means that higher education is not developing the skills that are needed to support entrepreneurship, revealing the great challenge posed to these centers of education within the region when it comes to entrepreneurship. Therefore, it is necessary to promote entrepreneurship in higher education centers (HECs), given that the more intensive the entrepreneurship training, the greater the possibility that students make the effort to start a new business, and thus contribute to the economy (Álvarez, De Noble & Jung, 2006).

The purpose of this study was to assess the perceptions of students, faculty members and directors of HECs in the region of Coquimbo, Chile with respect to entrepreneurship, taking into account diverse variables in order to establish significant differences in these perceptions that could affect institutional policies or actions, which may ultimately have an impact in regional development. In line with the challenges established by the OECD for tertiary education in Chile and strengthening the quality and equity of higher education, however, programmes are long (usually six years for degrees), the quality of programmes is not equal, the financial focus on education gives rise to some inequalities, and there is a lack of relevance in the skill set needed in the working world (OECD, 2013).

2. Methods

The study consisted of stratified probabilistic sampling among students in their last year of studies through a survey. Ninety-four academic programs were chosen belonging to 12 traditional and private universities and technical institutes within the communes of La Serena and Coquimbo. The student sample size was 389, with a confidence level of 95% and

a sampling error of 5%, 20% corresponding to technical training centers, 36% to technical institutes and 44% to universities. Faculty member sampling size was 56 from the aforementioned programs and correspond to 36 department heads. Table 1 shows sample stratification according to area of knowledge.

With regard to the gender break-down of the sample, 45% of the students were women and 55% men. Of those interviewed, 19% came from Technical Training Centers, 37% from Professional Training Institutes, and 44% from

universities. Regarding academics involved in Chairs bearing on entrepreneurship, 18% held their classes in Technical Training Centers, 38% in Professional Institutes and 45% in universities (54% had tenure and 46% were contracted on a fee basis). Of the 36 managers interviewed, 50% worked in universities, 14% in Technical Training Centers, and 36% in Professional Institutes. With regard to directors, 11% coordinated degree courses, 53% headed a department, and 36% headed a Degree Program.

Area of Knowledge	Students	Faculty Members	Directors
	Sample Percent	Sample Percent	Sample Percent
Engineering	34%	32%	36%
Social Sciences and Economics	37%	32%	31%
Information Technology and telecommunication	15%	18%	17%
Hotel, Tourism and Food	6%	9%	3%
Design and Communication	4%	4%	6%
Sciences	4%	5%	8%

Table 1: Sample stratification. Prepared by authors.

A set of variables were gleaned from other research and studies (Ortiz & Zúñiga, 2011, Loli, Dextre, del Carpio & La Jara, 2010, Lans, Blok & Wesselink, 2014, Martin, McNally & Kay, 2013, Robinson & Shumar, 2014, Landström, Harirchi & Åström, 2012, Alvord, Brown & Letts, 2004). These variables were subsequently submitted to a panel of experts, which decided the ones to be included in the study. Said panel was made up of professionals with strong links to entrepreneurship in the public and/or private sphere. The panel composition was as follows: Industrial Engineer, Lecturer at the State Regional University; Commercial Engineer - PhD in Economics and Business, Director of the Coquimbo Regional Business Development Corporation; Sales Engineer, Diploma in Innovation and Technology, Director of the Coquimbo Regional Fund for Solidarity and Social Investment; Sales Engineer, Mechanical Engineer, MBA, Diploma in Management, Innovation and Technology Transfer, Director of

the Coquimbo Regional Technical Cooperation Service; Industrial Engineer, MBA, Head of Not-for-Profit Co-operation since 2002. The Technical Cooperation Service's mission is to serve micro-entrepreneurs and micro-firms that "dream of growing"; Social Worker, Master in Development and Organizational Behavior, Executive Director of the Santiago Innova Corporation; Food Engineer, MBA, Master in Management and Company Organization, Business Innovation Agent for the Regional Innovation Project; Engineer in International Trade, Diploma in International Business, Diploma in Company Marketing, Coquimbo Regional Director for Export Promotion and Lecturer in Financial Management at the Regional Private University.

Once the research variables had been drawn up by the panel of experts, these were tested in a pilot sample to determine Cronbach's Alpha Coefficient (CA) - a method used to measure the reliability and validity of



the measurement (Cronbach, 1951). The CA method is widely used to assess the consistency of the questionnaire responses (Pinto, Fogliatto & Qannari, 2014). The CA may range from 0.0 to 1.0, and quantifies the degree to which a tool's elements correlate with one another (Adamson & Prion, 2013). Values exceeding 0.65 are considered acceptable and those greater than 0.8 are considered excellent (Leontitsis & Pagge, 2007, Köttner-Jan, 2010).

Variables considered and ultimately used in the evaluation are presented below.

Teaching Strategies (VAR 1): Activities conducted by institutions of higher learning in order to promote entrepreneurship as part of the student's learning, such as offers of elective courses or courses that promote entrepreneurship within academic curriculums.

Faculty Member Skills (VAR 2): Skills or profiles of faculty members with respect to teaching, promoting or strengthening entrepreneurship in institutions of higher learning.

Infrastructure (VAR 3): Availability of existing physical resources within an entity for the development of activities related to entrepreneurship and for the promotion of new business ventures.

Networking (VAR 4): The art of building and maintaining personal or institutional relationships in the long term, having mutual benefits for the parties involved.

Institutional Experience (VAR 5): Type of knowledge or entrepreneurship skills, which can be derived from observation, experiencing a new event, or any other event that could occur at an institution during a specific period of time, leaving a mark.

Student Skills (VAR 6): Characteristics associated with the individual's personality

for entrepreneurship, such as identification of opportunities, pro-activeness, creativity, vision, administrative skills.

Student Interpersonal Skills (VAR 7): Individual development characteristics within the context of work.

Student Attitude (VAR 8): Related to the strength with which the individual follows an idea or project, or attributes to potentiate business ventures.

Student Capability in Face of Risk (VAR 9): This encompasses the individual's attitudes, how they act in the face of risk, which is a natural consequence of mentation and their way of thinking as entrepreneurs.

Government Financial Support (VAR 10): This refers to the availability of financial resources, capital and debt, for new business ventures as well as for growing businesses, which include grants and subsidies. This includes the entire funding chain, from capital semilla (for new ventures) to markets with sophisticated capital (large businesses).

Programs and Government Strategies (VAR 11): Group of actions undertaken within a determined context, with the aim of promoting and creating business ventures.

In addition, to determine the effectiveness with which higher education centers implement their teaching resources, two questions were included aimed at students in order to establish if they had identified or developed a business idea or opportunity (excluding entrepreneurship with social value or inter-entrepreneurship)

3. Results

Cronbach's alpha coefficient for each of the variables is shown in table 2, and are accepted for being greater than 0.65.

Coefficient	Students		Faculty members		Directors	
	Value	No. of Elements	Value	No. of Elements	Value	No. of Elements
Cronbach's Alpha	0.89	60	0.82	24	0.70	19

Table 2: Coefficients for the reliability of instruments. Prepared by authors.

The effect of each variable was assessed using Statgraphics Centurion XVI 32-bit

edition, using an analysis of variance (Anova). Differences among average values were

analyzed through a least significance difference (LSD) test with a significance level of $\alpha = 0.05$ and a confidence interval of 95% ($P < 0.05$). In addition, a multiple range test (MRT) was used,

which was included in the statistical program to show the existence of homogenous groups within each of the parameters (Table 3).

Factor	Students		Faculty members		Directors	
Teaching Strategy (VAR 1)	3.25a	± 0.92	3.64a	± 0.90	3.55ab	± 0.90
Skills of Faculty Members (VAR 2)	3.48a	± 0.98	3.38a	± 0.99	3.92b	± 0.81
Infrastructure (VAR 3)	3.48a	± 0.92	3.86b	± 1.09	3.78ab	± 1.10
Networking (VAR 4)	3.13a	± 1.15	3.64b	± 0.91	3.56b	± 1.13
Institutional Experience (VAR 5)	3.39a	± 1.12	3.73b	± 0.80	3.89b	± 0.52
Students' Skills (VAR 6)	3.55a	± 0.51	3.34b	± 0.86	3.5ab	± 0.74
Interpersonal Skills (VAR 7)	3.68a	± 0.45	3.68a	± 0.74	3.64a	± 0.64
Student Attitude (VAR 8)	3.90a	± 0.50	3.32b	± 0.69	3.47b	± 0.65
Ability in the face of Risk (VAR 9)	3.68a	± 0.60	3.46b	± 0.85	3.61ab	± 0.87
Government Financial Support (VAR 10)	2.36a	± 0.97	2.82b	± 0.88	2.39a	± 0.96
Government Programmes and Strategies (VAR 11)	2.70a	± 1.08	2.92a	± 0.82	3.39b	± 0.81

Table 3. Anova Variables. Prepared by authors.
a,b Different letters in the same row indicate significant difference (p-value<0,05) (Values expressed median ± Standard Deviation)

Data was evaluated using a Likert scale, where 1 corresponds to total disagreement and 5 is total agreement with the affirmation. Table

4 shows the percentage of subjects who had a positive perception with a value of at least 4 for the variable being measured.

Variable	% Students Approving	% Faculty Members Approving	% Directors Approving
Teaching Strategy (VAR 1)	29%	43%	33%
Skills of Faculty Members (VAR 2)	44%	39%	81%
Infrastructure (VAR 3)	41%	64%	56%
Networking (VAR 4)	37%	39%	42%
Institutional Experience (VAR 5)	48%	66%	81%
Students' Skills (VAR 6)	20%	43%	47%
Interpersonal Skills (VAR 7)	27%	63%	61%
Student Attitude (VAR 8)	46%	54%	50%
Ability in the face of Risk (VAR 9)	37%	14%	64%
Government Financial Support (VAR 10)	9%	18%	8%
Government Programmes and Strategies (VAR 11)	23%	43%	33%

Table 4. Percentage of subjects approving their perception by Variable. Prepared by authors.

Variable	Universities	Technical Institutes	Technical Training Centers
Identify Business Opportunity	38%	44%	41%
Develop Business Opportunity	12%	19%	18%

Table 5. Identification and development of business opportunity by type of institution. Prepared by authors.



4. Discussion

Even when higher education centers incorporate activities that promote skills related to entrepreneurship or business into their curriculums, there are significant differences in the perception of these variables among directors, faculty members and students. Only 29% of students are in agreement that their educational institution considers that their institution promotes entrepreneurship within their learning, compared to 33% of directors and 43% of faculty members. These results are relevant, as indicated by Morales-Parragué (2009), since the teaching strategy has a strong effect in the entrepreneurial intention of students. Other authors like Del Solar (2010), state that teaching practices of teachers affect entrepreneurial abilities in students, which subsequently affect teachers.

Vera-Castillo, Baquedano-Venegas, Ferrám-Leiva, Olavarria-Bennett y Parra-Ortiz (2008) indicates the importance of the participation of teachers in continuing education activities in order to develop competencies similar to those needed to be transferred to students. Our results show that there are significant differences between the perceptions of faculty members and directors, and between directors and students. However, the main point is that the 81% approval by directors is greater than faculty member's approval, which is only 39%.

In regards to infrastructure, there is a significant difference in the perceptions between faculty members and students. Students have a low perception, in fact, only 41% evaluate infrastructure in a favourable manner, compared to 64% of faculty members and 56% of directors. The creation of an entrepreneurial environment, as well as the generation of the appropriate physical spaces is considered vital (Concha, Álvarez & Sáez, 2004). According to a study conducted by the International Labour Office for Latin America and the Caribbean (2007), infrastructure is considered to be a critical variable, and could become one of the factors that young people consider as most important when opting for self-employment or an enterprise.

The theoretical and empirical development of networking has established that networks are the main medium by which critical resources associated with entrepreneurial activities are shared. (Herrera-Echeverri, 2009). A low percentage of students (37%), faculty members (39%) and directors (42%) interviewed consider that this variable is covered in their higher education center.

In terms of institutional experience, there are significant differences among students as well as among faculty members and directors. According to García (2004), who cites Edvinsson et al., the intellectual capital can be defined as the possession of knowledge, applied experience and organizational technology, among other variables. It also includes diverse actions such as evaluating, reporting and most importantly, the transfer of needed experiences in order to materialize a project (Benavides & Sánchez, 2000). An important difference among students, faculty members and directors is appreciated: while only 48% of students approve the transfer of institutional experience, faculty members and directors feel the same, with 66% and 81% respectively. Sobrado-Fernández and Fernández-Rey (2010) propose this situation, indicating that the majority of universities have a weak entrepreneurial connection, decreasing the experience they are able to transfer.

Regarding student competencies, there only exist differences between the perceptions of students and faculty members. Although the average is higher for students, only a fifth of those interviewed consider themselves as having these competencies, while 43% of faculty members and 47% of directors feel their students have an entrepreneurial personality. According to the study by Cabana-Villca, Cortés-Castillo, Plaza-Pasten, Castillo-Vergara and Álvarez-Marín (2013), the specific weight of this variable corresponds to 29% entrepreneurial capability potential. On the other hand, in 2005, Sánchez, Lanero and Yurrebaso (2005) showed that a proactive personality as a student competency that positively influences entrepreneurial intentions.

The analysis of interpersonal skills or development characteristics of an individual within the context of work indicates that

there are no significant differences among any of the samples. This variable has the least consideration in studies on entrepreneurial ability (Benavides & Sánchez, 2000, Kantis, Postigo, Federico & Tamborini, 2002).

The literature indicates attitude as one of the most important variables of an entrepreneur (González & Rodríguez, 2008, Moriano, Palací & Morales, 2006, Calantone, Cavusgil & Zhao, 2002, Nybakk, Crespell, Hansen & Lunnan, 2009), and although there do exist significant differences among the perceptions of students, faculty members and directors, attitude is considered a relevant variable among those interviewed (students 46%, faculty members 54%, directors 50%).

There are significant differences among directors and faculty members, as well among students in the evaluation of ability in the face of risk, which is considered to be an important variable in the profile of an entrepreneur (Martín-Rojas, García-Morales & Bolívar-Ramos, 2013, Perks & Hughes, 2008, Roxas & Chadee, 2013, Dai, Maksimov, Gilbert & Fernhaber, 2013, Mathieu & St-Jean, 2013). Specifically, only 14% of faculty members interviewed considers that students possess this ability, 37% of students assume to have it, and 64% of directors believe students have this ability.

Although our country and region has government agencies (Sercotec, Corfo, Fosis) that support and develop new markets, strengthening product innovation, services and/or goods, the perception of those interviewed segments is that this support is lacking. Students consider 2.36 as a median and only 9% approves this variable, while faculty members consider 2.82 as an average and 18% approves, and lastly, directors have an average of 2.39 with 8% approval. Although GEM Coquimbo shows more favourable results for infrastructure (Soria, 2011), it seems that only experts value this resource as support. This situation was considered in the conditioning study of entrepreneurial activity and supporting institutions within a local scope, as in the case of the province of Alicante, where 20.91% of those interviewed considered the absence of sufficient financial support as an obstacle to

entrepreneurship (Gómez, Mira & Martínez, 2007).

Current legislation on university and intellectual property are considered an important variable for the generation of spin-offs (Monge, Briones & García-Pérez de Lema, 2011). Particularly in the Region of Coquimbo, (Soria, 2011), experts indicate that the slow process in the creation and operation of an enterprise, in addition to regional government policies, constitute the main obstacles for entrepreneurship and do not favour new companies. This perception is shared among the interviewed students, with only 23% of them considering such policies as adequate, in comparison with 33% of directors and 43% of faculty members, with significant differences among directors as well as faculty members and students.

4. Conclusions

An important gap in student competencies in regards to entrepreneurship can be appreciated. Considering that the ecosystem within universities is an influencing factor, significant differences have been shown to exist in how the key players perceive the variables under study.

It can be concluded that faculty members are leaders in the classroom but implement teaching strategies that do not contribute to entrepreneurial development. At the same time, HECs should transfer available entrepreneurial knowledge as institutional experiences to the design and practical implementation in the classroom.

The different perceptions of directors and faculty members compared with that of students can make the design, planning and resource allocation difficult in installing an effective ecosystem that may approach the concept of entrepreneurship in a comprehensive manner, having a positive impact in the creation of value in their professional development, and thus contributing to the development of the economy.

The lack of government financial support as being of little consideration by all those interviewed is highlighted, even though there

are numerous public and private initiatives and programmes that support entrepreneurship in the country. These initiatives are not being promoted within universities, and according to a study conducted by Corfo between 2009 and 2012, the amount of entrepreneurs who received Corfo subsidies grew 344% (Corfo, 2012).

With respect to the future direction of innovation and entrepreneurship, it is suggested that future studies focus on evaluating with greater detail those internal and external factors that may influence entrepreneurial ability of students. The limitations of the current study are that the findings are indicative of higher education centers in the Region of Coquimbo, and thus the results cannot be considered representative of higher education in Chile.

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