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AD-MINISTER

CONTENIDOS

- 5** **CONTEMPORARY FEMALE ENTREPRENEURSHIP IN NICARAGUA**
Emprendimiento femenino contemporáneo en Nicaragua
Michael J. Pisani
- 21** **FACTORES DETERMINANTES EN LA ADOPCIÓN DE PRÁCTICAS DE RESPONSABILIDAD DE SOCIAL EMPRESARIAL: UN ANÁLISIS SECTORIAL EN LAS FRANQUICIAS MEXICANAS**
Determining factors in the adoption of corporate social responsibility practices: a sectoral analysis of Mexican franchises
María del Carmen Gaytán Ramírez, Cesario Armando Flores Villanueva
- 39** **SME INNOVATION PROCESS: COMPARISON OF SERVICE AND MANUFACTURING FIRMS**
Proceso innovación en pymes: comparación de empresas de servicios y manufactura
Ronald Mora-Esquivel, Daniel Varela-Jiménez, Juan Carlos Leiva
- 65** **CULTURAL DIMENSIONS AND ENTREPRENEURIAL PERFORMANCE INTERACTION IN SMALL AND MEDIUM ENTERPRISES IN ZIMBABWE**
Las dimensiones culturales y la interacción entre el desempeño empresarial en las pequeñas y medianas empresas en Zimbabwe
Watson Munyanyi, Champion Chiromba, Misheck Diza, Rabson Magweva, Dzikamai Muzvidziwa
- 85** **GESTIÓN DE ACTIVOS INTANGIBLES DE CAPITAL RELACIONAL EN INSTITUCIONES DE EDUCACIÓN SUPERIOR**
Management of intangible assets of relational capital in higher education institutions
Natalia Marulanda Grisales, Claudia Lorena Rincón Grajales, Francisco Javier Echeverry Correa
- 113** **LA GESTIÓN DE LA CADENA DE SUMINISTRO SOSTENIBLE EN LA INDUSTRIA ALIMENTICIA**
Sustainable supply chain management in the food Industry
Edgar Guillermo Rodríguez Guevara
- 135** **THE EVOLUTION OF INTERLOCKING DIRECTORATES STUDIES - A GLOBAL TREND PERSPECTIVE**
La Evolución de los Estudios de Redes de Directores – Una Perspectiva de Tendencia Global
Miguel Ignacio Córdova Espinoza
- 166** **GUÍA PARA AUTORES**

CONTEMPORARY FEMALE ENTREPRENEURSHIP IN NICARAGUA¹

EMPRENDIMIENTO FEMENINO CONTEMPORÁNEO EN NICARAGUA²

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ABSTRACT

Women are important entrepreneurial actors within the Nicaraguan economic ecosystem. Majority female-owned firms comprise 32.7% of all urban Nicaraguan formal enterprises; these ownership rates far exceed the regional (21.8%) or global averages (14.5%). Within Nicaragua, self-employment rates for women (43.3%) surpass that of men (28.3%). This article describes the contemporary Nicaraguan entrepreneurial landscape for female-owned enterprises using the 2016 Nicaraguan Enterprise Survey of 333 formal sector urban-based firms conducted by the World Bank. Principal multivariate results include the concentration of female top management with majority female-ownership, the role of the informal sector in spawning formal female enterprises, and size constraints of female-owned enterprises.

KEY WORDS

Female Entrepreneurship, Nicaragua

RESUMEN

Las mujeres son importantes actores empresariales dentro del ecosistema económico nicaragüense. La mayoría de las empresas propiedad de mujeres comprenden el 32,7% de todas las empresas formales urbanas de Nicaragua; estas tasas de propiedad exceden con creces los promedios regionales (21,8%) o globales (14,5%). Dentro de Nicaragua, las tasas de autoempleo de las mujeres (43,3%) superan a las de los hombres (28,3%). Este artículo describe el panorama empresarial nicaragüense contemporáneo para las empresas propiedad de mujeres utilizando la Encuesta de Empresas Nicaragüenses 2016 de 333 empresas urbanas del sector formal realizadas por el Banco Mundial. Los principales resultados multivariantes incluyen la concentración de la alta dirección femenina con la propiedad mayoritaria de mujeres, el papel del sector informal en el desarrollo de empresas femeninas formales y las limitaciones de tamaño de las empresas de mujeres.

PALABRAS CLAVE

Emprendimiento femenino, Nicaragua

1 This article complies with standard academic ethical practices. The secondary data used (exempt from IRB review) was collected under the auspices of the World Bank Enterprise Survey group and is warehoused with the World Bank. Public account news sources were also utilized. No external funding was used in this research and there are no conflicts of interest (or competing interests) in the production of this research. This research is original and has not been submitted or published elsewhere.

2 Este artículo cumple con las prácticas éticas académicas estándar. Los datos secundarios utilizados (exentos de la revisión del IRB) se recopiló bajo los auspicios del grupo de la Encuesta Empresarial del Banco Mundial y se almacenan en el Banco Mundial. También se utilizaron fuentes de noticias de cuentas públicas. No se utilizó financiamiento externo en esta investigación y no hay conflictos de interés (o intereses en conflicto) en la producción de esta investigación. Esta investigación es original y no ha sido enviada o publicada en otro lugar.

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Emprendimiento femenino contemporáneo en Nicaragua

INTRODUCTION

With less than a \$15 dollar investment, Jessica Flores began her Nicaraguan micro-business out of necessity to help pay for her college tuition (Rivas, 2017a, 2017b). In 2009, Ms. Flores was studying industrial engineering in Managua, Nicaragua and hit on the idea to introduce her own line of pet medicines. She grew up as a pet lover and knew how to deworm dogs. At first, she sold her pet deworming medicines (and deworming service) door to door and gradually built up a steady clientele. By the time she graduated from university, Ms. Flores expanded her business to include a full range of health services for pets, including grooming, surgery, and lab work—in essence Ms. Flores had created a pet clinic. The business grew and transitioned from an informal itinerant business operation to a fixed-location formal enterprise that in 2017 includes a second pet clinic, eight employees, and a growing product line including a recently developed dog shampoo. Ms. Flores is among a unique group of female entrepreneurs operating formal enterprises with employees, comprising 2.9% of all economically active women, in Nicaragua (INIDE, 2017), the topic of this article. To this end, location and context matters greatly within the framework of entrepreneurial research (Welter, 2010), and this is particularly so when gender is considered (Marlow & Martinez Dy, 2017).

Doing business in Nicaragua, the second poorest nation in the Western Hemisphere with a per capita income of \$1,940, is challenging (World Bank, 2017a). For ease of doing business, the World Bank ranks Nicaragua 127th worst out of all 190 countries surveyed and ranks Nicaragua 26th worst of 32 countries in Latin America (The World Bank, 2017b). For example, the World Bank estimates the initial regulatory costs of starting a formal business in Nicaragua is 68 percent of per capita GDP (World Bank, 2017a). The consequence of such onerous government oversight is a very large informal sector (Brenes & Cruz, 2016; Pisani & Pagán, 2004) where formality may be as much an exception, rather than the norm, particularly for small business concerns (Pisani, 2016).

Sanz and Lazzaroni (2008) note additional barriers to enterprise development in Nicaragua such as access to financing, closed social networks, low levels of education and administrative experience, and lack of an economic climate that facilitates and fosters entrepreneurship. For example, family business groups are common in Central America. They often dominate local markets while maintaining relatively closed social networks organized by familial affiliation (Frutos-Bencze, 2017). Yet, formal business enterprises do emerge and may grow and prosper, even in challenging economic environments like Nicaragua, such as Ms. Flores' pet clinics described above. And not all the business and economic news is bad for Nicaragua, current economic growth hovers around five percent with inflation contained at around three percent (Banco Central de Nicaragua, 2017).

In this country of more than six million people, Nicaraguan women have played important roles as leaders in society, the political arena, and business,

especially since the revolutionary period of the 1970s and beyond (Babb, 2001). In 2017, two-thirds of urban Nicaraguan women participated in the workforce with underemployment noted as a concern (INIDE, 2017). Currently, 43.3% of women are self-employed, a rate much higher than men (28.3%) (INIDE, 2017). This is, in part, a result of the large informal sector where a direct relationship exists between informality and self-employment which are both inversely related to per capita income (Xavier et al., 2012). As such, self-employment remains an important economic employment outlet and driver of the economy along with formal business ownership.

The general study of female entrepreneurship in emerging economies is underdeveloped; especially so in respect to Central America. This exploratory research seeks to shed light on female entrepreneurship in Nicaragua as a starting point by examining the characteristics of female entrepreneurship and the role female entrepreneurship plays in formal sector enterprise development and performance. The data source for this study comes from the World Bank's 2016 Nicaraguan Enterprise Survey of 333 formal sector firms. The next section discusses the pertinent literature, section three reviews the data and descriptive statistics, section four reports the results with a discussion, and the last section concludes the article.

LITERATURE REVIEW

There is a growing body of literature surrounding female entrepreneurship as a distinct area of entrepreneurship research focus and contribution. Generally, the extant literature suggests: 1) self-employed participation rates for women are generally lower than men; 2) women launch entrepreneurial endeavors with fewer financial resources, women encounter more restricted access to formal financial channels, and women receive fewer investments from angel and venture capital markets than men; 3) there is sectoral segregation whereby self-employed women are more likely to occupy economic space in consumer-oriented retail and personal services and less likely to export compared to self-employed men; and 4) women entrepreneurs tend to own smaller enterprises curtailing firm performance than men (Jennings & Brush, 2013). With respect to Nicaragua, the literature is mostly representative of the Nicaraguan case—that is Nicaraguan female entrepreneurs are somewhat more constrained regarding financial access, lean toward a retail focus, and are smaller in enterprise size than male-owned Nicaraguan firms—but the literature is not so representative with respect to self-employment participation rates where Nicaraguan women outpace Nicaraguan men.

In addition, Langowitz and Minniti (2007, p. 357) suggest that the propensity toward female entrepreneurship originates from the perception of “the existence of opportunities, self-confidence in one’s own entrepreneurial skills, and knowing other entrepreneurs” who may be engaged in business startup. As stated, some markets may be less “visible” for female entrepreneurs to engage; Orser et al. (2010)

note that Canadian female-owned firms are less likely to export vis-à-vis their male counterparts. Santiago-Castro and Pisani (2013) also find that female entrepreneurs in Puerto Rico are less likely to engage export markets while facing many local competitors. Williams et al. (2017) study the connection between informality at firm start-up and firm performance across 127 countries utilizing female ownership as a control variable. Yet the study and role of female entrepreneurship may be more than a control variable in the firm progression from informality to formality, particularly in emerging market environments (Pisani, 2016; Pisani et al., 2017).

Notwithstanding the growth in publications surrounding female entrepreneurship over the past 30 years or so, there are still gaps in knowledge especially in regard to female entrepreneurship in emerging market contexts. Female entrepreneurship and associated gender roles in developing and emerging markets may be heavily influenced and conditioned by culture in the form of “local traditions and norms” (Welter, 2017, p. 166) and enterprise location, such as home-based businesses (Pisani & Yoskowitz, 2012).

There is little extant study of self-employment generally and of female self-employment more specifically in Central America. Two studies do focus exclusively on Nicaraguan female entrepreneurship. In his study of the female self-employed in Nicaragua during the 1990s, Pisani (2006, p. 92) notes the “importance of work experience, access to capital, and stability in the home in the creation of self-employed female directed enterprises.” Pisani also finds evidence of opportunity- and necessity-based self-employment selection and sectoral switching following the national business cycle. That is, when the economy slumps, self-employment had the highest returns for women, hence opportunity-led entrepreneurship. When the economy rebounds, self-employment attracts women who cannot maximize their returns in the wage and salaried sector, hence necessity-led entrepreneurship. Additionally, the informal sector in Nicaragua often becomes a refuge for necessity-based female entrepreneurs. Pisani (2016) in his examination of Nicaraguan small in-home convenience-like stores or “*tienditas*” owned primarily by female entrepreneurs and ubiquitous throughout the country, classified informal *tiendita* enterprises as failing (30.4%), ailing (18.6%), stable (25.4%), and healthy (25.6%) with the healthiest firms earning profits of \$4 or more per day.

As almost no research has focused on formal sector female entrepreneurship in Nicaragua, hence this present research is exploratory. Consequently, the research questions posed explore the fundamental essence of female entrepreneurship in Nicaragua.

- What are the basic characteristics of female-owned businesses in Nicaragua?
- Are there unique a) start-up conditions, and b) general business constraints faced by female-owned enterprises in Nicaragua?
- How does female ownership impact the composition of firm-level management in Nicaragua?

DATA & SUMMARY STATISTICS

The survey data for this study derives from the 2016 Nicaragua Enterprise Survey undertaken by the International Finance Corporation (IFC) of the World Bank (WB) and is archived at the WB.⁴ The WB enterprise survey series “is a firm-level survey of a representative sample of an economy’s private sector” (World Bank Group, 2017). Since 2006, this standardized survey has been deployed in 148 countries covering more than 160,000 firms. The standard questionnaire contains about 200 questions recorded in 13 main sections: firm-level demographics, general information, infrastructure and services, sales and supplies, degree of competition, innovation, capacity, land and permits, crime, finance, business-government relations, labor, business environment, and performance.

The WB’s Enterprise Survey sampling objectives (methodology) used for its cross-sectional Nicaraguan sample include: randomization, representativeness of the urban formal private sector excluding agriculture, and sufficient number of respondents for robust statistical testing (World Bank, 2016)⁵. The survey was stratified by industry (i.e., manufacturing, retail, and other services⁶), by firm size of permanent workers (i.e., small, 4-20 employees, medium, 21-50 employees, and large, 51 or more employees), and by location (i.e., Managua, other than Managua⁷).

In all, 333 enterprises were randomly surveyed from a universe of 1,455 firms (World Bank, 2017c). The reported non-response rate was 39.3% with non-participating firms replaced with randomly selected comparable firms. Lastly, the World Bank contracted completion of the survey through *Borge y Asociados* (Borge and Associates, a Central American public opinion research firm) and the Salvadoran organization FUSADES (*La Fundación Salvadoreña para el Desarrollo Económico y Social* [Salvadoran Foundation for Economic and Social Development]). The Enterprise Survey was administered in Nicaragua between October 2016 and June 2017 and was completed in a face-to-face interview.⁸ The WB provides weight estimates to generalize to the population as a whole. The median assumption weight is employed in the analysis herein representing an adjusted 63.6% of the estimated universe of registered firms. Overall, the WB describes the data as is in good condition.

Univariate descriptive statistics are examined in exploration of the first research question: “what are the basic characteristics of female-owned businesses in Nicaragua?” Sample base descriptive statistics for Nicaraguan firms that are

4 The data is housed at <http://www.enterprisesurveys.org/Data> and was released for non-WB purposed research in August 2017.

5 Sampling information in this section is derived from The Nicaragua 2016 Enterprise Surveys Data Set document.

6 This categorization also excludes financial intermediation, real estate and renting activities and public sector, and utilities.

7 The other than Managua region includes East (Masaya, Granada, and Carazo), West (Chinandega and Leon), and North (Esteli, Jinotega, and Matagalpa). The World Bank recommends combining East, West, and North into one categorical group.

8 The survey implementation information is derived from the 2016 Nicaraguan Implementation Report, titled “The Nicaragua 2016 Enterprise Surveys Data Set” available at: <http://www.enterprisesurveys.org>.

Michael J. Pisani

Emprendimiento femenino contemporáneo en Nicaragua

majority female-owned, have female ownership participation (but not majority female-owned), and male-owned firms for reference are displayed in Table 1. The descriptive emphasis is placed on majority female-owned firms (defined as 50.0% ownership or more) that make up 32.7% of all firms. Of note, firms with female ownership participation (less than 50% female ownership) comprise just 3.0% of firms; the remaining 64.2% of firms are male-owned. All of the variables presented in Table 1 are significantly different among the three ownership groups. Majority female-owned firms are relatively smaller in terms of number of employees and annual sales.⁹ More than half of majority female-owned firms are located outside of the capital city of Managua in contrast to male-owned firms. Industry sector, though somewhat similar across groups, illustrates a difference in concentration for female-owned firms in manufacturing, less so among other services.

Table 1: 2016 Descriptive Statistics for Nicaraguan Formal Enterprises by Gender

Variable	Majority Female Owned	Female Ownership Participation	Male Owned
Current Mean No. of Full-Time Employees (std.dev.)	18.9 (30.6)	26.9 (22.7)	23.6 (67.8)
Mean Annual Sales US\$ (std.dev.)	617,311 (3,243,453)	(67.8) 1,222,759	1,607,030 (9,473,167)
Location (%)			
Managua	44.2	98.7	57.5
Not Managua	55.8	1.3	42.5
Industry (%)			
Manufacturing	22.1	3.5	18.9
Retail	50.9	69.3	50.8
Other Services	27.0	27.2	30.2
Top Manager Female (%)	72.1	6.6	4.8
Mean Years of Experience for Top Manager in Sector (std.dev.)	22.1 (10.9)	24.5 (4.9)	21.9 (12.0)
Began Operations as an Informal Enterprise (%)	22.6	0.0	14.2
Online Website (%)	41.4	67.5	37.7
Business Innovation [new products/ services introduced over last 3 years] (%)	37.9	58.5	51.5

⁹ All monetary values are reported in US dollars at the exchange rate of 1 US dollar equals 29.32030 Nicaraguan córdobas as reported on Dec. 31, 2016 from XE.com.

Variable	Majority Female Owned	Female Ownership Participation	Male Owned
Obstaclesto Services/Land- Yes			
Electricityasan Obstacle (%)	54.5	62.4	75.5
Telecommunications as an Obstacle (%)	61.7	70.3	58.6
Land (%)	40.9	11.8	46.4
Other Business Obstacles - Yes			
Business Licensing and Permits (%)	52.1	36.2	69.0
High Transportation Costs (%)	35.9	4.8	34.4
Insufficient Access to Finance (%)	36.1	4.8	27.3
Crime, Theft, Disorder (%)	40.2	33.6	45.1
Labor Regulations (%)	45.2	90.8	64.3
Corruption (%)	56.9	70.2	62.7
Tax Rates (%)	45.6	68.9	63.8
Tax Administration (%)	52.1	89.5	60.2
Has Checking or Saving Account (%)	70.4	100.0	88.0
International Trade			
Import Operations	22.1	74.1	34.2
Export Operations	7.9	1.3	10.9
On-Site Tax Compliance- Visited by Tax Official [last 12 months] (%)	77.5	89.5	59.4
Compete Against Informal Firms – Yes (%)	54.0	85.5	78.5
Percent of All Firms	32.7	3.0	64.2
N	2,480	228	4,866

Notes: i) all results are weighted; ii) variables by row in italics are significantly different among the three groups (at the .01 level), estimated by comparison of means or cross-tabulations.

Of major significance, female-owned firms are 72.1% of the time headed by a top female manager who is very experienced; for male-owned firms and firms with female participation, seldom are women the top manager. More than one-fifth of majority female-owned firms (FOFs) began operations informally perhaps precipitating increased interest from tax officials. Informal origins may also

provide FOFs insider knowledge of the informal sector including more nuanced options to compete against informal rivals, perhaps reducing competition from the informal sector. Informality, in essence, creates an environment where enterprises function outside the purview of government oversight and peripheral at best to the formal institutions of capitalism such as a smaller scope of banking interaction or engagement in international trade. FOFs show lower rates of new product innovation over the past three years. Yet 41.5% of FOFs possess an online website and generally fewer obstacles— performance rates for an online presence and fewer obstacles that are largely better than their male counterparts. Nevertheless, the gamut of business obstacles exists for all ownership groups.

RESULTS & DISCUSSION

In this section, the remaining two research questions are empirically explored and discussed through multivariate analyses. These are: Are there unique start-up and general business constraints faced by female-owned enterprises in Nicaragua? And, how does female ownership impact the composition of firm-level management in Nicaragua?

Startup: Unique Start-up Constraints Faced by Female-owned Enterprises in Nicaragua

Two questions within the enterprise survey allow for some exploration of startup conditions for majority owned female enterprises (the second research question, part a). The first is whether or not the firm began life in the informal or formal sector and the second is the number of fulltime employees at startup. To find a potential relationship, a logistic regression was estimated. A logistic regression is an appropriate methodological instrument when the dependent variable is binary, allows for relaxed assumptions, and provides an estimation of the odds or likelihood of an event occurring.

The dichotomous dependent variable is firm ownership by gender, where majority female-owned businesses=1, and male owned businesses=0.¹⁰ The primary independent variables are firm informality at enterprise initiation (informal=1, otherwise=0) and the number of fulltime employees at startup. Three standard control variables were included in the estimation, firm sales, firm location (Managua = 1, otherwise = 0), and industry sector (manufacturing, retail, and other services; other services served as the reference category). Nicaraguan majority owned female firms are 41.3% more likely to have begun operations in the informal sector as compared to their male owned counterparts (see Table 2).¹¹ Furthermore, each additional fulltime employee at startup decreases the likelihood of being a majority female-owned firm by 1.4%. Hence, Nicaraguan majority female owned enterprises are more likely to begin life with fewer fulltime employees and in the informal sector than male owned Nicaraguan enterprises.

10 Partially female owned firms (ownership less than 50%) were omitted from this analysis.

11 This is calculated as $|1 - |$, see the last column in Table 2 ($|1-1.413|$ or .413 or 41.3%).

Table 2: Logistic Regression Results for Ownership (Female Ownership=1) and Startup Characteristics

Variables+	β Coefficient	S.E.	Wald	Sig. ^	Exp(β)
Constant	-.926	.061	229.429	.000‡	.396
Informal at Startup (Yes=1)	.346	.070	24.511	.000‡	1.413
Number of Full-Time Employees at Startup	-.014	.003	23.685	.000‡	.986
Control Variables					
Annual Sales	.000	.000	12.537	.000‡	1.000
Location (Managua=1)	.577	.055	111.559	.000‡	1.782
Industry Classification			.849	.654	
Manufacturing	.059	.077	.586	.444	1.060
Retail	.000	.063	.000	.994	1.000
-2 Log Likelihood significance level: 8623.749 .000					
Cox & Snell R2 Nagelkerke R2: .045 .063					
Hit Ratio (%): Yes No Overall: 0.0 99.4 66.7					

Notes: +Reference categories= Location, Managua; Industry, Other Services.

^ Represents significance at the *P<0.10; †P< 0.05; and ‡P<0.01 levels.

Source: Authors' calculations from the 2016 Nicaraguan Enterprise Survey.

General Business: Unique General Business Characteristics, Obstacles, and Constraints Faced by Female-owned Enterprises in Nicaragua

This sub-section focuses on the contemporary determinants of majority female-owned Nicaraguan enterprises with respect to selected general business characteristics, obstacles, and constraints (providing empirical insights into part b of the second research question). To find a potential relationship, a logistic regression was estimated. The dichotomous dependent variable is firm ownership by gender, where majority female-owned businesses=1, and male owned businesses=0.¹²

¹² Partially female owned firms (ownership less than 50%) were omitted from this analysis.

The primary independent variables, selected *a priori* because of the exploratory nature of the current research, are the number of current employees; an online presence through a public website (yes=1, otherwise=0); the presence of business innovations defined as the firm-level introduction of a new product or service over the last three years (yes=1, otherwise=0); firm-level obstacles to: access electricity (yes=1, otherwise=0), acquire land (yes=1, otherwise=0), obtain business licenses or permits (yes=1, otherwise=0), incur high transportation costs (yes=1, otherwise=0), access to finance (yes=1, otherwise=0), thwart crime/theft/disorder (yes=1, otherwise=0), follow labor regulations (yes=1, otherwise=0), confront corruption (yes=1, otherwise=0), pay taxes because of existing tax rates (yes=1, otherwise=0), and conduct business in the face of tax administration (yes=1, otherwise=0); firm possession of a checking/saving account (yes=1, otherwise=0); import (yes=1, otherwise=0); export (yes=1, otherwise=0); received a visit by a tax official in the preceding 12 months (yes=1, otherwise=0); and firm-level competition with informal competitors (yes=1, otherwise=0). Three standard control variables were included in the estimation, firm sales, firm location (Managua=1, otherwise=0), and industry sector (manufacturing, retail, and other services; other services served as the reference category).

The logistic regression results for Nicaraguan majority female-owned enterprises are reported separately as either more likely or less likely vis-à-vis their male counterparts below. The obstacles in which female-owned firms are more likely to face than male-owned firms include: access to electricity, 193.3% more likely; acquisition of business licenses or permits, 55.0% more likely; and following labor regulations, 159.2% more likely (see Table 3). Female-owned firms are 95.7% more likely to have an online presence through a website and are 136.5% more likely to import goods necessary for business operations than male-owned firms. With regard to possession of a checking or saving account, female-owned enterprises are 673.3% more likely to have a checking or saving account than male owned enterprises. Lastly, majority female owned companies are 113.4% more likely to experience competition from informal businesses in their business segment than male-owned companies.

Table 3: Logistic Regression Results for Ownership (Female Ownership=1) and General Business Characteristics, Obstacles, & Constraints

Variables+	β Coefficient	S.E.	Wald	Sig. ^	Exp(β)
Constant	-.512	.197	6.734	.009‡	.599
Number of Current FT Employees	.000	.001	.139	.709	1.000
Website (Yes=1)	.671	.088	57.822	.000‡	1.957
Business Innovation# (Yes=1)	-1.338	.077	304.098	.000‡	.262
Electricity an Obstacle (Yes=1)	1.076	.086	155.428	.000‡	2.933
Telecommunications an Obstacle (Yes=1)	-1.052	.084	158.584	.000‡	.349
Land an Obstacle (Yes=1)	.081	.083	.954	.329	1.084
Business License/Permit an Obstacle (Yes=1)	.439	.087	25.332	.000‡	1.550
High Transport Cost an Obstacle (Yes=1)	-2.207	.149	220.523	.000‡	.110
Finance an Obstacle (Yes=1)	-1.778	.150	140.881	.000‡	.169
Crime/Theft/Disorder an Obstacle (Yes=1)	-1.207	.077	244.438	.000‡	.299
Labor Regulations an Obstacle (Yes=1)	.953	.084	127.132	.000‡	2.592
Corruption an Obstacle (Yes=1)	-.203	.091	4.916	.027†	.816
Tax Rates an Obstacle (Yes=1)	.084	.086	.962	.327	1.088
Tax Administration an Obstacle (Yes=1)	-.077	.095	.666	.414	.926
Checking/Saving Account (Yes=1)	2.046	.095	459.320	.000‡	7.733
Import (Yes=1)	.861	.086	99.289	.000‡	2.365
Export (Yes=1)	-.040	.124	.105	.746	.961
Visit by Tax Official in Last Year (Yes=1)	-1.290	.083	242.531	.000‡	.275
Compete vs. Informal Firms (Yes=1)	.758	.077	96.226	.000‡	2.134
Control Variables					
Annual Sales	.000	.000	2.494	.114	1.000
Location (Managua=1)	.561	.086	42.331	.000‡	1.752
Industry Classification			185.888	.000‡	
Manufacturing	.869	.111	61.819	.000‡	2.385
Retail	1.366	.100	185.760	.000‡	3.920
-2 Log Likelihood significance level: 6224.673 .000					
Cox & Snell R2 Nagelkerke R2: .320 .445					
Hit Ratio (%): Yes No Overall: 62.3 92.5 82.5					

Notes: +Reference categories= Industry, Other Services.

Introduced a new product and/or service over the last 3 years.

^ Represents significance at the *P<0.10; †P< 0.05; and ‡P<0.01 levels.

Source: Authors' calculations from the 2016 Nicaraguan Enterprise Survey.

The obstacles in which majority female-owned firms are less likely to face than male-owned firms include: access to telecommunications, 65.1% less likely; report high transportation costs, 89.0% less likely; access to finance, 83.1% less

likely; incur crime, theft, or disorder, 70.1% less likely; and suffer government corruption, 18.4% less likely. Majority female-owned enterprises are 73.8% less likely to have introduced a new good or service over the past three years as compared to male-owned enterprises. And female-owned firms are 72.5% less likely to have been visited by a government tax official over the preceding 12 months in contrast to male-owned firms.

Composition of Firm-level Top Management in Majority-owned Female-owned Enterprises in Nicaragua

To uncover the relationship between ownership and top management (the third research question), a logistic regression was estimated. The dichotomous dependent variable is firm ownership by gender, where majority female-owned businesses=1, and male owned businesses=0.¹³ The primary independent variable is top manager is female (=1), otherwise=0. Three standard control variables were included in the estimation, firm sales, firm location (Managua=1, otherwise =0), and industry sector (manufacturing, retail, and other services; other services served as the reference category). Majority female ownership and organizational leadership are closely linked. Indeed, Nicaraguan female business owners are 45 times more likely to have a female as the top manager than Nicaraguan male business owners (see Table 4). This result indicates that majority female ownership heavily impacts the composition of top management answering the third research question. This result is not true of minority (less than 50%) female owned firms.¹⁴

Table 4: Logistic Regression Results for Ownership (Female Ownership=1) and Top Manager (Female Top Manager=1)

Variables+	β Coefficient	S.E.	Wald	Sig. ^	Exp(β)
Constant	-2.143	.084	647.895	.000†	.117
Top Manager Female	3.830	.082	2168.014	.000†	46.053
Control Variables					
Annual Sales	.000	.000	3.399	.065*	1.000
Location (Managua=1)	.255	.074	11.806	.001†	1.291
Industry Classification			6.624	.036†	
Manufacturing	.233	.105	4.935	.026†	1.263
Retail	.200	.087	5.317	.021†	1.222

-2 Log Likelihood | significance level: 5197.263 | .000

Cox & Snell R² | Nagelkerke R²: .407 | .563

13 Partially female owned firms (ownership less than 50%) were omitted from this analysis.

14 Significant (p=.011) logistic regression results for partially female business ownership (1-50%) indicates a 61.1% lower likelihood of a female top manager vis-à-vis male owned firms (majority female owned firms omitted from the analysis). This result is tentative because of the small number of partially owned female businesses in the sample.

Notes: +Reference categories= Location, Managua; Industry, Other Services.

^ Represents significance at the * $P < 0.10$; † $P < 0.05$; and ‡ $P < 0.01$ levels.

Source: Authors' calculations from the 2016 Nicaraguan Enterprise Survey.

Discussion

The three research questions organize this discussion. The first research question focused on the basic characteristics of formal majority female-owned businesses in Nicaragua. Approximately one-third of all formal business enterprises in Nicaragua are majority female-owned, this compares with 14.5% globally and 21.8% in Latin America and the Caribbean (World Bank, 2017d). This higher participation rate in business may in part be explained by the mobilization and involvement of women in the social and political life of Nicaragua since the revolutionary era of the 1970s (Babb, 2001; Pisani, 2006). The remainder of the basic business characteristics is enveloped in the other research questions and will be addressed below.

At startup, the results indicate a much higher likelihood of informal origin for female-owned Nicaraguan enterprises. This may reflect a period of transition and uncertainty, at times culturally nuanced, to ease into the business sector in face of gendered and often chauvinist challenges from society (Pisani & Yoskowitz, 2012). In turn, this may limit the initial size of female-owned businesses as per the number of fulltime employees in order to reduce visibility in the community. Additionally, resource constraints may work against larger startup size for female-owned firms.

After startup, these resource constraints may account for the generally smaller contemporary enterprise scale in terms of number of employees and firm sales of female-owned enterprises, perhaps encouraging female-owned firms to locate further away from the more intensely competitive market in Managua, the capital city. Majority female-owned Nicaraguan firms are typically led by an experienced female manager and oftentimes begin organizational life in the informal sector. Early organizational life in the informal sector may make formal Nicaraguan female-owned firms more vulnerable to competition from informal business actors and perhaps less innovative over time requiring imported inputs. Furthermore, informality may make the transition to formality more challenging with regard to accessing business licenses or permits, securing electricity, and following labor regulations, but less visible targets for crime, theft, or disorder, transportation issues, or interest from government and tax officials. Closeness to informality of female-owned firms may also create an eagerness and distinction for formality as evidenced by enhanced likelihood of checking and saving accounts which may facilitate financing and a public presence online with a website including access to telecommunications.

Critically for the advancement of women in business, majority female-owned firms provide opportunities for women in top management roles. And they do so at a rate that is 45 times greater than male-owned enterprises. Thus, building management capacity among businesswomen in Nicaragua has fallen to majority female-owned enterprises. Discouragingly, some female participation in ownership does not provide access to or a path for female top managers.

CONCLUSION

This exploratory study of urban formal female entrepreneurship in Nicaragua illustrates the important role of women in business. Three results deserve particular consideration in the conclusion: the high rate of female entrepreneurship, the facilitating role of the informal economy, and the advancement of female managerial talent. First, it is noteworthy that majority female-owned enterprises comprise nearly one-third of all urban formal sector businesses in Nicaragua—this is unexpected because of the relatively low rate of overall economically active women in the workforce. Second, for more than one-fifth of FOFs, the informal economy serves as the incubator for business operations that transition into formality. The informal sector is often dismissed as a negative externality of economic development in emerging markets; in Nicaragua it is instead the business cradle for many FOFs. Lastly, it is within majority female-owned firms where top management is female. In FOFs, women are able to assume top leadership roles and acquire substantial managerial experience on par with their male counterparts.

These three elements have important public policy implications. As policy-makers seek to expand the entrepreneurial ecosystem, clearly facilitating majority female-owned enterprises in the marketplace will allow nascent entrepreneurial forces reflected in high rates of female self-employment to flourish. Policy-makers should perceive the informal economy, not as a wasteland for underemployed labor, but as a potential stepping stone for business development, much like the introductory story of Jessica Flores and her pet clinics. Additionally, policy-makers should encourage and develop female business leaders through mentoring and educational programs in conjunction with successful majority female-owned enterprises.

This study is not without its limitations. First, the World Bank Enterprise Survey data only covers the urban economic environment and the formal economy. Nicaragua still has a large rural population, comprising 41% of the population, which the survey does not cover. Nicaragua also has a large informal sector—employing two-thirds or more of all Nicaraguans—a sector that is not included in the survey data.

Moving beyond this starting point in understanding some of the basic characteristics of Nicaraguan female entrepreneurship, further research may explore the 15 point gap between female and male rates of self-employment. Also, qualitative research as to the training and development of female top managers, particularly in majority female-owned enterprises, may provide actionable insight into providing rewarding career paths for women, businesses, and the economy. Lastly, connecting the inflection points between the informal and formal economy to discern which informal business concerns may achieve success as a formal enterprise is warranted.

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Michael J. Pisani

Emprendimiento femenino contemporáneo en Nicaragua

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FACTORES DETERMINANTES EN LA ADOPCIÓN DE PRÁCTICAS DE RESPONSABILIDAD DE SOCIAL EMPRESARIAL: UN ANÁLISIS SECTORIAL EN LAS FRANQUICIAS MEXICANAS

DETERMINING FACTORS IN THE ADOPTION OF CORPORATE SOCIAL RESPONSIBILITY PRACTICES:
A SECTORAL ANALYSIS OF MEXICAN FRANCHISES

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RESUMEN

Este artículo indaga en las prácticas de responsabilidad social empresarial (RSE) en los sectores de alimentos, comercio y servicios especializados de 366 sistemas de franquicia que operan en México. Las variables de investigación se soportaron en la teoría basada en recursos y la teoría de la agencia. Para el contraste de las hipótesis, se han utilizado las técnicas de análisis discriminante y de regresión logística como complementarias. Los resultados concluyen que el poder discriminador de los factores organizacionales sobre la adopción de prácticas de RSE influye de manera diferente en cada sector. Las variables tamaño, edad franquicia y regalías mostraron mayor poder discriminante para la adopción de prácticas de RSE en el sector alimentos; la cuota de entrada, la edad franquicia y porcentaje, en el sector comercio. Solamente la variable cuota de entrada mostró poder discriminante en el sector servicios especializados.

PALABRAS CLAVE

Responsabilidad Social Empresarial, Franquicias México, Teoría Basada en Recursos, Análisis Discriminante, Regresión Logística.

ABSTRACT

This article investigates the practices of corporate social responsibility (CSR) in the food, commerce and specialized services sectors of 366 franchise systems operating in Mexico. Research variables were supported in resource-based theory and agency theory. To contrast the hypotheses, the techniques of discriminant analysis and logistic regression have been used as complementary. The results conclude that the discriminatory power of organizational factors on the adoption of CSR practices influences differently in each sector. The variables size, franchise age and royalties showed greater discriminatory power in the adoption of CSR practices in the food sector; the entry fee, franchise age and percentage in the trade sector. Only the variable entry fee showed discriminant power in the specialized services sector.

KEY WORDS

Corporate Social Responsibility, Franchising Mexico, Resource Based Theory, Discriminant Analysis, Logistic Regression.

1. INTRODUCCIÓN

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La responsabilidad social empresarial (RSE) es un tema contemporáneo que ha provocado gran interés y por ello se busca conocer sus alcances y características. De acuerdo con Grayson y Hodges (2017) y Webb y Honnen (2006), cada vez son más las empresas que se ven interesadas en incluir prácticas de RSE dentro de su gestión empresarial. Adicionalmente, las instituciones internacionales, las agencias de desarrollo y los movimientos activistas han adoptado prácticas de RSE con el objetivo de mejorar la calidad de vida de las distintas sociedades y proteger el medio ambiente (Bull, 2004).

La RSE es *per se* un concepto complejo que incorpora la acción social de la empresa, la sustentabilidad, el medio ambiente, las relaciones internas con sus empleados, sus competidores y sus clientes, además de la integración de los grupos o clases menos favorecidas, las implicaciones de equidad de género y el compromiso para atender los problemas sociales del entorno donde opera (Cárcamo-Solís, Carrete-Lucero, Álvarez-Castañón & Arroyo López, 2016). En este sentido, Cuervo y Vázquez-Ordas (2008) consideran que las empresas con RSE se comprometen voluntariamente más allá de sus obligaciones legales. A su vez, Lafuente, Viñuales, Pueyo y Llaría (2003), y Singh y Kaur (2016) mencionan que, además de considerar la empresa dentro de sus fronteras, es importante tomar en cuenta la interrelación con los grupos de interés que la rodean (medio ambiente, empleados, consumidores, proveedores, distribuidores, comunidades locales).

Dentro de la fundamentación teórica de la RSE, se encuentra la teoría de los *stakeholders* que sustenta lo anterior. Freeman (1984) define el término *stakeholder* como: “cualquier grupo o individuo que puede afectar o ser afectado por el logro de los objetivos de la empresa” (p.24). Según este autor, los directivos deben buscar relaciones equilibradas entre los *stakeholders* y para ello deben colaborar con ellos para buscar soluciones.

Las empresas otorgan importancia a la RSE debido a que puede beneficiarlas al conseguirles un mayor reconocimiento e identificación de sus valores (Comín, 2007); también es factor esencial para mejorar su reputación y crear una ventaja competitiva (Fombrun & Shanley, 1990; Freeman, 2006; Gatewood, Gowan & Lautenschlager, 1993; Perrigot, Oxibar & Déjean, 2015; Turban and Greening, 1997).

La literatura sugiere que las compañías alrededor del mundo utilizan sus *websites* para demostrar y resaltar su comportamiento socialmente responsable (Bhattacharya, Korschun & Sen, 2009; Maignan & Ralston, 2002; McWilliams & Siegel, 2001). El modelo de franquicias implica una continua relación entre franquiciadores, franquiciados, consumidores y otros grupos de interés. Es por ello que desarrollan actividades como voluntariados, cooperan en asuntos educativos, de salud, de inclusión social; manejan sus actividades de manera que protejan el medio ambiente, por mencionar algunas. De esta manera, las franquicias crean valores compartidos, dependencia mutua, una comunicación adecuada e intercambio de información con sus *stakeholders* (Tariq Anwar, 2011).

De acuerdo con la Asociación Mexicana de Franquicias, este sector industrial contribuye al 6.5% del PIB del país y participa en la generación de 700,000 empleos. Por su parte, la revista *Entrepreneur*, en su artículo “500 Franquicias”, reporta hasta el año 2016 un listado de 1,050 marcas, de las cuales 899 (85.6%) son de origen mexicano y 120 (14.4%) de origen extranjero. En México, las franquicias operan en 13 diferentes giros, siendo los más importantes en participación: alimentos (31%), servicios especializados (13%) y comercio (10%).

El objetivo del análisis de este artículo es determinar cuáles son los factores más eficientes para discriminar entre las franquicias que se involucran en prácticas de RSE y las que no lo hacen, en los sectores de alimentos, comercio y servicios especializados. Para este objetivo se plantea: a) ¿Cuáles son las variables organizacionales con poder discriminatorio significativo que influyen en las franquicias de estos tres sectores para adoptar o no prácticas de RSE? Y, b) ¿El efecto de las variables independientes difiere en los tres sectores de estudio?

Este artículo se basa en el análisis de las prácticas de RSE reportadas en los *website* de 366 franquicias que operan en México en los tres sectores de estudio: alimentos, comercio y servicios especializados. Se utilizaron las técnicas de análisis discriminante y de regresión logística binaria como complementarias para evaluar el efecto de las variables independientes sobre la adopción de actividades de RSE por parte de las franquicias. Soportada teóricamente en la teoría de la agencia y la teoría basada en recursos, esta investigación incluye seis variables independientes que son: la edad de la franquicia, el tamaño, el porcentaje de unidades franquiciadas, la inversión, la cuota de entrada y la regalía.

El estudio de RSE en el sector de franquicias se justifica por razones éticas, por la importancia del sector para las economías emergentes y por los diferentes sectores que adoptan (Perrigot et al. 2015).

2. FUNDAMENTACIÓN TEÓRICA E HIPÓTESIS DE INVESTIGACIÓN

De acuerdo con Caves y Murphy (1976), la franquicia se define como un acuerdo por un periodo definido o indefinido en el cual el propietario de una marca registrada, llamado franquiciador, garantiza a otra persona o firma, llamado franquiciado, el derecho de operar bajo esta marca registrada con el propósito de producir o comercializar un producto o servicio; donde el franquiciador y franquiciado son legalmente independientes, pero económicamente interdependientes (Michael, 2003).

La franquicia es un modelo de negocio que compite en el mercado a través de unidades propias y franquiciadas. Esta industria comprende franquicias de diferentes edades y tamaños, ofreciendo una variedad de productos y servicios en mercados domésticos e internacionales; además, los diferentes requerimientos de inversión y términos de contrato entre los franquiciadores hacen que la industria sea heterogénea. Por ejemplo, esta industria en México opera en trece diferentes sectores: alimentos y bebidas, automotriz, comercio especializado, cuidado personal, educación, entretenimiento, mascotas, niños, salud y bienestar, servicios especializados,

tecnología, turismo y vivienda. La estrategia seguida por el franquiciador para competir en el mercado dependerá del peso específico de factores como la madurez, los recursos, el sector, entre otros. Esta heterogeneidad provoca que las formas y estrategias para involucrarse en actividades de RSE sean diferentes entre los franquiciadores (López & Ventura, 2001; Meiseberg & Ehrmann, 2012).

Para abordar el involucramiento de las franquicias en prácticas de RSE se combina la teoría basada en recursos (TBR) y la teoría de la agencia. La teoría de la agencia (Caves & Murphy, 1976; Jensen & Meckling, 1976) es utilizada para explicar la relación entre el franquiciador (principal) y el franquiciado (agente). Esta teoría señala que los administradores (agentes) de las unidades propias no tienen un fuerte incentivo para desempeñarse eficientemente porque una proporción de su compensación es salario fijo, el cual es determinado independientemente del desempeño de la unidad (Carney & Gedajlovic, 1991). A su vez, los administradores de la unidad deben ser directamente monitoreados para asegurar que su desempeño esté de acuerdo con los estándares, lo cual es un costo para el principal (Fladmoe-Lindquist & Jacque, 1995). Bajo este enfoque teórico la franquicia representa un poderoso incentivo para el franquiciado ya que su compensación varía directamente con el desempeño de la unidad (Carney & Gedajlovic, 1991), de modo que estará motivado a realizar una efectiva administración del establecimiento y de la promoción del concepto de franquicia. Consecuentemente, la necesidad de monitoreo es reducida por el esfuerzo de autocumplimiento del franquiciado (Fladmoe-Lindquist & Jacque, 1995).

La teoría basada en recursos ha sido utilizada en diferentes estudios empíricos (Ghantous & Das, 2018; Gillis, Combs & Ketchen, 2014; Perrigot & Pénard, 2013) y forma parte de las nuevas perspectivas teóricas para estudiar el fenómeno de la franquicia (Fernando Varotto & Aureliano-Silva, 2017). Por otro lado, de acuerdo con Penrose (1959), el grado de involucramiento de una empresa en actividades de RSE se puede abordar a través de la teoría de los recursos de la firma, la cual sostiene que la empresa posee una serie de capacidades y recursos provechosos y difícilmente imitables, conocidos como activos estratégicos, que pueden constituirse en la fuente de una ventaja competitiva sostenible a largo plazo. De acuerdo con esta teoría, los recursos se dividen en dos categorías: 1) recursos tangibles y 2) recursos intangibles. Los primeros se pueden adquirir fácilmente en el mercado por las empresas competidoras e igualmente pueden ser imitados por los competidores. En cambio, los recursos intangibles, tales como derechos de autor, patentes, diseños, marcas registradas y estructura organizacional, son valiosos y difícilmente imitables (Galbreath, 2005).

Usando la teoría basada en los recursos, Gillis et al. (2014) afirman que la reputación de la marca, rutinas y operaciones constituyen activos estratégicos que son propiedad del franquiciador, y que las rutinas de conocimiento compartido y la confianza interfirma son activos estratégicos relacionales que se dan solamente por la relación franquiciador-franquiciado. De esta forma, franquiciador y franquiciado mantendrán valores compartidos, como la adopción de RSE a lo largo de su relación.

2.1 Hipótesis de investigación

La economía de escala permite a las firmas más grandes tener un costo promedio menor que las firmas pequeñas para proveer atributos de RSE (McWilliams & Siegel, 2001). Las franquicias de mayor tamaño logran desarrollar economías de escala que les permiten disponer de recursos financieros y humanos (Carney & Gedajlovic, 1991; Lafontaine & Kaufmann, 1994).

La responsabilidad social implica costos, como por ejemplo compra de equipos y productos ambientalmente amigables, controles estrictos de calidad, seguridad, programas ambientales, entre otros; y los recursos son los medios para cumplir con estas actividades (Branco & Rodrigues, 2006). La teoría de la agencia asume que, conforme las firmas se expanden a lugares geográficos más dispersos, aumentan los costos de observación directa y, por lo tanto, el uso de unidades franquiciadas será mayor (Gillis et al., 2014). Entonces, las franquicias con mayor tamaño serán más visibles para los *stakeholders*, tanto consumidores, futuros franquiciados nacionales e internacionales, proveedores, etc. De esta forma, el monitoreo por parte de los *stakeholders* motivará a la firma a involucrarse en actividades de RSE, ya que la satisfacción de aquellos influye en el desempeño de la firma (Meiseberg & Ehrmann, 2012).

H1) Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados presentan mayor tamaño que las franquicias que no lo hacen.

De acuerdo con Galbreath (2005), la experiencia es una capacidad que representa un recurso intangible de la empresa. Las franquicias con mayor experiencia desarrollan las habilidades para establecer relaciones con los *stakeholders*, producto de experimentación y repetición (Meiseberg & Ehrmann, 2012). De esta manera, las franquicias con más años de experiencia están más preparadas para llevar a cabo este proceso, a diferencia de las franquicias con pocos años en el mercado, que estarán más enfocadas en crecer y es probable que no destinen recursos a actividades de RSE (Meiseberg & Ehrmann, 2012). Castrogiovanni, Combs y Justis (2006) señalan que la edad es un proxy para medir la experiencia de la franquicia.

H2) Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados presentan mayor edad que las franquicias que no lo hacen.

Bradach y Eccles (1989) indican que el sistema de franquicia implica la mezcla de unidades propias bajo el gobierno de la empresa y unidades franquiciadas bajo la operación de inversionistas independientes (franquiciados). Esta elección de estructura híbrida opera porque la existencia de una forma tiene una influencia positiva sobre la otra. Las unidades propias facilitan la difusión de la innovación y también ayudan a incrementar la uniformidad y estandarización de los procesos (Combs, Ketchen & Short, 2011; Nijmeijer, Fabbriotti & Huijsman, 2014); a su vez, las unidades franquiciadas, el aprendizaje y adaptación a los mercados locales (Combs et al., 2011; Sorenson & Sørensen, 2011). El involucramiento en actividades de RSE es una decisión estratégica y su implementación deberá ser más fácil con una

estructura basada principalmente en unidades propias, porque, como menciona la teoría de la agencia, el riesgo de oportunismo por parte del franquiciado implica una mayor tarea de supervisión a cargo del franquiciador para asegurar el cumplimiento de dichas actividades, debido a que los administradores de las unidades propias deberán seguir las políticas uniformes y estandarizadas establecidas por el franquiciador, a diferencia del franquiciado que, como empresario independiente, deberá ser convencido y educado (Perrigot et al., 2015).

H3. Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados cuentan con un menor porcentaje de unidades franquiciadas que las que no lo hacen.

Los recursos intangibles más importantes para lograr los resultados de la empresa son la reputación y la imagen, además de la propiedad intelectual (Galbreath, 2005). Cuando un franquiciador invierte en la reputación de la marca tendrá un fuerte incentivo de aprovechar este recurso valioso para lograr una ventaja competitiva. Un problema de agencia se manifiesta cuando los franquiciados aprovechan la reputación del sistema para ofrecer una calidad inferior, en demérito de la cadena completa (Michael, 2003), realizando acciones que aumentan las ganancias locales a costa de la reputación del franquiciador (Combs et al., 2011), por ejemplo, no invertir o participar en actividades de RSE. Por su parte, Shane (1996) señala que el oportunismo del franquiciado puede ser reducido a través de una alta inversión inicial, puesto que el riesgo de perder su inversión por la cancelación del contrato inhibe un comportamiento oportunista.

H4) Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados requieren inversiones mayores a diferencia de las franquicias que no lo hacen.

De acuerdo con Gillis et al. (2014), las franquicias que valoran mucho el conocimiento plasmado en manuales de operación y planes de entrenamiento consideran la adhesión estricta a las rutinas operativas como un activo estratégico para lograr una ventaja competitiva, y el franquiciado deberá pagar el costo para tener acceso a estos activos estratégicos. Cuando los franquiciadores consideran que estos activos intangibles son muy valiosos, exigirán al nuevo franquiciado mayor cuota de entrada, que refleje el valor de estos activos (Combs & Castrogiovanni, 1994; Diez & Rondán, 2004). La cuota de entrada no se considera propiamente una fuente de ingresos para el franquiciador, representa el costo de seleccionar, calificar y entrenar a los nuevos franquiciados (Scott, 1995). Siguiendo lo anterior, un futuro franquiciado valorará mucho los recursos estratégicos a los que tendrá acceso y estará dispuesto a seguir los estándares del franquiciador, como realizar prácticas de RSE.

H5. Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados, requieren mayor cuota de entrada que las franquicias que no lo hacen.

Gillis et al. (2014) asumen que la reputación de la marca constituye un activo estratégico valioso. Bajo este enfoque, las franquicias que se involucran en prácticas de RSE, lo hacen porque les proporciona mayor reputación y para crear una ventaja competitiva (Perrigot et al., 2015). Puede ser percibido como una señal de éxito de la franquicia (Gallini & Lutz, 1992) el aumento de la cantidad de futuros franquiciados en la cadena. Las franquicias con marcas fuertes y con buena reputación deberán cobrar regalías más altas, ya que los franquiciadores necesitan mantener el prestigio y calidad de la marca (Diez & Rondán, 2004; Rubin, 1978).

H6. Las franquicias que se involucran en actividades de RSE en los sectores de alimentos, comercio y servicios especializados requieren mayores regalías que las franquicias que no lo hacen.

3. METODOLOGÍA

3.1 Muestra

Uno de los medios más utilizados por los franquiciadores alemanes para comunicar las actividades de RSE son las notas de prensa y las páginas web corporativas (Meiseberg & Ehrmann, 2012). Con base en lo anterior, se analizaron los *websites* corporativos de las franquicias que operan en México para conocer si se involucran en actividades de responsabilidad social o no.

La muestra se construyó durante el mes de noviembre de 2016, utilizando como fuente principal datos del artículo “500 franquicias”, de la revista *Entrepreneur* de ese mismo año. Dicha revista reporta anualmente datos de las franquicias mexicanas y ha sido utilizada como fuente secundaria por otros autores (Alba, 2010; Fable & Welch, 1998; Lafontaine & Oxley, 2001). De la misma manera, estas fuentes de información han sido usadas como referencia de datos para investigación en otros países (Alon, 2000; Baena & Cerviño, 2010). Debido a que la revista no contenía los datos completos, principalmente sobre unidades franquiciadas, fue necesario obtener estos valores consultando la página web de la Asociación Mexicana de Franquicias, la página web de cada franquiciador y las revistas electrónicas especializadas en franquicias como: *topfranquicias.com*, *comprarfranquicia.mx*, *100franquicias.com.mx*. La revisión a las distintas fuentes de información permitió la depuración de datos discordantes antes de incluirlos en la base de datos. Se obtuvo una muestra de 366 franquicias, de las cuales 132 pertenecen al sector de alimentos, 154 al sector de servicios especializados y 80 al sector de comercio.

La composición de los sectores de franquicias para este estudio es la siguiente: 1) alimentos, está conformado por franquicias que se dedican exclusivamente a la venta de alimentos; 2) comercio, se constituye por aquellas franquicias dedicadas exclusivamente al comercio de bienes, como por ejemplo: automotriz, comercio especializado, cuidado personal, farmacias; y por último, 3) servicios especializados, el cual está conformado por franquicias que se dedican al equivalente no material de un bien, y se incluyen aquellas enfocadas a consultoría, educación, tintorería, turismo, servicios financieros, entretenimiento y recreación, bienestar y salud.

3.2 Análisis de los datos

Para el tratamiento estadístico de los datos se trabajó con el análisis discriminante por etapas en el software SPSS v. 19. El análisis discriminante permite determinar qué variables son más eficientes para discriminar entre las franquicias que se involucran en prácticas de RSE y las que no lo hacen, en los tres sectores de estudio. Los objetivos primarios del análisis discriminante son la descripción de las diferencias entre grupos y la predicción de pertinencia a los grupos (Hair Anderson, Tatham & Black, 2007; Mileris, 2010; Suárez, 2000), es decir, esta técnica permitió analizar si las variables evaluadas en el mismo contexto presentan diferencias significativas entre los grupos. Adicionalmente, se aplicó la prueba de regresión logística para confirmar la influencia de las variables analizadas con la técnica de análisis discriminante.

La pertinencia de la aplicación de la prueba de análisis discriminante requiere el cumplimiento de algunos supuestos. Para evaluar el supuesto de la hipótesis nula de igualdad de matrices de varianza-covarianza entre los grupos se realizó la prueba de Box. Se obtuvieron los siguientes resultados para cada sector en estudio: alimentos (M de Box = 13.378; F = 2.131; p = 0.047); comercio (M de Box = 6.412; F = 1.002; p = 0.422); y servicios especializados (M de Box = 0.053; F = 0.053; p = 0.819).

Para evaluar la normalidad se siguió el criterio de Pérez López (2004) que señala que: “en la prueba de asimetría y curtosis como un criterio suave suele considerarse normal a la población cuya muestra presenta coeficientes de asimetría y curtosis comprendidos entre -2 y 2” (p. 62). Se reportan valores menores a 2 en todas las variables excepto en la variable regalías. El no cumplimiento de los anteriores supuestos de normalidad e igualdad varianza-covarianza entre los grupos, no afecta gravemente la técnica por ser el análisis discriminante una técnica robusta (Torrado-Fonseca & Berlanga-Silvente, 2013), sobre todo si se utilizan muestras grandes. El número mínimo de observaciones en la muestra total deberá ser de cinco casos por cada variable independiente y el grupo más pequeño deberá tener un mínimo de 20 observaciones (Hair et al., 2007). Las tres muestras de los diferentes sectores cumplen con este criterio: ALIMENTOS (n = 132, nG1 = 105, nG2 = 27); COMERCIO (n = 80, nG1 = 60, nG2 = 20) y SERVICIOS (n = 154, nG1 = 113, nG2 = 41). Todos los sectores de estudio cumplen con el tamaño de muestra recomendado.

Para identificar las variables que mejor discriminan entre los grupos se utilizan los criterios de Lambda de Wilks y estadístico F. Cuando los valores de Lambda de Wilks son cercanos a cero significa que la variable tiene mayor poder discriminante. Sin embargo, es el estadístico F el que determina qué variables se deben tener en cuenta en el modelo.

Dada la gran dispersión en los valores de las variables tamaño, inversión y cuota de entrada, se han agrupado ascendentemente en 5 grupos de acuerdo con la siguiente clasificación: el grupo uno agrupa los valores desde cero hasta el percentil veinte; el grupo dos, los valores entre el percentil veinte y cuarenta;

el tres, entre el percentil cuarenta y sesenta; el cuatro, entre el percentil sesenta y ochenta; y el grupo cinco, valores mayores al percentil ochenta. Para la variable tamaño se han identificado: el grupo uno como “microfranquicias”, el grupo dos como “franquicias pequeñas”, el grupo tres como “franquicias medianas”, el grupo cuatro como “franquicias grandes” y el grupo cinco como “franquicias muy grandes”. A su vez, para las variables inversión y cuota, el grupo uno ha identificado a las franquicias como “muy económicas”, el grupo dos como “baratas”, el grupo tres como “costo medio”, el grupo cuatro como “caras” y el grupo cinco como “muy caras”.

3.3 Variables Independientes

La edad de la franquicia representa los años operando como franquicia (Alon, 2000). El tamaño representa las unidades totales de la cadena, la suma de las unidades propias más franquiciadas (Mariz-Pérez & García-Álvarez, 2009; Meiseberg & Ehrmann, 2012; Perrigot et al. 2015). El porcentaje de unidades franquiciadas representa el porcentaje de las unidades franquiciadas del total de la cadena (Kaufmann, Bhattacharya & Hsu, 2008; Mariz-Pérez & García-Álvarez, 2009; Meiseberg & Ehrmann, 2012; Gillis et al., 2014; Perrigot et al., 2015). La variable regalías representa el porcentaje de las ventas que recibe el franquiciador del franquiciado como pago continuo y la variable cuota de entrada, el costo en pesos mexicanos que paga el franquiciado para adherirse a la cadena (Castrogiovanni et al., 2006). La inversión representa el costo para abrir cada nueva unidad. El tamaño, la cuota de entrada y la inversión se agruparon en uno de los cinco grupos descritos anteriormente.

3.4 Variable dependiente

La variable dependiente prácticas de RSE reporta el involucramiento o no en actividades de RSE. Para la identificación de las actividades de RSE se usaron las dimensiones utilizadas por Perrigot et al. (2015), que son medio ambiente, sociedad, producto y servicio, y gobernanza corporativa. Se ha codificado con “0” a las franquicias que no muestran actividades de RSE en su *website* y con “1” a aquellas franquicias que sí muestran y practican dichas actividades.

4. RESULTADOS

El Q de Press contrasta la capacidad discriminadora, comparando el número de clasificaciones correctas con el tamaño total y el número de grupos. El valor del estadístico Q de Press debe ser mayor al valor crítico de 6.63 (Chi cuadrado para un grado de libertad a un nivel de confianza del 0.01) (Hair et al., 2007, p. 274).

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Factores Determinantes en la Adopción de Prácticas de Responsabilidad de Social Empresarial:
Un Análisis Sectorial en las Franquicias Mexicanas

Tabla 1. Prueba de igualdad de las medias de los grupos.

Variables	Alimentos			Comercio			Servicios especializados		
	Lambda de Wilks	F	Sig.	Lambda de Wilks	F	Sig.	Lambda de Wilks	F	Sig.
EDAD FRANQUICIA	0.921	11.135	0.001	0.945	4.5	0.037	0.971	4.478	0.036
PORCENTAJE*	0.954	6.288	0.013	0.956	3.618	0.061	0.989	1.644	0.202
REGALÍA	0.995	0.622	0.432	0.992	0.652	0.422	0.993	1.048	0.307
TAMAÑO	0.918	11.575	0.001	0.994	0.449	0.505	0.979	3.185	0.076
INVERSIÓN	0.989	1.47	0.228	0.987	0.988	0.323	0.98	3.146	0.078
CUOTA	0.987	1.688	0.196	0.886	10.012	0.002	0.944	9.07	0.003

*Porcentaje de unidades franquiciadas en la cadena.

La tabla 1 muestra los resultados de la igualdad de medias entre los grupos de franquicias que adoptan prácticas de RSE y las que no lo hacen en los sectores alimentos, comercio y servicios especializados. Los resultados indican que la edad de la franquicia es la variable que es significativamente diferente en los tres sectores. La variable porcentaje de unidades franquiciadas es significativamente diferente en los sectores alimentos y comercio. La variable tamaño es significativa solo en alimentos y servicios especializados. La variable cuota de entrada es significativamente diferente en comercio y servicios especializados. La variable inversión es significativamente diferente en servicios especializados. Es importante mencionar que la variable regalía no es significativamente diferente en ninguno de los grupos.

Tabla 2. Variables discriminatorias significativas en los tres sectores por el método por pasos

Variables	Alimentos N = 132	Comercio N = 132	Servicios especializados N = 154
EDAD FRANQUICIA	8.020***	7.179***	
PORCENTAJE*		6.477***	
REGALÍA	6.993***		
TAMAÑO	11.575***		
INVERSIÓN			
CUOTA		10.012***	9.070***
CLASIFICADOS CORRECTAMENTE	81.80%	76.80%	73.40%
Q DE PRESS	53.5	23.6	33

p < 0.05* p < 0.01** p < 0.001***

*Porcentaje de unidades franquiciadas en la cadena.

Los resultados obtenidos en la tabla 2 validan que, estadísticamente, la matriz de clasificación de los 3 segmentos evaluados es mejor que la clasificación esperada de forma aleatoria (Hair et al., 2007). También muestra las variables más eficientes para discriminar a las franquicias que adoptan prácticas de RSE y las que no lo hacen en cada uno de los sectores. El método por pasos ordena secuencialmente las variables independientes de acuerdo con su poder discriminante. A mayor valor de F, es mayor la contribución de la variable independiente para explicar la variable dependiente. En el sector alimentos la variable tamaño (F = 11.575) es la de mayor poder discriminante, en seguida la variable edad de la franquicia (F = 8.02) y, finalmente, la variable regalía (F = 6.99), lo que indica que las franquicias de mayor tamaño, mayor edad franquiciadora y que cobran más regalías tienden a adoptar prácticas de RSE. El sector comercio muestra con mayor poder discriminante significativo a la variable cuota de entrada (F = 10.01), seguida de las variables edad de la franquicia (F = 7.17) y porcentaje de franquicias (F = 6.47), lo que indica que las franquicias que cobran mayor cuota de entrada, de mayor edad y que mantienen una proporción menor de unidades franquiciadas en sus cadenas tienden a adoptar prácticas de RSE. En el sector servicios especializados solamente la variable cuota de entrada (F = 9.07) tiene poder discriminante significativo. La variable inversión no muestra poder significativo discriminante en ninguno de los grupos.

Tabla 3. Análisis de regresión logística para los sectores alimentos, comercio y servicios especializados.

Variables	Alimentos		Comercio		Servicios especializados	
	B	Sig.	B	Sig.	B	Sig.
EDAD FRANQUICIA	0.063	0.064	0.198	0.005	0.018	0.554
PORCENTAJE*	-0.005	0.574	-0.027	0.025	0.006	0.475
REGALÍA	0.167	0.067	-0.191	0.14	0.015	0.769
TAMAÑO	0.415	0.036	-0.427	0.155	0.121	0.458
INVERSIÓN	-0.127	0.58	-0.566	0.091	0.072	0.663
CUOTA	0.283	0.195	1.075	0.001	0.309	0.055
CONSTANTE	-4.345	0	-1.262	0.345	-3.256	0
CORRECTAMENTE CLASIFICADAS	82.60%		85%		72.10%	
R ² DE COX Y SNELL	0.145		0.274		0.077	
R ² DE NAGELKERKE	0.228		0.406		0.112	

*Porcentaje de unidades franquiciadas en la cadena.

La tabla 3 expresa los resultados de la regresión logística binaria que evalúa la influencia de las variables independientes sobre la variable dependiente. Los resultados muestran que en el sector alimentos la variable edad de la franquicia ($B = 0.063$; $p = 0.064$), la variable tamaño ($B = 0.415$; $p = 0.036$) y la variable regalía ($B = 0.167$; $p = 0.067$) contribuyen significativamente a la adopción de prácticas de RSE. En el sector comercio especializado las variables edad de la franquicia ($B = 0.198$; $p = 0.005$), porcentaje de franquicias ($B = -0.027$; $p = 0.025$), cuota de entrada ($B = 1.075$; $p = 0.001$) e inversión ($B = -0.566$; $p = 0.091$) contribuyen significativamente. En el sector servicios especializados solamente la variable cuota de entrada ($B = 0.309$; $p = 0.055$) contribuye significativamente en los franquiciadores que adoptan prácticas de RSE.

Para el sector alimentos se confirma la hipótesis H1, H2, H6. Para el sector comercio se confirma la hipótesis H2, H3 H5. Para el sector servicios especializados se confirma la hipótesis H5.

Los resultados del análisis discriminante (tabla 2) y de la regresión logística binaria (tabla 3) confirman, por diferentes métodos, el poder discriminatorio significativo de las variables independientes en los tres sectores de estudio. Adicionalmente, el porcentaje de franquicias correctamente clasificadas muestran resultados muy similares al evaluarlos por los dos métodos.

5. DISCUSIÓN

Los resultados muestran que son diferentes las variables que contribuyen a la adopción de prácticas de RSE en los tres sectores de estudio. En el sector alimentos, el tamaño de la franquicia, relacionado con los recursos financieros y no financieros de la cadena que le permiten destinar los recursos necesarios para la adopción de prácticas de RSE, aporta el mayor poder discriminante. La edad de la franquicia, relacionada con la experiencia, y las regalías, relacionada con los activos intangibles y la marca de la franquicia, también influyen significativamente en la adopción de estas prácticas. El análisis anterior revela que la adopción de prácticas de RSE en el sector alimentos está asociada a los recursos tangibles e intangibles de la franquicia.

En el sector comercio, la variable cuota de entrada podría estar relacionada con el valor de la marca y el deseo de los franquiciadores de ganar reputación frente a los *stakeholders*, lo cual es considerado como un activo estratégico valioso y, por lo tanto, exigirán mayor cuota de entrada a los nuevos franquiciados. Esta variable muestra el mayor poder discriminante en este sector. La variable edad de la franquicia, asociada con la experiencia como recurso valioso para transmitir las rutinas de trabajo y relaciones a largo plazo con los franquiciados y clientes, influye para la adopción de prácticas de RSE. La influencia significativa negativa de la variable porcentaje de franquicias indica que en este sector los franquiciadores que adoptan prácticas de RSE lo hacen principalmente a través de unidades propias, como una estrategia de mayor control. Aunque la variable inversión, asociada con los recursos, aparece significativa en la regresión logística, no mantiene poder discriminatorio significativo en los resultados del análisis discriminante.

En el sector servicios especializados solamente la variable cuota de entrada manifiesta poder discriminatorio significativo en las franquicias que adoptan prácticas de RSE. Este sector se caracteriza por la venta de servicios intangibles, por lo tanto el valor de los activos intangibles es muy valioso para este sector de franquiciadores. Esta característica podría explicar que solo la cuota de entrada relacionada con el valor de los activos intangibles del franquiciador manifieste un poder discriminatorio significativo. El resultado en este sector podría tomarse con reserva debido a su bajo poder explicativo en la regresión logística (R^2 Nagelkerke = 0.112).

Los resultados de la función discriminante señalan que el 81.8% de las franquicias fueron correctamente clasificadas en el sector de alimentos, el 76.8% en el sector de comercio y el 73.4% en el de servicios especializados. Los resultados obtenidos en la tabla de clasificación de la regresión logística fueron del 82.6% en el sector alimentos, del 85% en comercio y del 72.1% en servicios especializados. Estos datos muestran resultados muy consistentes en el sector de alimentos y servicios especializados. En el sector de comercio muestra resultados superiores en la regresión logística.

6. CONCLUSIONES

De acuerdo con los resultados obtenidos, el 20.4% de las franquicias del sector de alimentos se involucra en prácticas de RSE. En el sector de comercio fue el 25%, y en el sector de servicios especializados, 26.6%. Estos datos reflejan que los franquiciadores del sector alimentos muestran un menor involucramiento en prácticas de RSE.

Adicionalmente, se concluye que el poder discriminatorio de los factores organizacionales influye de manera diferente en cada sector para la adopción de prácticas de RSE. La influencia del tamaño, con mayor poder discriminante, la edad de la franquicia y las regalías, asociados a los recursos de la cadena, influyen en la adopción de prácticas de RSE en el sector alimentos.

Para el sector comercio, el mayor poder discriminante lo ejerce la cuota de la franquicia, asociada a los activos intangibles; adicionalmente, la edad de la franquicia, asociada al recurso de la experiencia, influye significativamente. Para este sector el involucramiento en prácticas de RSE se hace en unidades propias con el objetivo de ejercer mayor control sobre sus operaciones. Implementar prácticas de RSE en los franquiciados requiere el convencimiento y cooperación de estos, a diferencia de las unidades propias, donde el franquiciador ejercerá mayor control (Perrigot et al., 2015).

Para el sector de servicios especializados, caracterizados por el valor de sus activos intangibles, un recurso valioso es involucrarse en prácticas de RSE. Los franquiciadores de este sector con actividades de RSE exigen altas cuotas de entrada a los nuevos franquiciados para integrarse a su sistema, por lo tanto, para este sector la cuota de entrada manifiesta un poder discriminatorio entre los franquiciadores con prácticas de RSE y los que no lo hacen.

Futuras líneas de investigación podrían incluir variables adicionales como duración del contrato, crecimiento y origen de la franquicia. Además, realizar un estudio de percepción donde se contraste la opinión de los franquiciadores y de los franquiciados sobre los factores que impulsan la adopción de prácticas de RSE y cuáles son los beneficios esperados.

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SME INNOVATION PROCESS: COMPARISON OF SERVICE AND MANUFACTURING FIRMS

PROCESO INNOVACIÓN EN PYMES: COMPARACIÓN DE EMPRESAS DE SERVICIOS Y MANUFACTURA

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ABSTRACT

The article seeks to provide an understanding of process innovation, an area of innovation research where there is less contribution in the literature. The understanding of alternative ways in which companies innovate both their products and services, and organize and evaluate the results of their innovative activities is the focus of this study. To this end, a qualitative and explorative methodology was designed, focused on Small and Medium Enterprises (SME) from the information technology sector (ITS). It was then compared with a previous study of SME manufacturing in the food sector, both of which are in Costa Rica. Comprehensive, face to face interviews were implemented, with SME owners or managers who have recently launched an innovative service. The Nvivo version 10 software was used to process the information. The investigation results allowed the identification of a series of common phases and elements in the SME studied, for the development of innovations. Also, the existence of a series of differences and similarities in the innovation processes of these ITS SME with manufacturing SME was detected.

KEY WORDS

Innovation process, SME, Service innovation, Manufacturing innovation, Information Technology Sector

RESUMEN

Este artículo buscar aportar conocimiento en el proceso de innovación, un área de la investigación en innovación en la cual existe menor aporte en la literatura. La comprensión de formas alternativas que tienen, empresas que innovan en productos y aquellas que innovan en servicios, para organizar sus actividades innovadoras y evaluar sus resultados es el foco de atención del presente estudio. Para ello, se llevó cabo un estudio cualitativo y exploratorio en Pequeñas y Medianas Empresas (Pymes) pertenecientes al sector de tecnologías de información y comunicación, el cual se contrastó con otro estudio previo sobre Pymes del sector manufacturero de alimentos, ambos en Costa Rica. Se aplicaron entrevistas en profundidad con emprendedores quienes recientemente habían lanzado una innovación. Se utilizó el software Nvivo versión 10 para procesar la información. La investigación permitió determinar una serie de pasos comunes y elementos que caracterizan el proceso de la innovación. Asimismo, permitió evidenciar diferencias y similitudes en el proceso de innovación entre empresas manufactureras y del sector de tecnologías de información y comunicación.

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PALABRAS CLAVE

Proceso de innovación, Pymes, Innovación en servicios, Innovación en manufactura, Tecnologías de información y Comunicación.

1. INTRODUCTION

Innovation is currently considered the keystone in the competitive capacity of countries. Consequently, the capacity to generate advances in science, technology and new knowledge has become fundamental (World Economic Forum, 2016; OECD, 2005).

In the study of innovation we find: a) a greater empiric contribution in the innovative result than in the process (Crossan & Apaydin, 2010), b) also, the explanation of the phenomena in developed countries and large companies (Matos, Aparecida, & Querido, 2016), and c) a greater contribution in the literature of technological innovations (Randhawa & Scerri, 2015).

In view of the aforementioned, the following research question is posed: are there differences in the characteristic elements of the innovation process of a product and service between Small and Medium Enterprises (SME) in the food sector and SME in the information technology sector (ITS). Therefore, the present study seeks to understand the phases in the innovation process in SME of the ITS and their characteristic elements.

Also, this study aims to determine similarities and differences in regards to the SME manufacturing innovative process for the food manufacturing industry. This information will be from the point of view of a small, developing country, such as Costa Rica. Additionally, this study will be focused on the understanding of process linearity from the study participants' perspective.

Costa Rica is the 53rd most innovative country, according to the Global Innovation Index (Cornell University, INSEAD and WIPO, 2017), second in Latin America, only behind Chile. Globally, Costa Rica is ranked 1st on ITS exports on the same index. Additionally, 93.4% of Costa Rican companies are SME; most of these companies are focused on service-rendering activities (43%) (Costa Rican Ministry of Economy, Industry and Commerce, 2015).

It is important to highlight the role of both sectors studied (Food and ITS) in the Costa Rican economy. The former, according to the Costa Rican Agency for Exports Promotion (PROCOMER) (2018) represented 14.65% of the country's exports of goods; which in their totality, according to Costa Rican Central Bank (2018), represented 19.3% of the Gross Domestic Product (GDP) in 2017.

In contrast, the ITS sector is made up, on average of 8.4% of exports in services from 2012 to 2014, and all service exports constituted 14.8% of GDP in 2017, according to the Costa Rican Central Bank (2017). Furthermore, according to the World Bank (2016), this sector stands out for employing 2.5% of the workforce as well as its importance for job creation in the country.

To accomplish its research goal, the study adopted an exploratory qualitative approach. The innovation process' elements identified by six ITS SMEs' owners and managers interviewed were compared with those obtained in a recent study from Mora, Lafuente and Fonseca (2016) in six SME in the manufacturing sector. In the first cycle, descriptive coding and sub-coding were used to obtain and summarize citations whose contents referred to innovation process' elements; then, they were grouped into categories or related themes into second coding cycles (Miles, Huberman & Saldaña, 2014). Regarding the qualitative data processing, Nvivo 10 software was used.

As a result, a group of phases and their characteristic elements were identified, as well as tools and methodologies used to develop an innovation process within the companies. These processes are mainly focused on obtaining feedback from potential clients from the early stages of the process. Also, the study found similarities and differences between both sectors, and focused on its linearity.

2. LITERATURE REVIEW

Innovation, as a fundamental aspect of economic development, has been analyzed from different perspectives (Crossan & Apaydin, 2010; Ritala, & Almpanopoulou, 2017) that have generated different typologies and definitions (Oke, 2007). However, as Geldes and Felzensztein (2013) noted, there is an agreement in the proposed definition by OECD (2005), which states that an innovation implies the improvement and/or development in market introduction for products or services that are completely new.

Specifically, in the service sector, innovation is conceptualized as a merge between product and process innovation. Also, Agarwal and Selen (2011) define service innovation as a significant improvement in the way a service is provided, which may involve: a new interface for the client, new ways of delivery, improvements at the organizational level or in the marketing proposal, and/or changes that cause improvements in the productivity of the people providing such services.

Likewise, Den Hertog, Van de Aa and De Jong (2010) propose a conceptual model that identifies six main competencies that the service innovation process must involve. They include aspects such as: signaling user needs and technological options; conceptualizing; (un-)bundling; co-producing and orchestrating; scaling and stretching; and learning and adapting.

Along with the competence model previously presented, there is a new service generation process described by Johnson et al (2000), which proposes an activity cycle to develop a new service, which remarks the non-linearity of the process and the relevance of the process facilitators (team, design techniques, organizational culture, among others) that allow the design and provision of the service to the consumer.

The model proposed by Johnson et al (2000) consists of four stages: design, analysis, development and launch, which involve the formulation of strategies and objectives and the revision of the results obtained along with the formulation of new

ideas. Also, Randhawa and Scerri (2015) emphasize that the interaction between service consumers and suppliers, along with other parties, enables the education of the company and the development of strategies that allow for more efficient competition.

An effective methodology to manage these types of efforts is Design Thinking (Brown, 2008; Leavy, 2010; Dijksterhuis, & Silviu, 2017), which involves five main stages: understanding, empathize, defining the problem, coming up with ideas and trying them. They deliver a process that looks to solve users' problems in a creative, intuitive way which directly impacts the users' needs. Along with this methodology, the Lean Startup (Ries, 2011) method intends to lower the risks in these types of activities, with a main pillar which is customer feedback along the process.

2.1 Differences between the Manufacturing Sector and the Services Sector

First, it is important for services to demonstrate some characteristics such as: intangibility and heterogeneity, a durable character, greater interaction with users and simultaneity between production and consumption (Sampson & Spring, 2012).

In regard to the latter, it is relevant to point out that most of its performance is based on the user's criteria (Bessant & Tidd, 2011). As a result of this, a service innovation tends to be tried in the market instead of in research and development labs (Tidd & Hull, 2003).

The innovation process in services involves a high degree of interaction between the supplier and the customer (Zeithmal & Bitner, 2003; Witell et al., 2017). Also, the interaction with the consumer during the process of service innovation results in the existence of a greater level of customization in the final result, which causes greater heterogeneity (Randhawa & Scerri, 2015; Leyer, Stumpf-Wollersheim, & Pisani, 2017).

There are areas where greater differences between the innovative process of products and services can be found (Ettlie & Rosenthal, 2011; Rosca, Arnold, & Bendul, 2017); for example, services select alternative ways to formalize their innovation processes, and there are peculiarities in the methodology used to try new concepts with customers. Managers have multiple roles at all levels, both in the generation of ideas and in the development of new production processes.

2.2 Evolution of Innovation Models

As Kotsemir and Meissner (2013) noted, since the 1950's the concept of innovation process has continuously evolved. The first of these generations, presented by Rothwell (1994), focused on the development of new technologies that would automatically generate a demand dominated by its supplier, where research was the main input in the process (Velasco, Zamanillo, & Gurutze, 2003). Also, a lineal trajectory was assumed from its discovery to its introduction into the market, which was later known as the Technology Push model.

After that, and from the intensification of the competition from big corporations, it is important to understand the needs found in the market, which is the main aspect difference from the first generation (Matos et al., 2016); from that point on, the innovation process began its second generation, called Market Pull Model, which was focused on researching facts related to the demand as its keystone (Rothwell, 1994).

The third generation, known as the “coupling model”, took place between the early 70’s and mid 80’s, as the result of the growth of inflation rates due to the increase in oil prices. This period was highlighted by the search of a balance between research, development and marketing needs (Matos et al., 2016). This implied the development of a model that allowed for better management of resources. The Stage Gate model, developed by Cooper (1994, 2017), came about as a key proposal to divide the innovation process into the following stages: idea, preliminary research, implementation of a business case, development, trials and validation. Each of such stages had quality controls known as doorways, where project development decisions were made.

The generation of the fourth innovation process is described by Kline y Rosenberg (1986), who propose a model that follows a logic sequence, but not as a linear, continuous step sequence (Matos et al., 2016). According to Kline and Rosenberg (1986), a commercial innovation is controlled by two main forces: the market and technology, which usually determine the opportunity to improve a product, its performance and/or the ability to reduce production costs. All of these relate to three areas in the technological innovation process: research, knowledge and the principal process chain (Velasco et al., 2003).

A fifth process generation area highlights the fact that companies do not innovate in isolation, so it is important to consider a structure in which the relationships of the company are related to others, both directly as indirectly when it comes to innovating (Rothwell, 1994).

Lastly, as both an alternative and as a part of the sixth generation of the innovation process, the Open Innovation model presented by Chesbrough (2003) is brought up as a solution to the innovation practice problem: concentrating only on information and the capacities of the innovation-interested company. Chesbrough (2003; 2017) proposes that before the dynamic conditions of the current environment, the innovation-interested companies must recognize valuable ideas which may come internally or externally from their management structure, and to highlight the value of their importance regardless of their origin.

2.3 Considerations on the process linearity

As noted by Escorsa and Valls (1998), a linear model is used which seeks to understand the different stages and activities carried out during the innovation process. However, these models vary far from reality, and be quite complex (Crossan & Apaydin, 2010; Escorsa & Valls, 1998).

Also, Velasco, Zamanillo and Gurutze (2003) state that process representation in a simple, rational way is very useful in its understanding. However, there are differences in this type of presentation: a) a sequential, organized character is not always necessary at some of the stages of the process, since they may exist in a different order; b) the existence of a different feedback processes; the exchange of information back and forth where unforeseen occurrences may appear which are not evidenced in this model; and c) these types of models must use some kind of activity as an initial process cause. However, naming a single element as a process activator may be a little extreme due to the existence of multiple innovation sources.

Lastly, it is important to state the innovation process in some companies does not follow stages or a systematic process, mainly because they do not have the resources to do so (Faherty & Stephens, 2016).

3. RESEARCH DESIGN

The research was qualitative and exploratory. It used the Case method (Yin, 2009). Six ITS service company innovation cases were studied. The manufacturing company part was analyzed using a study by Mora et al. (2016) who developed their study analyzing six Costa Rican manufacturing companies' innovation cases.

3.1 Case Selection

The theoretical sampling was used, not only by replicating and contrasting previous cases (Eisenhardt, 1989) in another sector, but also to understand a construct being studied and its variations (Patton, 2002), specifically, elements of the innovation process. The sampling was designed to include informants from: a) SME firms -company, smaller in size to 100 employees; b) firms which have developed and launched service innovations to the market during the last two years; c) firms that operate in ITS subsectors. With respect to these criteria, the collaboration of informants was used to select the cases; named by Patton (2002) as typical cases. Thus, The Technological Institute of Costa Rica alumni program and ITS professionals were contacted. Moreover, outstanding companies in the media and innovation award-winning companies were selected. These sampling criteria were similar to manufacturing firm cases selected by Mora et al. (2016).

Table 1 describes characteristics of the firms studied and the interviewees. In regards to the sampling unit, four small companies, a medium company and a micro company were taken into consideration. It is important to note that these companies belong to different sub-sectors within the ITS. There were three company manager-owners, one marketing manager, one operational manager and a software development representative.

Table 1
Characteristics Of The Company Samples And Interviewees

Code	Sub-Sector ^a	Company Size ^b	Number of Interviewees	Interviewees Positions	Number of Visits
CT	6202 Hardware Innovation Consultancy	Micro	1	Owner-Manager	1
FP	6399 Video Game Consultancy and Development	Medium	1	Manager	2
GP	5320 Personal Messaging Service	Small	1	Manager	2
HH	6201 Health-related issues search platform	Small	2	Owner-Manager, Development Representative	2
SB	5820 Executive presentation development platform	Small	1	Owner-Manager	2
XY	6399 Hardware and Software Innovation Consultancy and Development	Small	1	Owner-Manager	2

Note. ^a According to the Costa Rican Economic Activities AECR-2011, based on Costa Rican Economic Activities Classification (INEC, 2011). ^b According to the micro-company traditional classification: less than 5 employees; small company: between 6 and 30 employees; medium company: between 31 and 100 employees (Costa Rican Ministry of Economy, Industry and Commerce, 2015).

3.2 Design of Data Collection Instrument

To compare the results of this study with previous ones obtained in the qualitative study of food sector SME firms, the conceptual framework of innovation process, stages and the questionnaire employed by Mora et al. (2016), were taken as a reference. The questionnaire used by Mora et al (2016) was analyzed and modifications were made to adapt it to the characteristics of the services sector, specifically, ITS, together, with the integration of new variables addressed in this study. These modifications were evaluated by means of a pre-test with a company from the ITS. Hence, an interview guide (Appendix 1) with open questions and polls was used, which looked for each participant to comment on the characteristics, phases and other elements related to the innovation process that took place within their organizations.

3.3 Data Collection Procedures

As shown in Table 1, in most of the firms the same interviewee was visited twice, during the second semester of 2016. Based on the interview guide, in the first visit each participant was asked to comment about the innovations in services their firms introduced to the market, and to describe each step and elements involved from

the idea gestation to its launch into the market. The interviewees were also asked to comment on their perception of the process linearity applied to their companies.

The second visit was devoted to present the manager with the main ideas, pieces of information, and aspects expressed by the interviewee, and that were captured in the first-round interview. This was submitted and depicted using figures and graphs, to explain in a narrative way the innovation process stages and elements of their company. Essentially, the interviewee was asked to complete any additional information not considered during the first visit, and most importantly, to confirm and validate the innovation process and the configuration of the elements. The latter, was used as a way to adjust and modify the construct validity (Pettigrew, 1997; Yin, 2009).

3.4 Data Analysis Procedures

The interviews were audio-recorded, with the authorization of the interviewee, and were transcribed *verbatim*. Every interview session lasted about 50 minutes. Subsequently, NVivo 10.0 was used to carry out the coding cycles of citations. In a first coding cycle, provisional coding enables the ability to have a beginning list of codes obtained from a previous review of literature; then relevant text or citations were identified using descriptive coding (Miles et al., 2014). Further, sub coding to detail the initial codes and structural coding related to elements of the innovation process were used, especially in the interest of identifying preliminary categories and subcategories into hierarchies or taxonomies. The aim of a second coding cycle was used to refine the grouping of themes and thematic categories and subcategories (Saldaña, 2013). Likewise, for large qualitative data sets, analytical techniques such as co-occurrences and frequencies of words or phrases were used for their reduction or synthesis, as suggested by Namey, Guest, Thairu and Johnson (2009).

The method allowed for the ability to identify and characterize elements that comprise the innovation process of the firms studied. It was important to structure the qualitative data into categories since it made it possible to identify differences and similarities between the processes and their elements. Finally, these results were later compared to those found by Mora et al (2016).

4.RESULTS ANALYSIS

4.1 Characterization and features of the innovation process stages

The qualitative data processed by Nvivo 10 generated 104 textual quotes expressed by the interviewees regarding the innovation process and its characteristic elements. These quotes were classified according to innovation process stages and worked as a guideline to establish which would be the most relevant aspects for each stage. These quotes were validated in the second round with interviewees. Also, it was possible to identify the elements in each one.

As a key finding, regarding the characterization of the innovation process taken by the studied companies, the topics of these citations tended to be grouped into three generic stages: a) idea gestation, b) development, and c) launch into the market. According to the methodology applied, citations were distributed in percentages as follows: idea gestation (30.77%), development (32.69%) and launch into the market (36.54%).

Furthermore, as it was distinguished by Kotsemir and Meissner (2013), three major steps (invention, development and commercialization) were identified in each innovation process studied. As such, there is the enforcement of all capabilities proposed by Den Hertog, et al., (2010), regarding the role of client participation in the learning process in the company, the generation of new strategies appointed by Randhawa and Scerri (2015), and the interactions and learning alongside the client as main points in the process (Brown, 2008; Johnson et al., 2000; Ries, 2011).

4.2 Contrast between the Service Sector and the Manufacture Sector

This section will contrast the generic stages in the innovation process of companies in the ITS with those in food sector analyzed by Mora et al (2016). To this end, the similarities and differences for each stage regarding the characteristic elements detected on both innovation processes will be presented, which will use the proposals from the theoretical point of view and the information collected along the study process.

Generic Stage 1: Idea gestation

The idea gestation stage detected four main sub-categories (Table 2): a) idea-generating sources, b) idea assessment flexibility, c) assessment criteria and d) external agent participation in the stage.

In connection with the idea-generating sources, in four ITS firms (SB, CT, XY, HH)

Table 2

Quote Distribution In Subcategories Of Idea Gestation Stage

Sub-category	Quote Number ^a	Percentage ^b
Idea-Gestation Sources	6	5.77%
Assessment Flexibility	6	5.77%
Idea Assessment Criteria	7	6.73%
External Agent Participation	13	12.50%

Note. ^a= Number of quotes related to the referenced stage in absolute frequency.

^b= Relative quote frequency related to the stage regarding the total amount of quotes in the interviews.

the identification of a problem was considered as the main internal source while the monitoring of market and technology tendencies, and external sources were noticed

as fundamental in two firms (GP, FP). Although these two sources were present in the cases of manufacturing SME, there were differences in other information sources which were used in the manufacturing sector, for example, a) the use of scientific information sources and b) fair participation.

The use of both types of idea-generating sources coincides with the Cooper (2008) and Johnson et al. (2000) statement on the existence of several idea generating sources in the innovation process. The focus of problem identification as a main source in the ITS stage is linked to the Design Thinking methodology proposed by Brown (2008), where the main objective is to find a solution, oriented to the user's needs and their satisfaction. Den Hertog, et al., (2010) agree with this statement and propose finding unmet user's needs in order to provide service innovation.

With respect to the second subcategory as it relates to flexibility in idea assessment, four of the ITS companies (CT, GP, HH, SB) did not follow a specific assessment methodology. Conversely, two of the companies (FP, XY) use a series of specific criteria to define which ideas are the most attractive ones. The latter went in line with the same number of fewer cases in the manufacturing firms with a structured, standardized system to record and assess their ideas.

It is also important to mention five companies in the ITS (FP, GP, HH, SB, XY) used the Lean Startup method developed by Ries (2011), which is a non-structured idea assessment process. It uses the scientific method in business by enforcing tests, also known as hypothesis, which allow for the assessment of the proposal relevance according to the user criteria.

In terms of the third subcategory, some of the criteria used by the companies to assess innovative ideas are: a) scalability (GP, SB), b) organization culture (XY), c) process improvement (GP), d) marketing potential (FP), and e) novelty (CT, FP). It is evident there is no tendency regarding the criteria used to assess the innovative ideas in the ITS. The opposite happens in the manufacturing sector, where four companies noticed the availability of raw materials, both in quantity and in quality, as a relevant element. They also consider other factors, such as: potential demand, product shelf life and packaging (Mora et al, 2016).

In the ITS study none of the subsector firm cases presented a rigorous assessment process as established by Cooper (1994; 2017). One of the main principles in Lean Startup, proposed by Ries (2011) and used by five out of six companies in the ITS, is to choose to experiment with users above having a completely elaborated plan.

A final element in the idea gestation stage is the participation of external agents to the company during this stage. In this regard, three external agents were highlighted by interviewees: a) accelerators or incubators (SB), b) competitors (CT, XY) and c) distributors (FP). This subcategory was not the case concerning the SME manufacturing firms, in opposition to Chesbrough (2003) who has stated that companies may integrate external ideas and make their own available to others.

Generic Stage 2: Development

The similarity and difference in analysis of the studied companies in the ITS and manufacture sector during the development stage identified the following subjects (Table 3): a) research, b) team building, c) an approval, d) acceptance test performance, e) “prototypes” and f) test documentation.

Table 3

Quote Distribution In Subcategories Of The Development Stage

Sub-Subject	Quote Number ^a	Percentage ^b
Preliminary Research	2	1.92%
Team Building	5	4.81%
Approval	4	3.85%
Acceptance Tests	6	5.77%
Prototypes	12	11.54%
External Agent Participation	5	4.81%

Note. ^a:Number of quotes related to the stage (absolute frequency). ^b:Relative quote frequency related to the stage regarding the total amount of quotes in the interviews.

In regards to the first characteristic element (Preliminary Research), two companies (HH, XY) emphasized the importance of conducting a preliminary research before the development stage. The aim is to learn about technological components and requirements needed to proceed with the development of their innovative idea. The study conducted in manufacturing SME found two companies had alternative ways to manage the requirements of the innovation process.

The capacity to analyze the requirements needed to proceed with the innovative service development implies two characteristics in the innovation process appointed by Den Hertog, et al., (2010). They contemplate the analysis of possible elements to be integrated in order to come up with a new solution in the market, and to have the capabilities needed to make smart combinations between them.

In regards to team building (second subcategory) and approval to manage the innovative service development (third subcategory), five companies (CT, GP, FP, HH, SB) think team work is valuable in this stage. Additionally, four companies (CT, FP, HH, SB) stated that it was important to designate specific people in the team in order to conduct approvals. One company (FP) highlighted the importance to accelerate the production process.

There were two cases in the manufacturing sector companies where an organizational mean facilitated coordination, planning and other aspects of the innovative process by implementing an innovation committee and a research and

development team. Also, the presence of approvals was a common subject in all companies of this sector.

Both elements are present in the Stage Gate model principles, where teams oversee the proposal development and the presentation of new advances to an assessment team, who decide if the project gets suspended, continues its course or needs to reassess certain aspects. The people in charge of approvals are known as “gatekeepers”, and they are in charge of defining if the project may continue or not (Cooper, 2008).

Referring to the performance acceptance test, a fourth subcategory was studied in the development stage. All companies in the ITS performed them and kept the respective documentation. Additionally, four (FP, HH, SB, XY) out of six companies had a documentation instrument. These kinds of tests were not found in the manufacturing sector before the launch into the market.

Both the Cooper (1994) and the Johnson et al (2000) models contemplate the development of acceptance tests, with certain users who prove the product's acceptance before going into the market. Also, Lean Startup and Design Thinking methodologies, used by five companies in the ITS (FP, GO, HH, SB, XY) use experimentation and validation with users to guide their enforcement of innovative ideas. Moreover, that confirms the fact that service innovation may be proved directly into the market instead of research and development labs (Tidd & Hull, 2003).

The last subcategory in this stage considers the characteristics of a successful prototype. Of those, five out of six companies (CT, GP, FP, SB, XY) mentioned that a prototype was considered successful when it met the clients' requirements, and one company (GP) mentioned that the most important fact was process optimizing to access a bigger market.

In comparison, the manufacturing companies study showed prototype assessment in all cases. However, such assessment focused on the analysis of the following criteria: a) profitability and availability of raw materials, b) organoleptic and physical aspects, c) and market demand, among others.

The influence of methodologies, such as Lean Startup and Design Thinking, is demonstrated with the requirements that prototypes must comply with, which are focused on meeting the clients' needs and solving their problems. This shares the ideal proposed by Bessant and Tiid (2011) and Vargo and Lusch (2008), which emphasizes that value will be determined only or mostly for the benefit of the customer.

Cooper's Stage Gate model (1994) has spaces per stage to assess advances to consider qualitative and quantitative criteria. However, qualitative aspects are related to the market in general, such as: achieving a sustainable competitive advantage, commercial appeal or synergy with other products. The process does not revolve around solving a client's problem; rather it uses predictions and analysis to assess the project development in general.

Generic Stage 3: Launch into the Market

During the launch stage (Table 4) these subcategories were identified: a) disclosure, b) client feedback, c) functionality or improvement introduction, d) critical facts in the stage and e) the existence of an augmented product.

Table 4

Quote Distribution In Subcategories Of The Launch Into The Market Stage

Sub-Subject	Quote Number ^a	Percentage ^b
Disclosure	14	13.46%
Client Feedback	6	5.77%
Improvements	5	4.81%
Launch Critical Facts	6	5.77%
Augmented Product	7	6.73%

Note. ^a: Number of quotes related to the stage (absolute frequency). ^b: Relative quote frequency related to the stage regarding the total amount of quotes in the interviews.

As it relates to the first subcategory, two companies (HH, XY) mentioned that they performed their disclosures internally in order to be prepared to answer all possible questions that clients may have. All companies in the ITS considered that the design and execution of a marketing plan played a determinant role in generating expectation for the client. This plan encourages the use of social media, content generation, publicity, and online search tools. In comparison, disclosure was not a characteristic subject to the cases studied in the manufacturing sector.

The model of Johnson et al (2000), contemplates the introduction of activities related to the designing of a marketing plan that the company will execute to the launch the innovative service. In addition, The Stage Gate system emphasizes the marketing department's involvement in the process and the presence of a post market introduction revision (Cooper, 2008).

As a second subcategory identified, client feedback, is considered by all companies in the ITS as an essential in the service assessment once they have been introduced into the market. Such an element is linked to the introduction of improvements and functionalities pointed out by four (GP, FP, HH, SB) of the studied companies, since users' criteria is the main input for idea generation. Additionally, focusing by all means in client satisfaction brings multiple benefits for companies because it allows for the building of long-term relationships with clients that can facilitate the introduction of new products or services in the future (Garcia, Quintero & Arias-Pérez, 2014).

In the manufacturing sector, companies were visiting the sales points as a system of internal feedback and were counted with an accompanying system for the distribution channel, where the information collected was considered as input to assess and manage change related to the previous stages executed.

On one hand, in the Stage-Gate model, there are three main elements to assess performance after the product introduction into the market: a) to meet the metrics proposed (sales, times), b) to analyze the role of each member of the team and their compliance of responsibilities and c) improvement points for future projects (Cooper, 2008).

On the other hand, this is contradicted by processes such as those proposed by Ries (2011) and Johnson et al (2000) which consider iterating and its learning process is fundamental to innovative product and service development. Therefore, there must be a possibility to retake previous stages or to revert the process by executing new ideas based on results obtained after the launch into the market.

Regarding the launch critical facts subcategory, one of the companies (CT) considered relevant to replicate the solution, two companies (HH, SB) highlighted the fact of having customers before the launch, another company (GP) to be able to have a balance between offer and supply in the platform, and two companies (SB, HH) considered as valuable not to take long in launching the product into the market.

Mora et al (2016) mention that companies in the manufacturing sector had monitoring systems to determine the acceptance of the product into the market and to have a volume control of the sales. The first of these aspects is mentioned before, and the second one is used by the companies in the ITS by using their platform and number of users.

The last subcategory studied in this stage was the presence of an augmented product. Two companies (HH, SB) have a system to advise clients, three companies (CT, FP, XY) provide maintenance services and one company (XY) provides support in solution installment.

This subject was considered by the companies in the manufacturing sector where use social media is used as well as complaint and claim systems to get feedback from users in order to solve their problems.

In the case of Johnson et al (2000), there are activities that involve preparing personnel to address issues customers may have, which are framed in the company context. Cooper (2008) proposes that companies assess each element involved in the development of each stage. However, these activities must be previewed from the initial stage of the project.

4.3 Perspectives regarding linearity of the innovation process

It is important to highlight the fact that all participants in the study identified the stages and elements of the process executed in their companies in order to bring innovative services into the market. They established a logic, stage-activity sequence in order to obtain certain results. Such an idea, according to Velasco, Zamanillo and

Gurutze (2003) is useful to better understand the process by presenting it in a simple, rational way, as in this case.

Also, all interviewees stated that they could not adhere to one series of strict steps and the existence of spaces was necessary to reassess aspects and retake stages to formulate concepts previously established. It is relevant to mention that five of the companies in the ITS (FP, GP, HH, SB, XY) use the Lean Startup method, which seeks to use the minimum amount of time and resources needed in validating if the proposal really is valuable for users (Ries, 2011). Johnson et al (2000) agree with Ries (2011) and notes that the efforts in the service innovation process are very iterative and not so lineal.

Velasco, Zamanillo and Gurutze (2003) agree the innovation process involves many feedback process where information is exchanged, and in which eventualities may happen that are not evidenced in lineal methods. This is backed by five companies (FP, GP, HH, SB, XY) that stated that the process, and their three generic stages, may repeat themselves on multiple occasions in order to bring services into the market more quickly, and to assess their acceptance in it. So, it would be presented repeatedly by generating inputs for decision making regarding improvements in the service or its withdrawal.

Not all innovation processes go through the same stages, and so the activity execution proposed for each stage is subjected to the circumstances of each specific development. Velasco, Zamanillo and Gurutze (2003), state that placing just one element as an activator in the process may be considered a little extreme due to the existence of multiple innovation sources.

Cooper's model (1994) on new product generation reflects on the existence of a series of similar stages. Kline and Rosenberg (1986) highlight the interaction between the stages in the process. However, the innovation process described in the service sector has a close relationship with the conceptual model proposed by Den Hertog, et al., (2010), since most competences described for the innovation process are enforced by companies that are a part of the study.

5. CONCLUSIONS

This study allowed for the identification of three generic stages in ITS SME analyzed in order to understand how they innovate. Sub-stages that were identified may help understand how an innovation is generated in the sector specifically for each stage as well as their characteristics. It was also possible to determine similarities and differences between the innovation process of companies which innovate in products and operate in a manufacture sector and those companies which innovate in services and operate in a service sector, like ITS.

Some similarities include a prototype acceptance test to reassess aspects and go back to the initial stages of the process while using similar channels to follow up their products and services into the market. Some differences include the client's participation from the idea gestation stage in the service sector

case and the criteria used to assess the innovative product or service proposals, which, in the manufacture sector, revolve around quantity and quality of raw materials and their availability, and in the service sector, around meeting the clients' requirements.

Although in both manufacturing SME and service SME, an essential point in the innovation process is the contact with clients in the generation of ideas, in the former, the qualitative reference study showed a tendency to formality in the registration and evaluation of ideas, in the latter this process is characterized by more flexible methods to request and to find client's solutions.

In addition, the flexibility in terms of evaluative criteria of ideas is noted. As Nijssen et al. (2006) asserted these differences do not only have to do with the nature of services (intangibility, co-production with client and so forth) but also affect the process of services and advancement in order to make them, to a certain degree, unique.

The development stage, after idea generation, showed differences with manufacturing SME in terms of the significance in ITS's services SME of task coordination, workers involvement (team working), planning and documentation for approval tests. These kinds of attributes are in line with the importance, in services companies, to fit customer needs with existing systems like enabling capabilities, a sound coordination and communication Nijssen et al. (2006).

Nevertheless, it is important to point out that the use of experimentation and validation with users to guide the enforcement of innovative ideas in service SME was another difference found. Specially, the study confirms that service innovation can be provided directly into the market instead of research and development labs (Tidd & Hull, 2003); being R&D, one of the key drivers of innovation in manufacturing firms (Brouwer & Kleinknecht, cited by Nijssen et al., 2006).

Finally, in the last stage -launch to market- ITS SME clearly engage with customers by designing and executing marketing strategies to generate expectation in clients, more actively than manufacturing SME did. A key factor in ITS SME studied was to improve and maintain client satisfaction in order to build long-term relationships with them, and as a means to facilitate the introduction of new products or services in the future (Garcia, Quintero & Arias-Pérez, 2014). Client feedback is a point that goes in line with one of the key drivers that differentiate service companies from manufacturing firms: a higher and stronger interaction between new service development and service delivery (Tatikonda & Zeithaml cited by Nijssen et al., 2006).

The research pointed out that the innovation process follows a series of stages with a logical sequence. However, it is not possible to adhere to a structured process where there are no spaces to go back to previous stages or to skip them. This is influenced by the methodologies used by the companies to manage their efforts in introducing innovative services into the market.

This study is being conducted as an effort to explore and to comprehend different and similar actions undertaken by services and manufacturing SME to organize, accomplish and to evaluate their innovative activities. The latter, due to the lesser empirical evidence that exists related to innovation processes (Galende, 2008; Crossan y Apaydin, 2010). Therefore, the interest has not been to identify key drivers of service or product innovations, but rather to identify differentiating and complementary elements of the innovation process.

However, there are some limitations in the study, and due to their nature, it is not possible to generalize the results. Nonetheless, the ongoing exploration of this phenomenon will allow going from an exploratory/descriptive scope to other explanatory scopes. Regarding future research lines, it is possible to examine the impact of methodologies, such as Lean Startup and Design Thinking in the innovative process of other companies. Also, it allows the assessment of results that generate a greater interaction with external players in the product innovation process.

As well, it is possible to examine the role of the innovative culture in companies of the ITS compared to those in the manufacturing sector. Also, it allows for one to know about the participation dynamics of human talent within the process. It is valuable to have a greater knowledge that allows one to determine the main obstacles or inconveniences in the SME innovation process along with tools to be used by the companies which deal with them.

Finally, the research, focused on a little studied innovation type, allowing for knowledge and examination of the characteristics of how innovation is generated in a Latin-American country, and to identify the differences and similarities according to the sector. This in turn allows for better planning of support programs, both in state and in private companies.

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APPENDICES

Appendix 1: Questionnaire⁴

Introduction:

Good morning / afternoon. This research aims to identify the steps followed by ITS companies since the initial process to the launched to the market of innovative services.

Furthermore, it is intended to compare the results of the study with those obtained in a previous six case studies conducted in Costa Rica 's food industry sub-sectors.

It is the intention of this study in achieving knowledge to comprehend the process of service innovations,

At the end of this ITS case study we will be honored to present the global results and give you some feedback.

Part 1: Identifying Product/Service Innovation

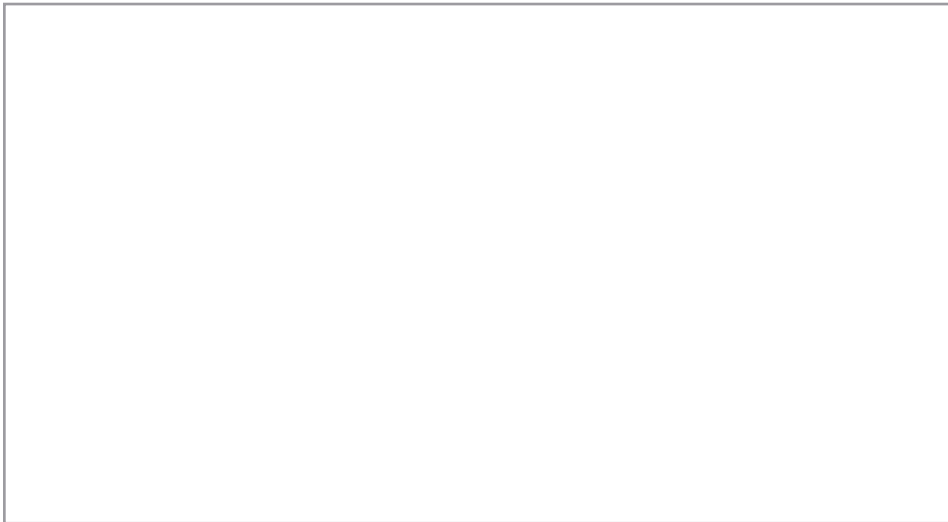
According to Oslo Manual (OECD,2005), innovation is the conversion of technological knowledge into new products, services or processes for their market introduction and technologically significant changes in products, services and processes.

1.1 Considering the definition given above, could you, please, say whether the company developed service innovations, in the in last two years?

Identifying Innovations		How many times?
Yes	NO	If yes, were they entirely new services?
Yes	NO	Were they significant changes in services and processes?
Yes	NO	Were they introduced to the market?

⁴ Source: Mora et al. (2016), adapted for service innovations

1.2 Could you describe, briefly, those new or improved services? (Interviewer: remember suggesting respondents to describe the process in their words).



Part 2: Idea Generation for that Innovative Service

2.1 Making a historic account of the developed service innovations, please let us know how ideas were originated.

2.1.1 What issues prompted / provoked the innovation that these ideas will originate? (Interviewer: delve into how the conception of the idea occurred, whether there was a market segment into which addressed or care of a need, specifically)

2.1.2 Who in the organization or externally participated in generating these ideas for innovation? (Remind the interviewee that what interests us is knowing who conceptualized what would those ideas of innovation and at what organizational level are those people. If they mention external actors, specify which actors were, what was their involvement and why they were involved).

2.1.3 Did any preliminary assessment of these innovative ideas were conducted formally or informally?

If the answer is YES:

- a. Does the firm have a standardized assessment process?
- b. What aspects were considered for the preliminary assessment? (Interviewer: identify if it is considered in the preliminary assessment aspects such as technical requirements for the development of the technology platform, access to resources, experience, etc.)
- c. Who did participate in this preliminary assessment?
- d. Was that assessment documented?

If the answer is NO:

- a. What were the reasons that prompted not making any evaluation?

2.1.4 What was the course of action to pursue the development of those ideas? for example, a project team was formed? how members were chosen? do you a methodology to specify the idea?

2.1.5 Who was the responsible of giving approval to continue or not those ideas toward a next level of achievement? What is the role of these people in the company? Do they change according to the type of project? For example, allow for prototyping or more specific design of the service. (Interviewer: verify that these people have the knowledge and level of involvement needed to make the decision)

Part 3: Developing the idea into Possible Prototypes/Designs

3.1 You have already told us about the genesis of these innovative services, could you explain: what key issues were considered in the company, to transform that idea into preliminary samples of innovative services?

Additionally:

3.1.1 What information, in addition to the one considered in the generation of initial ideas, was added to develop samples or testing/designing of the new service?

3.1.2 Who in/or outside the organization, was involved in generating this information? (Remind the interviewee that the interest is knowing who or who contributed in this aggregation and what organizational level are these people. If they mention other external actors, specify which agents and because the firm gave participation in this stage)

3.1.3 Were feasibility studies conducted at this stage?

If the answer is YES:

What aspect of the study were considered for this assessment?

What were the sources of information used?

Who participated in this evaluation?

Who decided to continue with design?

If the answer is NO

What were the reasons that prompted this decision?

3.1.4 How many different versions or prototypes/designs were developed for each idea? (It refers to different formulations of the new service)

3.1.5 In case you have developed more than a prototype or preliminary version, how did you the firm choose between them? who participated? what were the criteria(s) to choose them?

3.1.6 Please, tell us about the process to move from prototype/design to production consumer testing? For example, service idea acceptance/rejections by customers opinions, computer technical requirements, evaluation regarding intellectual property, among others.

3.1.7 During the step for prototyping and design tests, did the firm consider/reconsider were taken or those elements that were addressed in the phase of idea generation to be changed or improved? Why?

3.1.8 Do you consider, at this point, that the company had to revisit and re-valuate additional elements of the of idea generation phase, why?

Part 4: Testing to go from the prototype/design to its implementation

4.1 Once prototypes/designs were developed, could you explain us: what key issues were considered to start production its implementation? (Interviewer: write down the different aspects that the respondent refers to).

4.1.1 What aspects were considered to verify the feasibility of the implementation of the new service?

4.1.2 Who in/or outside the organization participated in the definition of the features and functionalities of the service? (Remind the interviewee that what we are interested is in knowing who contributed in the feasibility of the implementation and their organizational level. If they mention outsiders, specify who they were, what was the firm involvement and why was/were he/she/they considered)

4.1.3 Was some kind of service acceptance testing performed?

If the answer is YES:

a. What aspects were considered for acceptance testing?

b. Who designed and conducted these tests?

c. What was the scope of the test? (functionality, places, type of audience)

d. Who decided the continuity of the project?

If the answer is NO:

a. What were the reasons that caused these tests not implemented?

4.1.4 Do you consider that, at this point, the company has had to revisit and re-valuate additional elements of previous stages (idea, prototype/design)?

Part 5: Market Launch

5.1 Could you explain me, what key factors were considered in order to launch the service to the market? (Interviewer: write down the different aspects mentioned by the interviewee, consider the registration of patents and intellectual property, among others)

5.1.1 What aspects were considered to define the distribution channels? (Interviewer: delve into the different types of distribution channels for these types of services such as app stores, pay per installation, press, among others)

5.1.2 What aspects were considered to define the platform through which the user would get access to the service? (Interviewer: if there are several platforms through which customer could access the new service, ask the interviewee, what factors were considered to make that decision)

5.1.3 What aspects were considered for communication strategies? (Regarding: advertising promotional campaigns, testing, etc.)

5.1.4 What aspects were considered to get customer feedback about the new service?

5.1.5 Who in/or outside the organization participated in these activities to launch the innovative service to market? (Remind the interviewee that what we are interested is in knowing who or who contributed at this stage to launch the service to the market and what organizational level these people. If they mention outsiders, specify who they were, what was your involvement and why was/were they considered)

5.1.6 Do you consider that, at this point, the company has had to revisit and re-evaluate additional elements of previous stages (idea, prototype, implementation)?

Part 6: Service Innovation Process Perception

6.1 Some specialists in the field of innovation consider the two following viewpoints of the innovation process:

(Interviewer: Show the card with the following statements

1. The innovation service process always goes from one stage to the next in a single sequence and, once a stage is exhausted, it does not go through it again.
2. b. the process followed to generate innovations do not necessarily follow a single sequence, and it can be passed from one stage to another, and even return to check what has been done and if it is the case, make adjustments.

Referencing the above:

6.1.1 Which of the above two statements (1 or 2) do you consider that your company is closer to?

6.1.2 What are some reasons that make you think that way?

CULTURAL DIMENSIONS AND ENTREPRENEURIAL PERFORMANCE INTERACTION IN SMALL AND MEDIUM ENTERPRISES IN ZIMBABWE

LAS DIMENSIONES CULTURALES Y LA INTERACCIÓN ENTRE EL DESEMPEÑO EMPRESARIAL EN LAS PEQUEÑAS Y MEDIANAS EMPRESAS EN ZIMBABWE

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ABSTRACT

Although culture is generally considered as a determinant of entrepreneurship, consensus is generally lacking on the precise influence of this variable on entrepreneurial performance in emerging economies. Using a quantitative approach, this confirmatory, cross-disciplinary study sought to investigate the effect of cultural dimensions, on entrepreneurial performance of among Small and Medium Enterprises in Zimbabwe. The independent variables were derived primarily from Hofstede's cultural dimensions and a total of 250 questionnaires were distributed to Small and Medium Enterprises in Zimbabwe. The research adopted a multisector approach and respondents were drawn from the ten provinces of Zimbabwe. To confirm the existence of a relationship between cultural dimensions and entrepreneurial performance, structural equation modeling, a confirmatory, multivariate technique, was employed, starting with representing the causal relationships between these variables in a pictorial form. The findings from this research are consistent with the propositions that the dimensions of culture have a significant and positive influence on entrepreneurial performance. The results also affirm the findings of previous studies that have been carried out on the influence of culture on entrepreneurial performance. Over and above the generic dimensions of culture, this study adds the mediating role of the propensity to act and perceived feasibility.

KEYWORDS

Culture, cultural dimension, entrepreneurial performance, structural equation modeling.

RESUMEN

Aunque generalmente se considera que la cultura es un factor determinante de la capacidad empresarial, generalmente no se cuenta con el consenso sobre la influencia precisa de esta variable en el desempeño empresarial en las economías emergentes. Utilizando un enfoque cuantitativo, este estudio confirmatorio y multidisciplinario buscó investigar el efecto de las dimensiones culturales sobre el desempeño empresarial de las Pequeñas y Medianas Empresas en Zimbabwe. Las variables independientes

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se derivaron principalmente de las dimensiones culturales de Hofstede y un total de 250 cuestionarios fueron distribuidos a Pequeñas y Medianas Empresas en Zimbabwe. La investigación adoptó un enfoque multisectorial y los encuestados fueron extraídos de las diez provincias de Zimbabwe. Para confirmar la existencia de una relación entre las dimensiones culturales y el desempeño empresarial, se empleó el modelado de ecuaciones estructurales, una técnica confirmatoria y multivariada, comenzando por representar las relaciones causales entre estas variables en forma pictórica. Los hallazgos de esta investigación son consistentes con las proposiciones de que las dimensiones de la cultura tienen una influencia significativa y positiva en el desempeño empresarial. Los resultados también confirman los hallazgos de estudios previos que se han llevado a cabo sobre la influencia de la cultura en el desempeño empresarial. Más allá de las dimensiones genéricas de la cultura, este estudio agrega el papel mediador de la propensión a actuar y la viabilidad percibida.

PALABRAS CLAVE

Cultura, dimensión cultural, desempeño empresarial, modelado de ecuaciones estructurales.

INTRODUCTION

Entrepreneurship has over the years been recognised as fundamental in the economic growth and development of nations, incubation of new ventures, realignment of existing ones and the redistribution of established infrastructure (Urban, 2007; Edoho, 2015). In both developed and developing economies, Small and Medium Enterprises (SMEs) are highly significant and these SMEs have attracted the interest of both academics and policy makers (Schulte, 2010). In both developed and emerging economies, the Small and Medium enterprises (SME) sector has been given prominence and pole position in development agendas (Mutalemwa, 2015). They are also actively involved in supplying goods and services to large corporations (Mahmood and Hanafi, 2013). Promoting the development of SMEs especially in Africa is critical as a way of promoting growth in economies, creating jobs and thereby alleviate poverty (Smit & Watkins, 2012). Because SMEs contribute significantly to the overall economic performance, it is imperative for researchers to investigate antecedents of SMEs performance (Wiklund, Davidsson, Audretsch and Karlsson, 2011). Regarding the definition of an SME, there hasn't been a consensus or a universally acceptable definition, largely because economies are different (Okah-Efogo & Timba, 2015; Stamatović and Zakić, 2010). However, the definition by Margaretha and Supartika (2016) of an SMEs as an independent business entity characterised by a small market share and operated by part owners or owners suffices. Over the years, the SMEs sector has faced ever-increasing competition that has been propelled by globalisation, trade liberalisation and technological and innovation advances (Smit & Watkins, 2012). Typically, the SMEs sector in Zimbabwe faces growth and development hindrances including lack of financing, poor management, heavy taxation, and lack of proper markets for their products and services (Bomani, Fields and Derera, 2015).

BACKGROUND TO THE STUDY

One of the questions in the study of entrepreneurship, that has endured over the decades is how and to what extent culture affects entrepreneurship (McClelland, 1961; Weber, 1948; Schumpeter, 1931). This question has, in recent years, been revisited and is currently getting attention from researchers (Hayton and Cacciotti, 2013; Krueger et al., 2013). Culture is a multidimensional phenomenon, generally referring to a combination of preferences, principles, and opinions whether partially or wholly learned, that distinguish between members of different groups (Doepke & Zilibotti, 2013). Hofstede (1991) defines culture as the communal psychological orientation distinguishing individuals in different societies or groupings. Some scholars refer to culture as shared principles and predictable behaviours commonly found within a geographical or national setting (Hayton and Cacciotti, 2013). An appreciation of culture is important in explaining and analysing societal, organisational and management phenomena because culture molds people's perceptions and responses to strategic challenges (Schneider and De Meyer, 1991). Kirkman, Lowe and Gibson (2006). In addition, national cultures affect the demand and consumption of goods and services (Chui and Kwok, 2008). The different cultural dimensions govern individuals' propensity to entrepreneurship (Doepke & Zilibotti, 2013). Hence, there is a possibility that national and regional differences in culture are key to determining the influence that diversity has in individual behaviours, and most importantly the decision to startup a business rather than being employed (Mueller & Thomas, 2000).

The notion of culture primarily emerged from the investigation of traditional and national differences in the various disciplines of social sciences (Acar and Acar, 2012). Although culture is generally considered as a determinant of entrepreneurship, there is a general lack of consensus regarding the impact culture dimensions have on entrepreneurial performance in emerging economies (Stephan and Uhlaner, 2010). This study engages Hofstede's theory's four culture dimensions namely; uncertainty avoidance, individualism, masculinity, and power distance (Hofstede, 1985) to show their influence on entrepreneurial performance of SMEs in Zimbabwe. Although Hofstede's models have received extensive use in the study of national cultures and entrepreneurship, there are limited studies that have sought to apply these models in examining the impact of culture dimensions on entrepreneurial performance. By overlooking historical and social variables like national culture in the study of entrepreneurial behaviour, the literature promotes an inadequate understanding of entrepreneurship (Chasserio, Pailot and Poroli, 2014). To fill the gap in existing literature, this study is aimed at exploring the effects these cultural dimensions have on entrepreneurial performance. Over and above the four generic dimensions of culture, this study adds the mediating role of the propensity to act and perceived feasibility in an effort to fill the gap in literature. An understanding of the national and societal differences in cultural dimensions promotes the understanding and operationalisation of entrepreneurship differences.

LITERATURE REVIEW

Theoretical Grounding

This study on the interaction between culture dimensions and entrepreneurial performance is grounded on two theories; Hofstede's theory on cultural dimension and Shapero and Sokol theory of entrepreneurial events. The variables employed in the study have been developed primarily from these two theories.

Hofstede's Theory

Hofstede's theory on cultural dimensions has extensively been used and confirmed in the study of culture and management (Singh, Kumar and Baack, 2005). Hofstede (1980) posited that there exist four main dimensions that separate one culture from another worldwide. These dimensions are 'uncertainty avoidance', 'individualism', 'power distance' and 'masculinity' (Hofstede, 1980). Time orientation came as an addition to this original theory on culture dimensions (Hofstede & Bond, 1988). Although the theory has been met with some criticisms primarily regarding the methodology and context, it has remained an effective model in detecting and analysing cultural differences (Bochner, 1994). According to Beugelsdijk, Maseland, Onrust, van Hoorn and Slangen (2015) Hofstede's cultural dimensions framework maintains relevance in that it provides a set of common culture dimensions applicable to all societies, thereby allowing cross-cultural evaluations. This study adopts the culture dimensions suggested in the two propositions by Hofstede.

Shapero and Sokol Model of Entrepreneurial Events

The model by Shapero and Sokol on entrepreneurial events, suggests that perceived feasibility, perceived desirability, and propensity motivate entrepreneurs to act in starting a new venture (Shapero and Sokol, 1982). The model implies that people's beliefs about their personal capabilities in accomplishing an activity has either positive or a negative effect on their future entrepreneurial behavior (Jimenez-Moreno and Ussman, 2013). Conclusion from this model is that entrepreneurial events, which are a result of interrelated circumstances and social-cultural factors, have an influence on the individuals' entrepreneurial behaviour (Elfving, Brännback, and Carsrud, 2009). Although several factors are expected to impact an individual's behaviour and intention, empirical studies seem to support Shapero and Sokol's model (Krueger, 1993). From this model, this study adopts perceived feasibility and propensity to act as significant in influencing entrepreneurial performance.

Externally-Oriented Culture Dimensions (ECD)

Power distance

The power-distance construct defines the degree to which the less influential individuals in an institution usually expect and accept the unequal distribution

of power (Hofstede, 1997). Power distance relates to the degree to which members are comfortable in approaching or challenging their superiors. Hence firms that are characterised by a large power-distance culture centralise power, and its employees work on instructions they are mostly expected to comply (Tavakoli, Keenan and Cranjak-Karanovi, 2003). In such firms, the less influential employees assume and admit to the unequal distribution of power and are submissive and respectful to higher power authorities and maintain bigger social distance (Farh, Hackett and Liang, 2007; Shi and Hoyt, 2016). On the contrary, low power distant people find it easy to approach and contradict their superiors (Ford and Kotzé, 2005). These low power distance individuals are often democratic and are less likely to succumb to authority (Lam, Schaubroeck and Aryee, 2002). In addition, low power distance employees are often not controlled by the supervisor-subordinate relationship and are more enthusiastic to try alternative social support systems, are more open-minded and may perceive more value from their informal mentors (Qian, Han, Wang, Li and Wang, 2014).

Uncertainty-avoidance

According to Tavakoli, et al., (2003) uncertainty avoidance is defined as the degree to which society members feel that there are threats from both unknown and uncertain situations. Hofstede (1997) states that individuals in uncertainty avoiding cultures have the tendency to evade unclear circumstances and look for more clear and easy ways to interpret and predict situations. This implies that members of a strong uncertainty avoidance culture find comfort “even ineffective rules satisfying people’s emotional need for formal structure” Hofstede (1997:121). In the business context, these members tend to display more brand loyalty and are suspicious of any new products (Baker and Carson, 2011). They generally view newly introduced products or services as less satisfactory but those with low uncertainty avoidance propensities tend prefer such products or services (Ann Lee, Garbarino and Lerman, 2007). Schneider and DeMeyer (1991) believe that managerial personnel in high uncertainty avoidance cultures tend to be proactive in adapting to dynamism in the environment. This is in line with Geletkanycz and Hambrick (1997) who states that high uncertainty avoidance business executives are always looking for strategic solutions in response to changes in the business environment.

Internally-Oriented Culture Dimensions (ICD)

Masculinity

As expressed by Itulua-Abumere (2013) masculinity entails the behaviors, languages, and practices, exhibited in a specific culture and organisational setups that are ordinarily associated with males. Hofstede (1980) refers to this cultural dimension as the fondness by individuals in a social order for accomplishment, heroism, confidence, and quantifiable rewards for success, while its equal, femininity relates to the fondness for collaboration, humility, care for frail members, and higher quality

of life (Hofstede 1980). It is often characterised by physical robustness, control, and antagonism thereby reflecting a more violent but glamourised representations (Katz, 2003). The expectation is that males are tough and engrossed with materialistic success while females are more diffident, affectionate, and passionate about quality life (Hofstede, 1997). Members of a society that are more masculine in culture tend to value material based recognition and confidence and will always respond in a way that foster their personal desires (Wang, Peng, Sia, Tong and Ku, 2016).

Individualism

Compared to the other dimensions by Hofstede the individualism dimension is regarded as the most important in explaining the differences among cultures. Beugelsdijk, Maseland, and van Hoorn (2015) posit that individualistic cultures emphasise self-sufficiency and eccentricity and hence are highly unlikely to conform to group representations. Individualism explores the extent to which individuals in a society or organisations are willing to integrate themselves into groups (Hofstede, 1980). This cultural dimension focuses primarily on the individual person and level of interaction with other members of the society (Hofstede, 1991). Cultures that are more individualist tend to have several in-groups like families and clubs within bigger groups, and the behaviour of individuals is primarily aimed at meeting the objectives of the in-groups (Darwish and Huber, 2003). On the contrary, collectivism entails that members of a society generally value their involvement in group activities more than their individual activities and by so doing there is greater loyalty to the group and more desire to safeguard the interests of group members (Wang et al., 2016). While individualism and collectivism have often been defined as direct opposites, it is considered more accurate to look at them as terms that refer to self-concept from different paradigms (LeFebvre and Franke, 2013).

Entrepreneurial Events (EE)

Perceived Feasibility

In the Shapero and Sokol (1982) model, perceived feasibility is defined as the degree of personal capability in starting business to success. Moghavvemi, Salleh and Abessi (2013) elaborate that the perceived feasibility variable centers around the discernment regarding an individual's ability to undertake a specific task successfully. In entrepreneurship terms, perceived feasibility relates to the degree to which entrepreneurs consider themselves able to undertake an entrepreneurial activity (Ozaralli and Rivenburgh, 2016). Factors that influence perceived feasibility include availability of role models, financial capacity, social support, the level of education and general level of confidence in one's ability to accomplish activities (Gasse and Tremblay, 2011). Although scholars have acknowledged the significance of factors like self-confidence in fostering perceived feasibility, self-efficacy extensively has been identified a critical precursor to variable feasibility discernments (Krueger, Reilly and

Carsrud, 2000). In line with the above, a study by Hallak, Brown and Lindsay (2012) also revealed that efficacy is a significant predictor of entrepreneurial performance and that the higher the individual's self-efficacy the higher the performance.

Propensity to Act

Another important entrepreneurial event central to this study is propensity to act, which indicates a person's tendency to act upon a decision (Shapiro and Sokol, 1982). The model assumes a person's readiness to act on his choices and in subsequent development of the model, this variable has been equated to risk taking propensity and ambiguity tolerance (Krueger, 1993; Shane, 2003). An entrepreneur's propensity to act generally rests on his discernment of control and fondness to gain control (Krueger, Reilly and Carsrud, 2000). In the model on entrepreneurial events, propensity to act is hypothesised as a relatively constant typical behavior closely linked to the locus of control (Moghavvemi et al., 2013). In addition to the locus of control, 'learned optimism' is another critical conceptualisation to the propensity to act phenomenon (Krueger et al., 2000). The propensity to act variable exhibits the entrepreneur's psychological element in entrepreneurial intentions (Yatribi, 2016).

Entrepreneurial Performance (EP)

Scholarly debate concerning the definition and measurement of entrepreneurial performance has, over the years, remained open (Leković and Marić, 2015). Performance in SMEs is relatively difficult to measure because the parameters that are usually used to measure performance in large firms do not always apply to these SMEs, and measures of their performance are usually multi-dimensional (Chatterji, 2009; Simpson, Padmore and Newman, 2012). Fried and Tauer, (2015) argue that the difficulty in measurement has been worsened by the fact that no unanimous measure of entrepreneurial performance has surfaced. Hayton (2003) defines entrepreneurial performance in terms of the firm's capability to innovate, manage risk, and exploit environmental opportunities. The term entrepreneurial performance refers to the financial or strategic growth of ventures and other organisations (Ng and Rieple, 2014). Growth, defined either by the net profit margins or the return on assets, has been used as a measure of entrepreneurial performance basing on the notion that it is an antecedent to long term competitive position and profitability (Markman, 2002; Fitzsimmons, Steffens and Douglas, 2005). Another recognised measure of entrepreneurial performance is profitability and it compliments growth in that no growth can be achieved without constant profits and retained earnings (Fitzsimmons et al., 2005). Entrepreneurial performance is measurable using a blend of financial and non-financial parameters that include sales growth, growth in profits, and market share growth among others (Chandrakumara, De Zoysa and Manawaduge, 2011; Alhyari, Alazab, Venkatraman and Alazab, 2013).

The notion of entrepreneurial performance has a reflection on the competence of the entrepreneur and can be useful to the entrepreneur for self-evaluation as

entrepreneurs perceive their personal behavior as manifested in the venture and monitor their own performance (Baron and Henry, 2010). In addition to the above, entrepreneurial performance is demonstrated through developing new products, identification of new market opportunities and sound investor relationships (DeNoble, Jung and Ehrlich, 1999). Entrepreneurial performance, as a driver of market performance, is the essential point for the existence and the capacity to endure as an entrepreneur (Zahra and Covin, 1995; Zhao, Frese and Giardini, 2010). It is generally professed as deeply reliant on the recognition of market opportunities, vision, ingenuity, optimism, and self-efficacy in the face of failures and hurdles (Bird and Baron, 2005). Entrepreneurial performance is measurable in two ways; subjectively and objectively. On one hand, objective performance is measured using quantitative data while on the other hand subjective performance is measured in using qualitative data obtained through soliciting for opinions and perceptions about performance (Sebikari, 2014). This study adopts a subjective approach to entrepreneurial performance measurement because although the method may provide a biased assessment performance (Sapienza, Smith & Gannon, 1988) gathering objective data may be difficult mainly because owners and managers are largely reluctant to issue out company financial data to outsiders. Subjective responses were to both financial and non-financial questions, and were also used in order to echo the multi-dimensionality of the entrepreneurial performance variable.

Conceptual Model and Hypothesis Development

The cultural dimensions and preferences prevalent in a society has an impact on the members' entrepreneurship proclivity (Doepke & Zilibotti, 2013). In addition, culture and its dimensions are cause for members of a society to behave in a different manner than from other cultures; hence different cultures have different product, brand preferences (Mueller and Thomas, 2001; Keller Parameswaran and Jacob, 2011). These arguments were extended by Hayton, George and Zahra (2002) who argued that individual and organisational culture impacts on entrepreneurial decisions and the intensity of entrepreneurial activity. With regards to managerial attitudes and behaviours, Geletkanycz (1997) argued the different opinions and expectations entrenched in a culture influence the way members of an organisation undertake their duties. Hofstede's model on cultural dimensions which provides a reliable enumeration of the variances in culture between societies is essential in studying the influence of culture on the performance of entrepreneurial ventures (Hayton and Cacciotti, 2013). The relationship between culture and entrepreneurial performance implied in the arguments above lead to the proposition of the following hypothesis.

- H1 There is a positive and significant relationship between externally-oriented culture dimensions and entrepreneurial performance.

- H2 There is a positive and significant relationship between externally-oriented culture dimensions and entrepreneurial events.
- H3 There is a positive and significant relationship between internally-oriented culture dimensions and entrepreneurial events.
- H4 There is a positive and significant relationship between internally-oriented culture dimensions and entrepreneurial performance.
- H5 There is a positive and significant relationship between entrepreneurial events and entrepreneurial performance.

The following model was conceptualised to illustrate the direct and indirect causal relationships between culture dimensions and entrepreneurial performance.

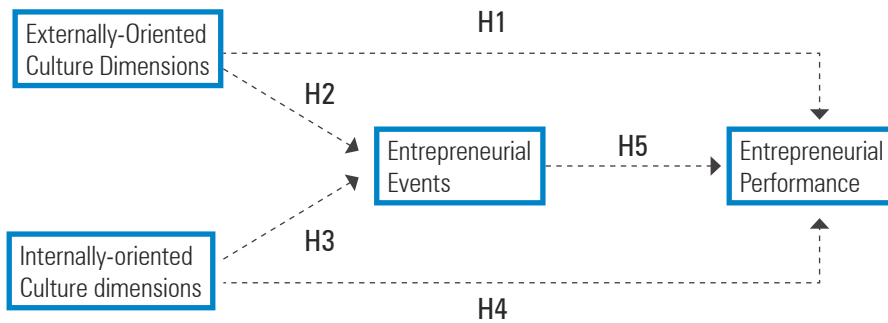


Figure 1: The conceptual model

RESEARCH OBJECTIVES

Main Objective

The main objective of this study was to investigate the influence of culture on entrepreneurial performance

Secondary Objectives

To achieve the primary objectives of this study, the following secondary objectives were formulated

- To determine the relationship between externally-oriented culture dimensions and entrepreneurial performance.
- To investigate the relationship between externally-oriented culture dimensions and entrepreneurial events.
- To ascertain the relationship between internally-oriented culture dimensions and entrepreneurial events.
- To determine relationship between internally-oriented culture dimensions and entrepreneurial performance.
- To establish the relationship between entrepreneurial events and entrepreneurial performance.

RESEARCH METHODOLOGY

To validate the hypothetical model empirically, a survey method was used on a sample obtained from the intersection of the Ministry of Small and Medium Enterprises and Cooperatives Development and the Small and Medium Enterprises Association of Zimbabwe databases. The population amounted to 987 firms and the sample firms were randomly drawn from the databases intersection with the aim of ensuring a broad size and age range coverage. The complete sample consisted of 250 SMEs. A combination of the drop and collect technique as advocated for by Ibeh, Brock, & Zhou (2004) and e-mail, which asked to participate in an online survey. This approach resulted in an 84.4% response rate equivalent to 211 responses. Owners and managers were the key informants in this study because they have a reliable view of the firm, hence can provide reliable information (Zahra and Covin 1993). The study employed a five point Likert ranging from strongly agree to strongly disagree. To measure entrepreneurial performance, this study used the operationalisation by Kropp, Lindsay and Shoham (2006), validated by Hallak, Brown and Lindsay (2012). Entrepreneurial events were operationalized by an adaptation of Krueger and Brazeal (1994) and Leppänen, Biermann, Sundberg and Tomson (2016) while cultural dimension measures were developed from Beugelsdijk, Maseland and Van Hoorn (2015). Structural equation modelling (SEM) was employed to analyse the data. This method was chosen because it provides a vigorous methodological technique to test the causal relationships (Kline, 2004). According to Byrne (2013) SEM has many advantages compared to other multivariate procedures, the main one being that it adopts a confirmatory as opposed to exploratory approach in analysing data, hence appropriate for inferential data analysis. The IBM SPSS AMOS 23 data analysis software package was used in data analysis.

DISCUSSION OF RESULTS

Model fit, Validity and Reliability of Measures

In SEM, model fit indices seek to determine the overall acceptability of the model and the common fit indexes are the comparative fit index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The results from this model show that RMSEA = 0.039, CFI = 0.995 hence the model is fit because the CFI values are greater 0.90, and RMSEA is less than 0.08 (Hu and Bentler, 1999). To assess the reliability of the scale, the composite reliability (CR) index and the average variance extracted (AVE) were used. According to Fornell & Larcker (1981) the recommended minimum values for CR and AVE indicators are 0.7 and 0.5 respectively. The results show that both indicators were above the recommended values, with CR ranging from 0.93 to 0.96 and AVE ranging from 0.646 to 0.829, affirming the reliability of the scale. Validity was measured by the square root of AVE and comparing the results with the inter construct correlations. The scale validity was obtained as diagonal square roots of AVE were larger than off-diagonal correlations.

Table 1. Results on descriptive statistics, ave, composite reliability, and correlations among major constructs

CONSTRUCT	MEAN	AVE	CR	ECD	ICD	EE	EP
ECD	4.14	0.721	0.94	0.849*			
icd	3.89	0.646	0.93	0.613	0.804*		
ee	3.78	0.802	0.95	0.634	0.567	0.896*	
ep	4.00	0.829	0.96	0.722	0.632	0.732	0.910*

Note: χ^2 (df) =779.939 (211); RMSEA 0.039, CFI = 0.995; *** $p < 0.001$.

*The bold elements are the square root of AVE. The off-diagonal elements are the correlations among the constructs. For discriminant validity, diagonal elements should be larger than off-diagonal; all the correlations are significant at the $p < 0.01$ level

Results of Structural Equation Model Analysis

Table 2 below shows the results of the structural equation modelling. Generally, the results from the structural equation model support the hypothesised relationships. Cultural dimensions influence entrepreneurial performance, even when mediated by entrepreneurial events in SMEs. In line with the proposition made in H1 and H2, there is a positive and significant relationship between externally-oriented culture dimensions and entrepreneurial performance and entrepreneurial events

respectively. H3 and H4 are also supported in that there is a positive and significant relationship between internally-oriented culture dimensions and entrepreneurial events and entrepreneurial performance. The final hypothesis H5 is consistent with the results obtained in that there is a positive and significant relationship between externally-oriented culture dimensions and entrepreneurial performance.

Table 2. Results of structural equation model analysis

Variable	Hypothesis	Factor Loadings
ECD→EP	H1	0.901***
ECD→EE	H2	0.354***
ICD→EE	H3	0.682***
ICD→EP	H4	0.791***
EE→EP	H5	0.749***

Note: χ^2 (df) =779.939 (211); RMSEA 0.039, CFI = 0.995; ***p<0.001

CONCLUSIONS

The results from the study affirmed that cultural dimensions have a positive influence on entrepreneurial performance in Zimbabwean SMEs. These findings support previous studies carried out by Urban and Ratsimanetrimanana (2015) in Madagascar, Doepke and Zilibotti (2013) in United States and Brettel, Chomik, and Christina (2015). Both externally-oriented and internally-oriented culture dimensions tend to positively affect financial and non-financial performance of the firm. It is imperative therefore that entrepreneurs, as members of a society, to value their cultural tendencies as they impact on their confidence and propensity to respond in a way that foster their firms' development. An individual's culture greatly affects their likelihood to undertake entrepreneurial activities. These findings are also useful to providers of entrepreneurial finance. In their determination of the bankability of an entrepreneurial activity, it is crucial that financiers evaluate an entrepreneur's cultural dimensions as an added factor. The ability to sustain an entrepreneurial venture, as this study has revealed, is dependent partly upon an entrepreneur's culture dimension. On the other head, it is important that policy makers appreciate the findings of this study. When formulating policies that are aimed at promoting the entrepreneurial performance of SMEs it is essential that policy makers take note of the variances in cultural dimensions between societies. For example, masculine communities tend to discard programs that have a biased towards women hence each policy must be culture sensitive. Given the scenario expressed in this study, business

and government must attempt to develop circumstances that exhibit a greater focus on culture as an antecedent of both entrepreneurship and entrepreneurial performance and promote culture related values.

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APPENDIX: RESEARCH CONSTRUCTS QUESTIONNAIRE SCALE

	ITEM	Question	Source
EXTERNALLY-ORIENTED CULTURE DIMENSIONS	Power distance		
	PD1	It is great to work with a manager who gives subordinates reasons for the decisions and answers any questions they may have.	Hofstede (1980); Kim & Zhang (2014).
	PD2	Employees should be encouraged to express their disagreements.	
	PD3	I would like to work with a manager who expects subordinates to carry out the decisions loyally and without raising questions.	
	PD4	Employees should respect their supervisors highly.	
	Uncertainty Avoidance		
	UA1	Rules and regulations are important because they inform me of what is expected of me.	Hofstede (1980); Yoo, Donthu & Lenartowicz (2011).
	UA2	It is important to closely follow instructions and procedures.	
UA3	Standardized work procedures are helpful.		
UA4	It is important to have instructions spelled out in detail so that I always know what I'm expected to do.		
INTERNALLY-ORIENTED CULTURE DIMENSIONS	Masculinity		
	MC1	I am very ambitious in the pursuit of a success-oriented career.	Hofstede (1980); Snell (2013).
	MC2	I make sure that I "call all the shots" in my life.	
	MC3	I do whatever I have to in order to work toward job success.	
	MC4	I don't allow others to have control over my life.	
	Individualism		
	IND1	I have considerable freedom to adapt to my own approach to the job.	Hofstede (1980); Allik & Realo (2004)
	IND2	I possess and fully use my skills and abilities on the job	
IND3	I have a challenging job, from which I get a personal sense of accomplishment.		
IND4	I receive adequate training opportunities on the job.		

Watson Munyanyi · Champion Chiromba · Misheck Diza · Rabson Magweva · Dzikamai Muzvidziwa
Cultural dimensions and entrepreneurial performance interaction in small and medium enterprises in Zimbabwe

	ITEM	Question	Source
ENTREPRENEURIAL EVENTS	Perceived Feasibility		
	PF1	I am able to undertake a task even if there is no one around to show me how to do it.	Shapero and Sokol (1982); Moghavvemi, Wai & Teng (2017).
	PF2	I have the skills and capabilities required to be creative and innovative in my business.	
	PF3	I am confident I can put in the effort needed to succeed in my business.	
	PF4	It would be very feasible for me to start a new business successfully.	
	Propensity to Act		
	PTA1	I will learn to how to do tasks that I don't know now in order to succeed in my business.	Shapero and Sokol (1982); Moghavvemi, Wai & Teng (2017).
	PTA2	I will scout for new innovations because I cherish the feeling of a useful service.	
	PTA3	I will take advantage of new opportunities in my business	
	PTA4	I intent to upgrade my skills in the future.	
	Entrepreneurial Performance		
	EP1	I prefer work that requires original thinking.	Saeed, Yousafzai, Yani-de-Soriano, & Muffatto (2015).
	EP2	I often surprise people with my novel ideas.	
	EP3	I am willing to take significant risk if the possible rewards are high enough.	
	EP4	I often seek and find opportunities for growth in business.	

GESTIÓN DE ACTIVOS INTANGIBLES DE CAPITAL RELACIONAL EN INSTITUCIONES DE EDUCACIÓN SUPERIOR

MANAGEMENT OF INTANGIBLE ASSETS OF RELATIONAL CAPITAL IN HIGHER EDUCATION INSTITUTIONS

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RESUMEN

La Gestión de Conocimiento (GC) en Instituciones de Educación Superior (IES) puede analizarse a partir de activos intangibles diferenciadores capaces de generar ventaja competitiva, entre los que se destaca el capital relacional (CR), que involucra la interacción con los diferentes *stakeholders*, la adquisición y la transferencia de conocimiento. El interés del presente estudio es caracterizar la interacción entre las categorías del capital relacional en las IES. Se empleó una metodología de estudio de caso, a partir de la correlación lineal bivariable de Pearson y la proporción de variabilidad compartida. Entre los principales resultados se identificó que el direccionamiento estratégico es uno de los *drivers* que permiten generar características diferenciadoras e incrementar el nivel de identidad institucional de los docentes vinculados a los grupos de investigación. Asimismo, la calidad del perfil docente facilita el establecimiento de relaciones de confianza y satisfacción de los requerimientos de diversos *stakeholders* institucionales.

PALABRAS CLAVE

Capital intelectual; capital relacional; direccionamiento estratégico; perfil docente; reputación.

ABSTRACT

Knowledge Management (CG) in Higher Education Institutions (HEI) can be analyzed through the identification of intangible assets. These assets are able to generate competitive advantage. One of these assets is Relational Capital (RC). RC involves interaction with different stakeholders, knowledge acquisition and knowledge transfer. The aim of this study is to characterize the interaction between relational capital categories in HEI. A case study methodology was used. Linear bivariate Pearson correlation and the proportion of shared variability were used. Among the main results, it was identified that strategic management was one of the main drivers that allow HEI to generate relevant characteristics. Strategic management also increases the level of institutional identity of the teachers linked to research groups. Likewise, quality teaching profile facilitates the establishment of trust relationships and the satisfaction of the requirements of different institutional stakeholders.

KEYWORDS

Intellectual capital; relational capital; reputation; strategic management; teaching profile.

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INTRODUCCIÓN

Las Instituciones de Educación Superior (IES) desempeñan un papel relevante en el desarrollo social al ser vistas como fuentes de generación, transferencia y conservación de conocimiento, pero requieren de un cambio significativo en cultura y valores, estructuras organizacionales e incentivos (Rowley, 2000). La gestión de conocimiento en las IES se refiere a cualquier actividad sistemática relacionada con el soporte y la mejora de la creación de conocimiento científico y el logro de metas de investigación (Tian, Nakamori & Wierzbicki, 2009). Por ende, gestionar el conocimiento de manera eficiente puede contribuir con el desarrollo de ventajas competitivas para que las IES logren competir en una escala global (Rodríguez & Segarra, 2016). La ventaja competitiva en las IES puede ser medida a partir de la gestión de los componentes del capital intelectual, que se puede potenciar a través de la valorización del conocimiento. No obstante, este proceso va más allá de la diseminación del conocimiento, lo que involucra el diseño de un conjunto de indicadores a la medida de cada IES (Cricelli, Greco, Grimaldi & Dueñas, 2017).

El capital intelectual puede ser visto como un conjunto de activos intangibles que generan valor en las organizaciones y que resultan críticos para alcanzar una posición competitiva (Bose, 2004; Calabrese, Costa & Menichini, 2013; Petty & Guthrie, 2000). Más aún, el capital intelectual se convierte en el elemento que materializa la intervención del conocimiento en las organizaciones (Mouritsen, Larsen & Bukh, 2001). Según el Modelo Intellectus, el capital intelectual se encuentra conformado por capital humano, capital estructural, capital relacional y capital de emprendimiento e innovación (Bueno et al., 2011). Además, la evaluación del desempeño en las IES depende de algunos componentes del capital intelectual, donde se destacan elementos del capital relacional como resultados de investigación y capacidad de transmitir conocimiento (Cantwell, 2015). Al ser intangibles, la medición y gestión se ve limitada (Sánchez & Elena, 2006).

Por lo anterior, el objetivo de esta investigación es caracterizar la correlación existente entre las categorías del capital relacional (reputación institucional, perfil docente, *stakeholders* y direccionamiento estratégico) y la generación de ventaja competitiva en los grupos de investigación de una IES ubicada en el norte del Valle de Aburrá. Para lograr el objetivo se empleó una metodología cuantitativa por medio de un cuestionario administrado a 30 docentes activos en los grupos de investigación. En la primera parte del documento se abordan los conceptos de ventaja competitiva, capital intelectual y capital relacional en las IES. En la segunda parte se exhibe la metodología empleada. En la tercera se muestran los resultados del análisis estadístico univariante de la **variabilidad compartida entre las variables**, así como las principales conclusiones derivadas de los resultados obtenidos.

REVISIÓN DE LA LITERATURA

Ventaja competitiva en Instituciones de Educación Superior

La ventaja competitiva se obtiene cuando una organización posee ganancias

superiores a las de los demás miembros del sector industrial, y por ende puede llegar a ocupar una posición privilegiada con la que puede mejorar su desempeño y posición (Kumar, 2016). Esto permite optimizar el uso de recursos y capacidades para superar a los competidores, al concebir la compañía como una organización global a través de la innovación, la generación de productos únicos, las marcas, el personal, la infraestructura y la localización (Penrose, 1959).

Los recursos también involucran algunos atributos de las organizaciones, como entrenamiento, experiencia, habilidades individuales, procesos organizacionales, información y conocimiento (Barney, 1991; Marino, 1996), además de las relaciones existentes entre los colaboradores que también pueden emplearse como insumo en los procesos organizacionales (Kaleka, 2012). Para que un elemento pueda ser definido como recurso debe cumplir cuatro condiciones (Barney, 1991): que sea valioso, raro, imperfectamente imitable y no poseer sustitutos estratégicamente equivalentes. Los recursos pueden constituirse como fortalezas o debilidades de las organizaciones, dependiendo de la manera en que estos se proyecten en el mercado (Wernerfelt, 1984). Sin embargo, pocos de estos recursos son productivos y llegan a volverse realmente valiosos para las compañías (Grant, 1991).

Conviene subrayar que las Instituciones de Educación Superior (IES), como compañías prestadoras de servicios, han identificado la necesidad de fortalecer el posicionamiento y la reputación mediante diferentes instrumentos que involucren los requerimientos de los *stakeholders*, los nuevos modelos de educación y las tendencias sociales, económicas y políticas. La reputación se convierte en una fuente de ventaja competitiva, por medio de la habilidad que tienen las instituciones para explorar e incrementar su alcance en el mercado (Wang, 2014). El nivel de reputación es dinámico, varía con el tiempo y se ve limitado por la competencia existente con respecto al acceso o captación de recursos diferenciadores, como lo es el *staff* educativo talentoso (Rodríguez & Segarra, 2016).

Así pues, adquiere relevancia el modelo de cooperación Universidad-Empresa-Estado como una fuente de ventaja competitiva para las IES (Ponce & Güemes, 2016). Dicho modelo, conocido como Triple Hélice (Etzkowitz, 2002; Etzkowitz & Leydesdorff, 2000), busca estimular la competitividad de los países a través del desarrollo económico basado en el conocimiento.

Otra alternativa para evaluar la ventaja competitiva en las IES es el proceso de toma de decisiones sobre las políticas a implementar para mejorar la categorización obtenida en los diversos *rankings* universitarios (Lopez & Rhoades, 2016), teniendo en cuenta que para obtener mejores cualificaciones y posiciones las IES compiten por la obtención de fondos de investigación y por la vinculación de *staff* talentoso, para garantizar la sostenibilidad y competitividad.

Capital intelectual en Instituciones de Educación Superior

El capital intelectual se convierte en un *driver* o facilitador para la gestión de dichos recursos, de manera especial el conocimiento. El capital intelectual busca proteger la

propiedad intelectual y la experiencia de los colaboradores mediante una adecuada gestión del conocimiento (Lu, 2012). Este capital involucra sistemas de información e infraestructuras físicas, información de consumidores, reputación, cultura organizacional, calidad del *staff*, direccionamiento estratégico y establecimiento de relaciones con *stakeholders*.

Se han diseñado múltiples modelos para la medición del capital intelectual en las organizaciones, como el *Balanced Score Card* (Darvish, Mohammadi & Afsharpour, 2012), el basado en el relacionamiento Universidad-Empresa-Estado (Etzkowitz, 2002; Etzkowitz & Leydesdorff, 2000) y el Modelo Intellectus (Centro de Investigación sobre la Sociedad de Conocimiento, 2003), entre otros. Si bien cada uno de los modelos posee un conjunto de características propias, se puede distinguir un segmento de componentes comunes: capital humano, capital estructural y capital relacional. En el caso de las IES, el capital intelectual involucra todos aquellos activos institucionales que son no tangibles, incluyendo procesos, capacidad para innovación, patentes, conocimiento tácito de los colaboradores, capacidades de los colaboradores, reconocimiento de la sociedad, red de *stakeholders*, contactos, entre otros (Ramírez, Santos & Tejada, 2012).

El capital intelectual en las IES comprende los objetivos estratégicos, el involucramiento colectivo de los *stakeholders* internos y externos para alcanzar dichos objetivos, el proceso de activación al interior de las IES y los indicadores para evaluar la creación de valor (Secundo, Massaro, Dumay & Bagnoli, 2018). Cada IES diseña un conjunto de indicadores para cada activo intangible (Ramírez, Lorduy & Rojas, 2007). Lo anterior se debe a que los activos intangibles varían entre las instituciones.

Ahora bien, las categorías del capital intelectual por sí solas no tienen influencia directa sobre el desempeño de las IES, es la evaluación de los procesos que ocurren entre las categorías la que refleja su influencia en el desempeño. En este sentido, se deben tener en cuenta procesos como administración, currículo, transferencia tecnológica, investigación, docencia y servicio. Además de los impactos sobre los diferentes *stakeholders* (Lee, 2010).

Capital relacional en Instituciones de Educación Superior

El capital relacional involucra la capacidad de los empleados de una organización para desarrollar conexiones entre ellos y los *stakeholders* como clientes y proveedores (Seleim & Khalil, 2011). Asimismo, involucra aspectos como confianza, respeto y camaradería entre colaboradores (Kale, Singh & Perlmutter, 2000). Además, el capital relacional se refiere a la forma como las organizaciones pueden absorber, explotar y explorar nuevo conocimiento de su ambiente para obtener y sostener una posición competitiva (Mehralian, Rasekh, Akhavan & Ghatari, 2013). Otros elementos que hacen parte del capital relacional son bienes, servicios, marca, imagen

organizacional, aliados, proveedores, lealtad, satisfacción de los clientes y reputación corporativa (Álvarez, 2004). El capital relacional tiene en cuenta el conocimiento tácito y explícito en la mejora de las relaciones con los clientes, proveedores y otros *stakeholders* (Dias & Casas, 2017).

En el caso particular de las IES, los diferentes tipos de relaciones que se establecen con los *stakeholders* son muy relevantes a nivel de interacciones académicas, pues se asocian con una mayor productividad en términos económicos, políticos e institucionales (Cricelli et al., 2018). El capital relacional en las IES involucra las relaciones con las organizaciones públicas y privadas, a partir de las tres actividades misionales: docencia, investigación y extensión (Machorro, Mercado, Cernas & Romero, 2016; Secundo et al., 2018), y las relaciones de confianza que se establecen con ellas, con base en la imagen y la reputación institucional.

El capital relacional también considera el posicionamiento de las IES en las redes sociales, la marca, el involucramiento de la institución en actividades de entrenamiento, la colaboración con centros de investigación internacionales, las redes académicas y de profesores, el intercambio internacional de estudiantes, el reconocimiento internacional de las universidades (Leitner et al., 2014). Además, el capital relacional se basa en la confianza existente en los consumidores, generada a partir de la reputación organizacional (Gómez, Moreno, Becerra & Londoño, 2016). Cabe anotar que los resultados de investigación medidos en el capital relacional se encuentran directamente vinculados con el capital humano (Feng, Chen, Wang & Chiang, 2012) y con la constante cualificación del mismo, que dependerá de la adquisición de recursos y del establecimiento de relaciones externas con clientes, proveedores y gobierno.

Todas estas observaciones apuntan a que el capital relacional por sí solo no se puede convertir en un recurso valioso para alcanzar la diferenciación de las organizaciones. Más aún, las IES que han implementado algunas políticas sobre gestión de recursos intangibles son capaces de establecer e identificar interacciones entre los componentes del capital intelectual (Di Berardino & Corsi, 2018).

De aquí que las particularidades de cada uno de los *stakeholders* contribuyen con la construcción de indicadores individualizados para medir el desempeño de las relaciones, teniendo en cuenta que la gestión de estos indicadores debe quedar explícita en las estrategias y políticas de las IES (Habersam, Piber & Skoog, 2018).

El capital relacional en las IES puede ser descrito a partir de un conjunto de categorías, entre las cuales se destaca: reputación institucional, perfil docente, *stakeholders* y direccionamiento estratégico (ver tabla 1). A su vez, la adecuada gestión de estas categorías contribuye con el logro de ventaja competitiva en las IES, sin desconocer que el éxito final requiere del establecimiento de un mecanismo de coordinación entre capital relacional, estructural y humano.

Tabla 1. Categorías del capital relacional

Categoría	Características	Fuente
Reputación institucional	<ul style="list-style-type: none"> • Dependerá de los <i>stakeholders</i> y del área de conocimiento estudiada. • Mide la satisfacción de los requerimientos de los <i>stakeholders</i>. • Requiere gestión efectiva de recursos y actividades organizacionales. • Involucra aspectos como imagen, identidad organizacional y excelencia en investigación. • Tiene en cuenta la producción académica. 	Collins & Park, 2016; Hsieh, Weng & Lin, 2017; O'Loughlin, MacPhail & Msetfi, 2013; Plewa, Ho, Conduit & Karpen, 2016; Šontaitė & Bakanauskas, 2015; Stergiou & Tsikliras, 2014
Perfil docente	<ul style="list-style-type: none"> • Involucra características personales, formación y experiencia. • Tiene en cuenta competencias interpersonales, comunicativas, trabajo en equipo, innovación, planificación y gestión de la docencia. • Es dinámico. • Requiere de la identificación de la demanda de enseñanza actual. • Es necesario establecer mecanismos para atraer al <i>staff</i> talentoso. 	Álvarez-Rojo et al., 2009; Browning, Thompson & Dawson, 2017; Ghonji, Khoshnodifar, Hosseini & Mazloumzadeh, 2015; Miranda, Nova & Cornacchione, 2013; Núñez & Rodríguez, 2015; Triadó, Estebanell, Márquez & Del Corral, 2014; Volkwein & Sweitzer, 2006; Zepeda & Herskovic, 2013
Stakeholders	<ul style="list-style-type: none"> • Se requiere identificar los requerimientos particulares de cada <i>stakeholder</i>. • Son fuente de fondos y donaciones. • Los requerimientos son dinámicos y hay nuevos tipos de <i>stakeholders</i>. • Busca establecer relaciones en el largo plazo. • Incluye alta dirección de la institución, entidades gubernamentales, empleados, estudiantes, proveedores, competidores, patrocinadores, comunidad e intermediarios financieros. 	Geryk, 2017; Gómez et al., 2016; Kettunen, 2015; Liefner, 2003; Marić, 2013; Nguyen & Gramberg, 2017

Categoría	Características	Fuente
Direccionamiento estratégico	<ul style="list-style-type: none"> • Permite mejorar posicionamiento, expandir el relacionamiento con <i>stakeholders</i> y crear valor. • Incluye asignación de recursos, calidad en la educación, productividad en investigación, capacidad del currículo para responder a los requerimientos del mercado; misión, visión y valores. • Involucra inversión en el capital humano y control estratégico de las actividades. • Facilita la identificación de las actividades core, gobernanza, estructura organizacional y establecimiento de prioridades estratégicas. • Se asocia a las políticas gubernamentales. 	Bradford, Guzmán & Trujillo, 2017; López & Vargas, 2010; Ojeda, 2013; Pucciarelli & Kaplan, 2016

Fuente. Elaboración propia.

METODOLOGÍA

Para el desarrollo de la investigación, se utilizó una metodología con un enfoque cuantitativo. Además, el alcance es de carácter descriptivo-correlacional. Se realizó un estudio en cuatro grupos de investigación pertenecientes a una Institución de Educación Superior ubicada en el norte del Valle de Aburrá. Las áreas de estudio de los grupos de investigación participantes son: educación, responsabilidad social y desarrollo sostenible, ciencias humanas y ciencias administrativas. La IES hace parte de un sistema universitario nacional con presencia en 18 de los 32 departamentos colombianos e inició operaciones en el norte del Valle de Aburrá en 1998. Asimismo, el modelo pedagógico del sistema universitario al cual pertenece se replicó en Costa de Marfil, África. Cuenta con programas técnicos, tecnológicos, profesionales y posgrados, en las modalidades presencial y virtual-distancia. Como característica particular, los grupos de investigación debían estar reconocidos y clasificados por el Departamento Administrativo de Ciencia, Tecnología e Innovación de Colombia (COLCIENCIAS). La población escogida fue de 49 docentes activos en los grupos de investigación. Para el diseño general de la muestra se empleó el método de Muestreo Aleatorio Simple (MAS), con un nivel de confianza del 90% y un margen de error del 10%, de donde se obtuvo un tamaño de muestra adecuado de 29 docentes. Se aclara que se obtuvo la respuesta de 30 docentes.

Posteriormente, mediante el diseño de un formulario (ver anexo) y la aplicación de una encuesta, se recopiló la información primaria. El formulario se encontraba dividido en cinco apartados: caracterización del investigador (preguntas de control),

reputación, *stakeholders*, perfil docente y direccionamiento estratégico (ver tabla 2). Los ítems valorados tenían asociado un conjunto de opciones de respuesta cerrada, basado en la Escala de Likert de cinco opciones, siendo 1 “nada de acuerdo” y 5 “completamente de acuerdo”.

Tabla 2. Codificación preguntas

Codificación	Categoría del capital relacional
C1, C2, C3, C4, C5, C6, C7, C8, C9	Preguntas de control
PI1, PI2, PI3, PI4, PI5, PI6, PI7, PI8, PI9, PI10, PI11	Reputación
PI12, PI13, PI14, PI15, PI16	<i>Stakeholders</i>
PI17, PI18, PI19, PI20	Perfil docente
PI21, PI22, PI23, PI24, PI25, PI26	Direccionamiento estratégico

Fuente. Elaboración propia.

Se realizó un análisis estadístico de las categorías, con base en la correlación lineal bivariada de Pearson. Además, es importante identificar si la correlación es o no significativa. Así pues, se usaron las siguientes parejas de hipótesis:

$$H_0 = r_{ij} = 0 \text{ vs } H_a = \rho r_{ij} \neq 0, \text{ lo que equivale a } H_0 = \rho = 0 \text{ vs } H_a = \rho \neq 0$$

RESULTADOS

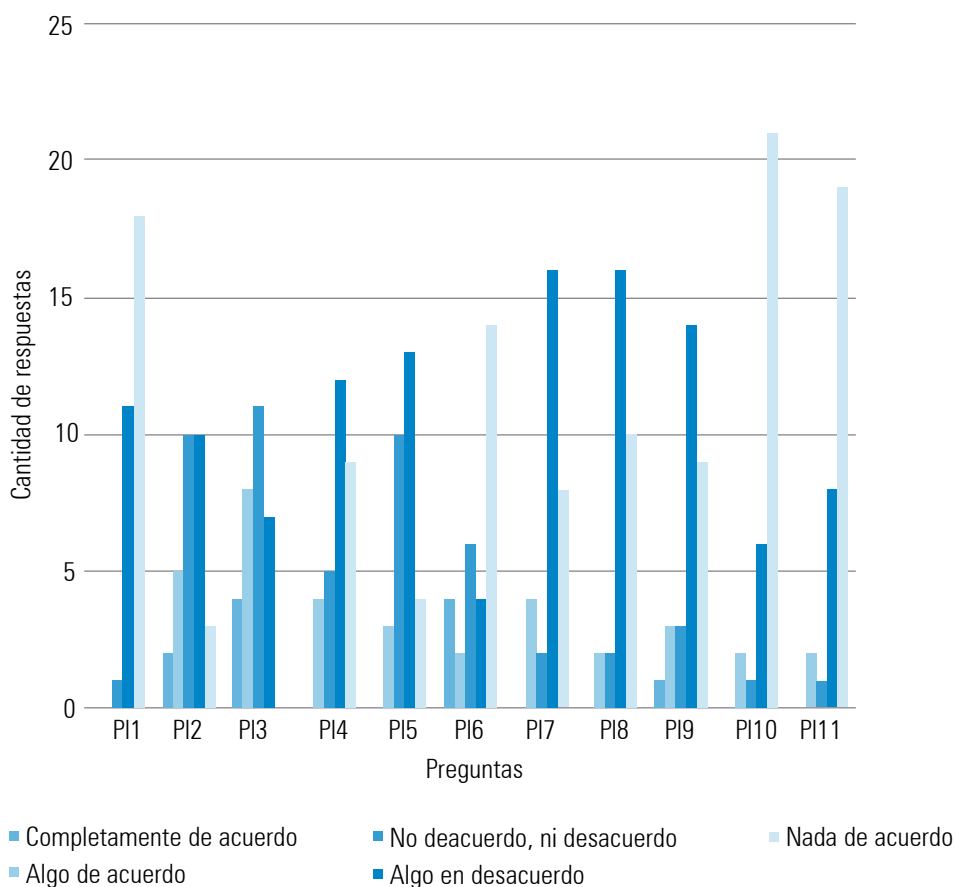
La recolección de la información se realizó durante la segunda mitad del año 2017. Posteriormente, se validó la confiabilidad del instrumento a través del Alpha de Cronbach, cuyo valor fue de 0,93, superior a 0,7 –que es el coeficiente mínimo aceptable–, lo que muestra una alta confiabilidad en los datos recopilados (George & Mallery, 2003).

Caracterización de las categorías de capital relacional en la IES

Teniendo en cuenta los componentes del capital relacional, se seleccionaron cuatro categorías de estudio: reputación, *stakeholders*, perfil docente y direccionamiento estratégico. En el caso de la reputación, aproximadamente el 90% de los docentes expresa una actitud favorable y muy favorable en lo que se refiere a la identificación con la misión institucional (PI10). Lo anterior muestra congruencia con la percepción favorable (86,6%) que poseen los docentes con respecto al soporte que brinda la misión al desarrollo de proyectos de investigación (PI8). Asimismo, el 96,6% de los docentes posee una actitud favorable y muy favorable en lo que se refiere a la identificación con

las líneas de investigación del grupo al cual se encuentran vinculados (PI1). Ahora bien, la reputación también involucra el análisis del reconocimiento que poseen los grupos de investigación a nivel académico, social y empresarial. En este sentido, el 40% de los docentes expresa una posición desfavorable y muy desfavorable con respecto al reconocimiento que brindan las empresas al mejoramiento de productos y procesos derivado de proyectos de investigación (PI3) (ver figura 1).

Figura 1. Reputación



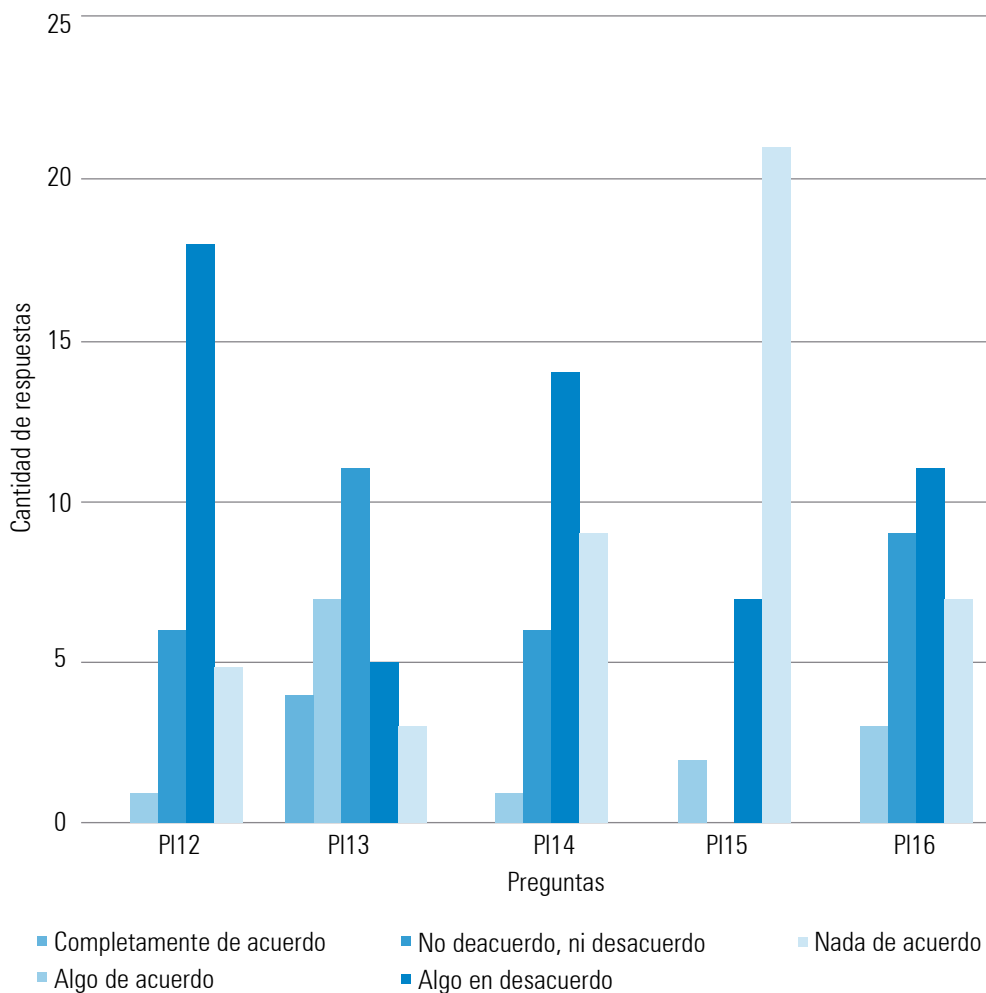
Fuente. Elaboración propia.

En lo que se refiere a los *stakeholders* como segunda categoría de análisis, aproximadamente el 93,3% de los docentes considera que los proyectos de investigación que ha desarrollado responden a las necesidades sociales (PI15). Además, el 76,6% expresa una actitud favorable y muy favorable con respecto al

Natalia Marulanda Grisales · Claudia Lorena Rincón Grajales · Francisco Javier Echeverry Correa
Gestión de activos intangibles de capital relacional en Instituciones de Educación Superior

establecimiento de relaciones de confianza con los diferentes *stakeholders* de la institución (PI12), y un 76,7% manifiesta tener claridad en lo que se refiere a las estrategias de protección de la propiedad intelectual (PI14). No obstante, cerca del 63,3% no posee certeza con respecto a los instrumentos necesarios para medir la confianza con los *stakeholders* (PI13) (ver figura 2).

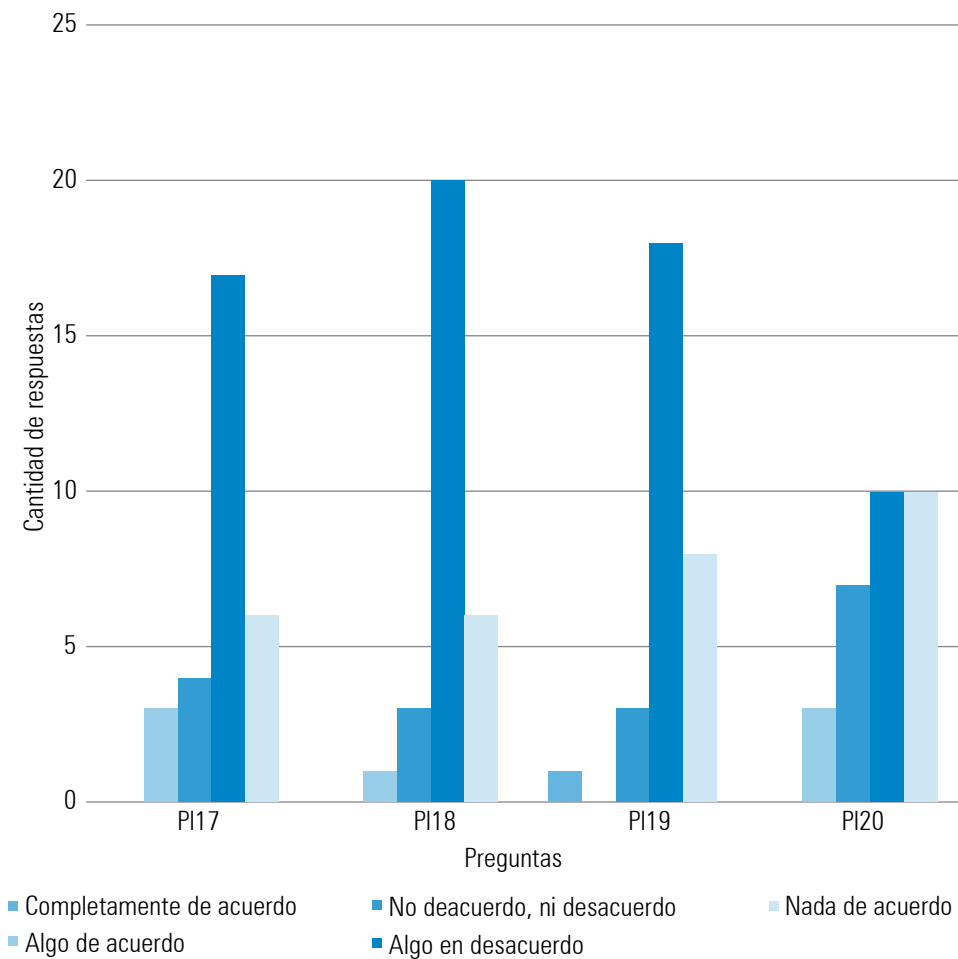
Figura 2. *Stakeholders*



Fuente. Elaboración propia.

Analizando la categoría de perfil docente, el 86,7% de ellos considera que el perfil de los vinculados al grupo es idóneo para desarrollar proyectos de investigación con los diferentes *stakeholders* y que este se adapta a los cambios que surgen en diversas áreas del conocimiento (PI18), (PI19). De forma similar, el 76,7% de los docentes manifiesta que la calidad de los miembros del grupo de investigación facilita el proceso de interacción con los diversos *stakeholders* (PI17). Es de aclarar que el 33,3% de los integrantes de los grupos de investigación no emplea herramientas que le permitan realizar seguimiento a los productos (PI20) (ver figura 3).

Figura 3. Perfil docente

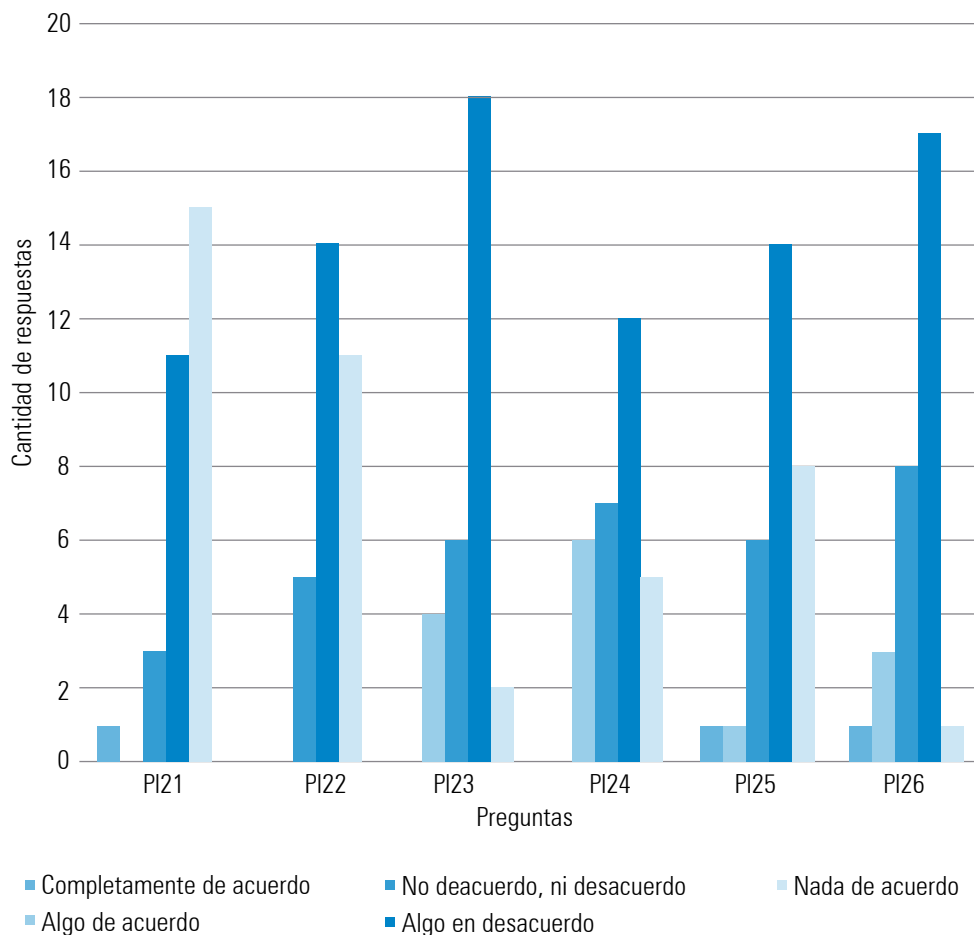


Fuente. Elaboración propia.

Natalia Marulanda Grisales · Claudia Lorena Rincón Grajales · Francisco Javier Echeverry Correa
Gestión de activos intangibles de capital relacional en Instituciones de Educación Superior

Finalmente, en la categoría de direccionamiento estratégico, el 83,3% de los integrantes de los grupos de investigación de la IES manifiesta una posición favorable y muy favorable con respecto a la eficiencia de las estrategias adelantadas por la institución para fortalecer las competencias en investigación (PI22). Sin embargo, aproximadamente el 43,3% de los docentes considera que dichas estrategias no son muy útiles al momento de establecer relaciones con los diferentes *stakeholders* (PI24). Es de aclarar que el 60% de los miembros de los grupos de investigación posee actitudes muy favorables con respecto al apoyo que brinda la institución para la generación de características innovadoras de los grupos (PI26). Además, el direccionamiento estratégico de la IES en materia de investigación involucra el seguimiento y control a las actividades desarrolladas por el investigador, aspecto en el que el 86,7% de los docentes expresa una posición favorable y muy favorable (PI21) (ver figura 4).

Figura 4. Direccionamiento estratégico



Fuente. Elaboración propia.

Variabilidad compartida entre variables

Para la selección de parejas de análisis se tuvo en cuenta el cumplimiento de dos supuestos: correlación lineal bivariada de Pearson (r_{ij}) $> 0,3$ y $Valor_p \leq 0,05$. Se aclara que la relevancia del coeficiente de correlación puede explicarse en términos de la proporción de variabilidad compartida o coeficiente de determinación, r_{ij}^2 .

De esta manera, el nivel de identidad que alcancen los docentes con respecto a las líneas de investigación del grupo al cual pertenecen se verá reflejado en el reconocimiento que tiene la comunidad académica hacia el ejercicio investigador, asimismo, dicha identidad se encuentra influenciada por las estrategias adelantadas por la institución para fortalecer las competencias investigativas de los docentes (PI1, PI4, $r_{PI1, PI4}^2 = 0,1421$), (PI1, PI23, $r_{PI1, PI23}^2 = 0,1281$).

Asimismo, la respuesta oportuna a los requerimientos sociales y el nivel de apropiación generado en las comunidades contribuyen con la medición de los niveles de confianza y percepción de la labor investigativa generada en la comunidad académica (PI4, PI13, $r_{PI4, PI13}^2 = 0,1797$), (PI4, PI15, $r_{PI4, PI15}^2 = 0,2631$), (PI4, PI16, $r_{PI4, PI16}^2 = 0,2190$), (PI9, PI15, $r_{PI9, PI15}^2 = 0,4942$), (PI16, PI17, $r_{PI16, PI17}^2 = 0,2560$). Es aquí donde el direccionamiento estratégico de la organización adquiere un papel relevante para fortalecer los elementos diferenciadores que generan ventaja competitiva en una IES, planeando una adecuada gestión de recursos y capacidades en el largo plazo. Entre estos recursos se destacan los docentes, cuya capacidad de adaptación al cambio en las diferentes áreas del conocimiento (PI16, PI19, $r_{PI16, PI19}^2 = 0,3564$) contribuye con la generación de ventaja competitiva.

En este orden de ideas, se resalta una porción de variabilidad explicada entre el reconocimiento social que poseen los grupos de investigación y su influencia en el reconocimiento por parte de compañías y demás miembros de la comunidad académica. A su vez, dicho reconocimiento dependerá del nivel de seguimiento a la satisfacción del usuario, realizado por los integrantes de los diferentes grupos de investigación (PI2, PI3, $r_{PI2, PI3}^2 = 0,4719$), (PI2, PI4, $r_{PI2, PI4}^2 = 0,2580$), (PI3, PI4, $r_{PI3, PI4}^2 = 0,1672$), (PI2, PI6, $r_{PI2, PI6}^2 = 0,3757$), (PI3, PI6, $r_{PI3, PI6}^2 = 0,1391$). Más aún, el reconocimiento por parte de la comunidad académica dependerá en gran medida de la imagen que el grupo logre proyectar entre los demás grupos de investigación de las IES (PI4, PI5, $r_{PI4, PI5}^2 = 0,2872$), (PI4, PI6, $r_{PI4, PI6}^2 = 0,3684$), por medio del perfil de los docentes vinculados y de las herramientas de seguimiento a productos y a la actividad del investigador (PI16, PI18, $r_{PI16, PI18}^2 = 0,3782$), (PI16, PI20, $r_{PI16, PI20}^2 = 0,13982$), (PI18, PI20, $r_{PI18, PI20}^2 = 0,3606$), (PI16, PI21, $r_{PI16, PI21}^2 = 0,1122$) y (PI18, PI21, $r_{PI18, PI21}^2 = 0,2401$).

Sin embargo, para incrementar la probabilidad de obtener reconocimiento y establecer relaciones de confianza con los *stakeholders* previamente mencionados, los directivos de la IES han de garantizar coherencia entre misión y visión, el desarrollo de actividades de investigación y la respuesta oportuna a las diferentes necesidades sociales (PI4, PI9, $r_{PI4, PI9}^2 = 0,1648$), (PI16, PI24, $r_{PI16, PI24}^2 = 0,3058$). Lo anterior facilita que los docentes pertenecientes a los grupos de investigación se identifiquen con la misión y visión institucional (PI8, PI9, $r_{PI8, PI9}^2 = 0,5913$), (PI9, PI10, $r_{PI9, PI10}^2 = 0,3469$), para

su posterior transmisión y aplicación en las actividades misionales de la institución: docencia, investigación y extensión (PI2, PI8, $r_{PI2, PI8}^2 = 0,2631$), (PI2, PI9, $r_{PI2, PI9}^2 = 0,3552$), (PI3, PI9, $r_{PI3, PI9}^2 = 0,2798$), (PI2, PI10, $r_{PI2, PI10}^2 = 0,1474$), (PI2, PI11, $r_{PI2, PI11}^2 = 0,1608$), (PI3, PI11, $r_{PI3, PI11}^2 = 0,1391$), (PI2, PI12, $r_{PI2, PI12}^2 = 0,1544$), (PI3, PI12, $r_{PI3, PI12}^2 = 0,1576$), (PI2, PI13, $r_{PI2, PI13}^2 = 0,1477$), (PI3, PI13, $r_{PI3, PI13}^2 = 0,2530$), (PI2, PI15, $r_{PI2, PI15}^2 = 0,1560$), (PI3, PI15, $r_{PI3, PI15}^2 = 0,1857$), (PI4, PI10, $r_{PI4, PI10}^2 = 0,1624$), (PI4, PI11, $r_{PI4, PI11}^2 = 0,1536$), (PI8, PI10, $r_{PI8, PI10}^2 = 0,2332$), (PI8, PI11, $r_{PI8, PI11}^2 = 0,1998$), (PI9, PI11, $r_{PI9, PI11}^2 = 0,4316$).

Es de considerar que la calidad del perfil de los docentes activos en los grupos de investigación permitirá establecer relaciones de confianza y desarrollar proyectos de cooperación con diferentes *stakeholders* (PI17, PI18, $r_{PI17, PI18}^2 = 0,4448$). Asimismo, las acciones adelantadas por los directivos de la IES también influyen en el establecimiento de relaciones de confianza con los *stakeholders*, a partir de estrategias que faciliten el fortalecimiento de las competencias en investigación de los docentes (PI17, PI24, $r_{PI17, PI24}^2 = 0,1714$), (PI18, PI24, $r_{PI18, PI24}^2 = 0,1714$), (PI19, PI24, $r_{PI19, PI24}^2 = 0,2043$), (PI17, PI23, $r_{PI17, PI23}^2 = 0,2862$), (PI18, PI23, $r_{PI18, PI23}^2 = 0,1648$), (PI20, PI22, $r_{PI20, PI22}^2 = 0,1738$), (PI20, PI23, $r_{PI20, PI23}^2 = 0,1406$), que garanticen que su perfil se adapte a los cambios en las condiciones en el área de conocimiento a la cual pertenecen (PI17, PI19, $r_{PI17, PI19}^2 = 0,4121$), (PI18, PI19, $r_{PI18, PI19}^2 = 0,8649$), (PI19, PI20, $r_{PI19, PI20}^2 = 0,8649$), y que promuevan la vinculación de aquellos a redes académicas (PI18, PI25, $r_{PI18, PI25}^2 = 0,3540$).

Ahora bien, la relación entre la calidad del perfil de los docentes vinculados a los grupos de investigación con el reconocimiento entre los miembros de la comunidad académica, con los proyectos que han desarrollado dichos docentes, con el seguimiento realizado a los productos derivados de investigación y con la posibilidad de adaptación a los cambios en las diversas áreas del conocimiento, también posee una variabilidad compartida relevante con respecto al reconocimiento social y empresarial que recibe la labor del investigador (PI2, PI17, $r_{PI2, PI17}^2 = 0,1989$), (PI3, PI17, $r_{PI3, PI17}^2 = 0,2693$), (PI11, PI17, $r_{PI11, PI17}^2 = 0,2560$), (PI2, PI18, $r_{PI2, PI18}^2 = 0,3203$), (PI3, PI18, $r_{PI3, PI18}^2 = 0,2352$), (PI2, PI19, $r_{PI2, PI19}^2 = 0,3636$), (PI3, PI19, $r_{PI3, PI19}^2 = 0,1317$), (PI2, PI20, $r_{PI2, PI20}^2 = 0,3203$), (PI3, PI20, $r_{PI3, PI20}^2 = 0,1513$), (PI4, PI20, $r_{PI4, PI20}^2 = 0,3660$). Más aún, la calidad de los productos derivados de los procesos de investigación se encuentra directamente relacionada con el perfil de los docentes adscritos a los grupos de investigación y con su identificación con la misión institucional (PI7, PI18, $r_{PI7, PI18}^2 = 0,1489$), (PI9, PI17, $r_{PI9, PI17}^2 = 0,1310$). Lo anterior permite evidenciar la interacción de los tres componentes principales del capital intelectual: capital humano, capital estructural y capital relacional (Centro de Investigación Sobre la Sociedad del Conocimiento, 2003).

Por ende, el direccionamiento estratégico de la IES debe involucrar la gestión simultánea de dichos componentes principales. Esto permite fortalecer las competencias en investigación de los docentes y establecer nuevas relaciones con los *stakeholders* y con redes académicas, a fin de generar características diferenciadoras en los grupos de investigación (PI2, PI21, $r_{PI2, PI21}^2 = 0,2381$), (PI3, PI21, $r_{PI3, PI21}^2 = 0,2342$), (PI4, PI21, $r_{PI4, PI21}^2 = 0,1451$), (PI2, PI22, $r_{PI2, PI22}^2 = 0,1866$), (PI3, PI22, $r_{PI3, PI22}^2 = 0,1451$), (PI4, PI22, $r_{PI4, PI22}^2 = 0,1398$), (PI2, PI23, $r_{PI2, PI23}^2 = 0,2171$), (PI3, PI23, $r_{PI3, PI23}^2 = 0,2391$), (PI4, PI23,

$r_{PI4, PI23}^2 = 0,1560$), (PI16, PI23, $r_{PI16, PI23}^2 = 0,1560$), (PI2, PI24, $r_{PI2, PI24}^2 = 0,2070$), (PI3, PI24, $r_{PI3, PI24}^2 = 0,3794$), (PI2, PI25, $r_{PI2, PI25}^2 = 0,1560$), (PI3, PI25, $r_{PI3, PI25}^2 = 0,1632$), (PI4, PI25, $r_{PI4, PI25}^2 = 0,2016$), (PI2, PI26, $r_{PI2, PI26}^2 = 0,1918$), (PI32, PI26, $r_{PI32, PI26}^2 = 0,2450$). No obstante, dichas características diferenciadoras solo se obtienen a partir de una adecuada asignación de recursos que permitan mejorar la calidad de los productos derivados de procesos de investigación, lo que genera visibilidad entre los diferentes *stakeholders* de la IES (PI3, PI7, $r_{PI3, PI7}^2 = 0,2450$).

Además, la calidad de los productos derivados de procesos de investigación dependerá en gran medida de su coherencia con la misión y la visión institucional, de los mecanismos de protección de propiedad intelectual, de la capacidad de respuesta a las necesidades sociales y de las actividades empleadas para comunicar los resultados a los diversos *stakeholders* (PI7, PI8, $r_{PI7, PI8}^2 = 0,2520$), (PI7, PI9, $r_{PI7, PI9}^2 = 0,1648$), (PI7, PI14, $r_{PI7, PI14}^2 = 0,1324$), (PI7, PI15, $r_{PI7, PI15}^2 = 0,1664$), (PI8, PI15, $r_{PI8, PI15}^2 = 0,1584$), (PI7, PI16, $r_{PI7, PI16}^2 = 0,1339$). Es de aclarar que desde la dirección de la IES se deben generar alternativas que permitan fortalecer las competencias en investigación de los docentes, lo que facilitará realizar seguimiento y control a la calidad de los productos (PI7, PI20, $r_{PI7, PI20}^2 = 0,1568$), (PI7, PI21, $r_{PI7, PI21}^2 = 0,1466$), (PI20, PI21, $r_{PI20, PI21}^2 = 0,1706$), (PI7, PI22, $r_{PI7, PI22}^2 = 0,1428$), (PI8, PI22, $r_{PI8, PI22}^2 = 0,1332$), (PI21, PI22, $r_{PI21, PI22}^2 = 0,4134$), (PI21, PI23, $r_{PI21, PI23}^2 = 0,2883$).

Por lo que se refiere a la imagen u opiniones concebidas entre miembros de grupos de investigación, resulta fundamental evaluar el nivel de satisfacción con respecto a los resultados y productos vinculados a los procesos de investigación (PI5, PI6, $r_{PI5, PI6}^2 = 0,3669$), (PI5, PI10, $r_{PI5, PI10}^2 = 0,1552$), (PI5, PI11, $r_{PI5, PI11}^2 = 0,2470$). De igual manera, la calidad y el grado de identidad del docente con respecto a la misión y a la visión institucional tendrá un efecto sobre la imagen que el grupo de investigación proyecte a los diferentes *stakeholders* al momento de atender sus necesidades (PI5, PI14, $r_{PI5, PI14}^2 = 0,1361$), (PI5, PI15, $r_{PI5, PI15}^2 = 0,3387$), (PI9, PI24, $r_{PI9, PI24}^2 = 0,2862$), (PI15, PI17, $r_{PI15, PI17}^2 = 0,3058$).

Dicho lo anterior, la IES estipula una serie de mecanismos de seguimiento y control a las funciones desarrolladas por los docentes en la actividad misional de investigación (PI12, PI21, $r_{PI12, PI21}^2 = 0,1747$). En primer lugar, es importante identificar el nivel de satisfacción de los directivos con los productos académicos entregados por los docentes, y cómo dicho nivel influye en la atención de necesidades sociales y en el establecimiento de relaciones de confianza con los *stakeholders* (PI6, PI12, $r_{PI6, PI12}^2 = 0,1640$), (PI6, PI15, $r_{PI6, PI15}^2 = 0,1528$), (PI6, PI20, $r_{PI6, PI20}^2 = 0,3294$), (PI15, PI20, $r_{PI15, PI20}^2 = 0,1689$), (PI6, PI21, $r_{PI6, PI21}^2 = 0,1789$). Asimismo, las actividades de seguimiento y control facilitan la identificación de las falencias que poseen los docentes en términos de investigación. Este proceso permite generar alternativas para fortalecer las competencias investigativas que ayuden a la construcción de rasgos distintivos en los docentes en el largo plazo (PI6, PI22, $r_{PI6, PI22}^2 = 0,3014$), (PI6, PI26, $r_{PI6, PI26}^2 = 0,1632$), (PI21, PI26, $r_{PI21, PI26}^2 = 0,1482$), (PI9, PI21, $r_{PI9, PI21}^2 = 0,1497$), (PI9, PI22, $r_{PI9, PI22}^2 = 0,1528$), (PI9, PI23, $r_{PI9, PI23}^2 = 0,3036$), (PI15, PI23, $r_{PI15, PI23}^2 = 0,1632$).

De aquí que los mecanismos de seguimiento y control diseñados desde el direccionamiento estratégico de la institución se conviertan en herramientas para mejorar el perfil del investigador, evaluar la confianza existente entre los docentes y los diferentes *stakeholders* y fortalecer estas relaciones (PI13, PI17, $r_{PI13, PI17}^2 = 0,1831$), (PI13, PI18, $r_{PI13, PI18}^2 = 0,2421$), (PI13, PI24, $r_{PI13, PI24}^2 = 0,3844$), (PI15, PI24, $r_{PI15, PI24}^2 = 0,25$). Además, como resultado, también evidencia la adaptación que tienen los docentes a cambios en las diferentes áreas del conocimiento (PI13, PI19, $r_{PI13, PI19}^2 = 0,1616$), la posibilidad de incursión y distinción en redes académicas (PI13, PI25, $r_{PI13, PI25}^2 = 0,1755$), (PI21, PI25, $r_{PI21, PI25}^2 = 0,2560$) y el desarrollo de competencias diferenciadoras (PI13, PI26, $r_{PI13, PI26}^2 = 0,1391$).

Como se ha mencionado, el nivel de identidad que poseen los docentes con respecto a la misión y visión institucional (PI10, PI11, $r_{PI10, PI11}^2 = 0,9158$) es fundamental para la elaboración de proyectos de investigación que se adapten a las características institucionales, en términos de pertinencia y calidad (PI10, PI17, $r_{PI10, PI17}^2 = 0,2693$), y a las exigencias de los diferentes *stakeholders* (PI10, PI15, $r_{PI10, PI15}^2 = 0,6099$), (PI10, PI24, $r_{PI10, PI24}^2 = 0,1413$), (PI15, PI18, $r_{PI15, PI18}^2 = 0,2199$). Más aún, cuando se desarrollan proyectos de cooperación los resultados han de ser difundidos entre las diferentes entidades involucradas (PI10, PI16, $r_{PI10, PI16}^2 = 0,1544$), (PI11, PI16, $r_{PI11, PI16}^2 = 0,1376$), (PI12, PI16, $r_{PI12, PI16}^2 = 0,2227$), (PI15, PI16, $r_{PI15, PI16}^2 = 0,3136$). Lo anterior permite fortalecer relaciones de confianza con los diferentes *stakeholders* (PI12, PI16, $r_{PI12, PI16}^2 = 0,2227$), (PI13, PI16, $r_{PI13, PI16}^2 = 0,2181$) y afianzar las características diferenciadoras de los docentes vinculados a los grupos de investigación (PI12, PI24, $r_{PI12, PI24}^2 = 0,2798$), (PI15, PI19, $r_{PI15, PI19}^2 = 0,2530$).

Hasta el momento, se ha resaltado la importancia del direccionamiento estratégico en la IES para fortalecer las competencias en investigación que poseen los docentes. No obstante, es fundamental que la alta dirección evalúe si estas estrategias son conocidas y eficientes (PI22, PI24, $r_{PI22, PI24}^2 = 0,1926$) y, más aún, si están en capacidad de generar aspectos diferenciadores que contribuyan con la reputación de los docentes entre los diferentes *stakeholders* (PI22, PI26, $r_{PI22, PI26}^2 = 0,2116$), (PI23, PI24, $r_{PI23, PI24}^2 = 0,3665$), (PI23, PI26, $r_{PI23, PI26}^2 = 0,1794$) y faciliten así su incursión en redes académicas (PI24, PI25, $r_{PI24, PI25}^2 = 0,3092$), (PI23, PI25, $r_{PI23, PI25}^2 = 0,2274$), (PI24, PI26, $r_{PI24, PI26}^2 = 0,1436$), (PI25, PI26, $r_{PI25, PI26}^2 = 0,1541$).

DISCUSIÓN

Activos intangibles como identidad, imagen y reputación se convierten en elementos valiosos que han de ser considerados en la gestión de las IES; además, estos activos fortalecen las relaciones que tiene una IES con los *stakeholders* a partir de confiabilidad y credibilidad (Maduro, Fernandes & Alves, 2018). De forma particular, el nivel de identidad que adquieran los investigadores con respecto a misión, visión y líneas de investigación institucionales se ve reflejado en el reconocimiento de los *stakeholders*, que se deriva de la respuesta oportuna a los diversos requerimientos. Más aún, la identidad y reconocimiento son claves en el desarrollo de relaciones de

confianza de largo plazo, además de jugar un papel representativo en la reputación de una IES. Esta reputación es un indicador de calidad (Geschwind, 2018) y depende del nivel de satisfacción individual que tenga cada uno de los *stakeholders* con respecto al cumplimiento de plazos y metas en el desarrollo de proyectos conjuntos de investigación; por ende, la reputación en una IES puede ser vista como la *customization* de *stakeholders* (Mikhaylov & Mikhaylova, 2018).

En este orden de ideas, la gestión de activos intangibles en grupos de investigación de una IES posee una alta variabilidad, explicada con base en el perfil de los docentes e investigadores que se encuentran vinculados a dichos grupos. Por ende, resulta imperioso considerar que los cambios derivados de internacionalización, *marketing*, avances tecnológicos y formas innovadoras de investigación requieren que los investigadores no solo sean competentes, sino que sean competentes globalmente (Niemczyk, 2018). Solo es posible adquirir este nivel de competencia si la cualificación constante del investigador se incluye en el direccionamiento estratégico de la IES, considerando que la investigación es uno de sus pilares y actividades misionales. Dicho direccionamiento requiere de un conjunto de actividades como: identificación de misión, metas y estrategias actuales en investigación; análisis externo; análisis interno; implementación de estrategias y evaluación de resultados (Nguyen & Gramberg, 2017).

Ahora bien, la gestión de activos intangibles, como reflejo de la gestión de conocimiento en las IES, genera valor y ventaja competitiva a partir de la imagen, la reputación y los beneficios derivados de actividades y activos de conocimiento. Los activos de conocimiento que pueden generar beneficios son de tres tipos: productos de investigación, capital intelectual y programas de investigación. De aquí que la definición de estrategias que permitan incrementar la competitividad y gestionar el conocimiento generado por una IES plantee desafíos importantes en el direccionamiento estratégico de una institución (Cantú & Ceballos, 2010). Otra fuente de generación de ventaja competitiva para los grupos de investigación en una IES es la cooperación Universidad-Empresa, que requiere una reasignación de recursos a las áreas prioritarias y una mayor coordinación institucional (Galán-Muros, Van der Sijde, Groenewegen & Baaken, 2017). Es así como la creación de conocimiento es un requisito esencial para garantizar una ventaja competitiva sostenible en las IES (Sriwidadi, Arief, Prabowo & Muqarrabin, 2016), porque este tipo de instituciones se esfuerzan por lograr la excelencia en investigación a través de una mayor productividad. La literatura muestra que los sistemas de gestión del conocimiento contribuyen significativamente a mejorar la productividad de la investigación en las instituciones de educación superior (Upadhyaya & Pillai, 2016).

CONCLUSIONES

La valorización de conocimiento en las Instituciones de Educación Superior (IES) implica la identificación de los recursos tangibles e intangibles que sean valiosos y que se conviertan en elementos diferenciadores, a fin de generar ventaja

competitiva. Por ende, la presente investigación propone cambios en la estructura y direccionamiento estratégico de las IES, en el reconocimiento de su papel en la sociedad y en la caracterización de sus particularidades, con base en la gestión y medición de intangibles. Lo anterior permitirá valorizar el conocimiento y expresarlo en términos del capital intelectual, que al ser visto como un recurso intangible facilita la intervención en el conocimiento.

Esta investigación aporta al desarrollo de estudios que involucren la evaluación de las relaciones y de los procesos de transformación existentes entre los principales componentes del capital intelectual: capital humano, capital estructural y capital relacional. Se destaca que difícilmente se pueden establecer relaciones de confianza con los diferentes *stakeholders* de las IES (capital relacional) sin tener en cuenta la calidad del recurso humano (capital humano), la infraestructura y los procesos organizacionales (capital estructural) que soporten la interacción con actores de diferentes áreas de conocimiento.

El relacionamiento de las IES con miembros de la comunidad académica, con la sociedad y con el sector empresarial posee una alta variabilidad, explicada por el nivel de identidad que alcancen los docentes con la misión, visión y líneas de investigación institucionales. A su vez, este relacionamiento puede verse influenciado por el nivel de seguimiento y control a las actividades de investigación que responden a las diferentes necesidades sociales. En este orden de ideas, la investigación plantea la necesidad de desarrollar actividades de seguimiento que permitan identificar falencias, generar planes de mejora y desarrollar competencias distintivas en los docentes investigadores.

El fortalecimiento de los elementos diferenciadores del capital relacional en las IES involucra la gestión de recursos y capacidades distintivas, a fin de generar ventaja competitiva. Es aquí donde el direccionamiento estratégico de las IES debe velar por la calidad del perfil docente y de los productos de investigación, por la reputación institucional y por la identificación de las particularidades de cada uno de sus *stakeholders*. Para tal fin, se requieren transformaciones en los modelos de gobernanza de las IES.

Se sugiere, para futuras investigaciones, identificar las relaciones de causalidad existentes entre las categorías que conforman los componentes centrales del capital intelectual (capital humano, capital estructural y capital intelectual). Lo anterior, permitirá obtener una visión holística de la gestión de activos intangibles, desde el concepto de capital en las organizaciones.

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ANEXO

Preguntas formulario recolección de información capital relacional en una IES (Solo se muestran las preguntas vinculadas al componente de capital relacional)

A continuación se presentarán una serie de afirmaciones, las cuales usted deberá valorar acorde a la siguiente escala de valoración: 5 (Completamente de acuerdo), 4 (Algo de acuerdo), 3 (Ni de acuerdo, ni desacuerdo), 2 (Algo en desacuerdo) y 1 (Nada de acuerdo).

Ítem	Pregunta	5	4	3	2	1
		Completamente de acuerdo	Algo de acuerdo	Ni de acuerdo, ni desacuerdo	Algo en desacuerdo	Nada de acuerdo
Reputación						
1.	Se identifica con las líneas de investigación del grupo al cual pertenece					
2.	La sociedad reconoce la labor del grupo de investigación en la resolución de sus necesidades					
3.	Las empresas reconocen el aporte del grupo de investigación en el mejoramiento de procesos/ productos y servicios					
4.	El ejercicio investigador del grupo es reconocido por la comunidad académica					
5.	El grupo de investigación posee una imagen favorable entre los grupos de investigación de las Instituciones de Educación Superior					
6.	El grupo realiza seguimiento al nivel de satisfacción de la institución con los resultados de investigación					
7.	La calidad de los productos derivados de procesos de investigación es acorde a los recursos proporcionados por la institución					

Ítem	Pregunta	5	4	3	2	1
		Completamente de acuerdo	Algo de acuerdo	Ni de acuerdo, ni desacuerdo	Algo en desacuerdo	Nada de acuerdo
Reputación						
8.	La misión institucional es coherente con el desarrollo de las actividades de investigación					
9.	La visión institucional es coherente con el desarrollo de las actividades de investigación					
10.	Se identifica con la misión de la institución					
11.	Se identifica con la visión de la institución					
Stakeholders (Grupos de interés: Docentes, estudiantes, Instituciones de Educación Superior, empresa, Estado)						
12.	Se establecen relaciones de confianza con los <i>stakeholders</i> de la institución					
13.	El grupo de investigación posee instrumentos para medir el nivel de confianza que tiene con los <i>stakeholders</i> de la institución					
14.	Conoce los mecanismos para la protección de la propiedad intelectual cuando se realizan proyectos de investigación con diferentes <i>stakeholders</i>					
15.	Los proyectos de investigación desarrollados por el grupo al cual pertenece responden a las necesidades sociales					
16.	Los resultados del proyecto de investigación se socializan con los <i>stakeholders</i>					
Perfil Docente						
17.	La calidad en investigación de los docentes vinculados al grupo al cual pertenece facilita el establecimiento de relaciones con los <i>stakeholders</i>					
18.	El perfil del investigador vinculado al grupo es idóneo para desarrollar proyectos de investigación con <i>stakeholders</i>					

Ítem	Pregunta	5	4	3	2	1
		Completamente de acuerdo	Algo de acuerdo	Ni de acuerdo, ni desacuerdo	Algo en desacuerdo	Nada de acuerdo
Perfil Docente						
19.	El perfil de los investigadores del grupo se adapta a los cambios en las diversas áreas de conocimiento					
20.	Emplea herramientas para realizar seguimiento a los productos derivados de investigación					
Direccionamiento Estratégico						
	La institución proporciona mecanismos que le permiten participar al investigador de manera activa en las decisiones relacionadas con las actividades de investigación					
	La institución cuenta con instrumentos de seguimiento y control a las actividades desarrolladas por el investigador					
	Conoce las estrategias adelantadas por la institución para fortalecer las competencias en investigación en los docentes					
	Las estrategias adelantadas por la institución para fortalecer las competencias en investigación en los docentes son suficientes					
	La gestión adelantada por la institución en términos de investigación fortalece el establecimiento de relaciones con diversos <i>stakeholders</i>					
	La institución proporciona mecanismos para la vinculación de los miembros de los grupos de investigación en redes académicas locales, nacionales e internacionales					
	La institución genera estrategias para crear características diferenciadoras en investigación					

LA GESTIÓN DE LA CADENA DE SUMINISTRO SOSTENIBLE EN LA INDUSTRIA ALIMENTICIA

SUSTAINABLE SUPPLY CHAIN MANAGEMENT IN THE FOOD INDUSTRY

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RESUMEN

En este artículo se identifican los principales factores que inciden en la gestión de la cadena de suministro sostenible en la industria alimenticia a nivel internacional. Para su desarrollo metodológico se implementó la técnica de análisis de contenido de documentos científicos publicados entre 2006 y el 2017 en las bases de datos de SCOPUS, ISI Web Of Science, Science Direct y JSTOR. Entre los hallazgos se destacan factores como la alta gerencia, la estrategia empresarial, la estructura organizacional, los sistemas de medición y seguimiento para la sostenibilidad, la conciencia ambiental, el diseño de la planta física, las capacidades dinámicas, las políticas y regulaciones, la gestión de proveedores y la actitud de los clientes. Adicionalmente, los resultados permiten reconocer este enfoque como emergente, en el que se destaca la necesidad de desarrollar trabajo en red entre los actores involucrados en la producción.

ABSTRACT

The article presented below has the objective of identifying the main factors that affect the sustainable supply chain management in the international food industry. For the methodological process, it was implemented the technique of content analysis of scientific documents published between 2006 and 2017 in the databases of SCOPUS, ISI Web Of Science, Science Direct and JSTOR. Among the findings are the existence of factors such as senior management, business strategy, organizational structure, measurement and monitoring systems for sustainability, environmental awareness, physical plant design, dynamic capabilities, policies and regulations, supplier management and customer attitude as part of the key elements for the sustainable supply chain management in food industry companies. In addition, the results allow us to recognize this approach as emerging, in which the need to develop networking among the actors involved in production is highlighted.

PALABRAS CLAVES

Sostenibilidad – Gestión de cadena de suministro sostenible – Industria alimenticia

KEYWORDS

Sustainability - Sustainable supply chain management - Food Industry

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INTRODUCCIÓN

De acuerdo con el Global Brief Food Fresch (Euromonitor, 2016), la dinámica en el consumo de alimentos frescos en el mercado internacional se caracteriza por las tendencias de los consumidores a exigir alimentos amigables con el medio ambiente, cuyas condiciones de producción sean justas para agricultores, productores y consumidores finales. Requerimientos que llevan a los responsables de la gestión de cadenas de suministro sostenibles (GCSS) a cumplir con las expectativas relacionadas con la producción y a responder a la creciente demanda de alimentos producidos de forma sostenible.

Al respecto, las empresas que cumplen con estas exigencias se dirigen a una base de clientes con alta conciencia de las dimensiones de la sostenibilidad, es decir, conscientes de las condiciones económicas, ecológicas y sociales en las que se producen y se ofrecen los alimentos, por lo que procuran mantener el control sobre su cadena de suministro y, con ello, generar una ventaja competitiva frente a sus competidores (Beske, Land & Seuring, 2014).

McDougall, Wagner y MacBryde (2016) y Ansari y Kant (2017) señalan la complejidad de la GCSS dentro de las empresas, especialmente en la industria alimenticia, debido a lo reciente de la definición de este enfoque, a la integración de las dimensiones económicas, sociales y ambientales, y a la incorporación de actores externos a las compañías (consumidores e instituciones gubernamentales, ONG, instituciones privadas), lo que demanda un trabajo de interacción para permanecer en el mercado.

Al respecto, Al Zaabi, Al Dhaberi y Diabat (2013) y Sajjad, Eweje y Tappin (2015) destacan el rol de los ejes articulares en la GCSS como vínculos estructurales en los procesos productivos que afectan, en gran medida, el desarrollo de las industrias y se caracterizan por favorecer, o limitar, su crecimiento.

De acuerdo con las directrices del Comité de Seguridad Alimentaria Mundial (1999), de la Organización de las Naciones Unidas para la Alimentación y la Agricultura (FAO), es necesaria la incorporación de procesos de gestión de cadenas de suministro que garanticen la calidad e inocuidad en la producción de los alimentos, reconociendo con ello la importancia para la industria alimenticia de adaptar la GCSS para brindar a los consumidores, y productores, una amplia oferta de bienes que cumplan con estándares que contribuyan a mejorar su calidad de vida.

En este sentido, este artículo identifica los principales factores que inciden en la GCSS en la industria alimenticia en el ámbito internacional.

Para el desarrollo del objetivo planteado, se realizó el análisis de contenido de una muestra de artículos seleccionados a partir de ecuaciones de búsqueda con palabras claves recopiladas a partir de la revisión bibliográfica previa y consulta a expertos en el campo de la GCSS.

ENFOQUE METODOLÓGICO

La identificación y análisis de los factores que inciden en la GCSS en la industria alimenticia se realizó mediante la técnica de análisis de contenido (Duriau, Reger & Pfarrer, 2007; Elo & Kynngäs, 2008; Hsieh & Shannon, 2005) de 63 documentos científicos, principalmente artículos, publicados entre el 2006 y el 2017² en las bases de datos SCOPUS, Scindirect, ISI Web of Science y JSTOR.

La recopilación de la muestra de documentos se realizó mediante la ecuación de búsqueda que se muestra a continuación, construida a partir de tesauros asociados a la GCSS, la industria alimenticia y la sostenibilidad³:

Ecuación de búsqueda 1. TITLE ("sustainable supply chain management" AND ("food industry" OR agroindus OR "food production" OR frut* OR veget* OR "agro allied" OR hort*) AND ABS ("sustainable supply chain management" OR SSCM) AND ("food industry" OR food OR agroindus* OR "food production") AND sustainability OR "supply chain" OR "green supply chain") AND KEY (sustainability OR "sustainable supply chain management" OR SSCM OR "food Industry" OR "food production" OR agroindus* OR frut* OR veget* OR "agro allied" OR hort*) AND (LIMIT-TO (PUBYEAR , 2017) OR LIMIT-TO (PUBYEAR , 2016) OR LIMIT-TO (PUBYEAR , 2015) OR LIMIT-TO (PUBYEAR , 2014) OR LIMIT-TO (PUBYEAR , 2013) OR LIMIT-TO (PUBYEAR , 2012) OR LIMIT-TO (PUBYEAR , 2011) OR LIMIT-TO (PUBYEAR , 2010) OR LIMIT-TO (PUBYEAR , 2009) OR LIMIT-TO (PUBYEAR , 2008) OR LIMIT-TO (PUBYEAR , 2007) OR LIMIT-TO (PUBYEAR , 2006)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ENGI") OR LIMIT-TO (SUBJAREA , "DECI") OR LIMIT-TO (SUBJAREA , "AGRI") OR LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "MULT"))*

Ecuación 1.

Una vez configurado el corpus de artículos, se realizó la depuración y análisis de los descriptores primordiales que permiten identificar los factores centrales de la GCSS revisando los títulos, los resúmenes, las palabras claves y los autores. En esta revisión, se clasificaron los hallazgos según las principales categorías de análisis vinculadas a la sostenibilidad y a la cadena de suministro. Así, se logró la identificación de factores en el contexto internacional.

FUNDAMENTACIÓN TEÓRICA DE LA GESTIÓN DE LA CADENA DE SUMINISTRO SOSTENIBLE (GCSS)

La sostenibilidad ha sido definida como la capacidad de suplir las necesidades en el presente sin comprometer la capacidad de las generaciones futuras para satisfacer las suyas (WCED, 1987, la traducción es nuestra). En los últimos años, se ha configurado una tendencia en el sector empresarial de recocer en la sostenibilidad un eje central del desarrollo de las operaciones (Aragón-Correa & Rubio-López, 2007; Browne, 2002).

Sin embargo, la comprensión del concepto de sostenibilidad en la práctica presenta inconvenientes que van desde una posición filosófica intergeneracional a

2 Se tomaron como unidad de análisis los documentos científicos publicados entre enero y abril de 2017.

3 La identificación de documentos se acotó a criterios como: i. Publicaciones en inglés; ii. Autores con visibilidad, cuyos H-index fueran considerados de referencia en áreas asociadas a gerencia, gestión administrativa y negocios; y, iii. Publicaciones de revistas indexadas y clasificadas en el Journal Citation Report -JCR- y ubicadas en el cuartil JIF .

un término multidimensional para la gestión empresarial. Inicialmente, el concepto se asociaba a temas ambientales, pero, con el tiempo, se han incorporado las dimensiones económica y social, enfoque que implica la interacción de un mayor número de factores y actores al interior de las empresas para su implementación (Ahi & Searcy, 2013), especialmente si se toma en cuenta que la cadena de suministro contempla el producto desde su fase inicial.

Un enfoque de sostenibilidad en la cadena de suministro es el eje central teórico-práctico, donde la gestión se convierte en el núcleo para su definición y adopción (Ashby, Leat & Hudson-Smith, 2012). Sin embargo, y de acuerdo con la literatura, no existe una definición general de la GCSS; autores como Ahi y Searcy (2013) identificaron la existencia de doce definiciones (ver tabla 1) en las que se observa una heterogeneidad en su concepción y ejes de desarrollo.

De acuerdo con los hallazgos de los autores, las definiciones declaran la incorporación del objetivo de la sostenibilidad en las actividades de la empresa. Sin embargo, no plantean qué es ser sostenible o cómo se llega a serlo. Las distintas definiciones plantean diferentes enfoques de análisis, que van desde los aspectos estratégicos hasta la incorporación de las dimensiones ambientales, sociales y económicas.

Grzybowska (2012) identificó múltiples facilitadores para la sostenibilidad de las cadenas de suministro vinculados con el proceso de producción al interior de las empresas. Entre ellos, resalta el compromiso de la alta dirección, las adecuaciones para la logística reversiva (desempeño ambiental) y los acuerdos voluntarios e iniciativas del sector privado para la autorregulación.

Liu, Bai, Liu y Wei (2017) consideraron pertinente para la definición de la GCSS la incorporación del enfoque de Triple Cuenta de Resultados (*Triple Bottom Line - TBL-*) que vincula el análisis de las dimensiones económica, social y ambiental para las empresas productoras de bienes y servicios. Los autores diferenciaron entre los tipos de empresas en consideración a los grupos de interés que cada una vincula y a la naturaleza de su actividad económica.

Tabla 1. Definiciones de GCSS. Adaptado de Ahi y Searcy (2013, p. 336)

Fuente	Definición
Jorgensen y Knudsen (2006)	Los medios por los cuales las empresas gestionan su responsabilidad social a través de los procesos de producción deslocalizados que abarcan las fronteras organizacionales y geográficas.
Carter y Rogers (2008)	La estratégica, la integración transparente y el logro de los objetivos sociales, ambientales y económicos de una organización en la coordinación sistémica de los procesos de negocio entre organizaciones clave, para mejorar el rendimiento económico a largo plazo de la empresa y de sus cadenas de suministro.
Ciliberti et al. (2008)	La gestión de cadenas de suministro donde las tres dimensiones de la sostenibilidad, es decir, la económica, la ambiental y la social, se tienen en cuenta.

Fuente	Definición
Font et al. (2008)	La incorporación de la sostenibilidad a los procesos existentes de la gestión de la cadena de suministro, considerando los impactos ambientales, sociales y económicos de las actividades de negocio.
Seuring (2008)	La integración de la gestión del desarrollo sostenible y de la cadena de suministro mediante la unión de estos dos conceptos, teniendo en cuenta aspectos ambientales y sociales a lo largo de esta cadena, para generar productos y procesos más sostenibles.
Seuring y Muller (2008)	El tratamiento de los materiales, la información y los flujos de capital, así como la cooperación entre empresas a lo largo de la cadena de suministro, teniendo en cuenta las tres dimensiones del desarrollo sostenible (es decir, la económica, la social y la ambiental) en función de las necesidades del cliente y de otros interesados.
Badurdeen et al. (2009)	La modificación de la planificación y la gestión de las actividades de aprovisionamiento, compras, de transformación y de logística que participan durante la prefabricación, la fabricación, el uso y las etapas postuso en el ciclo de vida del producto, considerando explícitamente las implicaciones sociales y ambientales que permitan lograr una visión compartida del negocio.
Haake y Seuring (2009)	El conjunto de políticas de gestión de la cadena de suministro, las acciones tomadas y las relaciones construidas en respuesta a las preocupaciones asociadas con el medio ambiente y los problemas sociales, vinculadas con el diseño, la adquisición, la producción, la distribución, el uso, la reutilización y la disposición final de los bienes y servicios producidos por la empresa.
Pagell y Wu (2009)	Las acciones administrativas específicas que se toman para hacer que la cadena de suministro sea sostenible.
Closs et al. (2011)	Respuesta de las capacidades de la empresa para planificar, mitigar, detectar, responder y recuperarse de los posibles riesgos globales. Estos riesgos se asocian a consideraciones fundamentales en la cadena de suministro, como el marketing, el desarrollo de productos, la selección de canales de distribución, las decisiones de mercado, el abastecimiento, la fabricación, el transporte, la regulación del sector, la disponibilidad de los recursos, la gestión del talento humano, las plataformas alternativas de energía y la seguridad.
Wittstruck y Teuteberg (2011)	Una extensión al concepto tradicional de gestión de la cadena de suministro mediante la adición de los aspectos ambientales y sociales/éticos.
Wolf (2011)	El grado en que un fabricante colabora estratégicamente con sus socios de la cadena de suministro y gestiona los procesos intra e inter organizacionales para la sostenibilidad.

Las propuestas analíticas y conceptuales de los autores resaltan la complejidad de la definición de la GCSS debido a la multidimensionalidad de sus perspectivas de análisis. Para Gupta y Palsule-Desai (2011), Wilding, Wagner, Miemczyk, Johnsen y Macquet (2012), Alexander, Walker y Naim (2014) y Ansari y Kant (2017), la complejidad de su definición radica en las diferencias que se presentan entre los sectores productivos, la ubicación espacial (urbano o rural), el tamaño de las empresas o industrias y el tipo de bien que producen (mercancías o servicios).

Esta complejidad se hace mayor cuando se busca la aplicación del concepto GCSS a industrias dinámicas como la alimenticia (Euromonitor, 2015), que se caracteriza por la fuerte competencia en el mercado internacional, mayores regulaciones gubernamentales en temas ambientales y sociales, y consumidores exigentes que buscan resultados más allá de la satisfacción del consumo directo.

En este sentido, se destaca la necesidad de identificar los principales factores que inciden en la GCSS en la industria alimenticia para tener una mayor comprensión y así contribuir a su adopción y desarrollo. Con este fin, a continuación se presenta un conjunto de factores identificados en la literatura científica que facilita el abordaje de la GCSS, a partir de su nivel de alcance en las organizaciones.

DIMENSIONES DE ANÁLISIS EN LA GESTIÓN DE LA CADENA DE SUMINISTRO SOSTENIBLE (GCSS) EN LA INDUSTRIA ALIMENTICIA

En un primer grupo, se establecen los factores internos, definidos como los factores relacionados con las organizaciones y sobre los cuales tienen capacidad de decisión. Posteriormente, se presentan los factores externos, aquellos sobre los cuales las organizaciones no tienen capacidad de decisión y no tienen algún nivel de control.

Factores internos

La identificación de factores internos en la GCSS hace referencia a los aspectos que se desarrollan al interior de las compañías y se constituyen en ejes centrales de trabajo dentro de sus variables de control e inciden sobre sus estrategias empresariales, su diseño organizacional y su estructura productiva.

Alta gerencia

Las necesidades sociales, las preocupaciones sobre la protección del medio ambiente y la creciente demanda de recursos naturales llevan a los responsables de la alta gerencia a reconsiderar sus modelos de negocio y reestructurar sus operaciones de la cadena de suministro. Al respecto, el compromiso de la alta dirección, la conciencia sobre prácticas sostenibles, el liderazgo para la sostenibilidad y la disposición de recursos para la financiación de programas y proyectos enfocados a la sostenibilidad son algunos de los aspectos identificados dentro de la alta gerencia en las empresas para la configuración de las GCSS.

Wu y Pagell (2011) aportan a la comprensión de los procesos implícitos en la toma de decisiones medioambientales por parte de la alta gerencia. Para los autores,

las empresas carecen de información suficiente al tomar estas decisiones en sus actividades productivas. Sin embargo, la viabilidad del negocio y la estabilidad financiera son las fuerzas que promueven las acciones empresariales para mejorar los resultados sobre el ambiente.

Walker y Jones (2012) y Gold, Hahn y Seuring (2013) resaltan la necesidad del compromiso de la alta gerencia para el diseño, la implementación y la gestión de cadenas de suministro sostenibles que se orienten a cumplir con las altas expectativas de los clientes, relacionadas con seguridad alimentaria, inocuidad y compromiso con el medio ambiente. Para ello, proponen el desarrollo de prácticas que les permiten el control sobre la cadena de suministro y lograr así una ventaja competitiva con la implementación de las capacidades dinámicas que privilegien la conciencia ambiental, el intercambio de conocimientos, la co-creación y la confianza.

Bastian y Zentes (2013) reconocen el impulso de la alta gerencia en el compromiso con la transparencia como un elemento clave dentro del enfoque de la GCSS. Para los autores, la desintermediación, la comunicación intensiva y la integración de terceros en la gestión de la cadena suministro tiene impactos sobre la credibilidad de quienes intervienen en ella, lo que genera incrementos en el desempeño social, ecológico, operacional y en el éxito en las relaciones de largo plazo. En este sentido, destacaron la transparencia como un requisito previo, o un indicador básico, de la buena gestión en las cadenas de suministro agroalimentarias.

Para Grekova, Bremmers, Trienekens, Kemp y Omta (2014) la GCSS requiere cooperación e intercambio de información entre las cadenas alimentarias para reducir el impacto ambiental conjunto, conocido como la gestión ambiental orientada al exterior (E-EM). Los autores plantean que es necesario identificar los factores que influyen en los gerentes para desarrollar este tipo de trabajo cooperativo que permite reducir los efectos de las presiones institucionales externas (regulativas, normativas y culturalmente-cognitivas) y cumplir con los requerimientos al interior de la empresa para la gestión medioambiental, que abarca el intercambio de información en la cadena, la cooperación con los proveedores y con sus clientes.

Estrategia empresarial

La incorporación de una visión sostenible de largo plazo en la cadena de suministro, la planificación estratégica para la sostenibilidad en dicha cadena, la descomoditización (productos con mayor valor agregado) y un enfoque de *Triple Bottom Line* son algunos elementos claves para el desarrollo de la GCSS.

Oglethorpe y Heron (2010), Mojtahedzadeh e Izadi (2013) y Govindan, Jafarian, Khodaverdi y Devika (2014) proponen la integración de la sostenibilidad en la toma de decisiones y la integración de los temas relacionados con el cambio climático a las decisiones operativas (producción, compras y logística) relacionadas con la gestión de las cadenas de suministro.

En un sentido más operativo, el *Triple Bottom Line* es considerado por Kao, Redekop e Mark-Herbert (2012) y Chkanikova (2016) como el enfoque más

apropiado para la GCSS debido a la capacidad de esta metodología para integrar las dimensiones sociales, económicas y ambientales. Sin embargo, Wu, Liao, Tseng y Chiu (2016) destacan los beneficios de esta Triple Cuenta de Resultados, pero plantean que esta es insuficiente para el desarrollo general de la GCSS debido a las características heterogéneas de las distintas industrias.

Para Touboulis, Chicksand y Walker (2014) es necesaria la identificación de estrategias de gestión con relaciones generadoras de confianza entre los grupos de interés, para construir cadenas de suministro sostenibles que permitan la comprensión, desde una perspectiva del poder, de cómo se puede llegar a tener una forma efectiva de lograr los objetivos de sostenibilidad.

Sajjad et al. (2015) analizan los factores que impulsan a las empresas de la industria alimenticia a integrar los principios de sostenibilidad en su gestión de la cadena de suministro, e identifican que los valores de sostenibilidad de la alta dirección, el deseo de reducir el riesgo y la gestión de las partes interesadas son los motivadores más destacados para la adopción de la GCSS.

En contraste, Kirchoffest, Omar y Fugate (2016) identifican cómo compañías que operan con prácticas no adecuadas de la GCSS se enfrentan a grandes obstáculos para la implementación de las iniciativas de sostenibilidad y el desarrollo de un modelo de negocio, y sugieren tipologías de gerentes en este tipo de compañías que varían en función, principalmente, de la percepción de la vulnerabilidad estratégica, de la evaluación de sus opciones y de la utilidad de sus conocimientos en sostenibilidad.

Wilhelm, Blome, Wieck y Xiao (2016) proponen el análisis de la complejidad de la cadena de suministro, las capacidades de gestión de la sostenibilidad de los proveedores de primer nivel y el enfoque de la sostenibilidad (es decir, la sostenibilidad social o ambiental) para el desarrollo de estrategias de sostenibilidad.

Golini, Moretto, Caniato, Caridi y Kalchschmidt (2017) analizan el efecto de la relación entre el enfoque de sostenibilidad en los procesos productivos de la industria alimenticia, específicamente el sector de carnes, y su capacidad de impactar toda la cadena (ambiental y socialmente), y concluyen que existe una estrecha relación entre ambos, confirmando el papel fundamental del enfoque sostenible en la GCSS. Para los autores, es necesario contar con una visión holística en la que se destaquen las interdependencias a través de diversas etapas de la producción y donde el enfoque de sostenibilidad sea el eje articulador.

Estructura organizacional

El aprendizaje organizacional, la gestión del conocimiento al interior de la empresa, los canales de comunicación fluidos y la cultura organizacional son algunas de las características claves identificadas en el diseño de estructuras organizacionales que contribuyen con la GCSS.

Pullman y Dillard (2010) destacan la importancia de la gestión de la cadena de suministro que se apoya en una organización basada en la creación de valor sostenible. Para los autores, el desarrollo de productos y procesos sostenibles

requiere la adopción de entornos adecuados en la estructura organizativa que promuevan acciones para el establecimiento de socios estratégicos.

En contraste, Anastasiadis y Poole (2015) advierten la importancia de alinear las diversas prácticas de planeación estratégica y los enfoques empresariales para configurar cadenas de suministro sostenible modernas que desarrollen nuevas oportunidades en el sector agroalimentario. Para ello, los autores resaltan aspectos tales como el flujo de información a lo largo de la cadena y la confianza entre los diversos grupos de interés.

Marshall, McCarthy, McGrath y Claudy (2015) plantean la necesidad de adoptar diferentes prácticas para la GCSS, especialmente aquellas asociadas a la dimensión social. Para ello, los autores proponen examinar cómo la cultura de la sostenibilidad facilita explicar la adopción de prácticas sociales en la cadena de suministro.

Sistemas de medición y seguimiento para la sostenibilidad

El diseño y la implementación de sistemas de medición de los costos y de los beneficios ambientales derivados de la cadena de suministro sostenible se constituyen en aspectos relevantes para las actividades de seguimiento y control. Erol, Sencer y Sari (2011) resaltan la necesidad de incorporar sistemas de medición que tengan por objeto abordar los aspectos económicos, sociales y ambientales de la gestión sostenible de la cadena de suministro. Para ello, los autores proponen adoptar metodologías que permitan establecer protocolos integrados que faciliten el flujo de información y sintetizen los resultados de manera ágil para la toma de decisiones de la alta gerencia.

Kashmanian (2015) define el monitoreo y las auditorías para la evaluación del desempeño de la sostenibilidad de proveedores como parte de los elementos claves de la GCSS. Con este seguimiento el autor concluye que se mejora el rendimiento de los proveedores mediante la exigencia de cumplimiento de regulaciones y políticas, se reducen los impactos ambientales y se obtiene un mayor retorno por los esfuerzos.

Para McLaren (2016), la adopción de las metodologías del análisis de ciclo de vida y el cálculo de la huella de carbono conducen al desarrollo de “nuevas formas de hacer negocios” entre las partes interesadas a lo largo de las cadenas de suministro, lo que facilita su gestión y mejora el flujo de información para la toma de decisiones de las partes involucradas.

Conciencia ambiental

El análisis del ciclo de vida, la incorporación de una conciencia social y ambiental, la gestión ambiental (energía, agua, residuos, reciclaje) y la logística reversa y sostenible son algunas de las estrategias ambientales para la implementación de la GCSS en la industria alimenticia.

Pullman, Maloni y Carter (2009) analizan los efectos de la incorporación de prácticas ambientales en las empresas del sector. Entre sus resultados, los autores identifican que los efectos de los programas de sostenibilidad se concentran en

el impacto de las prácticas de conservación y manejo de tierras, así como en las prácticas globales de protección al medio ambiente y del desempeño de la calidad por parte de los recursos humanos.

Validi, Bhattacharya y Byrne (2014), Cagliano, Worley y Caniato (2016) y Genovese, Acquaye, Figueroa y Koh (2017) resaltan la importancia de incorporar y afianzar la conciencia ambiental en todas las áreas de la compañía. La adopción de este enfoque lleva a la reducción del uso de los recursos ambientales y a la creación de los sistemas de producción autosostenibles, en los que se estimula el desarrollo de innovaciones orientadas a la sostenibilidad.

Planta física

Las adecuaciones físicas para la estrategia ambiental y la construcción sostenible de las plantas de producción son elementos que se destacan en el apoyo a la GCSS. Kyllönen y Helo (2012) resaltan el impacto de la distribución espacial de la planta física en la gestión de las cadenas de suministro sostenibles. En esta perspectiva, la distribución física es considerada fundamental dentro de las decisiones estratégicas de la GCSS para la disminución de los tiempos de distribución, de los residuos y de las emisiones de dióxido de carbono, lo que contribuye también a disminuir el costo de la producción.

Meneghetti y Monti (2015) proponen el análisis del impacto de las variables de decisión de la cadena de suministro, de la ubicación de las instalaciones, del uso de energía y de las emisiones de dióxido de carbono dentro de la GCSS como mecanismo de control para la optimización en el diseño sostenible de sistemas de almacenamiento en la industria alimenticia.

En relación a la distribución física de la producción, Sgarbossa y Russo (2017) analizan el potencial de los modelos de cadena de suministro de ciclo cerrado que permiten la recuperación de recursos sin valor (por ejemplo, residuos inevitables), en la que los residuos producidos se reutilizan a través de actividades de recuperación, lo que aporta un indicador de rentabilidad y autosuficiencia energética que genera oportunidades sostenibles de nuevos procesos productivos.

Capacidades dinámicas

Son definidas como la capacidad de una organización para crear, ampliar o modificar a propósito su base de recursos, con el objeto de crear valor económico más alto que el de sus competidores (Helfat & Peteraf, 2009). Por su parte Rauer y Kaufmann (2015) vinculan estas capacidades con las prácticas estratégicas y organizacionales mediante las cuales las empresas logran reducir las barreras para la GCSS y generan nuevas configuraciones de recursos que contribuyen a mejorar sus procesos y al cumplimiento de sus objetivos de sostenibilidad.

Para Beske (2012) y Beske et al. (2014) las capacidades dinámicas en la industria alimenticia conducen al desarrollo y fortalecimiento de las ventajas competitivas en la GCSS. Para ello, los autores hacen especial énfasis en las características

internas de las empresas para el desarrollo de procesos productivos orientados al cuidado del medio ambiente, y en procesos externos que les permitan alinearse con sus aliados estratégicos para el intercambio de información y la suma de esfuerzos para objetivos ambientales.

En esta misma línea, León-Bravo, Caniato, Moretto y Cagliano (2016) y McDougall et al. (2016) destacan que el desarrollo de capacidades dinámicas en las empresas apoya la gestión de cadenas de suministro sostenibles e incentiva el desarrollo de nuevos productos sostenibles.

En general, el análisis de los factores internos permite identificar el alto nivel de control de la gerencia sobre la GCSS y las múltiples dimensiones del trabajo dentro de las organizaciones para desarrollar los objetivos relacionados con la sostenibilidad en las cadenas de suministro. Sin embargo, este análisis también destaca la importancia de la articulación de los objetivos gerenciales en las distintas fases del proceso productivo y en los objetivos estratégicos.

Factores externos

A continuación, se describen las características de los factores externos a las compañías que inciden sobre la GCSS en la industria alimenticia. Estos factores se caracterizan por el bajo nivel de control de las empresas sobre ellos, lo que los hace indispensables al momento de diseñar las estrategias de gestión para contrarrestar así sus efectos.

Políticas y regulaciones

La adopción de normas y reglamentos, la anticipación de la regulación, la comprensión de la legislación gubernamental son parte de las acciones con que las empresas responden a la creciente demanda global por la incorporación de aspectos de sostenibilidad en la industria alimenticia. Müller, Vermeulen y Glasbergen (2009) y Trachana, Karagiannaki, Zampou y Pramatarí (2016) reconocen la importancia para las empresas de iniciar procesos de transformación en sus políticas, para superar sus límites actuales relacionados con las regulaciones y normativas nacionales e internacionales. Para ello, los autores identifican las ventajas de implementar en sus cadenas de suministro sistemas de información pertinentes centrados en la toma de decisiones ambientales.

Gold, Seuring y Jeff (2012) identifican un conjunto de barreras asociadas a la tecnología y a las políticas gubernamentales como los principales obstáculos para la GCSS en la industria alimenticia. Para los autores, las limitaciones generadas por la baja transferencia tecnológica y los requisitos y exigencias de las instituciones públicas que actúan en el sector restringen la capacidad de acción de las empresas y obligan al diseño e implementación de políticas y estrategias internas para la adaptación al mercado.

Forsman, Milani, Schondebare, Matthias y Guyondet (2014) analizan cómo las exigencias legales pueden desempeñar un papel importante en el éxito de los

procesos de producción de alimentos en el sector privado. Sin embargo, los autores señalan la importancia de un esfuerzo coordinado intersectorial y multidimensional que se ocupe de la gestión y desarrollo de tecnologías apropiadas.

Smith et al. (2016) advierten que un nuevo enfoque basado en estrategias verdes requiere objetivos de carácter sostenible en las empresas que faciliten la comprensión de cómo el bienestar humano está entrelazado con la salud de los ecosistemas que son afectados por las compañías. En este sentido, para los autores es necesario establecer las diferencias entre alimentos sostenibles y compras sostenibles.

Teuscher, Grüninger y Ferdinand (2016) refieren la gran contribución de las normas y plataformas privadas (ej. BSCI, ETI, SA8000), el etiquetado exigido en comercio justo y los modelos de procesos (ej. AA1000) a la gestión del riesgo en GCSS, porque brindan a las empresas del sector alimentos una posición privilegiada para ofrecer beneficios sostenibles y fiables a largo plazo a todas las partes interesadas en la cadena de valor.

Actitud de los consumidores

La actitud de los consumidores se destaca porque estos tienen altas expectativas frente al consumo de bienes y servicios de la industria alimenticia; su mayor conciencia ambiental y sostenible es una exigencia para las empresas productoras del sector, que perciben su satisfacción como objetivo estratégico.

Hospido et al. (2009) resaltan cómo los consumidores demandan cadenas de suministro sostenibles, amigables con el medio ambiente y con una variedad de alimentos frescos. Estos requerimientos influyen en el calentamiento global, la acidificación, el consumo de energía primaria, el uso del suelo y del agua. En este sentido, los autores señalan la necesidad del diseño e implementación de una GCSS que contribuya con la calidad del medio ambiente y responda a las necesidades de mercado de los consumidores.

Para Beer y Lemmer (2011) las expectativas de los consumidores son esenciales para comprender los costos ambientales dentro del desarrollo de cadenas de suministro sostenibles. Los autores resaltan cómo las expectativas de los consumidores condicionan los productos elaborados, porque generan factores a analizar, entre los que se encuentran los impactos ambientales, los diferentes sistemas de producción y los residuos generados.

En contraste, Wognum, Bremmers, Trienekens, Van der Vorst y Bloemhof (2011) exploran el impacto de los sistemas de información para apoyar la sostenibilidad de las cadenas de suministro de alimentos.

Proveedores

El cierre de brechas espaciales y culturales, los programas de capacitación, el *outsourcing* y la gestión sostenible de proveedores son algunos de los aspectos más destacados en relación con los proveedores dentro de la GCSS en la industria alimenticia.

Styles, Schoenberger y Galvez-Martos (2012), Grimm, Hofstetter y Sarkis (2014) y Tidy, Wang y Hall (2016) resaltan cómo la gestión eficiente de las cadenas de suministro sostenibles requiere tener especial consideración de los múltiples niveles de socios, porque los proveedores generan una serie de complejidades y desafíos únicos, como la falta de relaciones contractuales con los subproveedores, las pocas oportunidades para ejercer presión directa sobre estos o la falta de transparencia respecto de su participación en las cadenas de suministro de una empresa.

En este sentido, proponen el enfoque de la teoría de recurso-dependencia para analizar críticamente las relaciones proveedor-proveedor-comprador, en las que el poder ejercido por los participantes influye sobre la gestión de las relaciones entre los actores y afecta las respuestas de la organización ante la implementación de iniciativas de sostenibilidad, porque influye en la distribución de los riesgos y del valor entre los socios de la cadena de suministro.

Harms, Hansen y Schaltegger (2013) sintetizan la gestión de los proveedores como una estrategia clave para la GCSS. Para los autores, la evaluación y selección de proveedores adopta una perspectiva estratégica orientada a mitigar el riesgo, mientras que el desarrollo de proveedores representa un enfoque empresarial, orientado a la oportunidad para la gestión de cadenas de proveedores de productos sostenibles.

Acosta, Acquier y Delbard (2014) ponen de manifiesto el papel de la incorporación de las demandas de sostenibilidad en los lazos de la red local para fomentar la adopción y difusión en el sentido ascendente de la cadena de suministro en la industria alimenticia. Para ello, los autores exploran cómo la empresa integra los requisitos de la sostenibilidad en el sistema de desarrollo de proveedores y en qué medida estas demandas se difunden.

Mehmann y Teuteberg (2015) analizan la importancia de integrar proveedores de servicios logísticos con objetivos orientados al desarrollo sostenible y la mitigación de los impactos sobre el medio ambiente, producto del transporte, en la industria alimenticia.

Finalmente, Grekova, Calantone, Bremmers, Trienekens y Omta (2016) identifican el potencial de la colaboración entre proveedores y clientes para inducir mejoras ambientalmente sostenibles en los procesos internos de las empresas. A partir de este trabajo colaborativo se hace frente a las presiones externas de sostenibilidad y se contribuye al rendimiento del negocio, porque se disminuyen los costos de producción y se incrementan las ganancias en el mercado.

En general, el análisis de los factores externos permite identificar la importancia estratégica de los diferentes grupos de interés que participan del proceso productivo y sobre los cuales las organizaciones tienen un bajo nivel de control, lo que limita sus campos de acción de acuerdo con sus objetivos estratégicos.

CONCLUSIONES

La identificación de los principales factores que inciden sobre la GCSS en la industria alimenticia a nivel internacional describe este campo como emergente

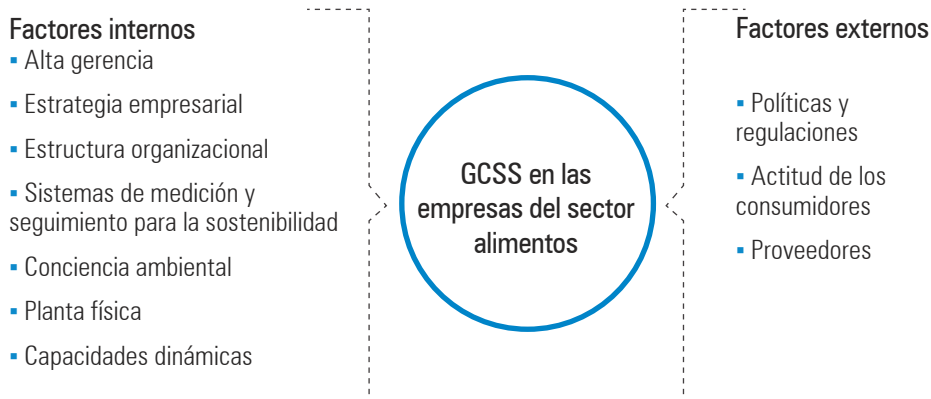
Edgar Guillermo Rodríguez Guevara
La gestión de la cadena de suministro sostenible en la industria alimenticia

en la investigación científica. Estos factores se identificaron mediante el uso de la metodología de análisis de contenido de los documentos seleccionados.

En general, los resultados llevan a plantear a la GCSS en la industria alimenticia como un enfoque con tendencia a consolidarse en el mercado internacional, debido a la mayor conciencia ambiental y social de la población y los gobiernos, que se ha materializado en normas, regulaciones y certificaciones (ver ilustración 1). Por tanto, la adopción de este enfoque en el diseño de la estrategia de las empresas se ha convertido en eje de trabajo para la alta gerencia, que percibe en la sostenibilidad un elemento clave para la competitividad. Al respecto, resalta en la literatura científica la necesidad de incorporar el concepto de sostenibilidad en todos los niveles de la organización, para que el desarrollo y fortalecimiento de la conciencia de la sostenibilidad sea el eje articulador entre quienes participan en el proceso productivo.

Otro hallazgo del análisis es el reconocimiento de la incertidumbre que subyace a la definición de los parámetros de sostenibilidad, lo complejo de la relación existente entre las dimensiones social, ambiental y económica, y de su articulación dentro de las empresas. Al respecto, se destaca la necesidad de desarrollar trabajo en red entre los actores asociados a la producción (proveedores, clientes, instituciones gubernamentales y demás) que permita el establecimiento de relaciones de confianza, debido a la alta participación de agentes externos a las compañías y sobre los cuales estas cuentan con bajo nivel de poder o decisión.

Ilustración 1. Identificación de los factores internos y externos en la GCSS en las empresas del sector alimentos en el mercado internacional



Fuente: Elaboración propia a partir del análisis de los resultados.

Adicionalmente, se destaca en la GCSS la tendencia a la co-creación entre los actores involucrados. Este enfoque de trabajo permite la participación activa de todos los involucrados con la cadena de producción, incluidos los actores externos, para el desarrollo de la sostenibilidad. Los resultados permiten afirmar el potencial de la GCSS para la innovación en las empresas y en las redes de trabajo en las que participan, debido al gran flujo de información, la colaboración y el conocimiento que se puede obtener en su desarrollo.

Finalmente, y debido al alcance del objetivo propuesto, uno de los elementos claves identificados es la importancia de la selección de prácticas para la GCSS que faciliten la incorporación, medición y administración de la sostenibilidad. En este aspecto, el *Triple Bottom Line* es un destacado referente. Sin embargo, y dada la importancia del tema de las prácticas dentro de la GCSS, este aspecto se constituye como uno de los posibles campos de desarrollo en el tema de la sostenibilidad.

TEMAS DE DISCUSIÓN PARA FUTURAS INVESTIGACIONES

Con el desarrollo de este análisis se contribuye a incrementar el conocimiento del campo de la investigación mediante la revisión de una extensa revisión de la literatura publicada en los últimos años.

A partir de los resultados se advierte el potencial de estudio que brinda este campo para la gestión administrativa y las operaciones industriales, especialmente cuando la tendencia en la globalización de las economías exige un mayor grado de sofisticación de la oferta de bienes y servicios, para responder al incremento de la conciencia social y ambiental, que trasciende a los procesos de producción tradicionalmente desarrollados en la industria alimenticia.

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La gestión de la cadena de suministro sostenible en la industria alimenticia

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THE EVOLUTION OF INTERLOCKING DIRECTORATES STUDIES - A GLOBAL TREND PERSPECTIVE

LA EVOLUCIÓN DE LOS ESTUDIOS DE REDES DE DIRECTORES – UNA PERSPECTIVA DE TENDENCIA GLOBAL

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ABSTRACT

Directors' corporate networks have been the subject of several studies that explore their different consequences, such as resource collaboration, transmission of practices, financial decisions, reduction of uncertainty, control and management, the firm's reputation and individual interests. However, there is still no consensus about what these interlocking directorates (IDs) really do for firms and in what direction current research is following. This study carried out an extensive review of the literature in 75 papers (from 1969 to 2018) focused on IDs research, and as a result proposes two categories and four subcategories related to companies' outcomes. The study found that the biggest contribution to firms, focuses on the description of network structures and control and management results, remarking the difference between North America IDs research and other regions, while shedding light on what IDs do for firms. It also identified gaps in research such as dissemination, globalization and collusion that need to have more analysis.

RESUMEN

Las redes de directores han sido objeto de muchos estudios que exploran sus consecuencias tales como la colaboración de recursos, transmisión de prácticas, decisiones financieras, reducción de la incertidumbre, control, reputación e intereses individuales. Sin embargo, aún no existe un consenso acerca de lo que estas redes de directorios realmente hacen para las empresas y el camino que sigue su investigación. Este estudio realizó una revisión extensa de 75 artículos (desde 1969 hasta 2018) enfocados en estas redes y propone dos categorías y cuatro subcategorías de acuerdo a sus resultados para las empresas. Se encontró que la mayor contribución para las empresas se enfoca en la descripción de la estructura de la red y en los resultados de control, mostrando diferencia entre la investigación de Norteamérica y otras regiones, dando luz acerca de lo que hacen estas redes para las empresas. Se identificó también que los efectos de difusión, la globalización y la colusión requieren más atención.

KEY WORDS

Interlocking directorates, corporate governance, corporate network, business elites.

PALABRAS CLAVE

Redes de directorios, gobierno corporativo, red corporativa, élite de negocios

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INTRODUCTION

Any individual or community is naturally embedded in social relations (Granovetter, 1985). It is through these social relations that different types of ties between entities are created (Granovetter, 1973) and these connections can establish a way to relate not just individuals, but can create ties among groups as well, making it possible to manage a two mode relationship (Breiger, 1974). A network is represented by the entities (individuals or collectivities) and their corresponding connections (Granovetter, 1976).

From the standpoint of the Resource Dependence Theory (Pfeffer & Salancik, 1978) the resource is strongly indicated as a need of organizations for their survival and to achieve good performance. However, the simple presence of a network is not sufficient to ensure obtaining benefits from it. In order to get access to the benefits of a network, it is necessary to identify what kind of resources are available from it, and most importantly, take notice of strategic and valuable resources that are not available from the organization's internal sources (Hitt, Ireland, Camp & Sexton, 2001). The group of valuable resources that a firm could obtain from its network is called social capital (Adler & Kwon, 2002; Parkhe, Wasserman & Ralston, 2006) and the organization must make proper use of this social capital according to the surrounding conditions of the business environment (Kwon & Adler, 2014).

According to Breiger (1974), a two-mode network is a structured configuration formed by individuals and communities both at the same time. Some of the main characteristics of this configuration, such as cohesiveness or connectivity, could possibly be framed with specific "Small World" properties (Travers & Milgram, 1969) defined by the length between entities, meaning the distance from one point to another; and clustering level, that implies network transitivity (Conyon & Muldoon, 2006). Firms are collectivities, and they are related to each other through inter-organizational relationships such as their board of directors. A corporate network is created when boards of different companies establish connections between themselves through business relationships where many resources such as information, trust, knowledge or access to capital may be found. Different types of corporate networks were studied before such as ownership networks, equity or interlocking directorates. This study will focus on the literature review about the latter, following the research questions explained below.

IDs occur when a director sits on more than two boards opening the availability of new resources for each firm (Haunschild & Beckman, 1988; Shipilov, Greve & Rowley, 2010) or the possibility of control and coordination between them (Boyd, 1990; Mizruchi, 1996; Palmer, 1983; Salvaj, 2013; Salvaj & Lluch, 2014; Lluch, Salvaj & Barbero, 2014). Furthermore, the formation of an ID may be due to individual interests of the directors (Zajac, 1988) or a wide class influence against the logical business criteria (Useem, 1984).

The relevance of this study is to understand how IDs global research has been evolving, while finding outcome patterns across the firms evolution. This allows us

to contribute in answering Mizruchi's question regarding what interlocks really do in (1996), while clearing new paths for future research that could complement current findings, while reinforcing concepts where the literature is scarce. Understanding how IDs research evolution and its effect on firms' outcomes contributes to building a consensus on Mizruchi's question in IDs literature, while finding out if IDs are or are not reinforcing managerial practices are explained.

Making a differentiation between IDs research evolution among certain regions such as in Latin America or other emerging markets' groups with the rest of the world could prove interesting, as most studies aim to explain the effects and characteristics of IDs under an environment's stable conditions such as those in The United States or in European countries (Lluch et al, 2014). However, Latin America has a completely different business environment, with weak and ineffective governments, small and inefficient non-profit organizations as well as many cultural problems for developing strategies (Jäger & Sathe, 2014), which forces organizations to prepare themselves by using different growth and survival initiatives for this complex and turbulent context, and under high levels of uncertainty (Vassolo, De Castro & Gomez-Mejia, 2011).

The focus of this paper proposes a categorization of IDs research according to the firms results in having a regional perspective. Accordingly, the study answers the following two research questions: (1) For the firms studied, what was the main business contribution of IDs global research? (2) What is missing for IDs global research evolution in the years ahead?

This literature review proposes to contribute to the existing body of corporate networks' research and to maintain an open discussion of the characteristics, benefits and advantages in creating interlocking directorates for firms, as well as identifying how researchers can contribute to the future growth of this organizational field.

This paper is organized as follows: The second section describes the method used for selecting papers, and how the literature was categorized. The third section contains the main document where the literature is detailed according to its contribution to the firms. The fourth part aims to provide a discussion regarding six different metrics that highlight patterns of IDs research evolution. Finally, the fifth section summarizes the principal findings of the literature review, focuses on answering the two research questions previously mentioned and proposes new paths for future research.

METHODOLOGY

The study was conducted with an extensive review of 75 IDs research papers (from 1969 to 2018), in order to identify and analyze their main findings, categorize them by their region of study and their contribution for companies. Out of the total sample, 70 of the papers were empirical and 5 were conceptual with no associated region of study. Table 1 shows the composition of the sample by convenience, as pointed out in the 2017 Scimago Journal and Country Rank for scientific journals.

Table 1. Papers inside the sample according to their Journal Scimago Ranking 2017.

Journal Scimago Rank 2017	Papers	% Accumulated
Q1	58	77%
Q2	4	83%
Q3	3	87%
Q4	2	89%
Non-ranked	8	100%
Total	75	

Source: Own.

According to Table 1, 83% of the papers in the sample are in journals ranked as Q2 and above. The sample includes 39 different scientific journals and 4 books, and this selection was focused on heterogeneity and prestige criteria. However, there are eight non-ranked papers in the sample that are book chapters, which were selected according to their relevance and novel contribution for their regions. Table 2 aims to show the distribution of the sample according to the decade of publication of the papers inside.

Table 2. Papers inside the sample according to their publication decade.

Publication decade	Papers
1960s	1
1970s	1
1980s	9
1990s	10
2000s	17
2010s	37
Total	75

Source: Own.

With reference to Table 2, the paper selection for this review includes some research before 1980s, when IDs research was beginning, an important number for the 1980s period and a larger amount of papers for 1990s and later, in order to

properly establish trends of IDs research evolution. Specifically, the sample includes 34 different periods between 1969 and 2018.

The main IDs literature contributions for firms are organized in this paper under two principal grouping concepts: (1) Description of structures (DS), and (2) Organizational outcomes (OO). Then, the study proposes four subcategories, two for each one of the previous concepts: (1.1) Formation and ties description (DS-FT) and (1.2) Comparative description (DS-C) both for DS concept; (2.1) Control and management outcomes (OO-CM) and (2.2) Financial outcomes (OO-F) both for OO concept. This categorization details the main findings and contributions of IDs papers for firms.

The DS concept refers to a general or detailed description of networks' structures, characteristics of ties, actors' role and position within the network, and the evolution of the structure. DS-FT category includes detailed information about the reasons for the formation of the IDs and how corporate ties are constructed, maintained or broken. The DS-C category aims to explore by comparative studies between corporate networks of two or more datasets, finding common patterns and relevant differences, which allow to explain, as well how corporate networks evolve and operate differently in several contexts, economic sectors or groups.

The OO concept is focused on revealing findings in IDs literature closely related to firms' outcomes. Research has proposed that IDs are created following some specific business targets like acquiring resources or gaining influence and control over a counterpart firm. Therefore, it is expected then that a major trend of IDs research aim to facilitate those objectives for companies. The OO-CM category refers to firms' outcomes related to the capability to exert control, influence and management over other firms. It means that IDs creation solves monitoring and supervising activities inside the corporate network. On the other hand, OO-F category includes firms' outcomes related to financial decisions or benefits such as M&A transactions, financial policies diffusion, financial performance, and takeovers decisions.

Finally, the study concludes with a discussion of the results and future trends for IDs global research using six metrics obtained from the dataset of papers reviewed: (1) total of IDs related publications of academic journals by year of release, (2) percentage of IDs related publications per region, (3) total of IDs related publications in North America, Latin America and Europe over time, (4) final year of the studies' samples for IDs related publications over their years of publication, (5) IDs related publications according to their main findings and year of release, and (6) percentage of IDs related publications according to their contribution.

IDS RESEARCH UNDER FIRMS' OUTCOME PERSPECTIVE

(1) DESCRIPTION OF STRUCTURES (DS)

There are many different reasons behind the decision to interlock boards. Firms usually like to work together, so they look for cohesive business environments where collective goals would be enforced, trust would be developed, there would be less opportunistic spirit, and a flow of valuable and new information between organizations is facilitated (Lluch *et al*, 2014). According to such expectations, corporate network structures result as being diverse with regard to their configuration (Davis & Mizruchi, 1999; Mizruchi, Brewster Stearns & Marquis, 2006). The descriptive analysis of the characteristics and patterns found among their connections permit the disclosure of some of those reasons, or other important information about firms' behavior or their strategies.

(1.1) Formation and Ties Description (DS-FT)

In a review from the period of 1935 through 1965, Dooley (1969) identified five reasons for the existence of IDs in a sample analysis of 200 non-financial and 50 financial largest firms in the United States: (1) Size of the organization, the larger the firm, the higher the number of current interlocks, opposite to what Takes and Heemskerck (2016) found later; (2) Management control, referring to the intention of controlling another companies activities by creating IDs with them; (3) Financial interlocks, with two reasons for having them, - fulfilling the necessity of control over an indebted firm or having access to capital to ensure business activity continuity, as Davis and Mizruchi (1999) found in their study of how the role of banks evolved in the United States corporate network from 1982 to 1994, by changing their centrality degree in the structure; (4) Competition, even with the execution of Clayton Act of 1914 in the United States, there was evidence that many companies still had IDs with competitors' firms in the same market, and (5) Local interest groups, where the most important issue is to keep the unity and integration of a strategic group of firms, relating one to another through shared directors (Dooley, 1969). Therefore, interlocks were created as mechanisms to deal with the uncertainty of the environment, making it possible for the organization to respond accordingly to the demands in context (Pfeffer, 1972).

Directorate interlocks are created to introduce into the firm new valuable resources from the environment; or to support an elite group or some wide class statements in order to maintain the corporate network integration or to follow individual or group's interests (Richardson, 1987; Phan, Hoon Lee & Chi Lau, 2003). In addition to this, Zajac (1988) found that director's decisions are driven by personal professional interests, following an individual advancement strategy. After Dooley (1969), a later review by Mizruchi (1996) posed the question: What do interlocks do?, exhibited five main determinants for the creation of interlocking directorates, some of them are focused on the firm's outputs purposes and others just serve the directors' interests. The first group considers the following determinants: (1) Collusion, also described

by Dooley (1969) as a competition factor, where two or more organizations create these corporate ties in order to obtain an illegal advantage and execute some bad practices in the market; (2) Co-optation and monitoring, again referred to by Dooley (1969) as Management Control, where firms join together through an interlock to share resources and decrease the level of uncertainty that they have to deal with or to gain control and supervision over another organization; and (3) Legitimacy, when the composition of the board, obtained by the formation of interlocking directorates, enhances the reliability of the firm in the business community. On the other hand, the second group of determinants is focused on the construction of corporate ties oriented to: (4) Director's self-interests as career advancement, stated also by Zajac (1988), when a director is interested in the creation of an interlock just for the purpose to boost his professional career; and (5) Social cohesion, exhibited also by Dooley (1969) as local groups of similar interests and by Useem (1984) as the existence of an Inner Circle, a small group characterized by its power, influence and connectivity over most important political, economic and social actors in a country, where directors aim to maintain the affiliation with a corporate elite (Useem, 1980; Mizruchi, 1996). Regarding risk of collusion through the presence of IDs, Simmons (2011) found no evidence for the establishment of IDs between two competing firms, challenging the previous statements of Dooley (1969) and Mizruchi (1996). However, Simmons's findings suggested the legality of IDs as time contingent, due to the convergence of the firms' activities in a specific sector. A later study of David and Westerhuis (2014) stated that the main functions of corporate networks as being four: (1) access to financial capital, usually needed by organizations' business transactions, (2) channels for information, serving as pipe-lines through which several resources flow (explained later in OO-CM category), (3) control over competition, in accordance with the local antitrust regulations and characteristics and, (4) enhance the reputation of firms, considering the professional background of shared directors and their prestige.

In addition to these findings, Zajac and Westphal (1996) found, over a sample of 491 large firms in the United States during the period 1985-1992, that the reason for creating an interlock obeys mostly to the CEO's influence and interests, looking to maintain his or her intra-organizational power through the manipulation of inter-organizational interlocks, when the CEO's decisions of who will be part of the board depends on the level of control that he or she wants to have over the firm. These are similar results to those of Geletkanycz, Boyd and Finkelstein (2001), who demonstrated how CEO external directorate linkages were related to his or her compensation. Similarly, Fracassi and Tate (2012) indicated that powerful CEOs tend to search among directors well connected with them in order to appoint these executives to integrate the board. The result of this manipulation of the board's composition, through the creation of several IDs, is a weaker monitoring over the CEOs' business decisions. IDs formation also could be a matter of public policy accomplishment or just to facilitate a specific transaction. According to Cárdenas

(2015), the corporate network elite in Latin America is a fragmented one, revealing that countries are mostly interested only in national business transactions rather than management control over the region. They prefer local rather than regional ties, thus stopping the emergence of a transnational corporate network. Silva, Majluf and Paredes (2006) found that Chilean interlocking directorates by 2000 seemed to be there just to ensure an expropriation process or to fulfill some legal requirement. Sometimes these common transactions or obligations can help the creation of IDs. According to Lluch et al (2014), there could be more than one mechanism for network cohesion when an interlocking directorate is created. In their study, at the beginning of the 1970s, Argentina presented a cohesive corporate network considering three major business mechanisms: (1) identity by ethnic condition, (2) family relationships and (3) relationships to a common government agent who was present in many boards, called *syndic*. Similarly, the presence and number of interlocks can define the boundaries of a business mechanism as well, such as business groups (Khanna & Rivkin, 2006), or family firms (Salvaj, Ferraro & Tapies, 2008).

Regarding the resilience of interlocks, a broken tie occurs when the common director between two firms disappears (Palmer, 1983). As was observed in a research study of over 1,131 firms in the United States during the period 1962-1964, the majority of IDs accidentally broken were not reconstituted again. Furthermore, Palmer, Friedland and Singh (1986) found that just directional ties are more likely to be reconstituted. So according to this analysis, not all broken ties will be renewed; it will depend on the firm's intentions, requirements and strategic goals (Palmer, 1983). These findings do not support some of the statements made by Dooley (1969) and Mizruchi (1996) who proposed management control and monitoring as reasons for establishing IDs, leading to the expectation of the reconstitution of a broken corporate tie as something natural, something that was not evidenced by the empirical research. Furthermore, those who are or will be the directors' companions on the board might influence the formation and reconstitution of interlocks. According to Conyon and Muldoon (2006), major interlocked directors tend to sit on boards where there are other highly interlocked ones. A study of the elite corporate network of 100 businesses, 109 nonprofit organizations and 98 government committees in the United States, demonstrated that nonprofit organizations, especially charities and foundations, seem to have a lower integration and central degrees than business and government sectors, where major firms are important actors and have high-profile directors on their boards (Moore, Sobieraj, Allen Whitt, Mayorova & Beaulieu, 2002).

Actors who participate inside the corporate network have a responsibility and a correct function, but their final behavior depends on the context and the period where they have to perform. So, the dynamic and flexible roles of these participants mostly depends on the external influences of the environment. In a study of 166 firms in the United States, Mizruchi and Bunting (1981) found that by 1904 the total number of interlocks related to a firm could be improved in order to reveal the firm's influence

according to the strength and direction of the ties. Nevertheless, later, Palmer (1983) demonstrated in his research over the period 1962-1964, that it is not sufficient just to consider their direction in order to find the balance of influence between two interlocked firms. These two contradictory findings reinforce the idea of Mizruchi et al (2006), where the effects of social ties could vary across time. Later analysis had shown that this centrality measure is time contingent, because firms that were highly central in one period, can exhibit a different centrality with the passing of the years, according to the changes of the business environment or the organizations' strategies (Davis & Mizruchi, 1999), such as what happened with the banks in the United States during the period of 1982-1994, which over time changed their role of high central actors in the corporate network, or the banks and financial institutions in Spain by 2003 (Salvaj & Ferraro, 2005) and in the United Kingdom (Schnyder & Wilson, 2014), demonstrating that corporate networks' structures evolve alongside countries' current form of capitalism.

According to Salvaj (2013), Chile maintained its corporate network structure from 1969 to 2005, but the participants within this changed their roles many times. This network kept its cohesion through changes in the regulations of the government, the entry of multinational companies and the capital market development, but its actors played different roles. For instance, at the beginning of the period under analysis, banks were central participants with a high degree of intermediation centrality, but after the economic crisis of 1982 and the open market global phenomenon, banks left this role to local business groups and some multinational firms. Therefore, the Chilean corporate network is a good example of how a group of firms can have a high degree of global centrality, but a weak role as intermediates connectors within this network (Salvaj, 2013). Furthermore, Wilson, Buchnea and Tilba (2017), explained how the role of banks and new financial institutions was enforced over time, from 1904 to 1976, increasing the density of business leaders networks. These cases prove the resilience of the structure for interlocking directorates, but finally, the value of the cohesiveness of a business network comes when firms' decisions take different paths, some for responsible behavior and others for collusion or other bad practices in the market (Salvaj, 2013). Despite the time contingent volatility of this centrality measure, IDs network seems to have an intrinsic property to maintain the structural characteristics of its configuration. Because of that, any possible removal of the main central boards or highly connected directors from the network will not produce major modifications in its structure, proving its resilience to external changes of the corporate governance factors (Davis, Yoo & Baker, 2003; Naudet & Dubost, 2017). Chilean IDs network had to deal with major political and economic changes in the business environment from 1970 to 2010, but nonetheless, it remained resilient, demonstrating a high level of connectivity between state-owned firms and private business groups (Salvaj & Couyoumdjian, 2015), similar to the Dutch corporate network, which maintained its resilience from 1903 to 2008 and exhibited banks

as central actors over that time (Westerhuis, 2014), the same as The United States corporate network between 1962 and 1966 (Mariolis and Jones, 1982), or the Swiss corporate network that demonstrated cohesiveness from 1910 to 2010, banks being in a central position until 1980, when globalization effects reduced the importance of banks within the network and increased the number of outside directors on the boards (Ginalski, David & Mach, 2014; Buchnea, Tilba & Wilson, 2018). Furthermore, Carroll (2002) found that the Canadian corporate network was completely changed from 1976 to 1996 due to external factors in the environment like the transnationalization of capital, deregulation of the financial sector and reforms in the corporate governance, all of these reasons associated with the globalization trend. In addition to this, the Argentinian corporate network from 1923 to 2000 drowned in a long-term social deconstruction process that progressively fragmented it, because of the effect of external and internal issues, where businesses were not connected, were unaware of the potential benefits from IDs and finally losing their capability for attracting resources (Salvaj & Lluch, 2014). Resilience of both types of corporate network structures, ownership or interlocking directors, had been tested and proven, as well as other particularities such as traditional ruling class elites. According to Buck (2018), the British ruling class elite endured despite globalization effects over the entire corporate network that represented a huge number of new outside directors on the local boards. Kogut and Walker (2001) emphasized the robustness of the German ownership network structure that allowed it to endure over time, despite the globalization effects on the country's economic environment. In addition to this, German IDs network had also shown high connectivity and centrality degree in Europe (Cárdenas, 2015), as well as the Spanish IDs and ownership networks (Salvaj & Ferraro, 2005), both representing exceptions to Kogut's (2012) statement about the unlikelihood that a country has both corporate networks with the "Small-World" properties.

(1.2) Comparative Description (DS-C)

In a study of 1,733 firms in the United States, 2,236 firms in the United Kingdom and 2,354 Germany firms, Conyon and Muldoon (2006) found strong similarities between the corporate network structures of these three countries, according to their "Small-World" properties that were evaluated. To the contrary, Musacchio and Read (2007) did a comparative analysis using 1909 data of Mexico and Brazil corporate networks and found that corporate interlocks are more common in Mexico, where formal institutions are weak or inefficient and organizations have to support their growth on informal institutions like interlocking directorates, in order to have proper access to important resources for their new ventures or initiatives. On the other hand, the Brazilian corporate network appears to be more fragmented and this structure implies that firms do not have a strong necessity for these corporate ties, because the formal institutions in Brazil were facilitating access to capital and good market conditions for the business community. (Musacchio & Read, 2007).

According to Windolf (2009), antitrust regulation had a fragmentation effect on the United States corporate network, causing its density reduction and weakening of banks. However, Germany's corporate network density is not only higher than the United States' is, but also banks had better centrality degree, and bankers a higher position on the boards. IDs enforced the cooperative German business environment but not the competitive one of the United States, thus facilitating German directors to have more social capital than their American counterparts.

According to Salvaj (2013) and Salvaj and Lluch (2014), by the 1960s Argentina and Chile, two countries with a similar type of capitalism, had largely different corporate network structures mainly because of two factors: (1) the country's political and economic situation and (2) the ownership structures of firms involved in this business network. They found that Argentina's corporate network structure was fragmented, but on the other hand, the Chilean network had shown a lot of cohesiveness between organizations. It seems that Argentinean firms trust less these board relationships than Chilean ones (Salvaj, 2013; Salvaj & Lluch, 2014). Moreover, Salvaj (2013) and Salvaj and Lluch (2014) emphasized that a country with weak institutions such as Argentina in that period, did not put its trust on IDs as a substitute action to deal with that weakness. Furthermore, the professional backgrounds of the most-connected directors inside the corporate network are different for both countries. Argentinean well-connected directors tend to be lawyers, government officers and accountants, while for Chile these directors are mostly businessmen (Salvaj, 2013; Salvaj & Lluch, 2014). Lluch, Rinaldi, Salvaj and Vasta (2017) also found differences between the evolution of IDs corporate networks of Argentina and Italy, the latter being more cohesive, where banks changed their roles across time and had a strong professional network of syndics. On the other hand, Argentinian banks had shown an irrelevant presence in the corporate network. By the early 1970s, there was a change in the corporate network in Argentina where business groups acted as connectors in this network, establishing business ties with other dispersed firms through the creation of interlocking directorates (Lluch et al, 2014). These business groups' behavior generated more cohesiveness inside the corporate network in Argentina and set a new role for these firm groups, but one thing remains equal, the most relevant linkers in the Argentinean corporate network during 1970-1972 are still professionals, technicians or syndics, but not businessmen (Lluch et al, 2014). Finally, Windolf and Beyer (1996) also found differences between two European countries, Germany and Britain. IDs in the German corporate network serves mostly to ownership interests, while Britain's corporate network do not exhibited a particular configuration favoring any group.

Cárdenas (2016) found that by 2012, corporate networks in Latin America exhibited a different structural configuration. Business elites had more cohesion in Mexico and Brazil than in Chile and Peru. Generally, management in Latin America is not related to ownership, and there is less redundancy between ownership and directors networks, considering that this pattern appeared repeatedly some decades ago. The

explanation for this might be a globalization phenomenon, which introduced a high number of outside directors on boards, keeping banks in a central position such as in Peru. There is evidence of “Inner Circles” (Useem, 1984) found inside these four countries’ corporate networks.

(2) ORGANIZATIONAL OUTCOMES (OO)

The effects of IDs on a firms’ behavior differ over time, as a consequence of changing markets and professional techniques evolution, how firms adapt their decisions to this evolution and the volatility of the environmental conditions (Mizruchi *et al*, 2006).

(2.1) Control and Management Outcomes (OO-CM)

The presence of an interlock in the relationship between two firms is enough to know that their behavior will be affected by this corporate tie (Mizruchi, 1996). Some of the consequences of creating IDs are corporate control and network embeddedness. Corporate control ensures having an influence on the decision-making process in other firms or the capacity of monitoring their business activities and obtain critical information from them, considering also that the board’s control role may be segmented through an interlocking manipulation of the CEO, according to his or her personal motivations to attain power (Zajac & Westphal, 1996), obtaining better compensation levels (Geletkanycz *et al*, 2001) or to have less resistance to his or her business decisions from the board (Fracassi & Tate, 2012). Network-embedded refers to the effect of the firm’s social relations in their strategic business decisions (Granovetter, 1985), using the corporate network as a big scan of the environmental situation and consequently adapting its initiatives to such (Mizruchi, 1996).

Interlocks act as reliable conduits for information and directors’ experiences, facilitating the diffusion and the adoption process of different institutional and managerial practices through the corporate network (Davis, 1991; Davis & Greve, 1997; Shipilov *et al*, 2010; Shropshire, 2010; Cai, Dhaliwal, Kim & Pan, 2014; Mazzola, Perrone & Kamuriwo, 2016), but the likelihood of this transmission process depends on some specific director’s characteristics and other firm’s conditions, such as their number of interlocks and their position in the network (Shropshire, 2010). Copying practices does not occur blindly, but through a discrimination process according to the firms’ preferences and behavior (Davis & Greve, 1997). Davis (1991) explained how interlock network centrality degree was positively related to the firm’s adoption of poison pill practices, looking for the stability of the business elite members and protecting companies from attempts of hostile takeovers. However, huge firms were unlikely to adopt this managerial practice because their own size represented a sufficient barrier for such transactions. Poison pill managerial practice spreads more rapidly through IDs networks rather than ones of geographical proximity (Davis & Greve, 1997). The presence of director interlocks is related also to the diffusion of

quarterly earnings cessation guidance and disclosure policies (Cai et al, 2014) and to the improvement of corporate reporting (Ginesti, Sannino & Drago, 2017). On the other hand, IDs act not just as providers for diffusion of practices, but as constrainers as well, depending on the specific resource they are going to share. According to Ortiz-de-Mandojana, Aragón-Correa, Delgado-Ceballos and Ferrón-Vílchez (2012), financial firms and fossil fuel firms are not likely to adopt environmental strategies because of the effect of director interlocks.

IDs facilitate coordination between firms possibly conducting them to alliances and collusion practices as well (Mizruchi, 1996). An adequate discrimination of how to adopt and use those practices could overwhelm firms' responsibility when confronting high uncertainty in their contexts or come from communist systems. Following Szalacha (2011), IDs conflict of interests would appear mostly in those environments, where firms tend to operate on the edge of formal/informal and legal/illegal practices, and emerging economies for instance. Regulatory environment, globalization, and general economic conditions can moderate the effects of IDs in such coalitions and make adoption processes. Buch-Hansen (2014), found little evidence of collusion practices in Europe, when these environmental factors are involved.

IDs represent an external source through which several resources flow, enabling monitoring, influencing, co-opting and collaborating activities among firms and their environment. In a study of 80 large firms in the United States in 1969, Pfeffer (1972) determined that a precise presence of interlocks according to the environmental needs was related to firms' positive performance. The corporate network permits it to monitor and respond to uncertainty of market fluctuations, establishing relationships with banks via interlocking directorates (Burt, 1980). A later research study of board composition and number of interlocks over a sample of 147 companies from different industries in the United States, had shown that firms tend to increase the number of their interlocking directorates and reduce the size of their boards to deal with environmental uncertainty and resources scarcity. Then, these firms concentrated on maintaining directors with a high level of corporate linkages (Boyd, 1990). In addition to this, Bucheli, Salvaj and Kim (2018) maintain that Chilean business groups dealt with the transition period in the economic environment by establishing IDs between them, not abandoning their corporate ties once institutional voids were addressed. To the contrary, a study of 3,745 manufacturing firms in the United States during the period 2001-2009, had demonstrated that IDs do not reduce the uncertainty that a firm has to deal with, but they are capable of enhancing firm performance and bring positive effects to it under the presence of high levels of uncertainty in the business environment (Martin, Gözübüyük & Becerra, 2015). The level of uncertainty has a moderating role in the relationship between the position of these executive ties inside the corporate network and the organization's performance. So, uncertainty creates the necessary conditions to obtain the benefits of having IDs in the organization, not as a reason for creating them. Similarly, Larcker, So and Wang (2013) previously found that

well-connected boards will improve organizational performance especially in firms which are facing adverse situations. These findings are consistent with Beckman, Haunschild and Phillips (2004) research where firms that were facing individually specific uncertainty did not look to expand their corporate network structure, but to increase their interlocks with their current corporate network partners. The need of resources could lead organizations to the establishment of IDs in order to create synergies with other firms with complementary benefits. Bennett (2013), found banks and Chambers strongly connected by interlocked boards over the corporate network, sharing different resources they mutually expected.

Another way to deal with and exert monitoring action over business environment is to seek for influence in the political decision-making process of the organizations. According to Mizruchi and Koenig (1991), the presence of IDs between larger firms within a concentrated industry is related to similar political decisions, where both firms support and make economic contributions to the same candidates. Corporate elite political cohesion is strongly related to the action of IDs in the corporate network, more than members of the same industry or geographical proximity factors (Burris, 2005).

(2.2) Financial outcomes (OO-F)

There are two types of inter-organizational directorship interlocks, one focused on fulfilling its inter-organizational objectives and another one committed to an integration function (Richardson, 1987). Considering this, in the specific relationship between a non-financial firm and a financial one, the non-financial corporation obtained positive effects on its profit performance as a result of the replacement of broken ties in its corporate network, and following its inter-organizational functions as well. The second type of interlocks, according to Richardson (1987), are unrelated to firm profit performance. Furthermore, an analysis of a sample of 191 joint-stock firms in Singapore at the end of 1997 also exhibited these two types of corporate networks, a group of directors who searched for valuable resources and another elite group who sought to maintain their wide class influence in the business community (Useem, 1984), and how these two interlock trends are related to firm performance (Phan et al, 2003). According to this research, those directors who want to attain power and influence through their corporate relationship tend to create interlocking directorates in the intra-industry range, having no effect at all on firm performance and also a negative collusion risk; while boards who are interested in capturing strategic resources for the firm mostly rely on inter-industry interlocks, generating a positive impact on organizational results. This is partially consistent with Larcker et al (2013) findings that well-connected boards have positive results on the firm's financial performance. Pombo and Gutiérrez (2011) showed similar findings in a study of Latin America of 335 Colombian firms, where the presence of outside directors and the number of interlocks were strongly related to the firms' financial performance.

Interlocking directorates are also presented as mechanisms related to some specific financial results such as periodical company financial reports. According to Chiu, Hong Teoh and Tian (2013) in their study of 118 firms in the United States during the period 1997-2001, they found that the social contagion effect which flows through a corporate network makes it possible that a non-manipulative firm changes into one because of the presence on its board of a shared director from a manipulative earnings-oriented organization. As opposed to this, a non-manipulative firm that does not have any interlock with a manipulative earnings-oriented one is less likely to acquire this bad practice (Chiu et al, 2013). Mizruchi et al (2006) demonstrated that the effect of corporate ties on the firms' financial behavior is historically contingent. Firms have shown a less progressive use of IDs in financial decisions as a consequence of the professionalization of financial activity, the internalization of it and the changes in the business environment (Mizruchi et al, 2006). These findings are complementary with Mizruchi and Brewster Stearns (1988) findings that firms tend to seek to have a financial representative on their board when they face solving deficiencies or an increase of their long-term debt, and this decision will allow them to have access to sources of capital, increasing their likelihood of borrowing from financial institutions (Mizruchi & Brewster Stearns, 1994). In addition to this, some factors of the economic environment such as demand for capital or phases of expansion in the business cycle are also positively related to making financial arrangements. Additionally, in response to the conditions of the environment, such as times of economic crisis, financial institutions are likely to demand their presence on non-financial boards in order to be able to monitor their investments (Mizruchi & Brewster Stearns, 1988).

Corporate network of IDs facilitates the diffusion of financial practices or the directors' experiences, which permit taking financial-related decisions. In the 1981-1990 period in 327 medium and large firms and their interlocked business community in the United States, Haunschild and Beckman (1988) found that IDs are useful sources of information for a firm's acquisitions decisions when the focal organization does not have any other substitute source for this financial means. Therefore, according to this, the importance of interlocks as financial information enablers depends on which other sources of information are available for access. Fracassi and Tate (2012) also found firms that had directors with external ties to the CEO that usually decided on more acquisitions, but these decisions finally destroyed the firm's value. Moreover, Cai and Sevilir (2012) proved that M&A transactions between interlocked firms have different consequences for the acquirer and the target. They found that these M&A transactions between first-degree connected boards, when acquirer and target have a shared director sitting on both boards, tend to favor the acquirer announcing higher obtainable returns, because of the asymmetric information that it has in the face of other bidders and the possibility of bargaining for a lower price, considering also that

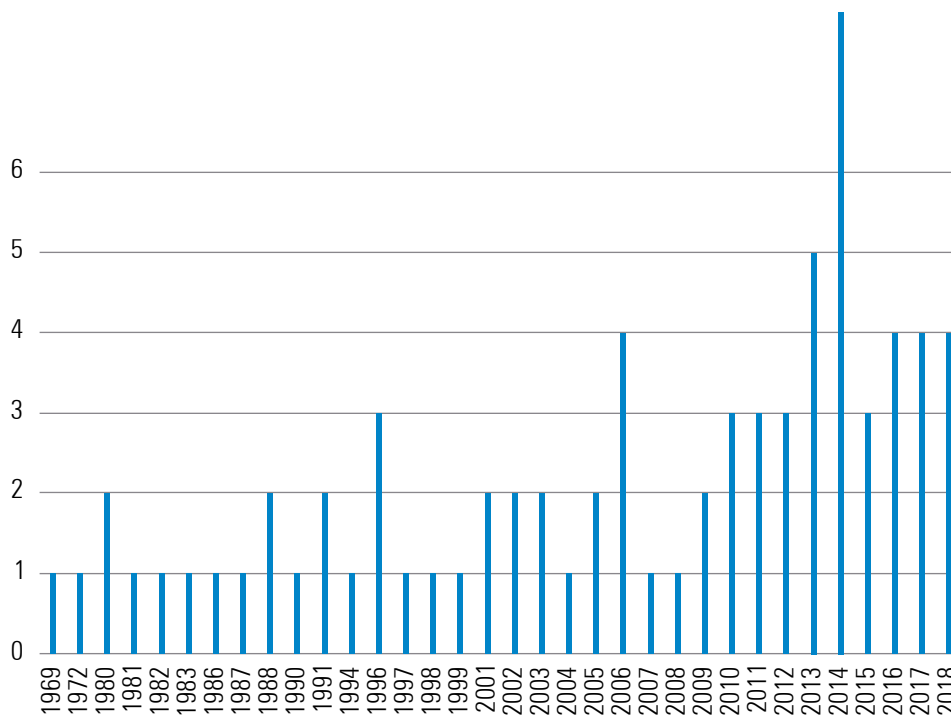
costs derived from banks or advisors will be less. Quite the opposite occurs in M&A transactions among second-degree connected boards, when both firms have the same director who sits on a third board, and where this kind of connectivity seems to favor the value created by the whole transaction (Cai & Sevilir, 2012). Benefits from financial decisions that come from IDs presence, depend on the type of interlock and the firms' connectivity level in the network, and finding directors corporate ties as reliable sources of critical information (Zona, Gomez-Mejia & Withers, 2018). Private equity-trade transactions are more likely to occur between firms interlocked by their boards, because directors use their knowledge and past experiences in those transactions to incentive or enhance similar ones (Stuart & Yim, 2010), in the same way that happens with decisions about auditors choice and fees in an interlocked firm (Johansen & Pettersson, 2013), synchronous stock price between Chilean corporate network firms (Khanna & Thomas, 2009) and similar financial policies such as capital investment, R&D, cash reserves and interest coverage ratio (Fracassi, 2016). Finally, corporate elites embedded in social networks allow an imitation process between the participants, reflecting the power of interlocking directorates in the economic and strategic decisions of the largest firms and business groups.

DISCUSSION

The discussion of the literature review results is focused on answering the two initial research questions of this manuscript, the first about the main management contribution for firms of IDs global studies, and the second one about the next steps for IDs research, according to its current progression and its opportunities or limitations beyond this study.

According to Figure 1, there is a concentration of IDs research released since 2006 and ahead, exhibiting a prominent number of papers in 2014. This can be the result of a renewed interest about board management because of the Enron, WorldCom and Tyco economic frauds (2001) and its impact in the global business community, and then Olympus (2011), Barclays (2012) and Petrobras (2014), which keep the attention on companies' ownership and boards (CNN, 2015).

Figure 1. Total of IDs related publications in academic journals by year of release.
Own elaboration.



Not only corporate scandals increased the interest for IDs research, but new comparative trends and methodologies for research as well. In addition to this, new antitrust legislation and a set of corporate governance regulations in countries boosted the development of this organizational field as well.

Figure 2 shows the distribution of papers per region of study. The amount of 37 papers was found which focused on the North American region that represents more than 50% of the sample. Europe is in the second place with 15 studies representing 22% of the total sample. Latin America appears with 12 papers, that represents 17% of the total. Finally, the rest of the sample is distributed between Asia and some mixed research between North America and Europe, and Latin America and Europe.

Miguel Ignacio Córdova Espinoza
The Evolution of Interlocking Directorates Studies - A Global Trend Perspective

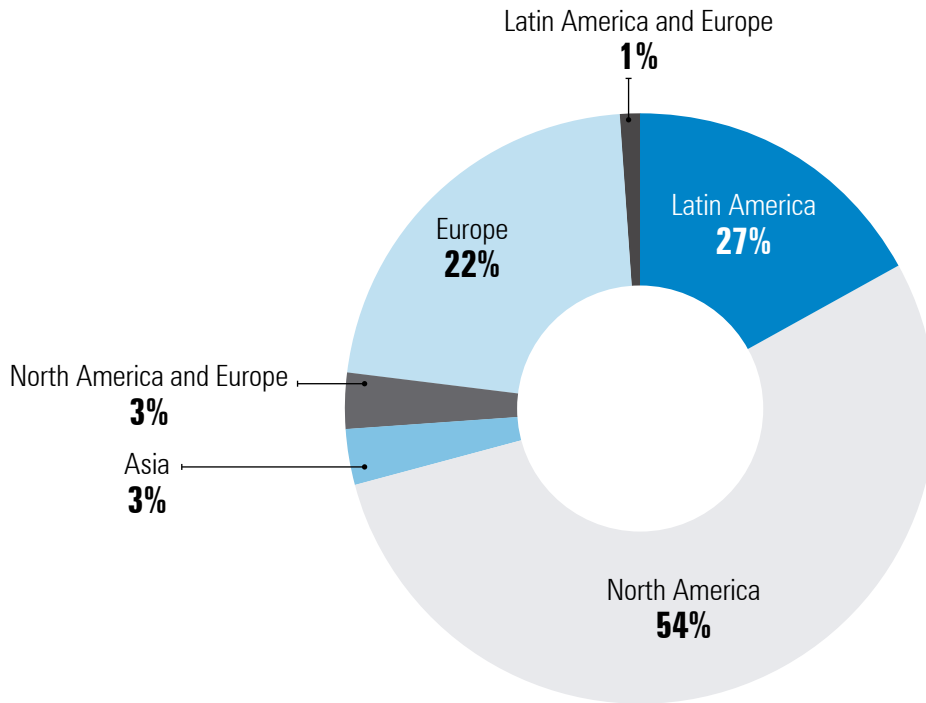


Figure 2. Percentage of IDs related publications per region. Own elaboration.

IDs literature requires a balance between regions of study. As there are many papers related to North America IDs corporate networks, it is necessary to explore more related to Europe, Latin America, Asia and the African regions. Since 1914, The United States corporate governance rules changed because of antitrust regulation, which represented a tipping point in the evolution of the business environment for firms. More important, is the finding of a lack of cross-continental research about interlocking directorates. In this review, there are several comparative studies between countries within the same region. However, the manuscript only identified three papers with data from different regions, North America and Europe, and Latin America and Europe. Taking into account that some world-scale events such as globalization, commodities commerce and economic crisis actually have a global impact, it seems strongly relevant to expand IDs literature with these cross continental comparative studies, looking at the effects on corporate networks at different regional levels.

Figure 3 demonstrates the extent IDs literature focused on North America over time and the interest in Europe since 1996, and recently Latin America from 2006.

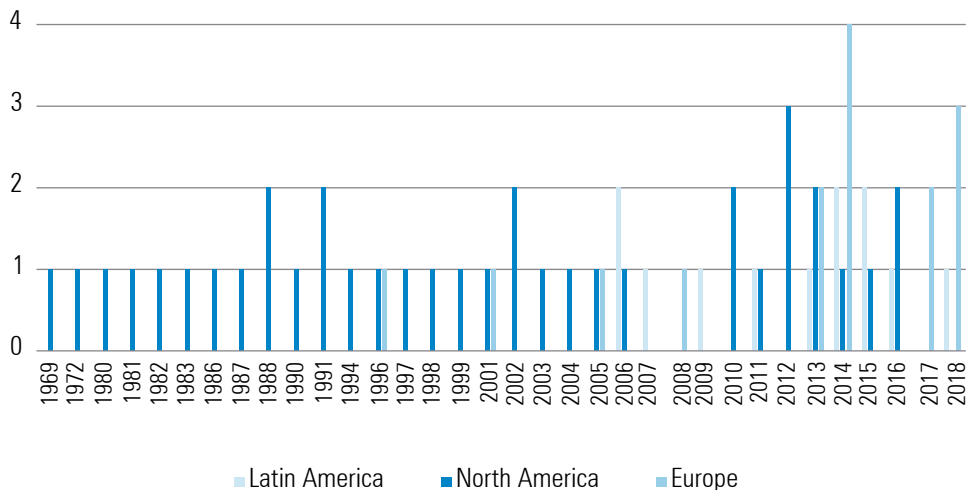


Figure 3. Total of IDs related publications in North America, Latin America and Europe over time. Own elaboration.

Considering that two conceptual studies of director interlocks in the sample come from 1996 (Mizruchi) and 1980 (Useem), it is interesting how empirical studies are constructed on traditional American perspectives. As a global phenomenon, IDs research has to keep revisiting previous concepts of corporate networks and director interlocks in order to fill in the gaps, due to the progress of management sciences and how empirical studies are opening new paths and questions for future research. Conceptual research of business elites interlocks is urgent in Latin America, considering the huge differences with other regions such as the turbulent business environment of emerging economies (Vassolo et al, 2011) and the variations of capitalism which those countries have crafted (Schneider, 2013).

IDs global research is following an appropriate tendency in the use of data for empirical studies. According to Figure 4, the tendency of the final year in the studies' samples used in every empirical IDs research is positively related to the year of publication in almost all the cases. In just two cases, the data used was particularly older, as the study observes in the 1981 and 2007 papers.

Miguel Ignacio Córdova Espinoza
The Evolution of Interlocking Directorates Studies - A Global Trend Perspective

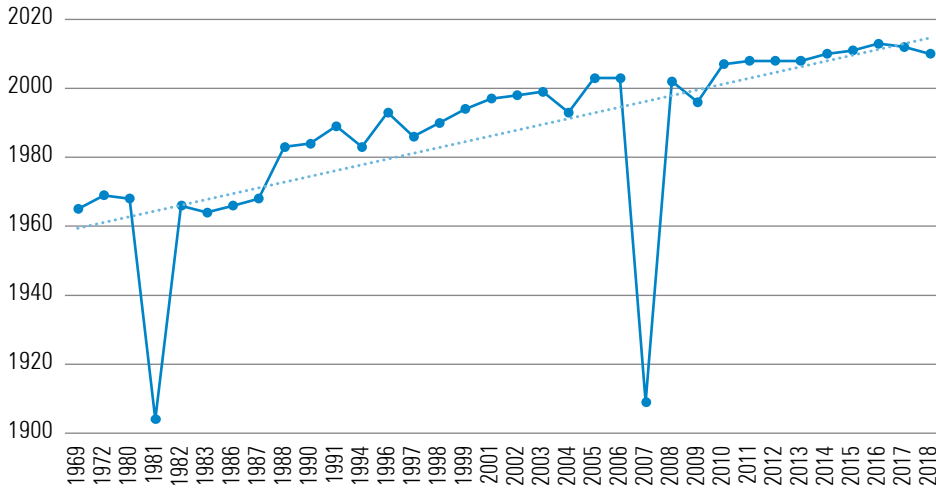


Figure 4. Final year of the studies' samples of IDs related publications over their years of publication. Own elaboration.

This finding is encouraging in terms of data availability for IDs research. Scholars have to ensure the recompilation of data and elaboration of data sets that permits proper empirical research for the next years. This also confirms that IDs global research is using data progressively, and capturing its evolution properly.

According to the contribution for firms of IDs publications, this study found a moderate concentration of DS related papers since 1960s until 1990s and then, a growing interest in OO related publications. This distribution of papers' contributions over time can be observed in Figure 5, and this paper argues two reasons to explain it: (1) a better understanding of IDs phenomenon as a first natural step; and (2) the assistance of information technology in the networks field of research, which allow the appearance of more comparative and detailed descriptive papers.

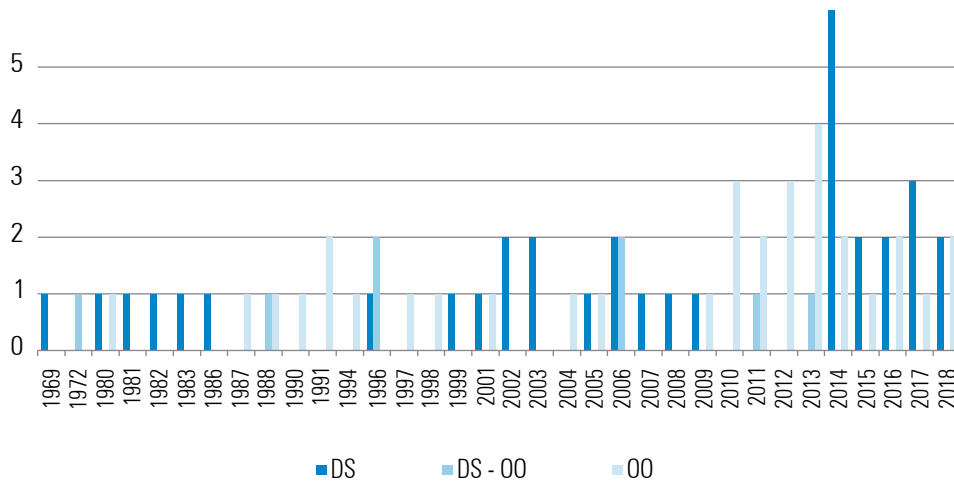


Figure 5. IDs related publications according to their main findings and year of release.
Own elaboration.

It seems that following these findings IDs research has found the balance between these two major trends of description (DS) and outcomes (OO). The equilibrium over quantity and release of publications for each contribution leads one to think that both support each other in order to continue their growth. Descriptive analysis is the basis for an outcome explanation, but it probably does not work in the opposite way. Few cases for DS-OO papers push us to consider that just the contribution papers of the outcomes could be using other sources for basic elements of DS, probably without considering the local context and other important specific characteristics of ties in the corporate network.

Figure 6 displays the IDs publications contribution share over the total of papers analyzed, considering there are eight papers, 10.7% of the sample, with more than one of these four possible contributions, according to the proposed categorization in this study.

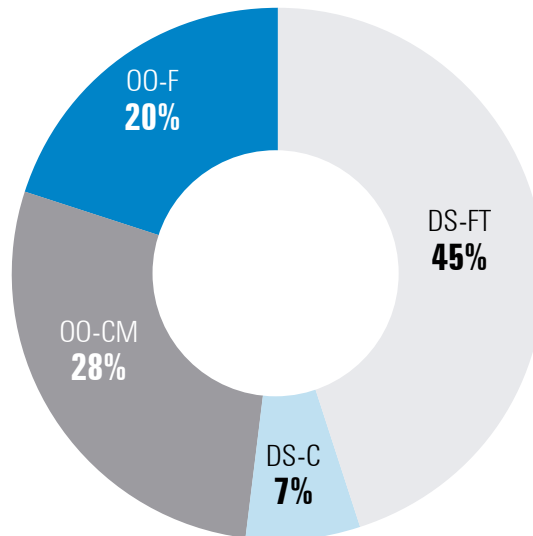


Figure 6. Percentage of IDs related publications according to their contribution. Own elaboration.

The main contribution seems to be a detailed description of structures and how ties operate inside corporate networks, and the second one is related to organizational outcomes, specifically control and management outcomes for firms. So, the current state of IDs research can be summarized as the need of a descriptive analysis of corporate networks structures in order to understand how firms can deal with the uncertainty in the environment, monitoring others and acquiring resources. Nevertheless, it is important to strengthen research focused on the contribution of financial outcomes, because of one of the main reasons of boards' interlocks existence, the separation of ownership and control, delivering value to stakeholders and solving agency problems as well. Finally, it is important to increase the comparative studies about IDs because the effects of director interlocks are strongly related to changes due to external reasons. Additionally, the comparative analysis of connected corporate elites between countries and regions will permit enhancement of the understanding of the role in context of each corporate network configuration, and the how the role of actors could vary depending on time periods and firms requirements.

CONCLUSIONS

This paper proposes a new two-category structure followed by a four sub-category level for the organization of IDs literature of a sample of papers from 1969 to 2018, according to its main findings as a contribution for the application of practices in firms. In addition to this, the study also proposes six different metrics to discuss the results while answering the two research questions provided in the first part.

IDs literature's most important contribution for firms is related to the description of the corporate network structures, analyzing the reasons for the creation of these interlocks and describing business elites ties characteristics and particularities. Having a proper description of the nature of director ties', firms could be able to understand how their connections with other firms are affecting their decision-making processes and, how the constraints and opportunities in the business environment are related to their level of connectivity inside the corporate community. This finding suggests that the biggest IDs research contribution for firms has remained at a descriptive and theoretical level, perhaps unreachable in the practitioners' field unless appropriate literature channels for management application could be properly driven.

Additionally, it seems that current IDs research is closely related to organizational behavior but focused on control and management outcomes, rather than financial ones. IDs research tends to benefit organizational outcomes when these corporate relationships follow the Resource Dependence Theory statements or the growth objectives of inter and intra-industry business communities. On the contrary, when these director ties aim to preserve the status of an elite group or are oriented to fulfill integration and cohesion goals, they do not have any effect on organization performance. Ironically, one of the main reasons for collaborative and cooperative action through director interlocks is the improvement of capabilities of resources attraction, which would benefit financial performance. However, the results of this study suggest that IDs research have been focused on explaining the structures first and many other additional facts found for financial outcomes.

IDs research exhibited multiple regional gaps, mainly because this organizational field matured first in North America and later in Latin America and Europe. In fact, director interlocks originally came from the type of competitive capitalism which reigns over the United States. However, every region has its own business particularities, regulations and laws trying to shape the way IDs corporate networks grow. Latin America, for instance, has its own opportunities and risks of managing the distance between control and ownership inside organizations, because of the high presence of family firms, informal markets and institutional voids. So, each country and region have similarities and differences, making the reinforcement of IDs comparative studies more important. IDs research focused on Latin America has had a major presence since the 2000s, oriented mostly to comparative and structural studies, and Europe has shown a conservative role using data for this research trend. The Latin America region was a latest adopter of capitalism as an economic system, and its capitalism is different from other regions, limiting its capacity for innovation, making added value products, and growth (Schneider, 2013). The incipient participation of the Latin American

region in IDs global research dialogue shows a growing interest of scholars from that region focused on the structure, characteristics and evolution of their corporate elite networks. Further, it urges more cross continental research that would strengthen the organizational field, capture the global effects of major scale events such as financial crisis and globalization, and finally, find evidence about how IDs are actually related to their business environments.

The revisiting of main concepts of Interlocking Directorates Theory seems necessary to have robust evidence about how IDs have been evolving over time, according to their extended application in management sciences. Key conceptual papers come from a North America business environment considering a competitive capitalism that is different from cooperative capitalism in Europe and hierarchical capitalism in Latin America (Schneider, 2013), and specific antitrust regulations which are poorly developed or absent in other regions. In addition to this, data sets used for IDs research are evolving progressively according to the years of publication of the studies. This is an encouraging finding, which provide useful information about the evolution of IDs research and permits the proposal for new paths for future research.

Some of the limitations for the present study may actually present new avenues for future development of IDs global research. This manuscript considers 75 papers as an initial revisit of this controversial and unanswered question about what interlocks really do, building on Mizruchi's (1996) unfinished debate. It seems necessary then to extend the number of papers in order to reinforce the global view of this phenomenon and to identify new gaps in the literature. Following the theory, IDs represent reliable conduits for the transmission of practices. However, this study misses a categorization regarding the properties and description of diffusion processes in order to separate the positive practices from negative ones. Therefore, it would be interesting in the future to research how specific patterns of the diffusion process involves the presence of IDs, and what their impact on firms' outcomes is. Big historical or economic events are not considered under the perspective of this study, but previous research has demonstrated the importance of established IDs corporate network configuration into a timeline of big scale events. Globalization for example, is changing the way IDs are connected to firms' behavior and performance. It will be relevant for future research on globalization to focus on the effects of the evolving configuration of elites networks. Moreover, the latest research contradicts traditional statements such as those related to collusion practice as a consequence of IDs presence in the corporate network, so further empirical research is needed related to collusive activities through director interlocks. This will permit management science to declare those as a potential IDs risk or just as a timely contingent pattern.

Finally, IDs global research is relevant in understanding firms' decisions, behavior and performance; but director interlocks creation depends on external influences in the business environment, internal forces of individual interests, and the objectives of a hidden business agenda of an elite class trying to enforce its cohesion. Because of these factors, IDs research has to be developed as a globally affected, locally contextual and timely contingent effort.

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Miguel Ignacio Córdova Espinoza

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