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EDITORIAL

Maria José Tonelli
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WHAT IS THERE TO CELEBRATE IN WOMEN'S MONTH?

In March, the month in which we celebrate women, its iconic date and main reference point being March 8, *RAE* is pleased to present three texts that deal with women in organizations. In the Perspectives section, Celina McEwen, Allison Pullen and Carl Rhodes reflect on the sexual harassment that is still present in organizations, the importance of the # MeToo # movement, and the role of leadership in promoting less sexist organizational environments. Sara Falcão Casaca, Maria João Guedes, Susana Ramalho Marques and Nuno Paço discuss the impacts of Portuguese legislation for increasing the presence of women on boards of directors. In the Essay section, Vanessa Martines Cepellos addresses the difficulties faced by women as they become older in organizations.

The topics dealt with in these texts extend beyond borders: sexual harassment in Australia, the under-representation of women on boards of directors in Portugal, and the ageism that affects women in Brazil are issues that are being constantly faced by women at work and in organizations practically all over the world. It is a well-known fact that organizations are gendered (Acker, 1990), and that inequality between men and women in the world of work has persisted for decades, and has been accentuated in Brazil by its intersectionality with structural racism (Carneiro, 2020). The inclusion of women in STEM areas is also still small (UN Women, 2021), and data from UN Women Americas and the Caribbean (2020) show that COVID-19's impact on women in the region is brutal. In other words, the timid advances made in the region in recent years are at risk of being lost. It is in the context of this pandemic that scientific research into the work of women in organizations is more necessary than ever.

But in addition to the articles in the Perspectives and Essay sections, we invite our readers to explore the other articles in this edition: "Export performance in South America: Do intangibles affect firms' performance in developing countries

such as Peru?", by Carlos Castillo Guardamino and José Ventura Egoávil; "High-performance level and technology management among winery firms in the wine industry cluster of Baja California: A fsQCA approach", by José Carlos Rodriguez, Mario Gómez and Maria Alice Manzo; "Leveraging the effectiveness of knowledge-intensive services: The roles of customers and service providers", by Simone Santos da Silva and Juliana Bonomi Santos; and "Corporate governance and political connections in anticorruption practices", by Sirlene Koprowski, Viviane Krein, Sady Mazzioni and Cristian Baú Del Magro. As a generalist journal, *RAE* has contributions on various relevant topics written by Brazilian and Latin American authors. There needs to be greater integration between researchers from these countries in order to drive science and knowledge in the region forward. It is also essential that there are discussions about anti-corruption practices.

We are still in the pandemic, so take care, and enjoy reading!

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ARTICLES

CORPORATE GOVERNANCE AND POLITICAL CONNECTIONS IN ANTI-CORRUPTION PRACTICES

Governança corporativa e conexões políticas nas práticas anticorrupção

Gobierno corporativo y conexiones políticas en prácticas anticorrupción

ABSTRACT

The objective of this study is to analyze whether specific corporate governance mechanisms and political connections influence the voluntary disclosure of anti-corruption practices in the companies listed in the Brazilian stock exchange [B]3. The disclosure index was obtained from the relationship between the number of citations of the keywords and the number of pages in the sustainability reports. The analysis was performed using multiple linear regression, considering 740 observations from financial years 2016 and 2017. The results indicate that the size and percentage of external members on the board of directors, Big Four audits, size of the audit committee, and participation of government shareholding positively influence the levels of disclosure of anti-corruption practices. In turn, the presence of politicians on the board of directors leads to an increase in information asymmetry due to a lower level of disclosure, which, by extension, represents less commitment to anti-corruption practices.

KEYWORDS | Corporate governance, political links, disclosure, anti-corruption, audit.

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RESUMO

O objetivo do estudo é analisar se mecanismos específicos de governança corporativa e as conexões políticas influenciam a evidenciação voluntária de práticas anticorrupção em empresas listadas na [B]3. O índice de evidenciação foi obtido a partir da relação do número de citações das palavras-chave com o número de páginas dos relatórios de sustentabilidade. A análise foi realizada por meio de regressão linear múltipla e considerou 740 observações dos exercícios de 2016 e 2017. Os resultados indicaram que o tamanho e o percentual de membros externos no Conselho de Administração (CA), auditoria big four, tamanho do comitê de auditoria e a participação acionária do governo influenciaram positivamente os níveis de evidenciação de práticas anticorrupção. Por sua vez, a presença de políticos no CA conduz para aumento da assimetria informacional ao revelar menor nível de divulgação, que, na sua extensão, representa menor compromisso com as práticas anticorrupção.

***PALAVRAS-CHAVE** | Governança corporativa, vínculos políticos, divulgação, combate à corrupção, auditoria.*

RESUMEN

El objetivo del estudio es analizar si los mecanismos específicos de gobierno corporativo y las conexiones políticas influyen en la divulgación voluntaria de las prácticas anticorrupción en las empresas que cotizan en la [B]3. El índice de divulgación se obtuvo de la relación entre el número de citas de las palabras clave y el número de páginas de los informes de sostenibilidad. El análisis se realizó mediante regresión lineal múltiple y consideró 740 observaciones de los ejercicios 2016 y 2017. Los resultados indicaron que el tamaño y el porcentaje de miembros externos en el consejo de administración, la auditoría bif four, el tamaño del comité de auditoría y la participación accionaria del gobierno influyeron positivamente en los niveles de divulgación de las prácticas anticorrupción. A su vez, la presencia de políticos en el consejo de administración conduce a un aumento de la asimetría de la información al revelar un menor nivel de divulgación, que, en su extensión, representa un menor compromiso con las prácticas anticorrupción.

***PALABRAS CLAVE** | Gobierno corporativo, vínculos políticos, divulgación, anticorrupción, auditoría.*

INTRODUCTION

In Brazil, the low level of compliance with laws, in addition to poor inspection by the government, encourage companies to engage in unethical practices (Halter, Arruda, & Halter, 2009). Operation Car Wash revealed a scheme involving large companies and the national political sphere, considered by the World Economic Forum as one of the largest corruption scandals in Brazil (Padula & Albuquerque, 2018).

In order to curb those behaviors, the Brazilian government made efforts for the enactment of Law no. 12,846/2013 (Anticorruption Law) and issued Decree no. 8,420/2015, both of which indicated the need for compliance as inductive legislation, based on the Corporate Governance (CG) regulatory framework, with guidance on internal mechanisms for integrity, auditing and incentives to the reporting of misconduct, as well as the application of codes of ethics and conduct by companies (Law No. 12,846, 2013).

CG was given prominence to promote transparency and the regulation of anti-corruption practices in publicly-held companies, in addition to being a central topic of Corporate Social Responsibility (CSR) (Aguilera, Rupp, Williams, & Ganapathi, 2007; Jamali, Safieddine, & Rabbath, 2008; Kaymak & Bektas, 2017).

CG mechanisms are essential in detecting and monitoring corporate corruption (Agyei-Mensah, 2017; Frías-Aceituno, Rodríguez-Domínguez, & García-Sánchez, 2014; Malagueño, Albrecht, Ainge, & Stephens, 2010; Na, Kang, & Kim, 2018; Owolabi, 2011; Wu, 2005), and the fight against it is an important attribute of CSR (Branco & Delgado, 2012; Hills, Fiske, & Mahmud, 2009; Hoi & Lin, 2012). Thus, the fight against corruption must be supported by CG mechanisms by means of CSR practices (Malagueño et al., 2010).

According to the Agency Theory, the separation between corporate ownership (owners/shareholders) and control (managers) produces agency conflicts and costs (Jensen & Meckling, 1976). The higher the level of ownership dispersion, the greater the agency conflicts between controllers and other stakeholders (Depoers, 2000). Agency conflicts involve the possibility of expropriation of minority shareholders by controlling shareholders, as well as information asymmetry problems (Jensen & Meckling, 1976), which, by extension, influence voluntary disclosure (Chow & Wong-Boren, 1987).

In environments of high capital dispersion, such as the United States, executives are given much power, and shareholders, little, which creates problems between shareholders and executives (Nassif & Souza, 2013). However, Brazilian companies have high levels of ownership concentration, and the main agency conflict occurs between majority and minority shareholders (Dami, Rogers, & Ribeiro, 2007).

In companies where share control is more dispersed (less concentrated), a greater information disclosure is necessary (Raffournier, 1995) to solve information asymmetry problems (Jensen & Meckling, 1976). In turn, shareholders with a significant portion of shares are part of management and have privileged access to information (Leuz, 2006).

CG has mechanisms that allow reducing agency conflicts between principals and agents or between controlling and minority shareholders (Silveira & Barros, 2008), thus acting to reduce agency costs (Dami et al., 2007).

In addition, firms use CSR as an extension of CG mechanisms in order to voluntarily disclose information that minimizes information asymmetry. However, CG is impacted by the environment's social and political factors, and the Board of Directors (BOD) can change actions on CSR (Jensen & Meckling, 1976).

In turn, political connections are intrinsic to the ownership structure and CG mechanisms, through the participation of individuals with political expertise in companies' BODs; such connections ensure benefits and competitive advantages, such as access to privileged information and financial sources that contribute to reduce informational asymmetry and agency conflicts (Camilo, Marcon, & Bandeira-de-Mello, 2012).

Political connections are allies of CG in strengthening the corporate image's legitimacy before stakeholders, through CSR. The voluntary disclosure of anti-corruption practices seems to represent a consistent way for the company with political connections to build trust with stakeholders (Said, Zainuddin, & Haron, 2009).

CG and political connections exert coercive pressure on companies to disclose information on anti-corruption practices. It is important to jointly study the impact of CG and political connections on CSR, since they are similar in the way they seek to serve stakeholders and address agency conflicts. Previous studies have used the Agency Theory's framework to reveal that, in the field of CG, political connections used as power balance aggravate conflicts of interest between majority and minority shareholders (Ding, Jia, Wilson, & Wu, 2015; Huang & Zhao, 2016; Pan & Tian, 2017).

In view of the above, the following problem emerges: what is the influence of CG mechanisms and political connections on the voluntary disclosure of anti-corruption practices? This study aims to analyze whether specific CG mechanisms and political connections influence the voluntary disclosure of anti-corruption practices in companies listed in the [B]³.

The research environment is justified, since companies operating in emerging markets face an environment that is conducive to corruption (Krishnamurti, Shams, & Velayutham, 2018). During the analyzed period, Brazil was ranked 79th and 96th in the International Transparency's ranking, in 2016 and 2017, respectively, of a total of 180 surveyed countries (Transparência Internacional, 2017), which characterizes a favorable business environment for studies on corruption. Given the country's fragile position in the global transparency context, CG and political connections have the potential to influence companies' engagement in anti-corruption practices and their respective disclosure.

From the standpoint of corporate reputation, disclosing anti-corruption practices expands CSR and promotes legitimacy before stakeholders (Etxeberria & Odriozola, 2018). From a managerial standpoint, it minimizes agency conflicts (Jensen & Meckling, 1976), and corruption prevention strategies are part of CSR (Hills et al., 2009), thus being included in the agenda of politicians, managers, shareholders and researchers (Hoi & Lin, 2012).

THEORETICAL FRAMEWORK

CSR and Anti-corruption Practices

Rejecting corruption is inherent to companies that have CSR, since corruption is deemed incompatible with sustainable development due to the social, economic and environmental damage it causes (Branco & Delgado, 2012). However, corruption continues to be a neglected social issue among CSR priorities (Hills et al., 2009).

Corruption in the private sector is characterized by abuse of power in achieving a private benefit (Rodriguez, Siegel, Hillman, & Eden, 2006), and it may take the form of gifts, misuse or the negotiation of information for one's personal benefit or the organization's benefit.

Organizations are encouraged to implement strategies to fight corruption, which can be related to the misuse of accounting, business espionage, information manipulation, purchases for personal benefit, bribery and asset theft (Hills et al., 2009).

In their investigation on companies from Malaysia and Indonesia, Joseph et al. (2016) found incipient disclosure of anti-corruption practices in CSR, with codes of conduct and reporting practices being the most reported items. In Brazil, some private-sector companies have become aware of the risks involved in unethical procedures and started to adopt specific CG practices regarding the subject (Halter et al., 2009), encouraged by Law n. 12,846/2013, among other factors.

CG and CSR in Anti-corruption Practices

Under the aegis of CG, companies are encouraged to promote ethics, impartiality, accountability, transparency and responsibility in all their relationships. Therefore, companies must keep their activities in line with society's ethical and legal aspirations (Jamali et al., 2008).

The CSR approach balances the needs of different groups with shareholders' goals by integrating social, environmental and public concerns into CG. The themes related to CG and CSR have been found to converge, since both seek to guarantee businesses' resistance (Aguilera et al., 2007).

CG represents a pillar for RSC's sustainability, and developing countries must increase the monitoring and capacity of regulatory and judicial systems on CG and coercive institutional pressures in adopting CSR (Jamali et al., 2008). CSR is considered an extension of the firm to promote CG's effectiveness, ensuring sustainability through corporate practices that promote responsibility and transparency for shareholders and society (Jo & Harjoto, 2012).

CG positively affects the company's engagement in CSR (Jo & Harjoto, 2012) and plays a catalyst role in breaking corruption's vicious cycle in organizations (Wu, 2005); it is therefore a supervision tool for ensuring management's ethical and consistent behavior (Frías-Aceituno et al., 2014).

Corruption works as a drain in companies' resources and creates a disincentive to CG (Bishara, 2011); it must be fought through controls that inhibit corrupt practices (Castro, Amaral, & Guerreiro, 2019). Especially in emerging markets, less developed CG systems are more susceptible to exploitation by corrupt individuals (Bishara, 2011).

> H1: CG mechanisms increase companies' CSR in disclosing anti-corruption practices.

CG plays a key role in maintaining corporate integrity and managing the risk of corporate fraud and corruption; communication to stakeholders supports accountability and the implementation of robust measures to limit and prevent corruption (Agyei-Mensah, 2017).

It is the BOD's responsibility to establish anti-corruption policies with guidance on CSR activities, as well as mechanisms to prevent unethical behavior (Bierstaker, 2009). In addition, a greater number of members in the BOD facilitates monitoring and controlling illicit practices (Agyei-Mensah, 2017).

The literature indicates that BOD characteristics influence CG effectiveness. In this approach, an independent BOD represents the interests of shareholders, thus preventing the

involvement of managers in bribery (Wu, 2005). Managers of companies supervised by a BOD with independent members apply and adopt anti-corruption policies more seriously (Healy & Serafeim, 2015).

Empirical evidence has indicated that BOD independence (Kaymak & Bektas, 2017; Khan, Muttakin, & Siddiqui, 2013) and size (Kaymak & Bektas, 2017) positively affect CSR practices. Previous findings also revealed that BOD independence (Agyei-Mensah, 2017; Donnelly & Mulcahy, 2008) and the size (Donnelly & Mulcahy, 2008) positively impact organizations' voluntary disclosure, thus playing a significant role in maintaining corporate integrity and in fighting corruption. Frías-Aceituno et al. (2014) identified that CG reinforces the control of bribery and corruption by combining the different mechanisms in the corporate environment.

> H1a: The presence of external members in the BOD, as well as its size, increase companies' CSR in disclosing anti-corruption practices.

The existence of an audit committee with a higher proportion of independent members reduces agency costs and improves internal control, leading to higher quality of disclosures. In their study on Malaysian companies, Said et al. (2009) indicated that the audit committee is positively related to CSR disclosure. In addition, Khan et al. (2013) confirmed the audit committee's positive effect on CSR practices. The audit committee plays an effective role in how CG operates, as in the evidence provided by Ho and Wong (2001) that the existence of the audit committee is significantly and positively related to the extent of voluntary disclosure.

> H1b: The presence of external members in the audit committee, as well as its size, increase companies' CSR in disclosing anti-corruption practices.

In addition to international efforts and legal requirements at the country level, accounting and auditing standards based on CG principles culminate in the quality and integrity of organizations that mitigate and curb corrupt practices. Accounting is an essential transparency mechanism whose role is to demonstrate the company's operations, reflected by reality in a precise, comparable manner, and, in turn, the role of auditing is to guarantee the accuracy of that information to its users (Owolabi, 2011).

Another relevant aspect about CG is external audit, which constitutes a control device for monitoring and detecting bribery (Na et al., 2018), with the role of ensuring information reliability, thus reducing informational risk (Malagueño et al., 2010).

With regard to countries, Malagueño et al. (2010) investigated 57 jurisdictions and indicated that improving accounting and auditing quality can help reduce corruption. In the organizational sphere, Na et al. (2018) showed that elements of CG impacted corruption prevention in companies in Brazil, Russia, India and China (BRIC).

In the study of Owolabi (2011), the quality of accounting and auditing was also considered an encouragement to mitigate corruption in 13 African countries. The Big Four global audit firms have been strict with regard to anti-corruption standards, thus intensifying the fight against corruption in companies (Healy & Serafeim, 2015).

> H1c: The Big Four audit firms increase companies' CSR in disclosing anti-corruption practices.

Political Connections and CSR in Anti-corruption Practices

Political connections are worldwide phenomena in which business groups connect with government members in various ways: when the government is a shareholder in private-sector companies; when a business owner is a politician or has been appointed to hold government office; when politicians or former politicians are BOD members or a hold a senior management position in private-sector companies; when companies make donations to politicians' election campaigns (Claessens, Feijen, & Laeyen, 2008).

Political connections are associated with lobbying, particularly regarding the transmission of privileged information to companies (Correia, 2014). Companies strengthen political ties in order to reduce uncertainties, facilitate access to credit, face less regulatory control, obtain tax benefits (Camilo et al., 2012; Huang & Zhao, 2016; Wang, Chen, Chin, & Zheng, 2017) and other state-controlled resources.

Political connections play a key role in economies with weak regulation, high levels of corruption and weak institutions (Polsiri & Jiraporn, 2012). Government shareholding leads to CSR, due to governmental responsibility regarding publicly traded companies' transparency (Nasir & Abdullah, 2004). Thus, creating higher levels of trust between stakeholders becomes paramount for politically connected firms (Martynova & Renneboog, 2009).

Empirical evidence has confirmed that companies where the government is the controlling shareholder are positively related to CSR disclosures (Khan et al., 2013; Said et al., 2009), and companies with political connections through shareholding are interested in maintaining their corporate reputation (Huang & Zhao, 2016).

Findings indicate that the company's social reputation is positively related to disclosure concerning anti-corruption practices (Etxeberria & Odriozola, 2018), and CSR has been a

constant political need, leading politically connected companies to increase investments in this field (Huang & Zhao , 2016).

> H2a: Government shareholding increases companies' CSR in disclosing anti-corruption practices.

The political connection is also established through the presence of politicians in the BOD of private-sector companies, and it involves compensation for both the company and the individual: a) companies strengthen ties with a view to obtaining easier access to resources, less regulatory control, and tax benefits; and b) politicians have private interests (Camilo et al., 2012; Chaney, Faccio, & Parsley, 2011; Guedhami, Pittman, & Saffar, 2014).

The presence of politicians in the BOD is more common in environments with high levels of corruption (Boubakri, Cosset, & Saffar, 2008) and, in the course of the relationship between companies and government, the politician easily manages to carry out illicit transactions, considering his position, in order to obtain private benefits (Abramo, 2005). In this type of political tie, there is collusion between managers and politicians, resulting in fraudulent practices with the common purpose of achieving private benefits (Pan & Tian, 2017).

A close relationship between government and companies facilitates bribery. Although the literature has not yet proven that political connections represent acts of corruption, there are strong indications based on the related benefits (Guo, 2018). Corruption is considered an important channel for corporations to establish political connections, due to the privileges involved (Liu, Luo, & Tian, 2016).

> H2b: Politicians as BOD members decrease companies' CSR in disclosing anti-corruption practices.

METHODOLOGY

The investigated sample consisted of 372 companies listed in the [B][3] in 2016 and 368 in 2017; of those, 83 and 99 released a sustainability report, respectively. For the companies in the sample that did not release sustainability reports, the disclosure level attributed was equal to zero.

We chose to use sustainability reports to measure the level of disclosure of anti-corruption practices because the Global Reporting Initiative's (GRI) guidelines have a specific item for the reporting of anti-corruption practices.

The length of reports on anti-corruption practices is an indication of the company's efforts to deal with bribery and corruption (Transparency International, 2009). The disclosure

of anti-corruption practices helps raise public awareness and coerces companies into adopting ethical principles (Hess, 2009).

To measure disclosure of anti-corruption practices, we searched for and quantified the keywords presented in Exhibit 1.

Exhibit 1. Keywords

Description
Anticorrupção; *código de conduta*; *código de ética*; *combate à corrupção*; *compliance*; *corrupção*; *extorsão*; *Lava Jato*; *Lavagem de Dinheiro*; *Lei n. 12.846*; *propina*; *suborno(s)*; *transparência* [Anti-corruption; code of conduct; code of ethics; fight against corruption; compliance; corruption; extorsion; Operation Car Wash; money laundering; Law 12,846; bribery; transparency].

To confirm that the keywords reflect the companies' anti-corruption practices, we analyzed the corruption prevention practices found in the sustainability reports next to the predefined keywords (Exhibit 1). Table 2 provides an example.

Exhibit 2. Anti-corruption practices found in the sustainability reports next to the search with keywords

Keyword	Description found
Anti-corruption	*Anti-corruption is part of the vendor contracting process since the bidding phase, when we present the Vendor Code of Conduct, which has topics based on the principles of the United Nations Global Compact, to the contract's signing, with Socioenvironmental Responsibility clauses (Banco Santander S.A., 2017).*
	In 2017, the Board of Directors voted the revision of the Code of Ethical Conduct. In addition, policies were revised and mandatory e-learning processes carried out with all employees in order to disseminate the anti-corruption and money laundering prevention culture (Cielo S.A., 2017).

Based on the words in Exhibit 1, 2,560 observations were obtained for 2016 and 3,621 for 2017 in the investigated reports. We used WordStat 8 to search for and quantify the keywords, and FineCount to determine the number of pages in the sustainability reports, according to the metric shown in Exhibit 3.

Exhibit 3. Measuring of Disclosure of Anti-corruption Practices

Description	Metric	Source	Authors
Disclosure of Anti-corruption Practices (DAP)	Ratio between keywords and number of report pages	Sustainability reports	Gamerschlag, Möller e Verbeeten (2011)

In order to examine the effect of CG mechanisms on companies' voluntary disclosure, we selected the variables presented in Exhibit 4.

Exhibit 4. Corporate Governance Independent Variables

Description	Metric	Authors
BOD size (BODS)	Total number of BOD members.	Wu (2005); Donnelly e Mulcahy (2008); Bierstaker (2009); Khan et al. (2013); Frías-Aceituno et al. (2014); Agyei-Mensah (2017); Kaymak e Bektas (2017); Na et al. (2018).
Percentage of external board members (EBM)	Proportion between the number of independent board members in relation to total number of members.	
Level of Corporate Governance (CG)	Dummy variable equal to 1 for Novo Mercado and/or corporate governance level 2.	
Audited by one of the Big Four (AUD)	Dummy variable, 1 for big four-audited companies and 0 otherwise.	Ho e Wong (2001); Said et al. (2009); Malaguenõ et al. (2010); Owolabi (2011); Khan et al. (2013); Healy e Serafeim (2015); Na et al. (2018).
Audit Committee size (AUDS)	Total of members in the audit committee.	
Audit Committee independence (AUDI)	Proportion between the number of independent committee members in relation to total number of members.	

For the political connections between companies and government, we used the independent variables shown in Exhibit 5.

Exhibit 5. Independent Variables for Political Connection

Description	Metric	Authors
Political connections through board members with political expertise (POLC)	Proportion of board members with political expertise.	Camilo et al. (2012); Huang e Zhao (2016); Wang et al. (2017).
Political connections through government shareholding (GOVSH)	Dummy variable, 1 for companies with direct or indirect government shareholding, and 0 otherwise.	Nasir e Abdullah (2004); Khan et al. (2013); Huang e Zhao (2016); Said et al. (2009).

Organizational characteristics also affect companies' informational level and were used as control variables (Exhibit 6).

Exhibit 6. Control Variables for Company Characteristics

Description	Metric	Authors
Size (SIZE)	Natural logarithm of the average book value of total assets.	Frías-Aceituno et al. (2014); Agyei-Mensah (2017).
Ownership Concentration (OC)	Percentage of common shares held by the largest shareholder..	Agyei-Mensah (2017); Na et al. (2018).
Industry (IND)	Dummy variable, 1 for companies in construction, oil, gas and biofuel industries, and 0 otherwise.	Frías-Aceituno et al. (2014); Na et al. (2018).
ISE Portfolio (ISE)	Dummy variable, 1 for companies in the ISE portfolio, and 0 otherwise.	Ricardo, Barcellos e Bortolon (2017).

To analyze the influence of certain CG mechanisms and political connections on the disclosure of anti-corruption practices, we used multiple linear regression and, in addition, a model with year fixed effects and robust standard error (Exhibit 7). Sensitivity tests were also conducted only for the companies that released sustainability reports in the studied period.

Exhibit 7. Econometric Models

$$DAP_{it}=\beta_0+\beta_1 BODS_{it}+\beta_2 EBM_{it}+\beta_3 SIZE_{it}+\beta_4 OC_{it}+\beta_5 IND_{it}+\beta_6 ISE_{it}+\varepsilon \qquad (1)$$

$$DAP_{it}=\beta_0+\beta_1 AUD_{it}+\beta_2 AUDS_{it}+\beta_3 AUDI_{it}+\beta_4 SIZE_{it}+\beta_5 OC_{it}+\beta_6 IND_{it}+\beta_7 ISE_{it}+\varepsilon \qquad (2)$$

$$DAP_{it}=\beta_0+\beta_1 CG_{it}+\beta_2 POLC_{it}+\beta_2 GOVSH_{it}+\beta_3 SIZE_{it}+\beta_4 OC_{it}+\beta_5 IND_{it}+\beta_6 ISE_{it}+\varepsilon \qquad (3)$$

$$DAP_{it}=\beta_0+\beta_1 BODS_{it}+\beta_2 EBM_{it}+\beta_3 AUD_{it}+\beta_4 AUDS_{it}+\beta_5 AUDI_{it}+\beta_6 CG_{it}+\beta_7 POLC_{it}+\beta_8 GOVSH_{it}+\beta_9 SIZE_{it}+\beta_{10} OC_{it}+\beta_{11} IND_{it}+\beta_{12} ISE_{it}+\varepsilon \qquad (4)$$

RESULTS

Among the keywords used, "*Combate à corrupção*" [Fight against corruption] and "Compliance" stand out; those keywords had a significant increase from 2016 to 2017 (Table 1), a result that is similar to the level of disclosure of anti-corruption practices.

Table 1. Observations by keyword

	Anti-corruption		Code of conduct		[ode of ethics		Fight against corruption		*Compliance*		Corruption		Extorsion	
Year	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Obs.	262	379	184	267	331	329	17	279	420	712	601	730	20	10
	Money laundering		Operation Car Wash		Law n. 12.846/2013		Bribery		Bribery		Transparence		Total	
Year	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Obs.	52	90	12	16	09	36	12	19	29	29	611	725	**2560**	3621

The descriptive statistics for the explanatory and control variables are shown in Table 2.

Table 2. **Descriptive Statistics and Frequency Analysis**

Variables	2016 N=372				2017 N=368			
	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Disclosure of anticorruption practices	0.08	0.18	0.00	0.88	0.10	0.20	0.00	0.91
BOD size	6.07	2.63	3.00	15.00	6.10	2.79	3.00	17.00
Percentage of external board members	0.18	0.23	0.00	0.86	0.19	0.23	0.00	0.88
Audit committee size	0.72	1.44	0.00	6.00	0.902	1.53	0.00	6.00
Audit committee independence	0.01	0.07	0.00	0.50	0.01	0.07	0.00	0.60
Board members with political expertise	0.11	0.18	0.00	0.88	0.11	0.18	0.00	0.88
Company size	24,232,826.17	131,299,362.49			22,688,990.77	130,376,312.98		
Ownership concentration	47.83	33.52	0.00	100.00	46.33	34.44	0.00	100.00

Variables	2016				2017			
	YES	%	NO	%	YES	%	NO	%
Corporate governance level	169	45.43	203	54.57	167	45.38	201	54.62
Big Four audit firm	275	73.90	97	26.10	255	69.3	113	30.7
Government shareholding	37	9.90	335	90.10	39	10.6	329	89.4
Industry	33	8.90	339	91.10	32	8.7	336	91.3
ISE Portfolio	32	8.60	340	91.40	30	8.2	338	91.8

To analyze the influence of explanatory variables on the level of disclosure of anti-corruption practices, we used multiple linear regression models that considered variables CG, audit and political connections, separately (Table 3).

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Table 3. Influence of corporate governance and political connections on the disclosure of anti-corruption practices

Dependent Variable: Disclosure of Anti-corruption Practices (DAP)						
Independent variables	Linear regression with year fixed effects and robust standard error					
	Model a	Model b	Model a	Model b	Model a	Model b
BOD size	**0.007****	0.0003				
Percentage of external board members	0.068**	0.0848				
Big Four audit firm			**0.022****	0.047		
Audit committee size			0.012**	0.022**		
Audit committee independence			0.060	-0.101		
Corporate governance level					0.036**	-0.014
Board members with political expertise					-0.012	**-0.173****
Government shareholding					0.101**	0.125**
Company size	**0.041****	**0.049****	**0.042****	0.029	**0.041****	**0.046****
Ownership concentration	0.001**	0.001*	0.001**	0.001	**0.001****	0.001
Industry	**-0.045****	0.108	-0.028	0.165	**-0.042****	0.153
ISE Portfolio	0.205**	0.063*	0.216**	0.073**	0.201**	0.072**
(Constant)	**-0.256****	-0.052	**-0.237****	0.039	**-0.225****	0.010
Observations	740	181	740	181	740	181
Adjusted R²	0.2918	0.1036	0.2897	0.1373	0.2989	0.1455
Prob › F.	0.000**	0.004**	0.000**	0.001**	0.000**	0.000**
Breusch-pagan	0.000	0.8952	0.000	0.6727	0.000	0.6292
Hausman	0.032**	0.045**	0.021**	0.033**	0.004**	0.008**
Durbin Watson	1.875	1.903	1.859	1.802	1.941	1.994
VIF	‹1.638	‹1.418	‹1.443	‹1.353	‹1.620	‹1.599

a: test with the total number of observations; b: sensitivity test excluding companies that did not publish sustainability report.

** Significant at 5%; * Significant at 10%.

It is worth stressing that the regressions classified in model "a" include all companies in the sample and, in model "b", only companies that released sustainability reports. We used multiple linear regression for all models, and then controlled for year fixed effects and robust standard error – only the latter are shown in Table 3, since the variation of coefficients and significance did not indicate relevant differences in the results. The regressions proved adequate to

the fixed effects model as the Hausman test showed statistical significance at the 0.05 level.

The findings show that companies with larger BODs and a higher percentage of external members in their BODs are more likely to disclose anti-corruption practices. These results are consistent with those of Agyei-Mensah (2017), since we also found that a higher proportion of independent board members encourages voluntary disclosure. Therefore, it is proved that

external members in the BOD are more committed and sensitive to ethical issues and more interested in meeting the demands of the various stakeholders, which also contributes to the fight against corruption (Frías-Aceituno et al., 2014).

In addition, less connection between external members and the other board members hinders collusion and increases the feeling of scrutiny. Considering the corruption cases covered by national media, it is plausible to assume that external board members have been paying special attention to the fight against corruption (Luca, Moura, & Nascimento, 2012).

With regard to audit characteristics, audit committee size and being audited by one of the Big Four auditing firms proved significant, which allows inferring that companies with these conditions have a higher level of disclosure of anti-corruption practices. This result is consistent with the findings of Malagueño et al. (2010), Owolabi (2011), Healy and Serafeim (2015) and Na et al. (2018), thus revealing that audit quality increases anti-corruption practices.

The evidence allows us to argue that the studied CG mechanisms are reflected in companies' CSR through the disclosure of anti-corruption practices. It is proven that CSR in the fight against corruption has been exercised through the action of CG mechanisms, thus corroborating previous evidence provided by Wu (2005), Agyei-Mensah (2017), Hills et al. (2009), Owolabi (2011), Branco & Delgado (2012), Hoi & Lin (2012), Frías-Aceituno et al. (2014) and Na et al. (2018). In addition, CG has used CSR to minimize agency conflicts, through the disclosure of anti-corruption practices, as suggested by Malagueño et al. (2010). This increases trust between controlling and minority shareholders with regard to corporate decision making (Jensen & Meckling, 1976).

Our study suggests that the political connection through government shareholding positively influences the disclosure of anti-corruption practices, with evidence of improved CSR (Etxeberria & Odriozola, 2018; Huang & Zhao, 2016; Khan et al., 2013; Nasir & Abdullah, 2004; Said et al., 2009).

Companies with government shareholding took care of their corporate reputation and stakeholders' interests by disclosing better quality information on anti-corruption practices (Etxeberria & Odriozola, 2018), thus confirming Agency Theory's precepts. The presence of the government in companies' ownership structure led to greater disclosure on measures to combat corruption, due to a certain moral obligation that it has towards society, mainly after Law no. 12,846/2013 was enacted.

In turn, the presence of politicians in the BOD negatively influences the disclosure of anti-corruption practices. Our findings

suggest that the compensation-related interests of companies that strengthen ties with politicians in the BOD may be a factor that limits the disclosure of anti-corruption practices. In addition, the private benefit of the politician who has a seat in the BOD hinders corporate monitoring (Camilo et al., 2012; Chaney et al., 2011; Guedhami et al., 2014).

With regard to the control variables, company size had a positive influence on anti-corruption practices. The result is consistent with the assumption that larger companies are exposed to public scrutiny, which leads to greater voluntary disclosure (Agyei-Mensah, 2017; Frías-Aceituno et al., 2014). The recent Brazilian political and business context justifies large companies' attitude on matters of fight against corruption, with a view to increasing legitimacy in the market.

Being in the ISE portfolio contributed to the level of disclosure of anti-corruption practices by the company. The fact that a particular company is part of this portfolio derives from proactive initiatives concerning social issues, including the fight against corruption. This agenda was possibly boosted after Law no. 12,846/2013 was enacted, and the companies forming the ISE underscored their anti-corruption practices in pursuit of better organizational reputation. Thus, the adoption of CSR integrates social interests into organizations' strategies (Hills et al., 2009).

Companies in the construction, oil, gas and biofuels industries were negatively related with the disclosure of anti-corruption practices. Companies in those industries were frequently referred to in the corruption scandals of Operation Car Wash and were less keen to disclose information related to anti-corruption initiatives. This result is consistent with the assumption that the greater the organization's exposure in corruption cases, the smaller its informational openness regarding prevention measures (Barkemeyer, Preuss, & Lee, 2015).

While increased ownership concentration had statistical significance in some models, it also had very low coefficients of influence on the level of disclosure of information on fight against corruption, and their explanatory power should be sparingly considered. However, the results are in line with Braga, Oliveira and Salotti (2009) and Murcia and Santos (2009), thus refuting Agency Theory's assumption that diluted shareholding increases voluntary disclosure to reduce agency conflict.

Finally, sensitivity tests were conducted using equations with the CG mechanisms, political connections and control variables together. Some tests considered all companies in the sample, and others, only the ones that released sustainability reports. The models used multiple linear regression, control for year fixed effects and robust standard error.

Table 4. Sensitivity test for the influence of corporate governance and political connections on the disclosure of anti-corruption practices

Dependent Variable: Disclosure of Anti-corruption Practices (DAP)				
Independent Variables	Linear regression with year fixed effects and robust standard error		Multiple Linear Regression	
	Model a	Model b	Model a	Model b
BOD size	0.0026	-0.0017	0.0026	-0.0017
Percentage of external board members	**0.0675***	0.1167	**0.0690****	0.1169
Big Four audit firm	0.0151	0.0341	0.0136	0.0339
Audit committee size	0.0069	**0.0188****	0.0073	**0.0188****
Audit committee independence	0.0340	-0.1077	0.0322	-0.1074
Corporate governance level	0.0061	-0.0557	0.0057	-0.0557
Board members with political expertise	-0.0179	**-0.1564****	-0.0183	**-0.1569****
Government shareholding	0.0962**	0.1133**	0.0965**	0.1135**
Company size	0.0339**	0.0377*	0.0339**	0.0377*
Ownership concentration	**0.0004****	0.0007	**0.0004****	0.0007
Industry	**-0.0372****	0.1318	**-0.0375***	0.1318
ISE portfolio	0.2014**	0.0851**	0.2010**	0.0849**
(Constant)	**-0.2144****	0.0224	**-0.2045****	0.0234
Observations	740	181	740	181
Adjusted R²	0.3157	0.1899	0.3135	0.1899
Prob › F.	0.000**	0.000**	0.000**	0.000**
Breusch-pagan	0.000	0.5613	0.000	0.5613
Hausman	0.034**	0.048**	0.034**	0.048**
Durbin Watson	1.917	1.897	1.917	1.897
VIF	‹2.060	‹1.689	‹2.060	‹1.689

a: test with the total number of observations; b: sensitivity test excluding companies that did not publish sustainability report.

** Significant at 5%; * Significant at 10%.

The results support the tendency that the presence of politicians in the BOD makes companies less concerned with disclosing anti-corruption practices, thus corroborating other evidence provided by Abramo (2005), Camilo et al. (2012), Chaney et al. (2011), Guedhami et al. (2014), Liu et al. (2016) and Guo (2018). The evidence allowed confirming that government shareholding caused an increase in the disclosure of anti-corruption practices by companies. In addition, it reinforces that a higher percentage of independent board members and larger audit committees increase anti-corruption practices.

FINAL CONSIDERATIONS

Regarding ownership structure, having the government as a shareholder, in addition to CG mechanisms, increased companies' engagement in the fight against corruption and encouraged CSR through anti-corruption practices. This result is due to constant pressure from stakeholders in the national environment in view of the corporate scandals involving politicians. The practical effects are mitigation of agency conflicts, improved CSR and reduced information asymmetry between stakeholders.

In turn, the presence of politicians in the BOD decreases the firm's engagement in CSR and reduces concerns with anti-corruption practices. This result provides insights into the evidence of conflicts of interest caused by failure to monitor CG due to the presence of politicians in companies (Ding et al., 2015; Huang & Zhao, 2016; Pan & Tian, 2017).

As board members, politicians are less concerned with adopting anti-corruption practices, which requires greater caution on the part of stakeholders in observing these firms' behavior. The practical effect is information asymmetry, which causes agency conflicts and impairs CSR engagement and the firm's performance in fighting corruption.

Our study suggests that, in the field of CG, the presence of politicians in the BOD aggravates conflicts of interest between majority and minority shareholders (Ding et al., 2015; Huang & Zhao, 2016; Pan & Tian, 2017), which is contrary to the alliance between political connections and CG in strengthening the corporate image, as suggested by Said et al. (2009). Legitimation only occurs when the government is part of firms' ownership structure, in which the corporate image seems essential to stakeholders.

We conclude that government shareholding indicates a greater interest in maintaining the reputation of companies, considering that stakeholders easily associate government and company. On the other hand, the presence of politicians in the BOD indicates diverging interests, because their presence is hidden from most stakeholders and facilitates corrupt practices for private benefit.

The study sought to differentiate itself in the way it analyzes corruption, considering that few empirical studies address this social problem from the perspective of disclosure by companies. It is worth noting, however, that disclosing terms related to anti-corruption practices does not make a company free of non-conformities; but the topic has occupied its executives' agenda.

Among this study's limitations is the fact that it did not address the issue of CEO duality, i.e., when the same person serves as both CEO and board chair. This limitation may be addressed by future research. Further investigations may also consider elements such as the nature of the controlling shareholder and the distribution of dividends.

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AUTHORS' CONTRIBUTIONS

The authors declare that they *contributed equally* from the conceptualization and theoretical-methodological construction, theoretical revision (literature survey), data analysis, and finally writing and final review. The data collection was conducted by Sirlene Koprowski and Viviane Krein.

ARTICLES

LEVERAGING THE EFFECTIVENESS OF KNOWLEDGE-INTENSIVE SERVICES: THE ROLES OF CUSTOMERS AND SERVICE PROVIDERS

Alavancando a eficácia de serviços intensivos em conhecimento: O papel dos clientes e dos prestadores de serviço

Optimizando la efectividad de los servicios intensivos en conocimiento: El papel de los clientes y proveedores de servicios

ABSTRACT

This study develops a theoretical model that relates customer participation in knowledge-intensive services (KIS), the actions of service providers to encourage customer engagement and the effectiveness of services. Five hypotheses were tested using structural equations, and data were collected by surveying a sample of 106 users of physical therapy, personal training, Pilates and global postural reeducation services. The results show that educating customers is not enough; service providers need to empathize and create an emotional bond with them. Additionally, customer education and emotional empathy have different effects on customer feedback and the extent to which customers follow instructions. This study contributes to the literature by promoting a holistic view of the factors that influence customer participation and its effectiveness in KIS.

KEYWORDS | Knowledge-intensive services, service effectiveness, customer participation, emotional empathy.

RESUMO

Esta pesquisa desenvolve um modelo teórico que relacionou as ações de participação dos clientes em serviços intensivos em conhecimento (SIC), as ações dos prestadores de serviço para estimular o envolvimento dos clientes e a eficácia dos serviços. Cinco hipóteses foram testadas por meio de equações estruturais, e os dados foram coletados por meio do levantamento de uma amostra de 106 usuários de serviços de fisioterapia, personal trainers, pilates e reeducação postural global. Os resultados mostram que não basta educar clientes; prestadores precisam ter empatia e criar um vínculo emocional com eles. Adicionalmente, a educação dos clientes e a empatia emocional influenciam de maneira diferenciada o fornecimento de feedback e até que ponto os clientes seguem as instruções. Este estudo contribui para a literatura, ao promover uma visão holística sobre os fatores que influenciam a participação do cliente e sua eficácia em SIC

PALAVRAS-CHAVE | *Serviços intensivos em conhecimento, eficácia do serviço, participação do cliente, empatia emocional.*

RESUMEN

Esta investigación desarrolla un modelo teórico que relaciona las acciones de participación del cliente en los servicios intensivos en conocimiento (SIC), las acciones de los proveedores de servicios para estimular la participación del cliente y la efectividad de los servicios. Se probaron cinco hipótesis utilizando ecuaciones estructurales, y los datos se recolectaron encuestando a una muestra de 106 usuarios de servicios de fisioterapia, entrenadores personales, pilates y reeducación postural global. Los resultados muestran que educar a los clientes no es suficiente; los proveedores deben sentir empatía y crear un vínculo emocional con ellos. Además, la educación del cliente y la empatía emocional influyen de manera diferente en la entrega de comentarios y en el grado en que los clientes siguen las instrucciones. Este estudio contribuye a la literatura, al promover una visión holística sobre los factores que influyen en la participación del cliente y su efectividad en la SIC.

PALABRAS CLAVE | *Servicios intensivos en conocimiento, efectividad del servicio, participación del cliente, empatía emocional, encuesta.*

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INTRODUCTION

In knowledge-intensive services (KIS), such as financial consulting or architecture, professionals use their knowledge to develop a customized solution that meets their customers' demands or solves their problems (Bettencourt, Ostrom, Brown, & Roundtree, 2002; Santos & Spring, 2015). The service provider must know the customer's needs and understand how they change (Santos & Spring, 2015). For this reason, customer participation is essential. Customers participate by informing their service provider of their needs and by providing feedback (Eisingerich & Bell, 2006). Customers must also perform activities and, therefore, it is important for them to follow instructions given by the service providers (Dellande, Gilly, & Graham, 2004).

Service providers must educate the customer by explaining concepts and providing information to help them understand the service (Eisingerich & Bell, 2006). Clients with greater understanding tend to become more engaged (Bell & Eisingerich, 2007; Eisingerich & Bell, 2008; Santos & Spring, 2015). Service providers with greater emotional empathy, i.e., greater ability to understand the client's emotions, problems and feelings (Lin, Yang, & Huang, 2016), will deliver more courteous service (Wieseke, Geigenmuller, & Kraus, 2012), thus encouraging customer engagement due to the closeness of the relationship (Fang, Palmatier, & Evans, 2008).

Studies on customer and service provider actions indicate that those actions can increase the level of service quality (Dong, Sivakumar, Evans, & Zou, 2015), as well as loyalty (Auh, Bell, McLeod, & Shih, 2007; Eisingerich & Bell, 2006, 2008; Howcroft, Hamilton, & Hewer, 2007) and satisfaction (Dong et al., 2015; Eichentopf, Kleinaltenkamp, & Stiphout, 2011).

However, it is not well understood whether the actions of customers and service providers contribute to KIS effectiveness (Dellande et al., 2004). Most studies explore gains related to customer satisfaction and loyalty (Dong et al., 2015; Eisingerich & Bell, 2006, 2008). Therefore, it is not known whether the actions of customers and service providers generate greater satisfaction and loyalty due to the service's results or the relationship.

Studies also take a restricted view of the contribution of both to service effectiveness. Some focus on the implications of customer engagement, without considering the actions of service providers (Dellande et al., 2004; Eichentopf et al., 2011; Kelley & Donnelly, 1990; Larsson & Bowen, 1989). Others take into account the role of service providers in customer education, though focusing only on how customers follow instructions (Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006, 2008; Evans, Stan, & Murray, 2008; Howcroft et al., 2007; Kelley & Donnelly, 1990; Larsson & Bowen, 1989). Therefore, there is the lack of a broader view of the connection between the actions of both, and whether those actions contribute to improving effectiveness.

The goal of this study was to analyze the relationship between customers' and service providers' actions and KIS effectiveness. A theoretical model was designed to capture how the service provider's emotional empathy and education actions affect the way the customer provides feedback and follows instructions, and the relationship between customers' and service providers' actions and service effectiveness. Data were collected through a survey with 106 customers of personal trainers, physiotherapy, Pilates and Global Postural Reeducation (GPR) to test the hypotheses.

THEORETICAL FRAMEWORK

Knowledge-intensive Services (KIS)

KIS consist in the delivery of professional activity used to create, accumulate and disseminate knowledge in order to fulfill customers' needs in a customized way by meeting demands or solving problems (Bettencourt et al., 2002; Santos & Spring, 2015). The delivery of such services begins with a customer presenting his need to the service provider (Santos & Spring, 2015). The latter, based on knowledge, diagnoses the situation and proposes a solution. If the customer agrees with the presented solution, then the service provider puts it into practice. Three characteristics are relevant to describe such services.

First, the service provider must have information (Muller & Zenker, 2001), experience and relational skills to understand the customer's need, offer a solution and maintain the necessary contact with the customer (Davenport, Jarvenpaa, & Beers, 1996). Second, the solution is customized and cannot be resold without adaptation (Muller & Zenker, 2001). Finally, the customer must provide information about his expectations (Bettencourt, 1997; Eisingerich, Auh, & Merlo, 2014). During the period the service is delivered, the customer also needs to tell the service provider about how his demand changes (Santos & Spring, 2015), assist the service provider in making decisions (Yim, Chan, & Lam, 2012) and perform activities that depend on him for implementing the solution (Bettencourt et al., 2002; Yim et al., 2012). If the service provider is unable to encourage this participation, he will face a challenge to understand the customer's needs. However,

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the concept of customer participation is broad, without a clear definition of its scope and boundaries (Dong & Sivakumar, 2017).

Various services can fit into this classification, such as training, guidance and consultancy, design and architecture and medical services (Nordenflycht, 2010); other healthcare services, such as physiotherapy, can also be considered KIS. These services depend on the provider's knowledge to create a customized diagnosis and a treatment plan, and must also be adjusted according to advances in patients' situation.

Customer Participation Actions in KIS

Customer participation in KIS can take place during service (Santos & Spring, 2015). Customers can perform two main actions. The first is to follow the instructions given by the professional (Dellande et al., 2004), since the service provider has knowledge to help in achieving goals. They can also act by providing feedback on results (Bettencourt, 1997), so that the professional can adjust the service to his needs; thus, the customer acts by providing information so that the service provider can create the appropriate solution (Aarikka-Stenroos & Jaakkola, 2012). It is worth noting that customers can praise or indicate points for improvement, and the service provider can use both types of comment to adapt his service.

Thus, in the case of KIS, the customer can perform two types of actions: giving constructive suggestions (feedback) to the service provider (Eisingerich & Bell, 2006) and following the instructions given (Dellande et al., 2004). These two customer actions contribute to KIS effectiveness (Dellande et al., 2004). However, the customer does not always provide feedback or follow instructions correctly. To do so, he needs to be aware of his role (Bettencourt et al., 2002; LengnickHall, 1996; Mills & Morris, 1986).

The service provider plays an important role in encouraging customer participation. He needs to educate the customer to participate by imparting knowledge of both the customer's responsibility during the service and of the activities to be performed, even when they are not together (Dellande et al., 2004). This prevents problems with unclear facts and reduces the possibility of criticism, since both parties agree on their responsibilities. The literature shows that when the service provider educates the customer, the latter is more likely to participate and express his opinions (Aarikka-Stenroos & Jaakkola, 2012; Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006; Evans et al., 2008; Grönroos, 2008; Howcroft et al., 2007; Kelley & Donnely, 1990; Santos & Spring, 2015). It also describes the importance for the service provider to have an empathic relationship with his customers (Bowman, Heilman, & Seetharaman, 2004).

However, while the literature shows the contribution of customer actions to effectiveness, and that education actions performed by service providers encourage customer participation, the effect of actions performed by service providers for effectiveness is unknown; nor is it known whether customers' and service providers' actions complement each other. Next, we formulate the study's hypotheses to better explore this issue.

HYPOTHESES FORMULATION

The Importance of Customer Actions for KIS Effectiveness

The concept of effectiveness is related to the achievement of goals. In KIS, effectiveness is associated with delivery of a solution that meets the needs of the customer, whose participation affects effectiveness (Tuli, Kohli, & Bharadwaj, 2007). Thus, it is reasonable to evaluate results from the customer's perspective, i.e., by asking the consumer about his expectations and opinions regarding the results (Dellande et al., 2004), and about his experiences with the service (Edvardsson, 2005; Klaus & Maklan, 2012). His opinion is essential to understand if the results were achieved (Berry, Wall, & Carbone, 2006).

Providing feedback and following instructions can contribute to service effectiveness (Dellande et al., 2004) for different reasons. By providing feedback and information about their preferences, customers contribute to the development of a plan in line with their needs and give service providers the opportunity to improve services in the course of their delivery (Santos & Spring, 2015). In addition, some activities can only be performed by the customer and, when the instructions are followed, there is a greater chance of success. As a result, customers can perceive failures and ask for help to solve them (Bettencourt et al., 2002). Both customer actions in KIS seem to be essential for greater effectiveness. Therefore, we formulate two research hypotheses:

> H1a: The customer's act of following instructions is positively associated with greater service effectiveness.
>
> H1b: The customer's act of providing feedback is positively associated with greater service effectiveness.

The Service Provider's Actions: The Role of Customer Education

Customer education takes place when service providers explain complex concepts to customers and provide suitable information to help them understand the service (Eisingerich & Bell, 2006). Service providers can present success cases in which they show events that were successful due to participation (Kelley & Donnely, 1990). Customer education aims to increase the level of knowledge, so that the customer feels motivated and able to participate (Eisingerich & Bell, 2006).

Customer education actions generate greater interaction with the service provider and greater clarity to follow the instructions (Bowman et al., 2004), even when they are not together. By understanding the service and what is expected of him, the customer is better able to provide relevant information and feedback. The literature shows that these education actions can lead customers to provide feedback and follow instructions, mainly because such actions increase their level of confidence in participating and expressing their opinion (Aarikka-Stenroos & Jaakkola, 2012; Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006; Evans et al., 2008; Grönroos, 2008; Howcroft et al., 2007; Kelley & Donnely, 1990; Santos & Spring, 2015). Therefore, the following hypotheses were proposed:

> H2a: Customer education in KIS is positively associated with the customer's act of following instructions.

> H2b: Customer education in KIS is positively associated with the customer's act of providing feedback.

Educating the customer makes it clearer to him how his actions can contribute to the achievement of goals and to service effectiveness. However, an improvement in effectiveness will only take place if the customer provides more feedback and follows the instructions. In other words, the customer's actions mediate the relationship between education actions and service effectiveness (Santos & Spring, 2015). It is not enough for the customer to know his role, he needs to follow the instructions (Bowman et al., 2004) to achieve the objectives more easily. In addition, the service provider will only be able to obtain better information for the service and provide a better solution to the customer's needs if the customer provides feedback and updates on his own situation. Thus, the following hypotheses were suggested:

> H3a: The customer's act of following instructions mediates the relationship between customer education and service effectiveness;

> H3b: The customer's act of providing feedback mediates the relationship between customer education and service effectiveness.

The Service Provider's Actions: The Role of Emotional Empathy

The literature defines empathy as cognitive and emotional. The former is the ability to understand the mental state of others, which helps predict the next steps and identify whether there is a lie in the relationship (Clark, Murfett, Rogers, & Ang, 2016; Lee, 2014; Pizam, 2015; Tran et al., 2013; Wieseke et al., 2012). Emotional empathy is defined as understanding of emotions, problems and feelings (Lin et al., 2016). This study used the service provider's emotional empathy as perceived by the customer.

When the service provider has emotional empathy for the customer, he is able to identify and classify consumers based on their needs, emotions, feelings and non-verbal signals (Lin et al., 2016). Thus, he can provide customized guidance that makes more sense to customers. The way in which the service provider conducts the relationship is essential to guarantee the customer's effectiveness in following the instructions (Bowman et al., 2004). By providing assertive information, the customer's chances of following instructions are increased. When the service provider pays attention to customers' emotions, he is able to get them to better follow the provided guidance (Dellande et al., 2004).

Consumers often want the person serving them to connect with their situation, and not just listen to their problem, even if that does not result in the solution to their need (Gorry & Westbrook, 2011). Since the service provider's empathy can arouse feelings such as affection and generosity (Lee, 2014), it leads him to behave in a more benevolent and caring way. An emotional connection can then be created between the parties (Development, Hoffman, & York, 2008). Thus, the following hypotheses were proposed:

> H4a: The service provider's emotional empathy is positively associated with the customer's act of following instructions.

> H4b: The service provider's emotional empathy is positively associated with the customer's act of providing feedback.

A greater emotional empathy from the service provider also leads him to be more interested in the customer's needs, thus generating greater knowledge and understanding to achieve the goals (Lin et al., 2016). This makes the service provider more likely to offer a more suitable and thus more effective solution. When perceived by the costumer, the service provider's emotional empathy can create a connection between them, and the greater the closeness, the greater the likelihood of reliable solutions (Evans et al., 2008) and improved effectiveness (Eisingerich & Bell, 2008). Thus, the service provider's emotional empathy might

be expected to contribute to effectiveness. However, even if the bond is created, to achieve the established objectives and find the best solution for his needs, the customer must perform the actions suggested by the service provider and provide information so that the latter can continuously adapt the service to former's needs. Thus, we present the last two hypotheses in this study:

H5a: The customer's act of following instructions mediates the relationship between the service provider's emotional empathy and service effectiveness.

H5b: The customer's act of providing feedback mediates the relationship between the service provider's emotional empathy and service effectiveness.

Figure 1 presents the theoretical model tested in this study.

Figure 1. Theoretical Model
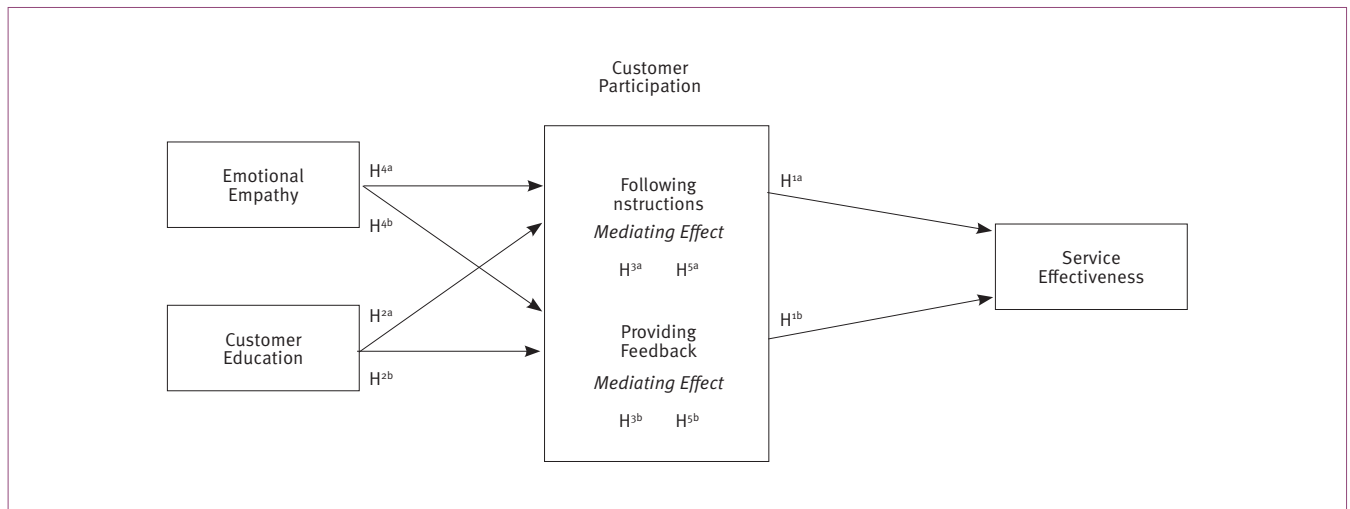
METHODOLOGY

Data were collected through a survey in order to test the hypotheses formulated about the relationships between providing feedback, following instructions, educating the client (Bell & Eisingerich, 2007; Dellande et al., 2004; Eisingerich & Bell, 2006), emotional empathy (Lin et al., 2016) and service effectiveness (Dellande et al., 2004).

Population and Sample

The studied population was formed by users of KIS, specifically in the fields of physiotherapy, personal training, RPG and Pilates. These services can be considered KIS, as well as other diagnostic services provided by doctors in clinics and hospitals, since their development depends on the specific knowledge of the professional who serves the customer. In addition, in these services, the training program developed by the professional is customized, and its creation depends on information that the customer must provide about his expectations, so that the solution can be aligned with his demand. Finally, during the

service delivery period, the customer also needs to inform how his demands change over time so that the service provider can adjust the training program.

These services are also relational, thus allowing customers to provide feedback and service providers to empathize with customers. Such similarities allowed using these different services to test the model. Since all studied fields are related to a specific segment in the healthcare industry, a certain homogeneity is expected between the type of interaction between customers and service providers, feedbacks and education actions, and the way customers follow instructions, thus restricting the scope of results to this type of KIS.

The collection instrument had three sections. The first provided general guidance on how to answer the questionnaire; it also allowed identifying the type of service and the frequency of use. The second section contained a scale to measure customer participation (following instructions and providing feedback), customer education actions, empathy and service effectiveness. The questions in this section were presented at random. The questionnaire's goal was to capture the customer's perception of each construct. Thus, the model was tested according to the

customer's perception. It was administered through virtual and physical tools. The third section contained questions about respondent characteristics.

The final questionnaire was made available on social networks, on channels such as LinkedIn, WhatsApp, e-mail and Facebook, for a period of two months. The importance of the study was described in the data collection instrument, and an individual presentation was also made to the people who responded in person. Collection was also conducted in gyms and rehabilitation centers. Therefore, the sample is non-probabilistic and does not allow generalizing the study's results. We obtained 94 responses electronically and 23 from paper questionnaires, which resulted in a final sample of 117 questionnaires. Student's t-tests for comparison of means between two samples indicated that there was no significant difference (p-value› 0.05) between the data collected through the electronic and physical questionnaires. The responses were screened and 11 questionnaires were excluded from the analysis as they presented a standard deviation between the responses below 0.5. Thus, the final sample consisted of 106 questionnaires. Table 1 shows the characteristics of the sample.

Most respondents are personal training users (59.2%, see Table 1). Analyses of variance were conducted to identify differences between the scales according to the type of service, and did not indicate significant differences between the variables (p› 0.05). These tests allowed the analyses to be carried out with the total sample.

Scales

The questionnaire was developed based on scales validated in previous studies. The service effectiveness scale was adapted from the study of Dellande et al. (2004), in which the authors explored the opinion of customers of medical services regarding the achievement of goals, a concept similar to that used in our research. However, that study assessed issues related to the state of customers (e.g., disposition) and the continued achievement of goals. For this reason, we chose to work with the items that evaluated only the achievement of established goals.

Customer participation as defined in this study seeks to capture whether the customer follows the instructions given by the service providers and whether he provides feedback. The scale relating to following instructions was obtained from the study of Dellande et al. (2004). The scales on customer feedback and customer education were obtained from the study of Eisingerich and Bell (2006). Finally, the empathy scale was

adapted from the study of Lin et al. (2016), who assessed the perception of empathy in the customer's opinion. With regard to that scale, we decided to work only with the items that measured the extent to which the customer perceived that the provider paid attention to his emotions, feelings and body languages (emotional empathy).

Table 1. **Sample Characteristics**

Sample Characteristics	Classes	Sample (n=106) Freq. %
Gender	Male	37.9
	Female	62.1
Age	31 or younger	29.2
	31-45	47.5
	46-64	21.4
	65 or older	1.9
Marital Status	Single	43.7
	Married	47.6
	Other	8.7
Education	Secondary education degree	28.4
	Undergraduate degree	31.4
	Graduate degree	40.2
Type of Service	Personal training	59.2
	Physiotherapy and GPR	19.4
	Pilates	21.4
Relationship Length	Less than 1 year	56.3
	More than 1 year	43.7
Frequency of Use	Every day	12.6
	3 times a week	27.2
	Twice a week	42.7
	Once a week or less	17.5

The scales were translated into Portuguese and adapted. Once the data were collected, we performed descriptive statistics analysis and an exploratory factor analysis (EFA) with varimax rotation in order to identify the dimensional structure of data (Table 2). EFA had a good fit (KMO = 0.82), and the Bartlett test was significant (p ‹0.01). The analysis of eigenvalues (above 1)

suggested the existence of five factors responsible for 75.4% of the extracted variance. A variable from the customer education scale was eliminated as it had a 0.66 load with its factor, and 0.41 with the factor that contained the empathy variables.

Table 2. **Scales – Descriptive analysis and factor loadings of the confirmatory factor analysis**

Construct	Scales	Mean	Standard deviation	Factor loading CFA*
Service Effectiveness	I am succeeding in achieving the goals I initially established	5.7	1.1	.91
	I will succeed in achieving the goals I initially established	6	1.1	.84
	I feel I have improved my weight/posture since I started using this professional's service	5.8	1.2	.70
Following Instructions	I continue to follow this professional's instructions even when I am not with him	5.4	1.2	.77
	To achieve my goal, I follow all tips from this professional	5.7	1.0	.74
	I follow this professional's instructions about what must be done before and after the exercises, even when he is not around	5.7	1.1	.74
	When I am alone, I continue to follow the instructions about posture/stretching and other instructions he gave in order to keep the results of the performed exercises	5.4	1.2	.75
Providing Feedback	I make constructive suggestions so that this professional can improve his services	5.4	1.3	.64
	When I have a problem related with this professional, I provide feedback so that he can improve the quality of service	5.6	1.2	.86
	When this professional defines exercises that I like and that bring me results, I provide feedback to let him know	6.1	1.1	.67
Customer Education	This professional explains the technical concepts of the recommended exercises, and he always indicates the best ways	5.7	1.3	.80
	This professional always provides the information I need about the exercises	5.9	1.1	.81
	This professional always explains the pros and cons of the exercises he recommends	5.6	1.3	.81
Emotional Empathy	I feel that this professional pays attention to my emotions, feelings and body language	5.3	1.3	.86
	This professional shows concern about feelings I don't verbalize	5.1	1.4	.98
	This professional pays attention to my feelings	4.9	1.5	.68

* significant at the 0.01 level

Analysis of Validity and Reliability

Confirmatory factor analysis was performed to assess the scales' validity and reliability using software AMOS. Table 3 shows the measurement model's fit indices. The data indicate the model's good fit.

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Table 3. **Model Fit Indices**

Indices	Measurement Model	Reference Standard (Kline, 2005)
x2 - Chi-square	165.4	**
DF – Degrees of Freedom	94	**
TLI	0.90	›0.9
CFI	0.91	›0.9
IFI	0.92	›0.9
RMSEA	0.08	‹0.08
x2 – Normed Chi-square	1.76	≤3.00

Then, the analysis of convergent, discriminant and reliability validity was carried out. All variables had a factor load above 0.5 and were significant at the level of 0.01 (see Table 2). The average variance extracted (AVE) for all constructs was also above 0.5. Thus, the scales showed convergent validity. To assess discriminant validity, squared correlations between constructs were calculated and compared with the average variance extracted (Table 4). All squared interconstruct correlations are inferior to the AVE (in bold, diagonal), thus indicating that there is discriminant validity between all constructs.

Table 4. **Composite reliability (CR), average variance extracted (AVE) and squared interconstruct correlation**

Constructs*	CR	Emotional Empathy	Customer Education	Providing Feedback	Following Instructions	Service Effectiveness
Emotional Empathy	0.84	**0.65**				
Customer Education	0.85	0.25	**0.66**			
Providing Feedback	0.77	0.27	0.26	**0.54**		
Following Instructions	0.84	0.03	0.24	0.11	**0.56**	
Service Effectiveness	0.86	0.09	0.13	0.10	0.28	0.67

*AVE in the diagonal

Finally, composite reliability was calculated, which was greater than 0.7 for all cases (Table 4). Together, the analyses indicated the scales' validity and reliability. Due to the sample's size, we chose to work with the scales calculated for each construct. To proceed with the analyses, we used AMOS to calculate the value of the factors (scales) and save them in the database.

RESULTS

We chose path analysis to test the hypotheses. Before this analysis, we assessed the impact of the control variables. To that end, a linear regression was calculated in which the variable service effectiveness was the dependent variable, and the control variables were the independent variables. The control variables were: gender, age, marital status, education, service type, frequency of use and length of relationship. Dummy variables were created to represent the classes of control variables (Table 1). The regression analysis showed an R^2 of 5.3%, and the analysis of variance was not significant (p = 0.91), thus indicating the lack of a relationship between at least one control variable and service effectiveness.

Since no control variable was significant, the control variables were not included in the path analysis. The model had a good fit, since all indicators were above the reference standards (Table 5). The R^2 for service effectiveness was 0.51. The R^2 values for the variables "following instructions" and "providing feedback" were 0.51 and 0.30, respectively. The square values indicated that the model's independent variables explained a relevant portion of the variability of the variables in question.

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Table 5. **Model fit indices for path analysis**

Indices	Model Fit	Reference Standard (Kline, 2005)
x^2 - Chi-square	2.68	**
DF – Degrees of Freedom	1	**
TLI	0.92	>0.9
CFI	0.99	>0.9
IFI	0.99	>0.9
x^2 – Normed Chi-square	2.68	≤3.00

After analyzing the model's goodness of fit, the regression coefficients between constructs were evaluated to test the proposed hypotheses (Figure 2). The relationship between following instructions and service effectiveness proved significant, but the same was not true for the relationship between providing feedback and service effectiveness. Thus, there is statistical evidence supporting H^{1a}, but not H^{1b}.

Figure 2. **Hypotheses Test**
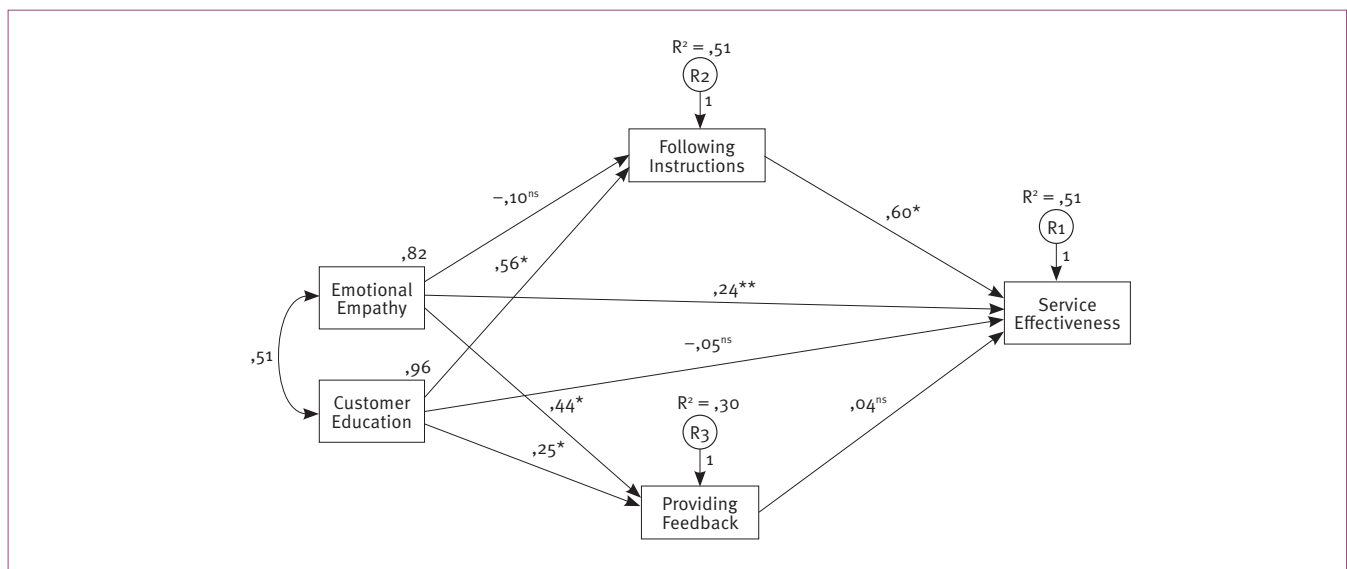
*p<,01; **p<,05; ns= not significant_

The results also indicate that customer education actions are positively associated with providing feedback and following the service provider's instructions, thus proving H^{2a} and H^{2b}.

To test the hypothesis that following instructions and providing feedback mediate the relationship between education and service effectiveness (H^{3a} and H^{3b}), we estimated the combined effect of the relationship between customer education and the mediating variables (following instructions and providing feedback) (A) and the mediating variables and service effectiveness (B). To perform the estimations, we used bootstrapping with generation of 2,000 samples, with software AMOS. For the mediating variable "following instructions", the combined effect (AxB) was 0.33 and significant (p <0.01). For the mediating variable "providing feedback", the combined effect of the relationship between customer education and providing feedback (A) and between providing feedback and service effectiveness (B) was 0.01 (p = 0.76). Thus, H^{3a} was confirmed, but it was not possible to confirm H^{3b}. We also estimated the direct effect between education actions and service effectiveness (C), which was not significant (p = 0.62). This finding indicates a total mediation by the variable "following instructions" in the relationship between customer education and service effectiveness.

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Emotional empathy was positively associated with providing feedback (p <0.01), but it was not related to the customer's act of following instructions, thus confirming H[4a], but not H[4b]. Finally, the hypothesis of mediation of following instructions and providing feedback in the relationship between emotional empathy and service effectiveness (H[5a] and H[5b]) was tested in the same way that H[3a] and H[3b] were tested. The combined effect of the relationship between empathy and following instructions (A) and between following instructions and service effectiveness (B) was -0.06 and not significant (p = 0.16). The combined effect of the relationship between empathy and providing feedback (A) and between providing feedback and service effectiveness (B) was 0.017 and not significant (p = 0.78). Thus, neither H[5a] nor H[5b] was confirmed. However, a direct relationship between emotional empathy and service effectiveness was identified, and it proved significant (b = 0.24; p <0.05). Table 6 summarizes the hypotheses.

Table 6. **Summary of Hypotheses**

Hypothesis	Conclusion
H1a: The customer's act of following instructions is positively associated with greater service effectiveness.	confirmed
H1b: The customer's act of providing feedback is positively associated with greater service effectiveness.	not confirmed
H2a: Customer education in KIS is positively associated with the customer's act of following instructions.	confirmed
H2b: Customer education in KIS is positively associated with the customer's act of providing feedback.	confirmed
H3a: The customer's act of following instructions mediates the relationship between customer education and service effectiveness;	confirmed
H3b: The customer's act of providing feedback mediates the relationship between customer education and service effectiveness.	not confirmed
H4a: The service provider's emotional empathy is positively associated with the customer's act of following instructions.	not confirmed
H4b: The service provider's emotional empathy is positively associated with the customer's act of providing feedback.	confirmed
H5a: The customer's act of following instructions mediates the relationship between the service provider's emotional empathy and service effectiveness.	not confirmed
H5b: The customer's act of providing feedback mediates the relationship between the service provider's emotional empathy and service effectiveness.	not confirmed

DISCUSSION

The literature has shown that customer participation is linked to satisfaction, trust and loyalty (Eisingerich & Bell, 2006; Fang et al., 2008; Jamal, 2009; Reichheld & Sasser, 1990; Sabharwal, Soch, & Kaur, 2010; Zeithaml, Berry, & Parasuraman, 1996). Our study shows that customer engagement also creates a greater sense of effectiveness in KIS customers. Greater effectiveness is related only to the customer's act of following instructions, in line with the study of Dellande et al. (2004). In other words, in the case of the studied services, the more individuals follow the directions, such as keeping the correct posture when alone and keeping a balanced diet, the greater the chances of achieving their goals regarding weight loss or improvement in quality of life. On the other hand, providing feedback does not contribute to achieving these goals. The literature, however, points out that feedback is important for greater customer loyalty (Eisingerich & Bell, 2006). Therefore, it may be important for improving the relationship between the parties, but it is not enough to lead the customer to achieve effectiveness.

This study contributes to the literature by providing an integrated view on customer participation in KIS and on the role of service providers. Research has hitherto focused only on customers' actions (Dellande et al., 2004; Eichentopf et al., 2011; Kelley & Donnely, 1990; Larsson & Bowen, 1989) or addressed only one form of customer action (Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006, 2008; Evans et al., 2008; Howcroft et al., 2007; Kelley & Donnely, 1990; Larsson & Bowen, 1989). This study identified that providing feedback and following instructions are antecedents and have different implications. The results indicate that providing feedback is associated with the

service provider's emotional empathy and customer education actions, but not with greater effectiveness. The fact that customers follow instructions is related to better effectiveness, but it seems to derive only from the service provider's education actions, and not from his empathy. Therefore, in the case of the studied services, we can say that, by being empathetic, personal trainers, Pilates instructors and other similar professionals are more likely to get their customers to provide suggestions for improving their services, even if that does not translate into better results. On the other hand, they will only be able to make their customers achieve their personal goals if they provide detailed guidance on how they should act out of class.

Finally, this study empirically assesses the role of the service provider's empathy, and points out that it is associated with more feedback being provided and with the achievement of goals. Thus, if the service provider is attentive to customers' emotions and feelings, he will motivate them to say whether the service is good or bad and perceive results more positively. Thus, this study contributes to the literature by highlighting the importance of relational aspects in the delivery of KIS; it also brings to the discussion the need to consider the service provider's intrinsic characteristics. Client education has been addressed in different contexts in the literature (Auh et al., 2007; Eichentopf et al., 2011; Eisingerich & Bell, 2006, 2008; Evans et al., 2008; Howcroft et al., 2007; Kelley & Donnely, 1990; Larsson & Bowen, 1989), but this study shows the importance of the service provider's empathy, and new studies should continue to research other actions of relevance by service providers.

This study has also managerial implications for KIS professionals. They should take the time to explain to the customer how to act, even when they are not together, and emphasize the importance of activities performed in the service provider's absence for achieving results. In our survey, people who knew the importance of certain movements continued to perform them even in the service provider's absence. Today, with social networks, contact between service providers and customers is easier and quicker. Thus, the former can develop active contact strategies in which they send messages with reminders and suggestions for activities.

This type of contact also promotes the relationship, whereby both parties become closer and the customer perceives the service provider's empathy towards his needs. When the client feels confident and develops social ties with the service provider, he increases his willingness to participate and express his opinion, thus providing feedback (Eisingerich & Bell, 2006). This relationship can also increase the customer's tolerance for mistakes.

Considering this study's findings regarding empathy, the service provider is advised to behave in a way that demonstrates his empathy. Insofar as he perceives openness on the part of the customer, it is important to ask about personal issues, sympathize with stories and events, assess the customer's mood and adapt the service to the situation. It is known that individuals have different levels of empathy (Lee, 2014), but empathy can be developed through training on how to interact with customers according to the service provider's perception (Lee, 2014). Thus, providers with difficulty relating to others should invest in training.

CONCLUSION

The results show that educating customers is not enough. Service providers need to be empathetic and create an emotional bond with them. Empathetic service providers who educate their customers encourage more participation and therefore achieve better results. This study shows that there are differences in the way customers participate, and a better understanding of customer participation in KIS requires assessing the different dimensions of participation. These findings are relevant and open new avenues for research, in addition to directing service providers' behavior so that they can achieve better results.

The people who answered the questionnaire are users of four types of services (i.e., physiotherapy, personal training, Pilates and GPR), all linked to healthcare, and most respondents use personal training services. Thus, this study's results are limited to that context. In addition, the study is based on a non-probabilistic sample, which does not allow generalizing its results. Although the contributions are relevant, future studies should research other services, such as financial consulting, to identify whether the findings are applicable to them.

Future studies should explore in greater detail other variables linked to the relationship between the parties and how they influence participation. Since service providers' emotional empathy proved relevant, and one of the premises adopted is that this occurred because empathy strengthened the relationship, it makes sense to study the relationship further. There are other strategies to encourage participation, such as socializing and problem management. The service provider can socialize with the customer by taking him out to observe cases of other customers, similar to his own, or by creating events to interact with him out of service hours, thus motivating his participation (Evans et al., 2008). In problem management, the service provider solves a particular situation, and the customer feels that his needs are taken into account. These actions reinforce the relationship, thus leading the customer to participate more (Eisingerich &

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Bell, 2006; Santos & Spring, 2015). New studies should explore the relationship between the service provider's empathy and these strategies, taking into account the most debated strategy in the literature – educating the customer. Future research should explore factors that impede the customer's effective participation towards the expected results. Effectiveness was treated here as the perception of results by the customer. In future studies, the relationship between real effectiveness and the actions of customers and service providers could be investigated. This would demonstrate whether these actions have a real effect or just influence the customer's perception of results.

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AUTHORS' CONTRIBUTIONS

ARTICLES

HIGH-PERFORMANCE LEVEL AND TECHNOLOGY MANAGEMENT AMONG WINERY FIRMS IN THE WINE INDUSTRY CLUSTER OF BAJA CALIFORNIA: A FSQCA APPROACH

Nível de alto desempenho e gerenciamento de tecnologia entre empresas vinícolas no cluster da indústria do vinho da Baixa Califórnia: Abordagem FSQCA

Alto nivel de desempeño y gestión tecnológica en las empresas vitivinícolas del clúster vinícola de Baja California: Un enfoque fsQCA

ABSTRACT

This paper analyzes how wineries in the wine industry cluster of Baja California in Mexico achieve a high-performance level and engage in technology management. The study uses the fuzzy-set qualitative comparative analysis approach to inquire into the necessary and sufficient conditions for firms in this industry cluster to attain a high-performance level. Our research hypothesis suggests that the presence of some resources (conditions) in the wine industry cluster of Baja California is a necessary and sufficient condition (set-theoretic relations) to achieve a high-performance level (outcome). Accordingly, this study examines the causal complexity observed in set-theoretic relations and high-performance levels in the wine industry cluster of Baja California. An important finding in this research is that winery firms in Baja California do not need to develop interdependent innovations to achieve a high-performance level. However, research and development efforts, good supplier relations, and production capacity are necessary conditions to achieve a high performance level in this cluster.

KEYWORDS | High performance level, technology management, wine industry, fuzzy-set qualitative comparative analysis, Baja California.

RESUMO

Este artigo analisa o nível de alto desempenho e o gerenciamento de tecnologia entre as empresas de vinificação do cluster da indústria vinícola da Baixa Califórnia, no México. O estudo usa a abordagem de análise comparativa qualitativa de conjunto difuso (fsQCA) para investigar as condições necessárias e suficientes para atingir um nível de alto desempenho entre as empresas desse cluster da indústria. A hipótese sugere que a presença de alguns recursos (condições) no cluster da indústria vinícola da Baixa Califórnia é condição necessária e suficiente (relações teóricas) para alcançar um nível de alto desempenho (resultado). Nesse sentido, este estudo examina a complexidade causal observada nas relações teóricas dos conjuntos e no nível de alto desempenho no cluster da indústria vinícola da Baixa Califórnia. Uma descoberta importante nesta pesquisa é que as empresas de vinhedos da Baixa Califórnia não precisam desenvolver inovações interdependentes para alcançar um nível de alto desempenho. No entanto, esforços de pesquisa e desenvolvimento, boas relações com fornecedores e capacidade de produção são condições necessárias para atingir um nível de alto desempenho.

PALAVRAS-CHAVE | *Nível de alto desempenho, gerenciamento de tecnologia, indústria de vinhos, análise comparativa qualitativa de conjunto difuso, Baixa Califórnia.*

RESUMEN

Este artículo analiza el alto nivel rendimiento y la gestión tecnológica en las empresas vitivinícolas del clúster industrial vinícola de Baja California en México. El estudio utiliza el análisis cualitativo comparado (fsQCA, por sus siglas en inglés) para determinar las condiciones necesarias y suficientes para alcanzar un alto desempeño entre las empresas de este clúster industrial. La hipótesis en esta investigación sugiere que la presencia de ciertos recursos (condiciones) en el clúster industrial vitivinícola de Baja California son condiciones necesarias y suficientes (relaciones de conjuntos teóricas) para alcanzar un alto nivel de rendimiento (resultado). Este trabajo analiza la complejidad causal que existe en relaciones de conjuntos teóricas y un alto nivel de desempeño en el clúster industrial vitivinícola de Baja California. Un hallazgo importante en esta investigación es que las empresas vitivinícolas de Baja California no necesitan desarrollar innovaciones conjuntas para alcanzar un alto nivel de desempeño. De igual forma, los esfuerzos para la investigación y desarrollo, las relaciones con proveedores y la capacidad de producción son condiciones necesarias para alcanzar un alto nivel de desempeño en este clúster.

PALABRAS CLAVE | *Nivel de alto desempeño, gestión tecnológica, industrial vitivinícola, análisis cualitativo comparado y conjuntos difusos, Baja California.*

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INTRODUCTION

In their 2012 paper entitled *"Is Baja California, Mexico, wine industry a cluster?"* Trejo-Pech, Arellano-Sada, Coelho, and Weldon (2012) ask whether the winery region of Baja California in Mexico can be considered a wine industry cluster. These authors concluded that Baja California must be considered a successful industry cluster (Trejo-Pech et al., 2012). Accordingly, the theoretical perspective adopted in this research is the industry cluster approach (Porter, 1998a, 1998b).

The wine industry in Mexico is made up of more than 216 wineries and 70 commercializing companies (Góngora-Rosado, 2016). Wine grapes are grown on 6,474 hectares of vineyards in 11 Mexican states (El Universal, 2018a; González-Andrade, 2015). However, Baja California is the most important producer of grapevines, accounting for around 60% (3,735 hectares) of the total vineyards cultivated in Mexico (González-Andrade, 2015). A Mediterranean climate makes Baja California the region best suited to produce high-quality grapes, supplying more than 85% of total Mexican wine through 350 wine labels and 2 million cases equivalent to a value of 378 million Mexican pesos (Consejo Mexicano Vitivinícola [CMV], 2018; González-Andrade, 2015; Secretaria de Fomento Agropecuario [SEFOA], 2011). Ensenada, Tecate, and Tijuana are the most important wine-producing locations in Baja California, where numerous wineries and other supporting firms make up the region's wine industry cluster (González-Andrade, 2015; Trejo-Pech et al., 2012).

The objective of this research is thus to reveal the necessary and sufficient conditions (set-theoretic relations) to achieve a high-performance level (outcome) among winery firms in the wine industry cluster of Baja California. The research method adopted in this study is the fuzzy-set qualitative comparative analysis (fsQCA) that allows integrating into the same analysis qualitative and quantitative methods (set-theoretic relations) that generate a specific outcome (Berger, 2016; Parente & Federo, 2019; Ragin, 2008; Rihoux & Ragin, 2009). The fsQCA approach also contributes to revealing the complex causality between conditions in a small number of cases through determining the necessary and sufficient conditions (set-theoretic relations) that generate a specific outcome (Ragin, 2000, 2008). The research hypothesis is specified in a configurational manner by developing substitution and complementarity logics among conditions that produce the outcome of interest (Parente & Federo, 2019). Therefore, the research question examined in this study is as follows: which are the necessary and sufficient conditions (set-theoretic relations) among winery firms in the wine industry cluster of Baja California that allow a high-performance level (outcome) to be achieved? In this sense, fsQCA methods offer insight into how firms may develop a competitive market advantage (Porter, 1997, 1998a; Porter & Stern, 2001).

LITERATURE REVIEW

The wine industry in Mexico

Winemaking has a long history in Mexico. It is considered the oldest wine-growing region in North America, dating back to 1522 when grapevines were introduced from Spain (Bringas & González, 2004; Covarrubias & Thach, 2015; Meraz-Ruiz, 2015). Nevertheless, the earliest Mexican wines were crafted in 1707, but it was only a few years ago that Mexico started producing, advertising, and marketing wine (Covarrubias & Thach, 2015; Wines of Baja, 2013). Nowadays, several civil associations in Mexico are related to wine production and allied with the International Wine Organization (IWO) to support the production and promotion of high-quality wine (González-Andrade, 2015).

The viticulture in Baja California is an example of how Mexican wineries have developed a high-quality and competitive industry with international recognition (Góngora-Rosado, 2016; Meraz-Ruiz, 2015). However, the viticulture in Mexico continues to be mostly a regional and small-scale industry, with Mexico ranking as the 25th-largest wine producer in the world (García-Fernández, Meraz-Ruiz, & Díaz-Gómez, 2018; Góngora-Rosado, 2016; González-Andrade, 2015). It is Mexico's climate that makes it possible to produce high-quality wine and positions Mexico as an outstanding wine producer and competitor in international markets (Góngora-Rosado, 2016; Meraz-Ruiz, 2015). Examples of successful wine producers in Baja California are *L.A. Cetto, Casa Domecq, Bodegas de Santo Tomás,* and *Monte Xanic* (Covarrubias & Thach, 2015). Indeed, the five-largest wineries from this region account for more than 15% of Mexican wine production (Covarrubias & Thach, 2015). Mexican wineries exported 500,000 cases of wine in 2018, notably to Belize (2%), Canada (4%), Denmark (1%), France (1%), Japan (30%), the United States (51%), and the United Kingdom (2%) (Milenio, 2018). Japan and the United States are the most important markets for Mexican wine. Figure 1 shows Mexico's wine exports by country of destination.

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FSQCA APPROACH | **José Carlos Rodríguez | Mario Gómez | María Aline Manzo**

Figure 1. **Mexico's wine exports by country of destination**
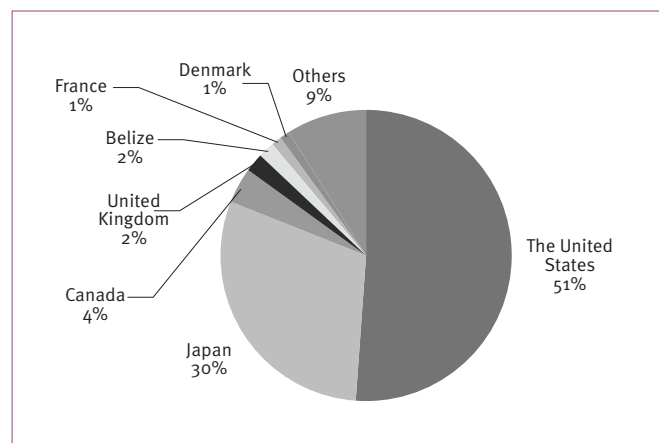
Source: Milenio (2018).

The *Consejo Mexicano Vitivinícola* (Mexican Board of Wine, CMV) has emphasized the importance of the Mexican wine industry in recent years with a growth equivalent to 8% of the total world wine production in 2017 and a remarkable increase in demand in national and international markets (El Conocedor, 2016; García-Fernández et al., 2018)

Grapevine farming is practiced in 11 Mexican states, namely, Aguascalientes, Baja California, Chihuahua, Coahuila, Guanajuato, Nuevo León, Puebla, Querétaro, San Luis Potosí, Sonora, and Zacatecas (Figure 2) (El Universal, 2018a; Meraz-Ruiz & Ruiz Vega, 2016) over a total of 6,474 hectares of vineyards. Nevertheless, 97% out of total grapevine production is concentrated in Aguascalientes, Baja California, Coahuila, Guanajuato, Querétaro, and Zacatecas (Meraz-Ruiz & Ruiz Vega, 2016). Indeed, Baja California accounts for almost 60% of the total vineyards cultivated in Mexico, equivalent to 3,735 hectares (González-Andrade, 2015; Trejo-Pech et al., 2012). Furthermore, Mexican wineries offer 350 wine labels and 2 million cases, equivalent to 2.5 million liters of wine a year (El Universal, 2018a). In 2017, Mexican wine production value was equivalent to 378 million Mexican pesos, while its commercialization value was equivalent to 1,588 million Mexican pesos, and thus the Mexican wine chain value was equivalent to 1,966 million Mexican pesos during the same year (El Universal, 2018a).

However, the main challenge to be addressed by Mexican producers is threefold (Meraz-Ruiz & Ruiz-Vega, 2016): environmental restrictions (e.g., insufficient water in vineyards), the opportunity to get adequate inputs from abroad, and a high concentration in the glass industry. Even if these are enormous tasks, Mexican wine producers are currently offering high-quality labels in national and international markets (García-Fernández

et al., 2018). Nevertheless, winery owners have proposed that the Mexican government support the wine industry through an adequate policy that includes tax discounts, sponsoring, and subsidizing wine production, as well as establishing a regulatory framework to promote, develop, and diffuse wine production through supporting innovation activities (Diario Oficial de la Federación [DOF], 2018; González-Andrade, 2015). Consequently, the Mexican government passed the 2018 *Ley de Fomento a la Industria Vitivinícola* (Act for the Promotion of the Wine Industry) intended to support the competitiveness of Mexican wineries. This initiative projected that wine production would rise by 50% through an increase of 15,000 hectares of cultivated vineyards in ten years (DOF, 2018; Industrial News Baja California [INBC], 2018). Furthermore, the CMV works to standardize the quality of Mexican wine made 100% with Mexican grapes. Finally, winemaking in Mexico profits from soil minerality and salinity; grapevine sweetness; and, crucially, environmental and legal conditions that contribute to the competitiveness of this industry (García-Fernández et al., 2018; González-Andrade, 2015).

Figure 2. **Grapevine producers in Mexico by state**
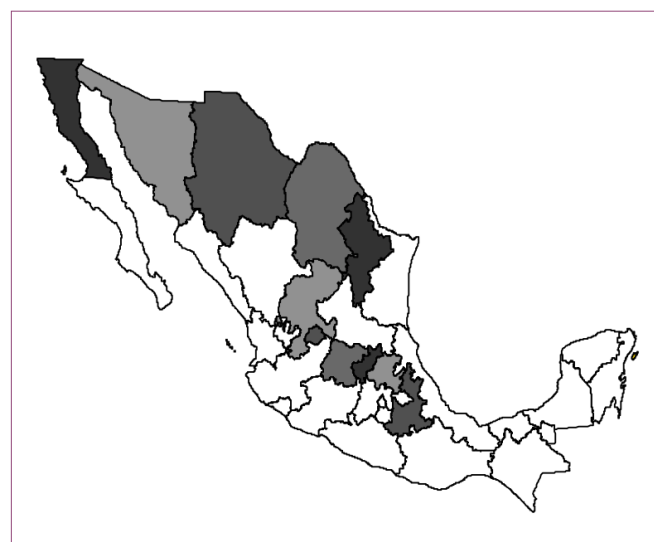
Source: El Universal (2018a).

Theoretical approaches on innovation policy

There are at least four theoretical approaches in the literature on how innovation activity is carried out (Rinkinen & Harmaakorpi, 2018):

- The innovation systems perspective,

- The smart specialization (SmSp) approach,

- The business ecosystem viewpoint,

- The industry cluster approach.

However, each approach responds to specific questions in the analysis of innovation (Rinkinen & Harmaakorpi, 2018). For example, the innovation systems perspective studies innovation as a systemic phenomenon at different levels of analysis: (i) national (Freeman, 1987; Lundvall, 1992; Nelson, 1993), (ii) regional (Cooke, 1992, 1998), and (iii) sectoral/technological (Malerba, 2002). The innovation systems perspective offers insight into how innovation activity is carried out when applying alternative innovation policies (Edquist, 1997). From this perspective, the linkages between information and knowledge flows, investment funding, flows of authority, and networks of partnerships must be included in the analysis (Cooke, 1998). However, market failures and other system imperfections must be at the core of innovation systems analysis because of the need to define suitable innovation policies (Asheim, Smith, & Oughton, 2011; Cooke, 1998; Harmaakorpi, 2006; Jauhiainen, 2009; Smits & Kuhlmann, 2004).

The SmSp concept was primarily developed as an alternative innovation policy approach, stressing the differences between regions when such policies were implemented (e.g., Europe and the United States) (Camagni & Capello, 2013; Foray & Ark, 2007; McCann & Ortega-Argilés, 2013). This perspective is about a targeted use of funding and investment in fields with the most promising innovation potential (e.g., new combinations of resources, and new niches and cross-cutting fields of expertise) (Rinkinen & Harmaakorpi, 2018). SmSp is based on the principles of embeddedness, relatedness, and connectedness (Foray et al., 2012). However, there is no universal innovation policy in the SmSp approach but several independent innovation policies in order for each region to create its appropriate strategy, goals, and action plan (Rinkinen & Harmaakorpi, 2018).

The business ecosystems perspective suggests that innovative firms must be considered as part of an ecosystem (Moore, 1993, 2006). An essential feature in this approach is that firms simultaneously cooperate and compete to co-evolve when developing innovations (Moore, 1993). Indeed, firms contribute to the business ecosystem value network in which value is co-created by all of them (Leviäkangas et al., 2014; Peppard & Rylander 2006). Business ecosystems are defined as *"a type of a business network, a collaboration to create a system of complementary capabilities and companies"* (Moore, 2006). Indeed, there are four stages when developing business ecosystems (Moore, 2006): birth, expansion, leadership, and self-renewal or death. The innovation

policy that follows from this perspective is intended to support cooperation activities among firms within an ecosystem.

Finally, the industry cluster approach demonstrates how firms within a geographic agglomeration may support innovation activity to develop a competitive advantage (Porter, 1998a, 1998b, 2000a, 2000b). It considers the importance of several actors in the process of developing innovation activities. The innovation policy drawn from the industry cluster approach suggests that firms within a cluster must compete and cooperate at the same time. This theoretical approach will be discussed in more detail in the next section.

The industry cluster approach

The industry cluster approach has evolved into a comprehensive stream of literature. This trend arises because of the importance given to clusters and local specialization in academic and political analyses during the last few decades (Cruz & Teixeira, 2010). Industry clusters are defined as *"geographic concentrations of interconnected companies and institutions in a particular field"* (Porter, 1998a, p. 78). This approach analyzes competitiveness and innovation activity among a geographic agglomeration of firms (Martin & Sunley, 2003; Porter, 1998a, 1998b, 2000a, 2000b). It includes many actors and institutions, such as specialized inputs, providers of specialized infrastructure, companies manufacturing complementary products, government agencies, universities, vocational and specialized training providers, and so forth (Porter, 1998a). Indeed, the interface between these interconnected companies and institutions is commonly a source of competitive advantage (Porter, 1998a).

The cluster approach suggests that competitive advantage is found where business units are based and different actors and innovation activities are located (Porter, 2000a, 2000b; Roelandt & Hertog, 1999). Therefore, clusters are formed to benefit from knowledge spillovers, trust, and better coordination for innovation (Maskell, 2001; Porter, 1998a). Indeed, cooperation and competition within a cluster is the driving force determining its dynamics (Bell, 2005; Padmore & Gibson, 1998; Porter, 1998a). Competition increases productivity and innovation through stimulating the formation of new firms, while cooperation establishes the basis of the cluster development (Porter, 1998a). In this regard, firms within a cluster cooperate with other firms typically through hierarchies, and the development of company relationships contributes to diminishing competition when it is necessary to determine long-run profits (Leavy, 1996; Porter, 1998a). Competition and cooperation can coexist because they

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occur on different dimensions between different players (Porter, 1998a).

Finally, the innovation policy drawn from the industry cluster approach stresses the importance of improving productivity and regional economic growth (Porter, 1998b). It seeks to guarantee the possibility of better conditions to access employees, suppliers, specialized information, institutions and public goods, perceptions of emerging buyer needs, innovation opportunities, and so forth (Porter, 1998b, 2000a). Importantly, the concept of industry cluster has not been exempted from some criticisms concerning its definition, theorization, empirical inquiry, and use in policy making (Martin & Sunley, 2003)

THE WINE INDUSTRY CLUSTER OF BAJA CALIFORNIA

A well-known example of a wine industry cluster is California (Porter, 1998a). This example shows how commercial wineries, independent wine grape growers, suppliers of grape stock, irrigation, harvesting equipment and barrel suppliers, and specialized public relations and advertising firms are interconnected through a network of complex linkages (Porter, 1998a). However, there are many other examples in the literature on wine industry clusters in the world (Trejo-Pech et al., 2012): Baja California (Mexico), Barossa Valley (Australia), Champagne and Bordeaux (France), Colchagua Valley (Chile), Mendoza (Argentina), Napa Valley (United States), and Rioja (Spain).

The wine industry cluster of Baja California possesses some specific features that make it rather different from other clusters, mainly soil minerality and salinity, grapevine sweetness, and environmental and legal conditions. These features have allowed Baja California to gain an international reputation for the quality of its wine (González-Andrade, 2015; López, House, & Trejo-Pech, 2010; Trejo-Pech et al., 2012). Indeed, the climate in Baja California particularly favors high-quality crops, ensuring a successful industry cluster (SEFOA, 2011). It is noteworthy that Ensenada, Tijuana, and Tecate are the most important areas in the Baja California region, producing around 90% of Mexican wine from 150 winery firms of varying sizes, and using different techniques (e.g., modern, handmade, and craft techniques) (Alpízar-Padilla & Maldonado-Ávalos, 2009; Quiñonez-Ramírez, Bringas-Rábago, & Barrios-Prieto, 2011; Góngora-Rosado, 2016; SEFOA, 2011). Table 1 shows the main grape varieties cultivated in Baja California (CMV, 2015; Meraz-Ruiz, 2015).

Table 1. **Grape varieties cultivated in Baja California**

GRAPE VARIETY	HECTARES	%
Cabernet sauvignon	592.8	21.4
Chenin blanc	216.7	7.8
Merlot	205.3	7.4
Grenache	158.8	5.7
Nebbiolo	156.2	5.6
Chardonnay	145.9	5.3
Zinfandel	140.0	5.0
Tempranillo	126.1	4.5
Sauvignon blanc	121.8	4.4
Syrah	112.8	4.1
Petite syrah	110.4	4.0
Other	689.3	24.8

Source: CMV (2015), Meraz-Ruiz (2015).

Finally, the wine industry cluster of Baja California has developed as highly competitive, characterized by some features (OIV, 2010; Trejo-Pech et al., 2012):

- Grapes are cultivated in a Mediterranean climate (e.g., Valle de Guadalupe).

- There is a strong collaboration between winery firms and other actors that generate collective knowledge.

- There is a deep interaction between identifiable physical and biological environments.

- Some successful vitivinicultural practices have been implemented.

Indeed, these characteristics refer to the existence of a highly competitive vitivinicultural *terroir* in this region, leading Baja California winery firms to develop a competitive advantage (OIV, 2010; Porter, 1997, 2008; Porter & Stern, 2001; Rodríguez, Gómez, & Ramírez, 2015).

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EMPIRICAL ANALYSIS

fsQCA methods

During recent years, scholars in the social sciences have been increasingly interested in QCA applications and methods (Schneider & Wagemann, 2010). Thus, QCA methods have been modified, extended, and improved to answer scientific questions, contributing to achieving further progress in the social sciences (Berger, 2016; Huarng & Roig-Tierno, 2016; Ragin, 2000, 2006, 2008; Ragin & Sonnett, 2004). The QCA methodology is a comparative case–oriented approach that allows the minimally necessary and/or minimal conditions to bring about an outcome to be identified (Vis, 2012). It is an approach based on set-theoretic relations and Boolean algebra that combines qualitative and quantitative methods to gain insight into the interactions of set memberships (Marx, Rihoux, & Ragin, 2014; Parente & Federo, 2019; Ragin, 2000, 2008; Roig-Tierno, González-Cruz, & Llopis-Martínez, 2017). In this way, the comparative case–oriented approach of QCA is capable of establishing set-theoretic relations that enable theorizing and examining the causal complexity of social phenomena characterized by nonlinearities and asymmetries (Parente & Federo, 2019; Rihoux & Ragin, 2009).

The theoretical explanations in QCA are not about the net effect of individual variables on an outcome (e.g., econometric analysis) but the causal conditions on a desired state or outcome (Radaelli & Wagemann, 2019). Therefore, causality in QCA is understood as a complex, conjunctural, equifinal, and asymmetric method based on set-theoretic relationships that make use of the principles of necessary and sufficient conditions (Parente & Federo, 2019). This possibility allows us to unravel the causal complexity characterizing social phenomena through analyzing multiple independent causal attributes associated with a given outcome (conjunction), exploring different combinations of conditions associated with an outcome (equifinality), and assessing the possibility that the presence and the absence of attributes could be associated to an outcome (asymmetry) (Parente & Federo, 2019). The basis of QCA is thus the study of the configurations that consistently produce sufficient and necessary conditions to generate a desired state or outcome (Parente & Federo, 2019; Ragin, 2000, 2006, 2008; Roig-Tierno et al., 2017). Nowadays, QCA methods have been used in several disciplines, such as public policy and political science, business and management, or even industrial engineering and computer sciences (Huarng & Roig-Tierno, 2016; Marx et al., 2014; Mendel & Korjani, 2012, 2013; Roig-Tierno, Huarng, & Ribeiro-Soriano, 2016).

There are three main approaches in QCA: crisp-set QCA (csQCA), fuzzy-set QCA (fsQCA), and multi-value QCA (mvQVA) (Ragin, 2000, 2006, 2008; Roig-Tierno et al., 2017). Certainly, QCA applications have evolved from using solely crisp sets into incorporating fuzzy sets with more finely grained degrees of membership (Parente & Federo, 2019). In particular, the fsQCA approach gives qualitative comparative analysis the possibility of managing several levels of membership when constructing logical propositions (Ragin, 2000; Roig-Tierno et al., 2017). Hence, the research questions typically raised in QCA concern the necessary and/or sufficient conditions to achieve an outcome (Cotte & Pardo, 2013; Vis, 2012). The aim is, therefore, to find out the logical connections between combinations of causal conditions that bring about a desired state or outcome (Roig-Tierno et al., 2017).

In the case of fsQCA research, the inquiry procedure allows the transformation of qualitative information into quantitative values to discover the missing associations between independent and dependent conditions, as well as provide a systematic approach for data calibration and quantification of qualitative fuzzy-set data (Fiss, 2007; Ragin, 2000, 2008; Roig-Tierno et al., 2017; Schneider & Wagemann, 2010, 2012). Thus, the fsQCA approach reveals how to deal with complexity among conditions, typically in a small number of cases (Ragin, 2000, 2006, 2008). Importantly, even if QCA was initially developed to find consistent relationships among small samples, it is also applied now to samples ranging from small to large (Parente & Federo, 2019).

The application of fsQCA methods proceeds in four steps (Marx et al., 2014; Ragin, 2006, 2008): (i) configurational model design and calibration, (ii) development of raw and modified truth tables, (iii) consistency analysis, and (iv) solution analysis. The *configurational model design and calibration process* implies transforming the explanatory conditions and outcome into set-theoretic relations to build the *raw and truth modified tables* of alternative configurations. This process allows the establishment of the *consistency cutoff* to distinguish causal combinations that are or are not part of the outcome that generates similar *solutions* (Ragin, 2006, 2008). The solutions occur along the complexity and parsimoniousness continuum in which the intermediate solution is often the most interpretable (Ragin, 2006, 2008).

It is essential to consider two additional concepts when applying fsQCA methods (Roig-Tierno et al., 2017): consistency and coverage. "Consistency" refers to the percentage of causal configurations with an identical outcome, while "coverage" (explanatory power or empirical relevance) refers to the number of cases with a valid configuration (Marx et al., 2014; Roig-Tierno et al., 2017). Accordingly, this research aims to identify the necessary and sufficient conditions leading winery firms to

achieve a high-performance level in the wine industry cluster of Baja California. Furthermore, this analysis will reveal the complexity (causal ambiguity) of the interconnections between companies and institutions within the wine industry cluster of Baja California when implementing a particular strategy to achieve a high-performance level.

Hypothesis and explanatory conditions

The wine industry cluster of Baja California is an example of a successful strategy to position Mexican wine in both domestic and international markets. Table 2 shows the internal and external

conditions of the wine industry cluster of Baja California that explain this strategy. The internal conditions are R&D efforts (R&D), specialized human capital (SHC), product and process innovation (PPI), and production capacity (PC), while the external conditions are good supplier relations (GSR), consumer satisfaction (CS), good complementary relationships (GCR), and interdependent innovation (IINN). Consequently, the hypothesis in this research is as follows:

> H1: The presence of GSR, CS, GCR, and IINN, on the one hand, and of R&D, SHC, PPI, and PC, on the other, are necessary and sufficient conditions (set-theoretic relation) to achieve a high-performance level (HPL) (outcome) among firms in the wine industry cluster of Baja California.

Table 2. **Outcomes and internal and external conditions**

OUTCOME	DESCRIPTION
High performance level (HPL)	**Profits**
INTERNAL CONDITIONS (SELECTED FIRMS ACTIVITIES)	
R&D efforts (R&D)	Firm investment in R&D activities
Specialized human capital (SHC)	Training and presence of the oenologists
Product and process innovation (PPI)	Plant and field technology
Production capacity (PC)	Annual current production
EXTERNAL CONDITIONS (SUPPLIERS, CONSUMERS, AND COMPLEMENTARY ACTIVITIES)	
Good supplier relations (GSR)	Integrated supply chain (%)
Consumer satisfaction (CS)	Awards obtained and number of labels
Good complementary relationships (GCR)	Agreements and contracts with local producers
Interdependent innovations (IINN)	Government financing and active participation in professional associations

This hypothesis is shortened in Combination 1 through Boolean algebra as a necessary and sufficient condition to achieve a high-performance level among firms in the wine industry cluster of Baja California:

$$\text{GSR} * \text{CS} * \text{GCR} * \text{IINN} * \text{R\&D} * \text{SHC} * \text{PPI} * \text{PC} \dashrightarrow \text{HPL} \quad (1)$$

Cases and data collection

Empirical data were collected from interviews at six wineries established in Baja California, during 2018. Respondents were

asked about firm performance and other activities constituting the configuration conditions that lead to a high-performance level. The sample selection corresponded to the wineries' position in terms of sales and production. Other information on the characteristics featuring this cluster was collected from CMV sources (CMV, 2015, 2018). Therefore, data from wineries included firm size, hectares of cultivated vineyards, annual case production, variety of vines, labels, and product awards. Suitable cases needed to explain the high-performance level among winery firms in this industry cluster were included in the sample (Parente & Federo, 2019). Table 3 shows the wineries analyzed in this research.

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Table 3. **Selected wineries in the cluster of Baja California**

WINERY NAME	FOUNDING YEAR	CULTIVATED VINEYARDS (HECTARE)	ANNUAL CASES PRODUCTION	VINES VARIETY	LABELS	PRODUCT AWARDS
Bodegas Santo Tomás	1888	400	600,000	21	57	10
Casa Pedro Domecq	1972	300	100,000	21	57	10
L.A. Cetto de Guadalupe	1974	1,100	1,000,000	100	40	500
Monte Xanic	1988	192	60,000	8	20	250
Vinisterra	2002	20	7,000	2	7	5
Viña de Liceaga	1993	8	5,000	4	8	5

Source: From companies' interviews.

Even if the success of Mexican wineries has been outstanding during the last few years, their production capacity is still in the development stage. Indeed, some wineries have applied unconventional business strategies to maintain their market competitiveness. *Vinisterra* and *Viña de Liceaga*, for example, have implemented "*Ruta del Vino*," a highway and paved road system that leads tourists to vineyards and wineries in the wine region of Baja California during the harvest season (Quiñónez-Ramírez et al., 2011).

RESULTS

The next step in the fsQCA investigation is to calibrate the causal and outcome conditions. In the case of the wine industry cluster of Baja California, the causal conditions correspond to the internal and external explanatory conditions previously discussed in this paper. The outcome condition corresponds to the HPL in this industry cluster. The calibration process was made through the direct method, and thus the explanatory conditions R&D, SHC, PPI, GSR, CS, GCR, and IINN were fixed as full membership (6 points), crossover point (3 points), and full non-membership (0 points) (Ragin, 2006, 2008). Table 4 shows the anchor point for these conditions. In the case of PC, the values were calibrated based on annual case production (Table 4). On the other hand, the calibration values of the HPL were computed based on firm profits, mainly full membership (30 points), cross-over point (9 points), and full non-membership (1 point) that correspond to the media of profits in the Mexican wine industry.

Table 4. **Calibration values**

CONDITION	RANGE	FULL NON-MEMBERSHIP	CROSS-OVER POINT	FULL MEMBERSHIP
R&D	0-6	0	3	6
SHC	0-6	0	3	6
PPI	0-6	0	3	6
GSR	0-6	0	3	6
CS	0-6	0	3	6
GCR	0-6	0	3	6
IINN	0-6	0	3	6
PC	0-1000	0	99	1000

Table 5 shows the raw truth table of this research. The raw truth table contributes to understanding the results computed in this model. It reveals the configurations of the winery activities in this cluster. Consequently, the gaps in the consistency values are useful for establishing a consistency threshold, and the values below 0.80 show substantial inconsistencies (Ragin, 2008). In this case, the consistency threshold was set at 0.80 for a high-performance level in the truth table.

Table 5. Raw truth table

RDE	SHC	PPI	GSR	CS	GCR	IINN	PC	NUMBER	HPL	RAW CONS.	PRI CONS.	SYM CONS.
1	1	1	1	1	1	0	1	4	1	0.99262	0.98823	1
0	0	1	0	0	0	1	0	1	0	0.37984	0	0
0	1	1	0	1	1	1	0	1	0	0.37984	0	0

In the same way, Table 5 shows the configurations that lead to the three solutions: complex (zero logical remainders), intermediate (logical remainders making sense in the final solution), and parsimonious solutions (all logical remainders without any possibility of evaluation) (Ragin, 2000, 2006, 2008). However, in the wine industry cluster of Baja California, the intermediate solution is superior to the other two solutions according to the interpretation of the results (Ragin, 2006, 2008). In this sense, the analysis of the parsimonious and intermediate solutions contributes to determining the central and peripheral causal conditions that shape this research on the explanation of the HPL (Fiss, 2011).

Table 6. Modified truth table

Conf.	RDE	SHC	PPI	GSR	CS	GCR	IINN	PC	N	Ny	Cons.	X ⟶Y
1	1	1	1	1	1	1	0	1	4	4	1	V
2	0	0	1	0	0	0	1	0	1	0	-	F
3	0	1	1	0	1	1	1	0	1	0	-	F

Table 6 shows the modified truth table with the results of sufficiency and the combinations to achieve the desired outcome (HPL). Combination 1 shows R&D, SHC, PPI, GSR, CS, GCR, and PC that jointly explain an HPL in the wine industry cluster of Baja California. The intermediate and parsimonious solutions are included in the analysis of sufficiency.

Table 7 shows the intermediate solution with only one combination satisfying the 0.80 threshold. A consistency value of 0.99 and a coverage value of 0.81 were achieved in the case of the intermediate solution, while a consistency value of 0.75 and a coverage value of 1 were achieved in the case of the parsimonious solution. Therefore, the intermediate solution shows a single configuration that explains 81.26% of the cases comprising the desired output with a consistency value of 0.9926. These results suggest that only one possible path leads to an HPL among firms in the wine industry cluster of Baja California. Even if the interdependent innovations (IINN) condition is not present in the intermediate solution, seven conditions are considered necessary for achieving an HPL in this industry cluster. It is essential to keep in mind that R&D, SHC, PPI, GSR, CS, GCR, and PC must be jointly present to achieve the desired outcome.

Table 7. Intermediate and parsimonious solutions (consistency threshold: 0.80)

INTERMEDIATE SOLUTION			
Causal Configuration	Row Coverage	Unique Coverage	Consistency
R&D*SHC*PPII*GSR*CS*GCR~IINN*PC	0.8126	0.8126	0.9926
Solution coverage: 0.812689; Solution consistency: 0.99262			
PARSIMONIOUS SOLUTION			
Causal Configuration	Row Coverage	Unique Coverage	Consistency
IINN	0.8368	0	0.7824
R&D	0.9365	0	0.8266
GSR	0.9818	0	0.8333
PC	0.9758	0.0181	0.9022
Solution coverage: 1; Solution consistency: 0.750567			

* denotes AND.

~ denotes absence.

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The parsimonious solution offers four combinations favoring an HPL in the wine industry cluster of Baja California (Table 7). The first configuration demonstrates the absence of IINN with a coverage value of 0.83 and a consistency value of 0.78, suggesting that firms in this industry cluster do not need to develop IINN to achieve an HPL. The second configuration, R&D with a coverage of 0.93 and a consistency of 0.82, implies that firms need to develop R&D efforts to obtain an HPL. The third configuration, GSR, with a coverage value of 0.98 and a consistency value of 0.83, suggests the importance of this condition to achieve an HPL. Finally, the fourth configuration, PC, with a coverage of 0.97 and a consistency of 0.90, demonstrates the importance of this condition to obtaining an HPL.

Table 8 shows the necessary conditions for achieving an HPL in the wine industry cluster of Baja California. The threshold is fixed at 0.80 for evaluating whether a condition is "almost always necessary" (Ragin, 2000). The results show that seven variables are necessary conditions (consistency values above 0.80).

Table 8. **Necessary conditions (consistency threshold: 0.80)**

CONDITIONS TESTED	CONSISTENCY	COVERAGE
R&D	0.936556	0.826667
SHC	0.900302	0.735802
PPI	0.954683	0.666667
GSR	0.981873	0.833333
CS	0.981873	0.736961
GCR	0.936556	0.748792
IINN	0.410876	0.552846
PC	0.975831	0.902235

Finally, alternative calibration values were used to test for the validity and robustness of the results. Intermediate solution results show a consistency solution of 0.8126 (above the threshold of 0.80) and a coverage solution of 0.9926. The parsimonious solution shows a consistency solution of 0.7505 and a coverage solution of 1.

DISCUSSION

The wine industry cluster of Baja California is moving towards an HPL. An essential feature in this industry cluster is that small and medium-sized firms are responsible for supplying necessary inputs to important wineries. Even if large firms operate with cutting-edge technologies, small and medium-sized wineries have a sizable production capacity. In this sense, *Vinos de Liceaga*, for example, is a small company that acquired Italian technology, namely, copper and steel alembic for wine production. Another example is *Monte Xanic*, a medium-size company that invested in novel technology to improve its wine production through innovative irrigation systems. Moreover, this company is a pioneer at using micro-oxygenation and night harvesting to increase the quality of its wines. *Vinisterra* is another example of a small winery that follows a process in which the wine is well known for its exceptional flavor.

On the other hand, large, medium-sized, and small firms in this wine industry cluster have specialized technical employees who are continuously trained to produce high-quality wine. GSR demonstrates how the supply chain in this industry is highly integrated, improving the production capacity of several firms in this cluster. Similarly, government support has been essential to improve the quality of wine production in this industry cluster. The Act for the Promotion of the Wine Industry of 2018, for example, has enabled the development of joint ventures between companies and government agencies in charge of stimulating wine production capacity through the adoption of efficient technologies. However, it is expected that the interaction between wine companies and specialized government agencies, as well as other national and international organizations, will allow the adoption of adequate strategies to promote Mexican wine in national and international markets.

Finally, complementarity between large and medium-sized/ small companies is an essential issue to obtain an HPL in the wine industry cluster of Baja California. A significant percentage of the production capacity of large companies, for instance, depends on agreements established with medium-sized/small producers that could generate synergies and the development of competitive advantage. Mostly, these synergies are drawn from sharing knowledge embodied in specialized human capital.

CONCLUSIONS

This research shows evidence of sufficiency that leads firms to acquire an HPL in the wine industry cluster of Baja California. The sufficiency configuration was demonstrated by the joint presence of R&D, SHC, PPI, GSR, CS, and GCR. However, this finding also contributes to supporting the possibility of designing a successful strategy to enable these companies in the wine industry cluster of Baja California to become more competitive.

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Additionally, the evaluation of the parsimonious and intermediate solutions contributes to gaining insight into how central and peripheral causal conditions contribute to generating an HPL. In this sense, PC, GSR, and R&D are necessary conditions for achieving an HPL among wineries in the wine industry cluster of Baja California. The absence of IINN in this configuration suggests that firms in the wine industry cluster of Baja California can develop alternative mechanisms to innovate. This finding reinforces the idea that R&D is a core condition to achieve an HPL in this industry cluster. Finally, results also suggest that R&D, GSR, and PC are necessary conditions to successfully innovate in the wine industry cluster of Baja California.

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AUTHOR'S CONTRIBUTIONS

José Carlos Rodríguez, Mario Gómez and María Aline Manzo equally contributed to the conceptualization and theoretical-methodological construction, theoretical review, data collection, data analysis, and writing and final review of this paper.

ARTICLES

EXPORT PERFORMANCE IN SOUTH AMERICA: DO INTANGIBLES AFFECT FIRMS' PERFORMANCE IN DEVELOPING COUNTRIES SUCH AS PERU?

Desempenho da exportação na América do Sul: Os intangíveis realmente importam para empresas de países em desenvolvimento como o Peru?

Desempeño de las exportaciones en Sudamérica: ¿Los intangibles afectan el desempeño de las empresas en países en desarrollo como Perú?

ABSTRACT

This study is one of the first empirical studies on intellectual capital (IC) in South American textile exporting companies. Using the resources and capabilities approach, we examine how certain intangibles can provide competitive advantages. We propose and test a model capturing the relationships between IC components and export performance (EP), as well as the various interrelationships among the different dimensions of IC. Using a sample of textile manufacturers operating in Peru, an emerging economy, we find that both human capital and structural capital have a significantly positive influence on EP. However, the data analysis does not confirm that relational capital has any positive influence on export performance.

KEYWORDS | Intellectual capital, export performance, South American, textile companies, emerging economy.

RESUMO

Este artigo contribui com um dos primeiros estudos empíricos relacionados ao capital intelectual (CI) em empresas exportadoras de têxteis da América do Sul. Utilizando a abordagem de recursos e capacidades, examinamos como certos ativos intangíveis podem trazer vantagens competitivas. Propomos e testamos um modelo que mostra as relações entre o CI e o desempenho de exportação (DE), bem como as várias inter-relações entre as diferentes dimensões do CI. Em uma amostra de fabricantes de têxteis que operam no Peru, uma economia emergente, verificou-se que o capital humano (CH) e o capital estrutural (CE) têm influência significativamente positiva no DE. No entanto, uma análise dos dados não confirma que o capital relacional (CR) tenha influência positiva no desempenho das exportações.

PALAVRAS-CHAVE | Capital intelectual, desempenho das exportações, América do Sul, empresas de têxteis, economia emergente.

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RESUMEN

Este artículo es uno de los primeros estudios empíricos sobre capital intelectual (CI) en empresas exportadoras de textiles de América del Sur. Usando el enfoque de recursos y capacidades, examinamos cómo ciertos intangibles pueden dar ventajas competitivas. Proponemos y probamos un modelo que muestra las relaciones entre el CI y el desempeño de exportación (EP, por su sigla en inglés), así como las diversas interrelaciones entre las diferentes dimensiones del CI. De una muestra de fabricantes de textiles que operan en Perú, se halló que tanto el capital humano (CH) como el capital estructural (CE) tienen una influencia significativamente positiva en el EP. Sin embargo, un análisis de los datos no confirma que el capital relacional (CR) tenga alguna influencia positiva en el desempeño de las exportaciones.

PALABRAS CLAVE | Capital intelectual, desempeño de exportación, América del Sur, empresas textiles, economía emergente.

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ARTICLES | EXPORT PERFORMANCE IN SOUTH AMERICA: DO INTANGIBLES AFFECT FIRMS' PERFORMANCE IN DEVELOPING COUNTRIES SUCH AS PERU?

Carlos Del Castillo Guardamino | José Ventura Egoávil

INTRODUCTION

Based on a resource-based perspective, a company's ability to penetrate international markets is linked to its overall competitive advantage (Barney, 1991, 2001; Brouthers, Brouthers, & Werner, 2008; Javalgi & Todd, 2011). Intangible assets such as knowledge and learning contribute to such a competitive advantage (Drenkovska & Redek, 2015; Hoa, Huong, Linh, & Mai, 2018; Muh & Murwaningsari, 2019; Xu & Wang, 2019).

While intellectual capital (IC) is recognized as the dominant factor affecting many companies' competitive advantage (Alatas & Cakir, 2016; Dumay, 2009; Hejazi, Ghanbari, & Alipour, 2016), the relationship between IC and export performance (EP) remains insufficiently explored throughout Latin America (Calix, Vigier, & Briozzoc, 2015; Pucar, 2012).

This article aims to answer the following two questions: First, which dimensions of IC are linked to the results of companies' internationalization? Second, how do these dimensions relate to EP in South America?

We address whether and how IC has any relationship with the exports of Peruvian textile companies. We also examine how the dimensions of IC are related to one another. Finally, we propose how dimensions of IC are linked and how they impact EP. Since much of the previous research has focused on competitive, mostly saturated developed markets, the use of our proposed model in Peru, a developing economy, is relevant.

This study advances the knowledge and best practices in the areas of IC and EP by using empirical evidence and obtaining a deeper knowledge of how enterprises in emerging economies leverage IC to improve their export effectiveness.

Our proposed model incorporates the variables of structural capital (SC) and relational capital (RC). While these variables have been studied in other countries, they have not been adequately studied in the South American exporting textile sector.

The contributions of this study are as follows: First, this study is one of the first empirical studies on the impact of IC on EP within the textile industry in emerging markets in Latin America. Little research has been conducted on IC performance within the South American traditional textile manufacturing sector.

Second, the existing IC literature on the textile industry mainly consists of descriptive summaries. However, such research lacks empirical results, focuses almost exclusively on Asian countries, and mostly overlooks South America.

Third, this study expands the extant literature and provides some valuable insights concerning the textile sector, for policy makers as well as academics and business leaders interested in making this sector more competitive.

Other studies have examined firms in the emerging economies of China, South Korea, Vietnam, Slovenia, Indonesia, and western Balkan nations. However, while South America is also characterized by emerging, middle-income economies, only a single relevant study exists, and it was conducted on Honduras.

Peru is a typical emerging economy that is evolving away from its dependence on exports related to the extractive industry into a value-adding economy in sectors such as textile manufacturing. Peru is also a middle-income country whose economy has been steadily growing for more than ten years. Peruvian manufacturers, becoming aware of the possible opportunities in international markets, must grow and adapt to the different characteristics of their export destinations.

This study focuses on companies in the Peruvian textile sector and uses data from 207 firms. The hypotheses were tested using a structural equation model (SEM) and by applying the partial least squares (PLS) method (Hair, Hult, Ringle, & Sarstedt, 2014).

This paper includes six sections: Introduction, Literature Review, Method, Results, Discussion, and Conclusion.

LITERATURE REVIEW AND HYPOTHESES STATEMENTS

Export performance and the resource-based approach

EP is defined as the degree to which an exporting company has achieved its objectives with respect to its international activities. According to the existing literature on the internationalization of companies (Dhanaraj & Beamish, 2003; Florez et al., 2012; Monteiro, Soares, & Rua, 2019; Ramon, Florez, & Araujo, 2019) exports may be understood in two different ways: (1) Exports may be among the first stages of internationalization, with the process starting with irregular exports, then indirect exports, and finally direct exports, and so on (Araya, 2009; Johanson & Vahlne, 2009). (2) Exporting companies are one of the various types of internationalized companies, including multinational, global, and transnational companies (Canals, 1994).

According to Dhanaraj and Beamish (2003) and Fuchs and Köstner (2016), exportation is one of the more attractive ways for a firm to break into international markets. Compared to possible joint ventures or acquisitions, exports require substantially fewer resources. Lu and Beamish (2002) indicate that by changes in the volumes of exported goods, as well as possible changes in

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destinations, improvements in flexibility and reductions in risk are possible. Lin and Ho (2019) suggest that exportation is the only practical way firms have to internationalize themselves.

Zou, Taylor, and Osland (1998) developed a general model for measuring EP using a scale with three dimensions: economic-financial, strategic, and satisfaction. This construct has been analyzed in the relevant literature (Griffith & Harvey, 2004; Kaleka, 2012). The discussion of EP focuses on the resource-based approach (Calix et al., 2015; Monteiro et al., 2019; Ramon et al., 2019). This approach treats companies as unique entities with accumulated resources, both tangible and intangible (Barney, 1991; Dhanaraj & Beamish, 2003). For example, companies with applicable knowledge, managerial skills, and other strategic intangible assets have resources that are scarce and difficult to create or reproduce. However, these companies are more likely to exhibit a competitive advantage (Pablos, 2004).

The literature suggests that EP correlates with knowledge, attitudes, international commitment, and decision-makers' abilities (Calix et al., 2015; Johanson & Vahlne, 2009; Monteiro et al., 2019). Therefore, a fundamental prerequisite for a competitive advantage is a company's ability to acquire and exploit knowledge in foreign markets.

Intellectual capital and export performance

IC refers to the intangible assets that contribute to a company's profitability. These assets include the employees' expertise, organizational processes, and total individual and organizational knowledge. Recurring references to human capital (HC), SC, and RC have been observed throughout the literature (Asiaei & Jusoh, 2017; Edvinsson & Malone, 1997; Muh & Murwaningsari, 2019; St-Pierre & Audet, 2011; Xu & Wang, 2019).

The various studies that have addressed the relationship between IC and EP (Pucar, 2012; Zhang & Wang, 2018) have indicated that intangible resources become factors that differentiate companies' performance in foreign markets, resulting in companies gaining a comparative advantage in terms of their EP (Morgan, Kaleka, & Katsikeas, 2004). Drenkovska and Redek (2015) have identified specific skills allowing companies to overcome barriers and develop their export activities. However, the studies providing evidence for a positive relationship between IC and EP have only used proxies to examine these concepts (Calix et al., 2015; Hejazi et al., 2016; Pucar, 2012).

Figure 1. Intellectual capital constructs
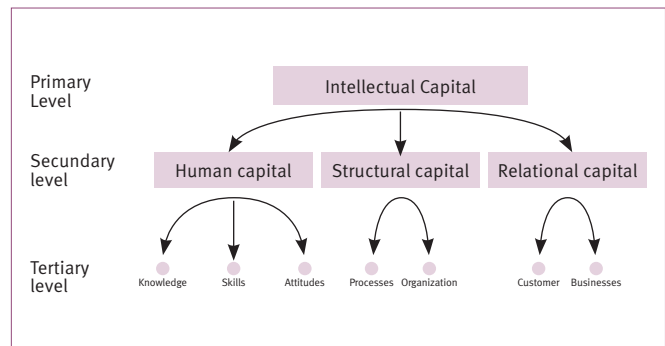
Authors' illustration, based on the literature reviewed.

Human capital and export performance

HC includes employees' knowledge, skills, and attitudes. It is usually considered the most important dimension of IC (Bontis, 2004; Hejazi et al., 2016) (see Figure 1). Previous research has highlighted that HC is positively related to both organizational performance (Muh & Murwaningsari, 2019; Subramaniam & Youndt, 2005) and EP (Johanson & Vahlne, 2009; Monteiro et al., 2019; Pucar, 2012; Ramon et al., 2019). Furthermore, the skills and knowledge of employees responsible for making decisions related to exports are valuable assets that help ensure the proper development of the company's international activities. This specialized knowledge guides internationalization in constructive ways as it reduces uncertainty in decision-making (Hilmersson & Jansson, 2012). Since their emergence, theories of internationalization have suggested that EP correlates positively with the knowledge, attitudes, international commitments, and skills of a company's decision-makers (Johanson & Vahlne, 2009).

Taking into account the general economic conditions in South America, and the textile sector in Peru in particular, as well as Peru's status as a developing country, the following hypothesis is proposed:

H1: HC in the Peruvian textile sector positively influences EP.

Structural capital and export performance

SC represents codified knowledge owned by the organization that does not exist in the minds of employees. It includes databases, processes, and routines (Bontis, 2004; Jansen, Tempelaar, Bosch, & Volberda, 2009; Kong, 2008). However, this type of capital supports employee activities and helps them learn new tasks and skills, thus improving their individual

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capacities. Gogan, Duran, and Draghici (2015) affirm that SC represents the competitive intelligence, formulas, information systems, patents, policies, and processes that have resulted in the methods and systems the organization has created over time. Unlike HC, SC remains in the organization when employees leave, thereby contributing to organizational continuity.

SC can be classified into two types: process SC and organizational SC (Edvinsson & Malone, 1997). A company gains process SC when it dedicates a separate division and establishes sales targets that are translated into organizational processes (Muh & Murwaningsari, 2019). Organizational SC results from investment in systems, tools, and operational guidelines that facilitate supply and distribution operations. Applied to foreign markets and operations, SC can be a determining factor of a company's EP (Johanson & Vahlne, 2009). As suggested by the resource-based approach, SC generates organizational resources that help bolster EP (Laureano & Marques, 2009).

Considering the Peruvian textile sector and the general economic conditions in Peru, the following hypothesis is proposed:

> H2: SC in the Peruvian textile sector positively influences EP.

Relational capital and export performance

RC refers to "the knowledge that was accumulated by all the different parties during exchanges, including relations with customers, suppliers, as well as other stakeholders" (Pablos, 2004). Because companies depend on their relations with the people they cooperate with, they cannot be treated as isolated systems. Reagans and Zuckerman (2001) indicate that the teams with the greatest diversity and the most social interconnections are more able to improve organizational performance. The main source of RC in organizations is its clients, suppliers, and other actors or interested members of the surrounding community. Qu and Lu (2013), as cited by Zhang and Wang (2018), state: "Relational capital is the sum of trust, friendship, respect, and mutual understanding which is based on the organizational level." RC may include elements not directly associated with any of the organization's direct actions. For example, it may include the corporation's image and reputation, and its identification with possible partners and other allies in the export sector (Villena, 2019).

RC comprises the capital originating from relationships with clients, as well as the capital from relationships with other businesses (Bontis, 2004; Hoa et al., 2018). Customer relationship management occurs through a company's interactions with customers. It includes the management of integrated channels, as well as the use of appropriate tools for the analysis of customer data (Ghane & Akhavan, 2014). Therefore, improved management of RC leads to an increase in client and supplier satisfaction, the establishment of mutual trust between parties, and the improvement of relations in general (Xu & Wang, 2019).

Taking this into consideration, the following hypothesis is proposed:

> H3: RC in the Peruvian textile sector positively influences EP.

Interrelations among the dimensions of intellectual capital

Relationships between the variables in the aforementioned hypotheses and the organizational performance of exporting companies have been proposed (Edvinsson & Malone, 1997). HC can be identified as a determinant of the other second-order types of IC, including SC and RC (Bontis, 2004). The influence of HC on SC becomes clear because SC is "where the knowledge creation process is assumed to reside" (Boisot, 2002). Additionally, HC influences SC through organizational culture. SC is strongly influenced by HC through the manager's cognitive capacity (Felício, Couto, & Caiado, 2014).

It is possible to argue that HC influences RC. In particular, some elements of HC, such as those linked to attitude, affect the establishment of relevant relationships (i.e., RC). This, in turn, allows access to valuable resources such as shared knowledge and provides a company with the ability to influence and build solidarity with other companies. Part of that shared knowledge includes cognitive and communication skills necessary in new markets, as well as an understanding of the ways a company can connect itself to these new markets (Hosseini & Owlia, 2016). Finally, the relationship between HC and RC is clarified by Davidsson and Honig (2003), who have indicated that the tacit knowledge acquired by previous experience (by a company's HC) helps ensure success.

Taking the above into consideration, the following two additional hypotheses are proposed:

> H4: HC in the Peruvian textile sector positively influences SC.
>
> H5: HC in the Peruvian textile sector positively influences RC.

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Figure 2. **Proposed theoretical model**
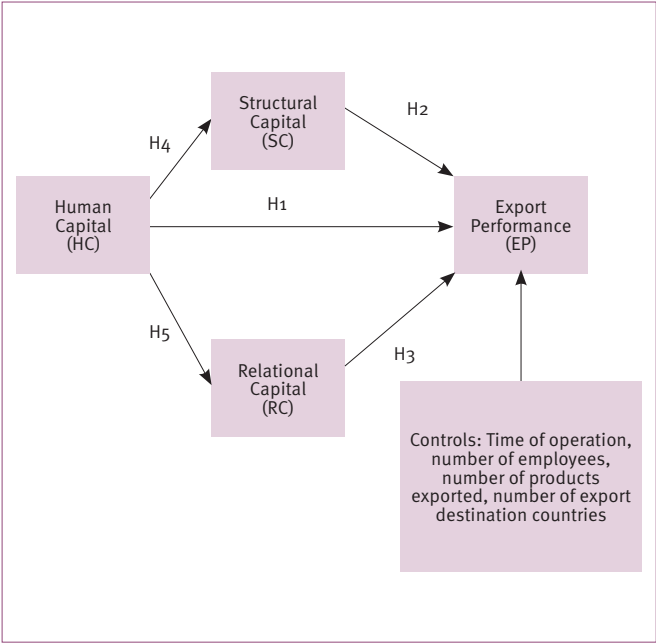
Graphical representation of the proposed theoretical model, based on the literature reviewed.

METHODS

Sample

The companies used in this study were selected from a secondary source consisting of a database of importers and exporters provided by the Peruvian Exporters Association (ADEX). Only companies in the Peruvian textile sector were included. Despite experiencing setbacks due to the 2008 financial crisis, this sector has become the single most dynamic industrial export sector in Peru (Sistema Integrado de Información de Comercio Exterior [SIICEX], 2019).

Our primary data were obtained by surveys of company representatives. The latter were quite accessible, enabling us to conduct our primary surveys easily. Since we focused on a single manufacturing sector, which was not subject to supply or demand controls, we were able to control for a larger number of contextual variables. We selected the sample companies based on three broad criteria. First, they needed to be selling their products directly to customers. Second, they had to be involved in both export and domestic markets. Third, they needed to be small or medium-sized companies.

From the ADEX database, we identified 874 companies meeting our criteria but their data lacked information regarding IC and company operations. A questionnaire was prepared that we pre-tested using in-depth, one-on-one interviews. Between March and July 2016, a total of 207 questionnaires were completed.

Variable measurement

As the study employed a questionnaire survey approach, all independent and mediating variables and the dependent variable were measured through five-point Likert-type scales ranging from 1 = "strongly disagree" to 5 = "strongly agree," with 3 = "neutral."

A total of 33 items on the three IC constructs, as well as EP, were used (see Tables 1, 2, 3, and 4).

Dependent variable

EP depends on a company's relative success in utilizing the various dimensions of IC. The measurement of EP did not include export volumes but four indicators were used to capture characteristics such as a company's export intensity, export growth, market share, and the company's perceived success and strategic position (see Exhibit 1).

Exhibit 1. **Dependent variable: Export performance (EP)**

Item	Statement	Relevant Literature
EP1	In recent years, exports have accounted for the bulk of the company's sales.	
EP2	The growth in the volume of exports in recent years has been considerable.	
EP3	The company is satisfied with the results achieved regarding its export activity in recent years.	Zou et al. (1998)
EP4	In recent years, the company has achieved the forecasted objectives with respect to its foreign markets and export volumes.	

Independent variables

Human capital

Following the existing literature, we measure HC in terms of knowledge, skills, and attitudes (see Exhibit 2).

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Exhibit 2. **Independent variable: Human capital (HC)**

Dimension	Item	Statement	Literature Review
Knowledge	HC1	Employees have sufficient knowledge about the textile and/or garment industry.	Pedrini (2007), Nieto & Fernández (2006), Katsikea et al. (2007), Cadogan et al. (2002), Knowles et al. (2006), and Andersen (2006)
	HC2	Managers have sufficient knowledge about economics, business, and finance.	
	HC3	Employees have sufficient knowledge about exports (contractual conditions, currencies, tariffs, and regulations).	
	HC4	Employees in the sales area have sufficient knowledge about the target markets.	
	HC5	Salespeople have sufficient knowledge of the relevant foreign languages.	
Skills	HC6	Employees can analyze and solve problems.	Daghfous & Kah (2006), Pedrini (2007), Chong et al. (2014), and Wong & Aspinwall (2005)
	HC7	Employees can adapt to new situations.	
	HC8	Managers have leadership skills and the ability to delegate work.	
Attitudes	HC9	Employees cooperate with their colleagues.	Wong & Aspinwall (2005), Pedrini (2007), Wang & Chang (2005), and Diamantopoulos & Kakkos (2007)
	HC10	Employees show interest in remaining at the company.	
	HC11	Managers are emotionally willing to persevere during the internationalization process.	

Structural capital

Following the existing literature, we measure SC by considering processes and organization (see Exhibit 3).

Exhibit 3. **Independent variable: Structural capital (SC)**

Dimension	Item	Statement	Relevant Literature
Process	SC1	The company has formal processes (for production, administration, sales, exportation, and finance) within the value chain it operates.	Bontis et al. (2000), Chen et al. (2004), Tseng & Goo (2005), Pedrini (2007), Wong & Aspinwall (2005), Lee & Steen (2010), Hutchinson & Quintas (2008), and Cadogan et al. (2002)
	SC2	Company processes are standardized and are recorded in management documents.	
	SC3	The company constantly incorporates improvements into its products and processes.	
	SC4	In the company, there is a continuous concern for the quality of the products or services exported.	
Organization	SC5	The company can impart to new employees the experience it has gained.	Wong & Aspinwall (2005), Chirico (2008), Janet & Alton (2013), Hutchinson & Quintas (2008), and Jones & Crompton (2009)
	SC6	The company can impart its organizational culture to its employees.	
	SC7	Company information flows effectively for decision-making.	

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Relational capital

Following the existing literature, we measure RC through questionnaire items on customers and businesses (see Exhibit 4).

Exhibit 4. **Independent variable: Relational Capital (RC)**

Dimension	Item	Statement	Relevant Literature
Clients	RC1	The company focuses on maintaining its image with current customers.	Shane & Cable (2002), Pablos (2004), Pedrini (2007), Blyler & Coff (2003), Blomstermo et al. (2004), Hilmersson & Jansson (2012), and Fletcher & Harris (2012)
	RC2	The company cultivates a positive image for prospective customers.	
	RC3	The company maintains an updated database of customers and suppliers.	
	RC4	The company participates in events to find customers in current and new markets (e.g., fairs and exhibitions).	
	RC5	The company analyzes the cultural, business, and political backgrounds of the countries to which it wants to export.	
	RC6	The company analyzes customers' preferences in the countries to which it wants to export.	
Businesses	RC7	The company obtains strategic information from its agents and distributors in the destination countries.	Blyler & Coff (2003), Andersen (2006), Pedrini (2007), and Souchon et al. (2012)
	RC8	The company cultivates and maintains good relations with agents and distributors in the destination countries.	
	RC9	The company belongs to business networks (e.g., chambers of commerce and industry-wide associations).	
	RC10	The company has cooperation agreements with other exporting companies.	
	RC11	The company has cooperation agreements with its suppliers.	

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Control variables

The following four control variables were considered: time of operation, number of employees, number of products exported, and number of export destination countries. Although these do influence EP, they were not included because they were not the emphasis of the study.

PLS

We utilize an SEM and the PLS method (Hair et al., 2014) for five main reasons: (1) The present study seeks evidence regarding the impact of IC on EP in South America. (2) The model proposed is a complex, multivariable model and includes three independent variables with seven dimensions, in addition to the dependent variable. (3) The five hypotheses are predictive but not causal. While causality implies the ability to predict events with 100% accuracy, prediction only allows a limited degree of accuracy. (4) PLS is recommended for small sample sizes; in this case, n = 207 companies. (5) The data obtained on our sample companies were not assumed to follow a normal distribution. PLS-SEM does not assume that the data are normally distributed; instead, a nonparametric bootstrapping procedure is used (Henseler, Ringle, & Sarstedt, 2012). In this procedure, repeated random samples are taken from the original sample with replacement, to create a bootstrap sample. Then, standard errors are obtained to test the hypotheses (the process assumes that the distribution of the sample reasonably represents the distribution of the population). The bootstrap samples allow the level of significance of the estimated coefficients to be obtained through the PLS-SEM algorithm. In this case, a bootstrapping procedure of 1,000 subsamples representing the standard errors was applied to assess the statistical significance of the established structural relationships.

RESULTS

Measurement model

Table 1 shows the outcome of the correlation analysis of the model variables. The correlations between the dependent variable and the independent variables were positive and significant.

Table 1. **Correlations**

Variables	1	2	3	4	5	6	7	8
1. Export performance	1							
2. Structural capital	0.92 ***	1						
3. Human capital	0.91 ***	0.42 ***	1					
4. Relational capital	0.007	0.02	0.13 *	1				
5. Number of employees	-0.06	-0.04	0.11	-0.57 ***	1			
6. Age of the company	-0.23 ***	-0.15 **	-0.10	0.49 ***	0.48 ***	1		
7. Number of export countries	0.31 ***	0.36 ***	0.34 ***	0.44 ***	0.54 ***	0.44 ***	1	
8. Number of export products	0.25 ***	0.27 ***	0.23 ***	0.18 **	0.30 ***	0.12 *	0.43 ***	1

Notes: *** significance at the 1% level (2-tailed); ** significance at the 5% level (2-tailed); significance at the 10% level (2-tailed). Number of observations=207.

The model has four latent variables. The Cronbach's alpha values for all the latent variables are shown in Table 2. In the evaluation of the measurement model, the composite reliability was checked to evaluate the model's internal consistency. To assess convergent validity, individual reliability indicators and the average variance extracted (AVE) were used. In addition, the evaluation of the model included the examination of discriminant validity through the cross-loadings.

Cronbach's alpha was used to measure the reliability of each of the measurement scales of the latent variables. The measurement scales of all the variables exceeded the threshold value of 0.70. However, it is technically more appropriate to use the composite reliability measure. Composite reliability varies between 0.0 and 1.0, with higher values indicating high levels of reliability and generally interpreted in the same way as Cronbach's alpha. In general, composite reliability values less than 0.60 indicate a lack of internal consistency while values of 0.60 to 0.70 are acceptable, and values greater than 0.70 are considered satisfactory (see Table 5). In the present model, composite reliability exceeds 0.70 in all cases.

The external loading (that is, the estimates of the relationships between the latent variables and their indicators) are presented in Table 2, and for the EP, HC, SC, and RC constructs, they are all significant and well above the threshold, 0.70. This suggests a sufficient level of reliability for each indicator. The AVE values of the four latent constructs exceed the minimum level of 0.50 (see Table 2). Therefore, the measures of the four constructs exhibit high levels of convergent validity.

As can be seen in Table 2, all the external loadings of the EP, HC, SC, and RC constructs are significant and well above the threshold value of 0.70, suggesting adequate levels of reliability for the indicators.

An additional measure to establish the convergent validity of each construct is the AVE. Using the same logic as with the individual indicators, an AVE of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its indicators. On the other hand, an AVE of less than 0.50 indicates that, on average, the variance of the indicators is larger than the variance explained by the construct. The AVE values of the four latent constructs exceed the minimum level of 0.50 (see Table 2). Therefore, the measures of the four constructs exhibit high levels of convergent validity.

Table 2. **Loadings and measures of validity and reliability**

Item	Loading (t-value)
Structural capital (SC):	
CR=0.864; AVE=0.680; Cronbach's alpha=0.764	
SC2	0.785 (25.355)
SC3	0.811 (42.668)
SC5	0.875 (53.031)
Human capital (HC):	
CR=0.918; AVE=0.619; Cronbach's alpha=0.897	
HC2	0.919 (92.352)
HC3	0.725 (25.135)
HC6	0.869 (50.367)
HC7	0.860 (52.040)
HC10	0.857 (53.733)
Relational capital (RC):	
CR=0.938; AVE=0.619; Cronbach's alpha=0.924	
RC1	0.856 (4.141)
RC2	0.768 (2.640)
RC4	0.859 (3.955)
RC5	0.793 (3.314)
RC6	0.772 (3.013)
RC8	0.869 (4.241)
RC9	0.811 (4.466)
Export performance (EP):	
CR=0.9893; AVE=0.677; Cronbach's alpha=0.677	
EP1	0.932 (144.070)
EP2	0.725 (23.834)
EP3	0.805 (36.106)
EP4	0.817 (37.345)

Note: Significance established through a resampling procedure (1,000 repetitions), in all cases, at the 1% level.

CR: component reliability; AVE: average variance extracted
It is also possible to assess the discriminant validity of the indicators by examining their loadings and cross loadings (see Table 3.) As can be seen in Table 3, the loadings always exceed the cross loadings. For example, the item RC1 generates a high loading in its corresponding RC construct (0.856) but is much lower in other constructs (0.008, 0.0097, and -0.012). The same is observed for the other RC items, including for the items of the SC, HC, and EP constructs. Therefore, the cross loading analysis suggests that discriminant validity has been established.

Table 3. **Cross loadings**

Item	Structural capital (SC)	Human capital (HC)	Relational capital (RC)	Export performance (EP)
SC2	0.785	0.655	0.141	0.669
SC3	0.811	0.704	-0.064	0.806
SC5	0.875	0.740	-0.003	0.795
HC2	0.716	0.857	-0.008	0.789
HC3	0.815	0.919	-0.050	0.895
HC6	0.620	0.725	0.397	0.571
HC7	0.730	0.869	0.235	0.797
HC10	0.711	0.860	0.031	0.759
RC1	0.008	0.097	0.856	-0.012
RC2	-0.088	0.000	0.768	-0.105
RC4	0.005	0.124	0.859	0.026
RC5	0.008	0.065	0.793	-0.043
RC6	-0.042	0.061	0.772	-0.060
RC8	0.009	0.116	0.869	-0.005
RC9	0.084	0.123	0.811	0.059
EP1	0.868	0.854	-0.115	0.932
EP2	0.688	0.687	0.299	0.725
EP3	0.730	0.684	-0.300	0.805
EP4	0.738	0.753	0.213	0.817

Structural model

Statistical evidence in favor of three of the five hypotheses proposed was found (see Table 4). The impacts of HC and SC on EP were statistically significant and positive, supporting hypotheses H1 and H2, respectively. In addition, it was found that the relationship between HC and EP is mediated by SC, as proposed in hypothesis H4. On the contrary, no evidence was found in support of hypothesis H3 since the relationship between RC and EP was not significant. Hypothesis H5 was also not supported, given that HC did not exhibit a significant effect on RC. Finally, given that SC shows a pronounced and significant effect on EP, SC partially

mediates the relationship between HC and EP. Since these direct and indirect effects are both positive, the product of the two (i.e., 0.412) is also positive. In addition, the indirect effect from HC on EP through SC (that is, the product of the path coefficients from HC to SC and from SC to EP) is significant since the 95% confidence interval does not include zero. Therefore, it can be concluded that SC is a complementary mediator of the influence of HC on EP. These results offer evidence for the mediating role of SC in the model. Specifically, SC represents a mechanism that underlies the relationship between HC and EP. HC affects SC, and SC, in turn, affects EP.

Table 4. **Standardized model coefficient estimates and p-values, corrected for bias**

H_0	Effects	Estimate	Confidence interval 95%		P-Value	Sig.
			Low	High		
	Direct Effects:					
H1	EP←HC	0.465	0.386	0.537	0.000	***
H2	EP←SC	0.482	0.399	0.565	0.000	**
H3	EP←RC	0.020	-0.026	0.091	0.507	
H4	SC←HC	0.850	0.809	0.878	0.000	***
H5	RC←HC	0.127	-0.234	0.238	0.315	
	Indirect Effects:					
	EP←HC	0.412	0.352	0.476	0.000	***
Controls	EP←EMPLOYEES	-0.085	-0.146	-0.007	0.019	**
	EP←TIME	-0.109	-0.162	-0.050	0.000	***
	EP←CONTRIES	0.069	0.011	0.125	0.375	
	EP←PRODUCTS	0.019	-0.027	0.057	0.017	**

Notes: Standard error based on resampling. * p <0.10; ** p <0.05; *** p <0.01. EP: export performance; HC: human capital; SC: structural capital; RC: relational capital; EMPLOYEES: Number of employees; TIME: Time during which company has been engaged in export activities; COUNTRIES: Number of countries exported to; PRODUCTS: Number of products exported.

These results support much of the theoretical basis presented above, as interactions among the different components of IC have been identified. Based on the results, SC partially mediates the relationship between HC and EP. Furthermore, the results also corroborate that HC and SC are the dimensions that contribute most significantly to EP.

DISCUSSION

In the past, the literature on the management of intangible resources focused on large organizations within developed countries (Cuervo-Cazurra & Genc, 2008). However, in recent years, researchers have broadened their interest to small- and medium-sized organizations in developing countries (Drenkovska & Redek, 2015; Hejazi et al., 2016; Hoa et al., 2018; Xu & Wang, 2019).

This study aimed to analyze the impact of IC on EP in the developing countries of South America. The literature suggests that IC resources often drive performance and, hence, there must be a causal relationship between those resources and value creation (Drenkovska & Redek, 2015). In general, the results suggest that intangible resources make important contributions to EP. Further, the results confirm that there is a positive relationship between the dimensions of IC and EP. Additionally, there exists a positive relationship between IC and EP within small- and medium-sized firms. These findings validate the resource-based theory in the South American context. Hence, this supports the theory that IC influences EP, which is consistent with Calix et al.'s (2015) findings about Honduras.

Regarding hypothesis 1, the results show that HC is the most important component of IC. Edvinsson and Malone (1997) also argue that "human capital is the primary component of IC as it is the critical source of intangible value for firms." It is a significant determinant of EP. This finding is consistent with prior research regarding the key role of HC in the performance of firms operating in Indonesia (Muh & Murwaningsari, 2019; Ngatno, Apriatni, & Widayanto, 2016), in South Asia (Bhavan, 2017), and in Latin America (Calix et al., 2015). However, the results seem different in countries such as India and China. Both Smiriti and Das (2018) and Xu and Wang (2019) have shown that the HC of companies in these countries' textile industries does not affect EP as strongly as it does in emerging countries. The reason may be what Bhavan (2017) affirms: "The countries suffering from trade deficits can concentrate on human capital development in the external sector to enhance its economic performance."

Regarding hypothesis 2, SC is a significant determinant of EP. This result is consistent with the findings of Xu and Wang (2019) in China and South Korea, Smiriti and Das (2018) in India

Hejazi et al. (2016). However, no significant associations are found in Iran (Muh and Murwaningsari, 2019) or Indonesia, especially in the province of Banten. An explanation may be that "the manufacturing companies in the province of Banten have not optimized their routines, procedures and bureaucratic systems."

Regarding hypothesis 4, HC influences SC. This reinforces the role of HC in enhancing the other intangible assets. However, the empirical results indicate that it does not have a significant influence on EP.

Hypothesis 3, concerning RC, is not supported, despite our expectations that it would be (Hoa et al., 2018). However, Xu and Wang (2019) found that in China, RC significantly influences textile companies' EP. Nevertheless, according to Xu and Wang, this is not the case for South Korea. Further, Xu and Wang state, "Overall, CEE, SCE, and RCE are found to be the main value-added drivers for Chinese textile companies. In South Korea, CEE and HCE are major contributors to the performance of the textile industry." In addition, studies conducted in Slovenia and the Western Balkans (Drenkovska & Redek, 2015) and in Vietnam (Hoa et al., 2018; Xu & Wang, 2019) confirm the importance of RC in company performance. However, in studies conducted in Russia, the importance of RC is not found to be as significant (Andreeva & Garanina, 2016).

CONCLUSIONS

The present study examined the influence of intangible capital on EP in the textile manufacturing sector of South American countries. The results suggest that intangible assets make important contributions to companies' EP. Specifically, the findings reveal that both HC and SC are significant determinants of EP. However, RC is not a significant factor affecting the South American textile industry. These results are similar to those found in emerging countries in Southern Asia. Comparing Asian countries with Peru, it seems that the political and economic context of the latter influences whether RC is important or not. It appears that some countries exhibit greater reliance on RC than others.

This study has contributed to the literature concerning IC. First, it has drawn from previous research on IC and has specifically included textile manufacturers from Peru, an emerging South American economy. Second, it has confirmed that by driving business opportunities in foreign markets, HC is the most important factor driving EP. Finally, we have used more than one indicator for each component of IC. This has overcome some of the possible limitations of previous studies, which only used accounting data as an indicator.

This study helps balance the attention between tangible and intangible assets, thereby creating a more holistic view of resources. This can provide researchers with a more comprehensive vision of the resources at a company's disposal. It can also aid policy makers who work to support and encourage the development of export activities, especially in small- and medium-sized enterprises. We conclude that Peruvian firms in the textile sector must focus on strategic resources to improve their EP.

This study has some limitations. First, the questionnaire may introduce possible bias due to the self-reporting. Those receiving the questionnaire were often unable to delegate the task of completing it because they were the only ones at the organization with the knowledge necessary to complete it. Second, because it was decided to focus on a single industrial sector, to control and manage the number of contextual variables, the findings cannot be extrapolated to a wider context.

The proposed model provides a future direction for researchers to continue and explore the role of IC in internationalization. Based on the findings of this study, it is necessary to consider how these factors may play a role in companies' internationalization.

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AUTHORS' CONTRIBUTIONS

Carlos Del Castillo and Jose Ventura participated in the conceptualization and theoretical-methodological construction and the theoretical review. The data collection was performed by Carlos Del Castillo. Both authors worked together in the data analysis and writing. The final revision of the manuscript was performed by Jose Ventura.

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PERSPECTIVES

IS A PROGRESSIVE LAW ACCELERATING THE LONGSTANDING SNAIL'S PACE? WOMEN ON CORPORATE BOARDS IN PORTUGAL

This paper looks at the impact of the new regulatory framework in Portugal that came into force in January 2018, the so-called gender quota law that relates to the gender composition of the boardrooms of companies listed on the Euronext Lisbon Stock Exchange and in the public sector. It begins by contextualising the debate about the underrepresentation of women on boards and the new binding policy framework that has been introduced in the European Union (EU) and Portugal. The paper then examines the data relating to the representation of men and women on the boards of public listed companies (PLCs). It is concluded that the introduction of binding legal targets in Portugal has accelerated the movement towards a greater representation of women on the boards of PLCs, giving an added impulse to the longstanding, but slow progress generated by the incentives that were designed to encourage voluntary action on the part of the companies themselves, and to promote self-regulatory measures. One of the fundamental challenges lying ahead is to move from a greater numerical gender balance to substantive gender equality in the boardroom, while also increasing the representation of women in positions of power and with influence over decision-making.

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INTRODUCTION

This paper seeks to examine the impact of the new regulatory framework in Portugal designed to elicit a greater gender balance in economic decision-making bodies, particularly in companies listed on the Euronext Lisbon Stock Exchange (the only segment that we are considering in this current research), state-owned companies, and local government companies. The research questions underlying the study are: to what extent has the gender quota law been effective in delivering the expected greater gender balance on the boards of publicly listed companies (PLCs)? If it has been successful, then what are the challenges ahead?

We begin by briefly contextualising the debate about the underrepresentation of women on boards (WoB), and the new binding policy framework (the so-called gender quota law) that has been introduced in the European Union (EU) and Portugal. Following this, we examine the data relating to the representation of men and women on the boards of public listed companies. It is concluded that the introduction of binding legal targets in Portugal has accelerated the movement towards a greater representation of women on the boards of PLCs, giving an added spur to the longstanding, but slow progress generated by the incentives designed to encourage voluntary action on the part of the companies themselves and to promote self-regulatory measures. One of the fundamental challenges lying ahead is to move from a greater numerical gender balance to substantive gender equality

in the boardroom, while also increasing the representation of women in positions of power and expanding their influence over decision-making.

Our research is in line with a growing number of studies that analyse the impact of regulatory frameworks intended to elicit a greater gender balance in political and economic decision-making bodies. The research presented here has been developed under the scope of a wider national project about *Women on Boards: An Integrative Approach*.[1]

THE UNDERREPRESENTATION OF WOMEN ON CORPORATE BOARDS: BRIEFING THE THEORETICAL EXPLANATIONS

Although there are some variations to be found among different societies, vertical sex segregation is one of the most persistent patterns of gender inequality (Terjesen & Sealy, 2016), as women face career progression barriers worldwide (International Labour Organization [ILO], 2015). Explanations for the underrepresentation of women on corporate boards are to be found in individual, organisational and societal/institutional factors (Iannotta, Gatti, & Huse, 2016; Menéndez, Fagan, & Ansón, 2012). Individual-based explanations highlight the fact that women face greater difficulties in reaching the highest ranks in organisations because they lack the required human capital (skills and managerial experience), social networking and the right attitudinal predisposition (lack of career ambition) (Coleman, 1988; Hakim, 2000).

Organisation-level explanations, on the contrary, lay emphasis on gendered organisational structures, processes and practices (Acker, 1990; Connell, 2006), and on the tendency for the under-representation of women, combined with tokenism (Kanter, 1977), to exacerbate the gender stereotypes, in-group favoritism and exclusionary mechanisms that reproduce homophily and further confirm women's status as outsiders (Konrad, Kramer, & Erkut, 2008; Lewis & Simpson, 2012).

In a complementary vein, society-level arguments stress the role of the national context, including the influence of cultural norms and of the gender order. Drawing upon insights from institutional and stakeholder theories, one particular focus of analysis has been the normative and regulatory framework

and the role that national institutions and key social actors play in advancing gender equality (Grosvold & Brammer, 2011; Seierstad, Gabaldon, & Mensi-Klarbach, 2017; Terjesen, Aguilera, & Lorenz, 2015). A growing number of studies, including ours, have therefore examined the different regulatory frameworks intended to elicit a greater gender balance in political and economic decision-making bodies, as well as the respective impacts and outcomes.

THE CORE GROUND FOR AFFIRMATIVE ACTION IN THE EU AND PORTUGAL: GENDER REPRESENTATION REGULATION IN LISTED COMPANIES

The United Nations Convention on the Elimination of All Forms of Discrimination against Women[2], considered to be the *magnum* convention on women's rights, and approved at the UN General Assembly in 1979, exhorted all members to ensure substantive equality between men and women by warranting equal participation in decision-making in all areas of life. Stimulated by the Beijing Declaration and Platform for Action, which was signed at the United Nations Fourth World Conference on Women, in 1995, women's under-representation in decision-making has been addressed by the EU policy since the mid-1990s and, consequently, incorporated in key strategic documents (Humbert, Kelan, & Clayton-Hathway, 2019).

In line with the view that affirmative action may contribute towards ensuring substantive and *de facto* gender equality by providing women with access to decision-making, and reinforcing social justice and democracy (Lépinard & Rubio-Marín, 2018), in 2003 the Council of Europe recommended that all governments of member states should consider "setting targets linked to a time scale with a view to reaching balanced participation of women and men in political and public decision making" (Council of Europe, 2003). Implementing national legislative changes, including affirmative action measures, is backed by the core policy of the EU. Article 23 of the Charter of Fundamental Rights of the EU states that "The principle of equality shall not prevent the maintenance or adoption of measures providing for specific advantages in favor of the under-represented sex" (European Union, 2000). The principle of affirmative action is also incorporated in Article 157(4) of

the European Union – "With a view to ensuring full equality in practice between men and women in working life, the principle of equal treatment shall not prevent any Member State from maintaining or adopting measures providing for specific advantages in order to make it easier for the underrepresented sex to pursue a vocational activity or to prevent or compensate for disadvantages in professional careers" (European Union, 2012).

Such a framework worked as the legal basis for the 2012 proposal of an EU directive on improving the gender balance among non-executive directors of companies listed on stock exchanges, and related measures. One of the main arguments for the need for a directive at the European level was the lack of transparency of the selection procedures and the qualification criteria for board positions. Contrary to the focus on the link between the equal representation of men and women in a full democracy – the prevailing EU narrative in the 1990s -, the 2012 proposal mostly relied on an instrumentally-driven approach by stating that "the underutilization of the skills of highly qualified women constitutes a loss of economic growth potential (Elomaki, 2017). Fully mobilizing all available human resources will be a key element to addressing the EU's demographic challenges, competing successfully in a globalized economy and ensuring a comparative advantage vis-à-vis third countries. Moreover, gender imbalance on the boards of publicly listed companies in the EU can be a missed opportunity at the company level in terms of both corporate governance and financial company performance" (European Commission, 2012).

It is worthwhile noting that this proposal is still pending due to internal resistance expressed by some member states (European Parliament, 2021). Following the snowball effect generated by the Norwegian quota regulation designed in 2003 and aimed at advancing gender balance on boards (Machold, Huse, Hansen, & Brogi, 2013), many European and EU countries have nonetheless passed legislation on gender board quotas (Humbert *et al.*, 2019; Senden, Kruisinga, Burri, & Timmer, 2018).

Portugal: setting the context

Following the institutionalist comparative approach proposed by Terjesen et al. (2015), it was previously suggested that Portugal is equipped with favorable institutional conditions for adopting a gender quota for boards of directors in the business sector, including: 1) a relatively high female employment rate and,

despite the financial weaknesses of a semi-peripheral economy, a welfare state whose policies are steeped in the principle of gender equality; 2) a left-leaning government coalition at the time when the parliamentary bill for the law was formulated and proposed; 3) and a legacy of path-dependent gender equality initiatives in the public policy area (Casaca, 2017).

Portugal has displayed a high employment rate for women (15-64 years old) within the EU (67.6%, in 2019, above the EU28 average of 64.1%) (Eurostat, 2020). This has been a long-established pattern in the country and is described as one of its singularities (Casaca, 2012; Ferreira, 1999; Torres, Silva, Monteiro, & Cabrita, 2005), since women's employment behavior has been closer to that of the Nordic countries than to the Southern European ones, where employment rates have been among the lowest in the European Union (Casaca, 2012). This has been combined with the higher investment in education made by women relative to men (61.6% of the active population with a tertiary degree are women) (Pordata, 2019). Vertical segregation on the grounds of gender, however, is one of the core challenges that needs to be addressed in advancing gender equality: women account for 27% of those serving as heads of department, while only 10% hold the position of director (Informa D&B, 2019). According to the Gender Equality Index (European Institute for Gender Equality [EIGE], 2020a), the score for Portugal is still weak when it comes to the distribution of power in the economic domain (measured by the proportion of women serving on the boards of the largest companies listed on the national stock exchanges and on the boards of national Central Banks), as the score in 2018 was still only 44.9%. Nonetheless, the improvement rate has been quite remarkable, since, in 2015, for instance, the proportion of women serving on boards was only 16.4%. The next section provides the explanation for this accelerated progress.

From the slow voluntary progress to the regulatory accelerator

In order to answer the key research question – *To what extent has the gender quota law been effective in delivering the expected greater gender balance on boards?* – data were retrieved from the EIGE's Gender Statistics Database (EIGE, 2020b), which provides statistics on the representation of men and women on the boards of the EU's largest public listed companies. When the quota law came into force in 2018, 18 companies were listed in the PSI-20 Index, and now (in October 2020) there are 17 companies forming part of this same universe.

These data allow for a comparison between the progress made in relation to the question of WoB in Portugal and the advances made in the other EU countries, although only for the specific segment of the largest PLCs. For the whole universe of PLCs in the country (40 and 38 in total, in 2018 and 2020, respectively), data were collected from the publicly available annual financial and corporate governance reports.

Before the introduction of the new regulatory framework in the country, policies to promote gender balance on boards relied on a combination of awareness-raising initiatives and soft measures, such as policy recommendations and incentives for self-regulation, which had only a limited impact on the numerical representation of women (Casaca, 2017). In 2012, when women accounted for only 7.4% of the board members of the largest PLCs, the government, which was led by a center-right coalition (2011-2015), passed a resolution explicitly recommending that PLCs adopt self-regulatory measures to achieve a plural presence of women and men in managerial and supervisory positions (no specific target was specified) (Figure 1, A).

Changes turned out to be very slow and, in March 2015, the same government invited all the PLCs to sign an agreement expressing their commitment to achieving a minimum representation of 30% for each sex (Figure 1, B). In June 2015, 13 out of 43 PLCs signed the respective agreement, with the proportion of women on boards reaching almost 14% (Figure 1, C). A new government, supported by left-leaning parties, which has been in power since November 2015, announced its plans to introduce legislation containing mandatory quotas – a promise that it fulfilled two years later.

The targets established by the gender quota law (Law No. 62/2017) published in August 2017 (Figure 1, D) are well below the minimum parity threshold of 40% (Council of Europe, 2003), which is also the quantitative objective established in the proposal for the EU Directive, drafted in 2012 (European Commission, 2012). The enforcement of this law consists of two stages: in the first stage, the proportion of members of each sex appointed to each managerial and supervisory body shall not be less than 20% after the first elective general meeting held after January 1, 2018 (Figure 1, E). In the second stage, such proportion shall not be less than 33.3% after the first elective general meeting held after January 1, 2020 (Figure 1, F). The Law provides for the application of both financial and reputational sanctions in the event of non-compliance

Figure 1. **Women's representation as board members in the largest PLCs (2011-2020)**
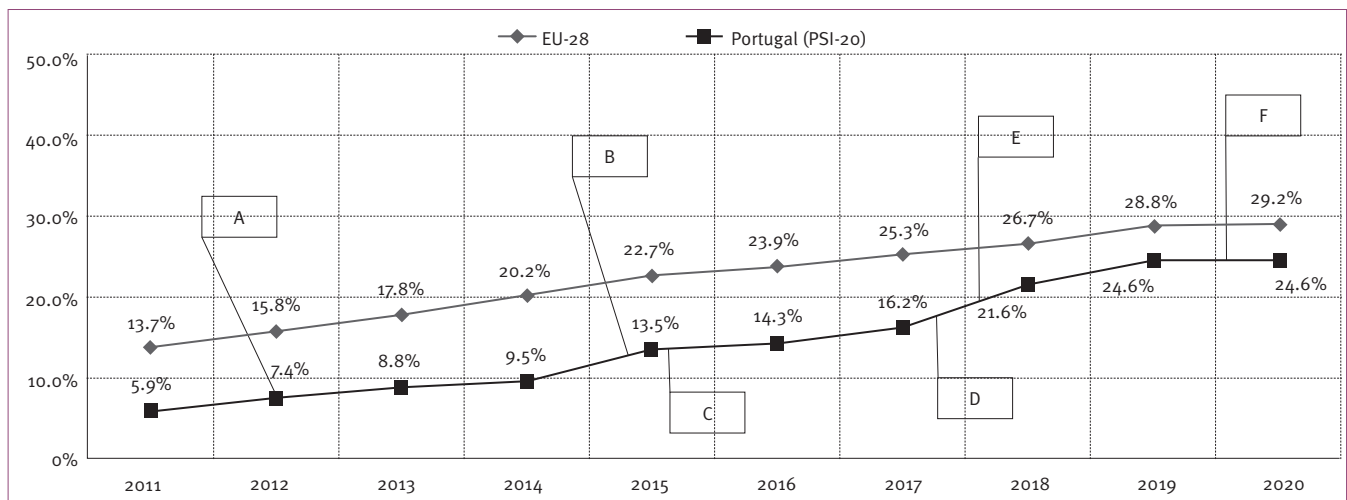
Source: EIGE (2020b), Largest listed companies: board members, available at: https://eige.europa.eu/gender-statistics/dgs/indicator/wmidm_bus_bus__wmid_comp_compbm/line [consulted on 25/06/2020]

Figure 1 shows that, after the rather slow and inconsistent progress of the previous decade, the quantitative ambition of the Portuguese law is gradually producing the expected results in the composition of the boards of the targeted companies, and has generated an increase in women's representation in the boardroom. In 2020, the percentage of women represented in the decision-making bodies of the largest PLCs (PSI-20 Index) and the gap in relation to the EU-28 average is the lowest of the past decade (2011-2020) (approximately 4 percentage points below). Analysing the progress made since 2011 (the year before explicit incentives were introduced by the government for the adoption of self-regulatory measures), it can be seen that the most notable increase occurred in 2018, the first year in which the law was applied.

As far as the whole group of PLCs is concerned, when the law came into force, in 2018, the vast majority of effective board members were men (82%), with women representing less than 20% (18%) – below the percentage of WoB in the group of companies listed in the PSI-20 Index. Regarding the number of companies already covered by these legal requirements, in 2018, after their elective general meetings under the new legal framework had been held (N=15), women accounted for 21% of all board members. In October 2020, not all of this group of companies were complying with the legal requirements: in three out of 32 com-panies, the percentage of WoB is below the targets required by law. The percentage of women on boards at companies complying with the law increased to 28% in 2020 (Table 1). In terms of their actual positions, however, only 14% of women are executive board members. When it comes to non-executive positions in the same group of companies, women's level of representation is higher, accounting for 37% of the total number of board members filling such positions, in PLCs and the PSI-20. Furthermore, for the same group of companies, only one woman was found to be serving as a CEO, while two more were serving as the chair of the board of directors.

Table 1. Percentage of WoB on PLCs in October 2020

	WoB (%)		
	Executive positions	Non-Executive positions	Total
Total PLCs (N=38)	14 %	35 %	26 %
Companies legally bound by the quota law (N=32)	14 %	37 %	28 %
Companies legally bound by the 20% target (N=22)	16%	34%	27%
Companies legally bound by the 33.3% target (N=10)	11%	49%	31%

CONCLUDING REMARKS AND THE CHALLENGES AHEAD

The introduction of binding legal targets in Portugal has acted as an accelerator leading to a greater representation of women on the boards of PLCs, thereby giving an added spur to the longstanding, but slow progress generated by the incentives designed to encourage voluntary action on the part of the companies themselves and to promote self-regulatory measures. However, not all the companies that are legally bound by the quota law are actually fulfilling the legal targets, and sanctions are due to be imposed in the months ahead. This will be an occasion for deciding whether the law is actually being enforced by the official mechanisms responsible for the application of penalties. A fundamental topic in our research is to identify whether a greater numerical gender balance is, in fact, prompting more substantive gender equality in the boardroom. As has been demonstrated, an evident challenge is to increase the representation of women in positions of power and influence over decision-making (executive roles), as the gender gap is still remarkably large. The next stage in our study will be to look into the social dynamics of the boardroom (*intra board processes*) and the *outcomes* of a greater gender balance on boards. As the gender quota law also makes the adoption of gender equality action plans mandatory, the focus for the outcomes is on the extent to which an increasing share of WoB is stimulating a review of internal corporate policies, practices and processes, eliciting more gender-inclusive work organisation models and work cultures. The current project also seeks to integrate theory, research, policy and practice, and has institutionalised a think tank, involving key stakeholders in evidence-based reflections on gender balance on boards (such as the current findings), and its impact on sustaining gender-equality values in society. A fundamental challenge ahead is to move from a greater numerical gender balance to substantive gender equality in the boardroom, while also increasing the representation of women in positions of power and influence over decision-making.

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PERSPECTIVES | IS A PROGRESSIVE LAW ACCELERATING THE LONGSTANDING SNAIL'S PACE? WOMEN ON CORPORATE BOARDS IN PORTUGAL

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AUTHOR CONTRIBUTIONS

The authors declare that they participated in all stages of development of the manuscript. Sara Falcão Casaca worked on the conceptualization and theoretical-methodological approach. The theoretical review was conducted by Sara Falcão Casaca. Data collection was coordinated by Sara Falcão Casaca and Maria João Guedes. Data analysis included Susana Ramalho Marques and Nuno Paço. All authors worked together in the writing and final revision of the manuscript.

PERSPECTIVES

SEXUAL HARASSMENT AT WORK: A LEADERSHIP PROBLEM

Sexual violence against women in the workplace remains rife and poorly addressed. Sexual harassment is often perpetrated by leaders, managers, or supervisors as the result of abusive power relations. Recognising and addressing the cultural tolerance for sexual violence in organizations and society is one of the steps in addressing this issue. In this paper, we argue that violence is normalised through leadership practices. We suggest that leadership against sexual harassment is essential for organizational redress.

INTRODUCTION

Workplaces have been identified as a social space where change that addresses and seeks to eliminate sexual violence perpetrated against women can be implemented and enforced through gender equity measures (Webster et al., 2018). Yet, this form of violence remains rife and poorly addressed despite legal interventions that have made sexual violence a criminal act and widespread implementation of diversity management and training (Mackay, 2018). Beyond the business case approach for diversity and punitive actions against individual perpetrators, facing head on the cultural tolerance for sexual violence in organizations, and society more broadly, is required. To properly address the scourge of violence against women at work also entails cultural and systemic change. This includes radically changing workplace cultures that facilitate sexual violence, which necessitates the explicit attention that sexual harassment is often perpetrated by leaders, managers or supervisors and the result of abusive power relations. Workplace change is the responsibility of leadership groups and tackling the fact that some leaders do play a role in enacting sexual violence is crucial.

Recent events and research in the US and Australia, such as the Harvey Weinstein trial and convictions, and the findings from the Australian Human Rights Commission's (AHRC) national survey into sexual harassment in workplaces (Gebicki, Meagher, & Flax, 2018), show that perpetrating sexual violence against women in the workplace is still occurring. Recent studies concerning social attitudes towards violence against women (Webster et al., 2018) and leaders' attitudes towards sexual violence in the workplace (Hart, Crossley, & Correll, 2018) show a high level of acceptance and perpetration of sexual-based hostilities or misconduct against women.

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Although many people experience sexual misconduct in the workplace (e.g., LGBTQI+ people, men, women), in this paper, we specifically focus on the violence directed at women. We discuss forms of sexual harassment that range from unwanted sexual attention to sexual coercion, sexual assault, and sexual abuse. Although these terms have differing meanings in different contexts and countries, in this paper we use 'sexual harassment' to mean any form of "unwelcome sexual behaviour that's offensive, humiliating or intimidating. It can be written, verbal or physical, and can happen in person or online" (ReachOut, 2021, n.p.). Sexual abuse is generally used to refer to a broad range of sexual activities and behaviours against people who are not able to give consent (e.g., children) (Cortina, Koss, & Cook, 2018). Sexual assault is a crime and "occurs when a person is forced, coerced or tricked into sexual acts against their will or without their consent" (New South Wales [NSW] Department of Community and Justice, 2021).

Following Özkazanç-Pan (2019), we see the need to interrogate the gender structures and systems that have facilitated sexual harassment, which shifts the emphasis away from individuals towards a structural and relational approach. The prevalence of toxic masculinity across industries and organizations are breeding grounds for practices that marginalize, silence and discipline women into routinely accepting, or tolerating, sexual violence perpetrated against them. Calling out cultural sexism is vital (Savigny, 2020), and leadership that aids cultural sexism and violence is key to its resolve. Leadership that perpetuates 'inequality regimes' (Acker, 2006) is a key part of addressing the gendered structures and systems that provide fertile ground for violence. However, women's experience of violence is unequal, as bell hooks (2004) articulates in her discussions of violence towards Black women.

Next, we outline the nature of sexual harassment against women, before examining examples of women's violence in high profile cases, which illustrate how intersectional inequality surfaces and demonstrate the need to call out violence. In the final part, we discuss the need for leadership to include overt and systemic action against sexual violence in the workplace.

SEXUAL HARASSMENT AT WORK

Based on US and Australian data, sexual harassment in the workplace is still common practice despite policy reforms and well-established gender equality schemes and strategies (Australian Bureau of Statistics, 2018; Feldblum & Lipnic, 2016; US Equal Employment Opportunity Commission, 2019; Nason

& Sangiuliano, 2020). In Australia, the Australian Bureau of Statistics has been administering a Personal Safety Survey (PSS) that includes questions about gendered and sexual violence. The 2016 PSS shows that close to 10.6% of the most recent incidents of sexual assault or sexual threat perpetrated by a man against a woman in the last 10 years occurred at work and 12.5% of the perpetrators were an employer/manager/supervisor/co-worker (Australian Bureau of Statistics, 2018).

The AHRC initiated a national survey into Sexual Harassment in Australian Workplaces (Gebicki et al., 2018). The results of this survey show that "one in three people (33%) have experienced sexual harassment at work in the last five years. As with lifetime sexual harassment, women were more likely to be sexually harassed in the workplace than men" (Gebicki et al., 2018, p. 8). Also, the survey found that:

- 25% of perpetrators of sexual harassment in the workplace acting on their own were the victim or survivor's direct manager or supervisor (11%), another manager or supervisor at work (8%) or the head of the workplace or organisation (e.g., the CEO, business owner or similar) (6%);

- in 47% of cases where there was more than one perpetrator involved a direct manager or supervisor (21%), another manager or supervisor (16%) or the head of the workplace or organisation (10%);

- 22% of single witnesses of acts sexual harassment in the workplace were the victim or survivor's direct manager or supervisor (12%), another manager or supervisor at work (6%) or the head of the workplace or organisation (4%); and

- in cases of multiple witnesses, 42% included the victim or survivor's direct manager or supervisor (16%), another manager or supervisor at work (16%) or the head of the workplace or organisation (11%).

These findings need to be examined in the light of—and in a way confirms—the fact that "One in five people who were sexually harassed at work said the behaviour was common (20%) in their workplace" (Gebicki et al., 2018, p. 9). The figures correlate other findings from several recent national surveys that highlight the extent of sexist views in Australia. For example, a national survey on social attitudes towards gender equity found that 53% of the surveyed population believed that in Australia sexism was most

widespread in the workplace, after in politics (58%) but ahead of in the media (42%) and advertising (33%) (Evans, Haussegger, Halupka, & Rowe, 2019). Another national survey on attitudes towards violence against women and gender equity found that 14% of Australians believed that men are better leaders in politics and work (Webster et al., 2018).

Furthermore, although only indicative of what may be seen as accepted practices and culture, a review of the 58 submissions made to the AHRC's National Inquiry into Sexual Harassment in Australian Workplaces by individuals— accessed on 8 July 2019 and made public on the AHRC's website[1] alongside 131 submissions made on behalf of organisations—highlights how common and normalised sexual and gender-based harassment is at work. A search of these submissions for the occurrence of the stem terms 'boss', 'director', 'leader', 'manager', 'executive', 'CEO', 'senior' and 'supervisor' revealed that 25 individuals reported sexually-motivated or sexist behaviours perpetrated by staff in management position (e.g., unwanted sexualised comments, lewd jokes, groping, rape), 18 reports of lack of support or poor response from management when reporting such misconduct (e.g., not acting on complaints, isolating staff who complain, blocked staff who complain from promotion), and 8 reports of management's implicit support or acceptance of objectifying sexual attitudes and behaviours towards women (e.g., blaming the victim for the perpetrator's actions). Although, data were not available on other forms of difference, this brief search also showed that most perpetrators were men (only 6 out of the 58 individual submissions were about female perpetrators) and the victims were mostly women (5 men out of 58 individuals).

In these submissions a review of references to the social movement 'MeToo' and '#MeToo' highlights the mixed impact the movement had in victims. Although it is not possible to generalise from the individual submission, we can see that, for some of these individuals, the movement had a negative impact, including retraumatisation (e.g., "I haven't thought of that incident in more than years, but I got to re-live the trauma of that attack and its personal and career ramifications when the #MeToo campaign gained momentum here 12 months ago") and confirming the lack of action from those in positions of responsibility or care and the impunity of perpetrators (e.g., "All the MeToo talk is cheap. You tell women to report sexual harassment to HR. HR does an 'alleged' cover up investigation."). On the other hand, we can also see that the movement helped victims not wanting to use

the formal reporting channels to informally disclose incidents (e.g., "I have tried to communicate these things in the MeToo movement but I lack the courage") and support them to formally report incidents, such as through a submission to the AHRC, as exemplified by the following quote:

> #MeToo's international spotlight on the sexual misconduct and abuse of power by individuals in positions of authority, and the high-profile allegations of sexual misconduct raised against those in the media industry here in Australia, has undeniably been a catalyst for giving (predominantly) women a voice and the ability to speak about behaviour that should never happen, let alone in a workplace.

In the US, according to a survey conducted in January 2018 of 1,000 women and 1,000 men aged 18 years and over (Kearl, 2018): "81% of women and 43% of men reported experiencing some form of sexual harassment and/or assault in their lifetime.

- More than 3 in 4 women (77%) and 1 in 3 men (34%) experienced verbal sexual harassment;

- 1 in 2 women (51%) and 1 in 6 men (17%) were sexually touched in an unwelcome way;

- Around 4 in 10 women (41%) and 1 in 4 men (22%) experienced cyber sexual harassment;

- More than 1 in 3 women (34%) and 1 in 10 men (12%) were physically followed;

- Close to 1 in 3 women (30%) and 1 in 10 men (12%) faced unwanted genital flashing;

- More than 1 in 4 women (27%) and 1 in 14 men (7%) survived sexual assault" (p. 7).

- This survey also highlighted that:

Any slight difference in experiences across racial/ethnic groups for women was not statistically significant. Overall, among men, Hispanic men reported experiencing sexual harassment and

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[1] https://www.humanrights.gov.au/our-work/sex-discrimination/projects/national-inquiry-sexual-harassment-australian-workplaces

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assault the most for every category, while Black men reported experiencing it the least for almost every category. Difference across racial/ethnic groups was particularly significant for physically aggressive harassment (36% of Hispanic men versus 25% of White men and 18% of Black men) and for sexual assault (12% of Hispanic men versus 8% of Black men and 6% of White men). (Kearl, 2018, p. 18)

These submissions and surveys highlighted the need for change, hinted at intersecting inequalities across gender, class, and ethnic lines, and stressed the role leadership practices plays in maintaining or enacting a culture that supports abuse of power over women in the form of sexual misconduct. Also revealed is individuals' understanding of leadership practices' capacity to change systemic and individuals' abuse of women.

CASES OF INTERSECTING INEQUALITY

To more vividly illustrate the ways in which men in leadership positions use their power to abuse women, we now turn to two highly mediatised cases that helped bring much needed attention to the issue of sexual abuse and violence against women. These cases provide a horrific exemplification of the relationship between power, violence and leadership as well as the complexity of coercive practices at the intersection of differences (e.g., gender, class, age, ethnicity).

On 7 December 2017 at a US congressional hearing about sexual harassment in the workplace, Gloria Lett, Counsel at the Office of House Employment Counsel, testified to her own experiences of discrimination. In addition to explaining how sexual harassment had, earlier in her career, led her to leave a job with which she was otherwise satisfied, she also revealed some realities of the racial discrimination and abuse she had been subject to. Lett described an incident as follows:

> As a woman of color, I have also experienced race discrimination in the workplace [...] I worked for a private company where a white manager brought it [sic] in a whip, which he prominently displayed in his office. And when questioned about it, he said he wanted to — quote — unquote — motivate the black employees. (Edwards, 2017, n.p.)

Lett's story is one of overt racism that chillingly echoes the extreme injustices of America's past, amplifying them into a present where White authority uses threats of violence in attempts to control African-American people. This is also a story about leadership. Not the fairy tales of heroism that characterise so much of leadership research (Grint, 2010), but the harsh realities of what can happen when workplace authority interacts with a cultural legacy of colonialism and sexism. Lett's account is harrowing in itself but harrowing too because it represents the experiences of so many women in the workplace at the hands of men. It also shows how those experiences can be troublingly different for women of colour. It is precisely disparities like these and how leaders exploit and reproduce them to ensure their dominance that show how inequality regimes work (Cook & Glass, 2014).

The second is the case of Hollywood film producer and serial sex offender Harvey Weinstein. When Academy Award-winning Kenyan-Mexican actress Lupita Nyong'o wrote of her harassment at the hands of Weinstein in *The New York Times* in October 2017 (Nyong'o, 2017) she was the first prominent Black actress to testify to being harassed by Weinstein; his other accusers were by and large White. It was in response to Nyong'o that, compared to all his other accusers, Weinstein made a very specific denial effectively asserting that she had fabricated the story. While he accepted responsibility for so many of his reprehensible behaviours, his reaction changed when his accuser was Black, resulting in many calling out his defence as racist (Wang, 2017).

Weinstein's career-long record of sexually harassing and assaulting women is an example of the worst kind of abuses of power by a White male authority figure. This behaviour was enabled by the power accorded to him through his leadership position as co-chairman of The Weinstein Company. Weinstein's disturbing record of systematic abuse of women in an industry where dominant White male 'leaders' make career decisions affecting women's lives based on an assessment of their 'fuckability' (Adewunmi, 2017) is not without racist dimensions.

Gloria Lett's whip-happy manager and Harvey Weinstein were able to get away with their repeated patterns of abuse for so many decades because their behaviours have been accepted as normal in their respective institutional setting. These acts amount to an injurious form of leadership that is an accepted and dominant practice, which is supported and legitimised by complex intersecting systems of power, such as racist White ethno-nationalist views and patriarchal domination. In defending himself, Weinstein said: "I came of age in the 60s and 70s, when all the rules about behaviour and workplaces were different. That was the culture then" (Eve, 2017, n.p.). The implications of this refusal to take responsibility are that when power inequality between men and women is institutionalised the abuse of women becomes normalised. Moreover, this institutionalisation

is further cemented by the "pressure to reconstruct the story to maintain the status quo association of leadership with individual action, masculinity, and static, hierarchical notions of power and control" (Fletcher, 2004, p. 653; see also Ford, 2005). That is how inequality regimes operate and how leaders exploit them to ensure their dominance (Cook & Glass, 2014).

LEADERSHIP AS POLITICAL ACTION AGAINST SEXUAL VIOLENCE

Sexual harassment against women, who identify or are perceived as belonging to another minority group, occurs within and through intersecting power structures. It is, therefore, crucial to understand that, in the workplace, these violent forms of discrimination and leadership practices are embedded in historically shaped inequality regimes and systems. These regimes and systems produce distinctive experiences that render some of us insignificant (Collins, 2015) through the performance and implementation of "practices, processes, actions, and meanings that result in and maintain class, gender, and racial inequalities within particular organizations" (Acker, 2006, p. 443).

To tackle sexual violence and achieve equality in organizations requires disrupting the underlying conditions that reproduce privilege and injustice, including the cultural tolerance of violence. Addressing these acts of violence and organizational conditions needs a deep commitment from leadership and alliance building at all levels of the organisations, rather than an unreflexive compliance or 'gender-neutral' approach that fails to recognise individual needs and maintains gender inequality.

A good start is to understand how inequality regimes operate by analysing hierarchies and leadership positions within organizations. But this is not enough because in some instances, an individual focus might have the opposite effect and make particular people appear or feel more isolated, and, in so doing, provide a normative platform for oppressive behaviour in institutions that reinforce patriarchal domination through structural order. If our goal is to be able to (inter)act as equals in organizations free of violence, achieving equality in singular workplaces is only one part of the emancipatory struggle. To lead broader systemic changes, there is a need to act beyond individual violations or inequalities in isolated organizations. There is also a need to take responsibility for all our actions.

To address sexual violence in the workplace requires political change (Rottenberg, 2019) and commitment from leaders. Such a politics means enacting leadership practices that acknowledge the existence of inequality regimes and seek to challenge and transform traditional gendered relations in the workplace characterised by productive and restrictive power-based interactions. It also relies on creating shared practices or 'community' as exemplified by feminist movements, such as #MeToo, #ShoutingBack and Black Lives Matter (Pullen, Rhodes, McEwen & Liu, 2019). Indeed, Özkazanç-Pan's (2019) discussion of collective feminism reminds us that "gender system change will require collective efforts, voices and scholarship that undoubtedly cross national, virtual and community boundaries when wide ranging, transversal communal action is required" (p. 1217). These forms of organising show the vital importance of building strength across axes of difference to disrupt the hierarchy, power and regimes on which inequality is perpetuated, and not only looking at the structural changes required to interrupt the re-emergence of the same behaviour in other individuals, but also calling out and/or prosecuting individual perpetrators at an organizational and national level (Teixeira & Rampazo, 2017; Teixeira, Silva, Mesquita, & Rampazo, 2018).

Some of the #MeToo claims of sexual harassment at work have led to changes, such as the increase in legal claims lodged, incidents being reported, and implementation of new training programs (Baum, 2019). Some examples of training material include *Consent Matters* for university staff and students in Australia[2] and the US-based *That's Harassment* (Avin & Schwimmer, 2018). The next steps required to end the cycle of violence are for men to be held accountable for their actions against women and leaders to take responsibility for attitudinal and cultural change in organisations.

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ESSAY

FEMINIZATION OF AGING: A MULTIFACETED PHENOMENON BEYOND THE NUMBERS

This essay aims to expand the concept of the feminization of aging by addressing the conditions associated with older women's working relationships. The feminization of aging is generally associated with the fact that there are more women than men in the elderly population, especially in Brazil. The theoretical basis of this study can help to expand our understanding of this phenomenon, which has three axes: the nature of the feminization of aging; the characteristics of those who experience it; and, finally, the needs of aging women and transformation strategies in the work context. These elements show that the phenomenon is too complex and multifaceted to be explained by quantitative approaches, which merely consider the predominance of women in the elderly population in Brazil. Due to gender and age discrimination and other professional challenges, women face difficulties associated with building, maintaining, and progressing in their careers. This expansion of the concept reveals the lack of attention and support for this social group in organizations, suggesting that professionals and managers must raise awareness of and confront this issue to effectively transform the world of work for older women.

INTRODUCTION

The worldwide global population aged 65 and over is expected to double, growing from 703 million elderly people in 2019 to 1.5 billion by 2050 (United Nations, 2019). In Latin America, the percentage of the population aged 65 and over has almost doubled in recent years, from 5% in 1990 to 9% in 2019 (United Nations, 2019). By 2050, elderly women are expected to make up 54% of the global population (United Nations, 2019).

It is estimated that older people will constitute 25.5% (58.2 million) of the population of Brazil by 2060, compared to 9.2% (19.2 million) in 2018 (Brazilian Institute of Geography and Statistics [Instituto Brasileiro de Geografia e Estatística—IBGE], 2018). In 2012, older men were 5.7% of the population and women 7.2%; by 2018, these percentages had grown to 6.8% men and 8.6% women (IBGE, 2019). Women also live longer than men in Brazil. Mortality-table data indicate that men have a life expectancy of 72.8 years, while women have a life expectancy of 79.9 years (IBGE, 2018). As there are more elderly women than men, both worldwide and in Brazil, some authors have argued that aging has become feminized in urban areas (Camarano, 2004; Gavrilov & Heuveline, 2003; Lima & Bueno, 2009).

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The feminization of aging is highly relevant in the context of organizations, as many older women enter or remain in the labor market (Nascimento & Rabêlo, 2008). The work conditions that women experience must not be ignored. Data presented by Felix (2016) show that rates of formal employment can begin to decrease when women are just 25 years old. Approximately 28% of women aged 45–49 are formally employed; after the age of 55, only 20% are employed. Of women over 60, less than 10% are employed under the CLT regime (*Consolidação das Leis do Trabalho*—Consolidation of Labor Laws).

The difficulties associated with women's aging are not well understood, since most studies on aging fail to consider the specific characteristics of men and women, treating them as equivalent (Lima & Bueno, 2009; Mori & Coelho, 2004). Therefore, despite the relevance of this topic, few studies have addressed women's aging (Lima & Bueno, 2009; Nascimento, 2015) or characteristic features of the feminization of aging, especially when the phenomenon is approached from a work-context perspective.

There is no consensus in the literature on the age at which women begin to experience difficulties in the labor market because they are considered "old." It may occur when they are 50 years old (Moore, 2009) or even earlier, when they are only 40 (Fineman, 2014). For women, "age is potentially a double damage: they often suffer ageism at younger ages than men" (Fineman, 2014, p. 1721). This paper therefore argues that the feminization of aging is not associated exclusively with women aged 60 or over (Law no. 8.842, 1994); younger women also suffer age-related discrimination.

This study is based on the concept of aging as a socially produced category (Debert, 2007), as well as on the theory of intersectionality (Nash, 2008). The theorization of intersectionality reflects the notion that subjectivity is composed of vectors of race, gender, social class, and sexuality, which reinforce each other (Nash, 2008) It is used to examine the "multidimensionality" of the marginalized experiences of marginalized subjects (Crenshaw, 1989). Although intersectionality research has a long-standing interest in one specific intersection, between race and gender (Crenshaw, 1991), there is limited knowledge of how gender relates to other attributes, such as social class, religion, disability, and age—or how these intersections impact people's professional lives (Harding, Ford, & Fotaki, 2013). Although the contribution made by the intersectional approach has been widely debated in sociology and gender-specific journals, its use has been limited to studies of labor and employment relationships (McBride, Hebson, & Holgate, 2014). Moreover, despite the

growing interest in age-based perceptions and work practices, few studies have investigated the complexity of aging or the ways in which it intersects with other aspects of identity within organizational settings. (Cleveland, Huebner, & Hanscom, 2017; Riach, Rumens, & Tyler, 2014). Nevertheless, some authors have argued that the relationship between gender and age has the potential to shape identities which, in turn, can influence perceptions and work productivity (Cleveland et al., 2017).

When discussing the feminization of aging, three axes make it easier to understand the phenomenon and how it is reflected in work relationships: the nature of the feminization of aging; the characteristics of those who experience it; and, finally, the needs of aging women and transformation strategies in the workplace.

These elements suggest that the feminization of aging is too complex and multifaceted to be explained by quantitative approaches, which merely consider the predominance of women in the elderly population in Brazil. The feminization of aging also encompasses the inequalities faced by aging women in the workplace. We therefore hold discussions on this topic to ensure that the factors that make aging women vulnerable are mitigated in the Brazilian context through the actions of organizations.

This paper expands the concept of the feminization of aging, promoting debate in the field of Business Administration to mitigate age-related losses.

WHAT IS THE FEMINIZATION OF AGING?

Drawing on the relevant Brazilian and international literature, this study aims to identify the main axes that characterize the feminization of aging and the relationship between this phenomenon and the world of work: the nature of the feminization of aging; the characteristics of those who experience it; and, finally, the needs of aging women and transformation strategies in the work context. These axes of analysis will be addressed in more detail throughout this section.

The nature of the feminization of aging

The feminization of aging is the phenomenon whereby "a greater proportion of women than men" [is found] "among the elderly population, especially at older ages" (Sousa, Lima, Cesar, & Barros, 2018, p. 2). In other words, it is shaped by evidence showing that there are "great differences in the number of elderly

people by gender" (Moreira, 1998, p. 88) and that aging lasts longer for women because they live longer (Moreira, 1998).

As they age, women, despite being in the majority and having a longer life expectancy than men, experience gender and age discrimination, especially in the workplace. This discrimination seems to occur because our society sees age as a marker, which brings together ways of thinking and understanding a given individual, organization, or even society (Fineman, 2014). Although ageism, which is discrimination against older adults (Butler, 1989; Dennis & Thomas, 2007; Palmore, 1999), affects employees in different age groups, it predominates among younger and older age groups, with women, who seem to face even more difficulties, as the main victims (Duncan & Loretto, 2004).

Some authors have argued that this discrimination also occurs outside organizations, being coproduced within everyday political and organizational interactions through work practices and individual actions (Halford, Lotherington, Obstfelder, & Kukarenko, 2015; Krekula, Nikander, & Wilińska, 2018). Researchers have pointed out that aging men and young people are more highly valued than aging women (Barrett & Nauman-Sessions, 2016), especially by organizations (McGann et al., 2016).

In the organizational context, women suffer explicit discrimination from coworkers who say they are too old, as well as experiencing age as a barrier when they search for work, seek access to training, request increased remuneration, or attempt to advance their careers. Such barriers can be veiled, as well as direct (Moore, 2009). When they apply for jobs, older female candidates are often rejected via age-neutral language that describes them as "overqualified" or "too experienced" (McMullin & Berger, 2006). The perception that older women lack technical skills or cannot relate well to younger employees is another factor associated with discrimination (Handy & Davy, 2007).

The discrimination faced by older women relates not just to chronological age, but also to physical appearance in the work context (Jyrkinen, 2014; Krekula et al., 2018). According to a survey conducted in Finland, based on 15 individual interviews and two focus groups involving 12 managers aged 30–60, women felt that their appearance, clothing, and behavior were under constant surveillance both inside and outside the workplace; for this reason, they adopted coping and self-management strategies (McKie & Jyrkinen, 2017). Aging brought additional challenges, with older women feeling that they had to remain energetic and young to enhance the image of the organization. In this environment, women often engage in anti-aging strategies, including physical exercise and dieting (McKie & Jyrkinen, 2017).

They understand that they, as individuals, must take control of their own aging and find ways to age successfully and avoid decline, mainly by consuming skin products, cosmetic surgeries, and aesthetic procedures (Trethewey, 2001).

Women fight invisibility and seek to improve their physical appearance by focusing on beauty, both to attract or keep romantic partners and to meet workplace demands (Clarke & Griffin, 2008). In the services sector, for example, appearance and youth are valued and some women are excluded for not corresponding to "the ideal form of professional" (Moore, 2009). Women assume that appearance is a relevant issue, as it is linked to sexual attractiveness. For men, on the other hand, "looking young" is only important in situations that require physical work, such as manual labor. (McGann et al., 2016).

Researchers have found evidence of age- and gender-based discrimination, not just in the actions of men, but also in the actions of other women, particularly younger women who use their appearance to compete in their organizations (McMullin & Berger, 2006). Negative experiences related to ageism, such as the depreciation of skills, may help to explain why women who interrupt their careers and later decide to return to work often choose to redirect their energies, avoiding their former employers (Lovejoy & Stone, 2012).

It is also important to note that aging women are not the only women to suffer discrimination. Studies have shown that women of all ages are more likely than men to suffer discrimination related to appearance or sexuality, especially if they are under 25 or over 45 years old (Duncan & Loretto, 2004). For this reason, the literature referenced in this study includes women of various ages, not just older women.

The characteristics of women who experience the feminization of aging

The feminization of aging changes the age patterns of women in the workforce (Giatti & Barreto, 2003) and puts pressure the labor market in various ways (Institute of Applied Economic Research [IPEA], 2010). This is shown in data provided by the United Nations (2012), which indicates that, in 2012, 26% of older men and 15% of older women in more developed countries were in the labor market. In Brazil in the same year, 44% of men and 21% of older women were in the workforce (Gomes & Pamplona, 2015). Given the scale of aging in the global workforce, understanding this phase of life is critical to the future capacity of organizations (Gordon & Whelan, 1998).

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Certain factors prompt older women to enter or remain in the labor market. Divorce and widowhood can force women into new roles, where they may have to learn new jobs, find ways to support themselves, or seek greater sociability and new partners (Nascimento & Rabêlo, 2008). In this scenario, many women must secure a livelihood for themselves and their families. Given the difficulties they face (Nascimento & Rabêlo, 2008) and their relatively low levels of education, they must often accept precarious jobs with poor wages that allow them to reconcile their work routine, since they are not qualified for more secure or better paid positions (Gomes & Pamplona, 2015; Nascimento & Souza, 2006). Aging women who have dedicated their lives to raising children may have few job prospects and struggle to find jobs (Lima & Bueno, 2009). Other women may choose not to look for work because their children are employed; such women may end up taking care of their grandchildren (Soares, 2012).

So who are the women who face difficulties in the job market? The literature shows that various types of women face difficulties linked to ageism in the workplace. Businesswomen appear to experience challenges (Gordon & Whelan, 1998), given that women are less likely to occupy managerial positions as they age. The data show that 43.4% of managerial positions are held by women between 16 and 29 years old; 39.5% are held by women between 30 and 49 years old; 31.6% are held by women between 50 and 59 years old, and only 31.3% are held by women aged 60 or over (IBGE, 2018). Women who have chosen flexible jobs also fall victim to gender inequality; many work informally, facing lower levels of choice, autonomy, and control than older men with flexible jobs (Loretto & Vickerstaff, 2015). This lack of recognition of their "work" makes older women less visible in debates about the balance between professional and personal life (Loretto & Vickerstaff, 2015). Women scholars also face age- and gender-based discrimination, as they are frequently pressured to assume gender-appropriate roles—generally related to student welfare—that are less highly valued than the research careers pursued by younger male colleagues (Broadbridge, Granleese, & Sayer, 2006). Aging immigrant and indigenous women are also vulnerable when they decide to return to the workforce; they frequently end up accepting lower wages and carrying out lower-status tasks than in previous or part-time jobs (Encel & Studencki, 1997). Likewise, women entrepreneurs face discrimination because they experience the disadvantages of being autonomous older women. However, they use their experience to take action against discrimination in their businesses (Meliou, Mallett, & Rosenberg, 2019).

The needs of aging women and transformation strategies in the work context

As this article explains, women face a range of difficulties linked to gender and age as they get older. The literature shows that it is important to recognize the needs of these women, enabling organizations to take responsibility for creating programs, policies, and practices to support them. Such steps will have positive consequences, both for the women and also for their organizations (Gordon & Whelan, 1998). It is therefore necessary to understand the conditions and demands that aging women face in different work contexts.

Women in traditionally female sectors often receive lower wages and are less recognized for their achievements than men. They are also more exposed to traumatic events and physical injuries; for example, such women often work in the health services as janitors, nurses, and auxiliary professionals (Payne & Doyal, 2010). Women who dedicate themselves to domestic activities or care for their grandchildren or other dependents may have compromised mental health, due to stress, social isolation, and a lack of recognition for their work (Payne & Doyal, 2010). Research has shown that aging women who occupy higher-level positions in organizations often feel the need to restore their work-family balance, have more personal time, achieve both personal fulfillment and perceived value for the organization and, finally, to prepare for the next decade (Gordon & Whelan, 1998).

Various strategies for providing a better quality of life for aging women in the workplace have been proposed. These have included fostering a culture in which employees feel comfortable talking about health problems and reducing sources of stress. Employers should also consider the effects of menopause and consider temperature and ventilation in the workplace (Griffiths et al., 2016). Other variables that influence the permanence of aging women in the labor market include interpersonal relationships, autonomy, flexibility, and interests outside of work (Shacklock, Brunetto, & Nelson, 2009).

Despite the clear feminization of aging, initiatives designed to minimize the effects of gender and age discrimination are rarely discussed in Brazil. There is an urgent need to focus on this issue and to direct more actions toward aging women, who are increasingly becoming a significant part of the workforce, despite the discrimination they face. The main questions raised by this essay are as follows: What are organizations doing for aging women in the workplace? Are the needs of these women understood? What strategies have been implemented? Organization directors must be encouraged to recognize the needs of aging women and to promote transformations designed

to enhance their inclusion and sense of being valued in the organizational space (Cepellos, 2016).

FINAL COMMENTS

This paper has adopted a multidisciplinary perspective to explore the literature on the feminization of aging. We argue that the concept of feminization goes far beyond the numbers; the phenomenon is more than just the fact that older women outnumber and live longer than men in Brazilian society. Rather, this study argues that the feminization of aging is a complex and multifaceted phenomenon. Especially in Brazil, losses seem to result from situations and historical and cultural contexts (Goldani, 2010) that make older Brazilian women more vulnerable than older men.

This paper argues that three axes shape this phenomenon: the nature of the feminization of aging; the characteristics of those who experience it; and, finally, the needs of aging women and transformation strategies in the work context. Any discussion about the feminization of aging must acknowledge that aging women face many challenges, including how to deal with their appearance, negative perceptions of their technical and behavioral skills, and the need to respond effectively when their knowledge and experience are questioned. Both men and younger women discriminate against older women, demonstrating the complexity of the phenomenon. Furthermore, although there is a growing contingent of older women in the workforce, few actions have been implemented to mitigate the problems they face.

This paper thus expands the concept of the feminization of aging, enriching the debate about gender- and age-based inequalities in organizations to help mitigate age-related losses.

The paper does have some limitations, as it addresses the feminization of aging in a generalized and exclusively theoretical way. Future studies should explore this topic in more detail, using empirical data and considering both the nature of particular organizational contexts and needs of women working in those environments. In addition, research should compare the experiences of aging women and men, identifying key elements that differentiate the experience of aging in these two groups.

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BOOK REVIEW

UNBLOCKING THE BLOCKCHAIN – A FRIENDLY GUIDE TO THE ETHEREUM PLATFORM

ETHEREUM: Blockchains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations

Henning Diedrich. Sydney, Australia: Wildfire Publishing, 2016. 346 p.

One of the many applications of the blockchain technology, the Bitcoin cryptocurrency, earned extensive media coverage when it hit its all-time high, nearly US$ 20,000, in 2017 (Wilkes & Sano, 2018). However, does the public, who is just beginning to learn about this technology, really know what blockchain is? Does it know about its possible applications? It is therefore necessary to understand that this technology is not limited to the Bitcoin platform's cryptocurrency, although Bitcoin has been responsible for popularizing it. If blockchain is expected to have a wide range of applications nowadays, the credit should go to another platform. The Ethereum platform emerges as a more dynamic environment for the development of new uses, and this book is dedicated specifically to it.

Thus, by using non-technical, beginner-friendly language, the author of *Ethereum: Blockchains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations* conducts a comprehensive discussion about the blockchain technology's potential applications in the Ethereum platform. To that end, the book's author, Henning Diedrich, uses his knowledge as a software architect who leads the IBM strategical blockchain group.

The book is comprised of small chapters focusing on specific subjects or terms related to blockchain and the Ethereum platform, each connecting to the next to build up three main blocks of subjects in addition to the introduction. In the Introduction, the author presents blockchain as a technology that may change reality as we know it. Diedrich opens the book with a reference to pop culture, i.e., the choice that 1999 film *The Matrix*'s main character must make between the blue pill, which represents a safe, limited permanence in the known reality, and the red pill representing a hard, exciting pathway into a new reality. He therefore invites the reader to understand the new reality that blockchain can offer.

The first block presents the Ethereum platform and its main applications, as well as a comparison with the other competing platforms, such as that of Bitcoin. Its creator, Vitalik Buterin, developed the platform based on a comfortable programming language, thus allowing the user to do everything that could be done in other platforms and more. That is because Ethereum focuses on the so-called smart contracts, i.e., auto-execution protocols activated only when a condition is met. For example, in a contract, each company involved in manufacturing a product can receive a preset amount
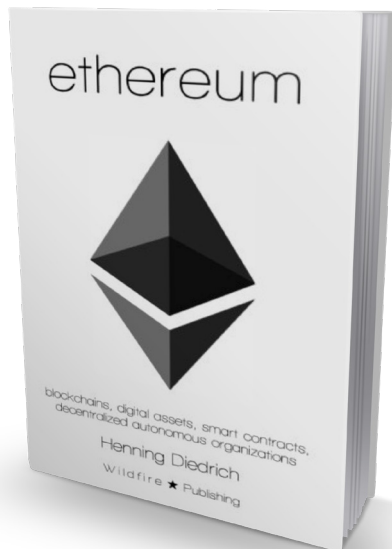
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after its sale, by means of its own digital coin, the Ether, which would already be included in the contracts. This strategy allows including a complex series of conditions into a single contract, such as delivery and quality conditions, among others.

The second block provides an extensive explanation about blockchain. In the author's view, trying to define this technology in a way everyone agrees with would be impossible. However, a few characteristics are common to all definitions. For example, data transaction should be decentralized and cryptographically stored in various computers. This prevents information from being lost or changed, thus providing transparency and security. Because all users can check all transactions in the network, none of those transactions are anonymous or confidential to any user of the same network.

The third block discusses three topics. In the first one, denominated Warnings, the Ethereum platform's main hindrances are presented. The second, denominated Context, looks into the history of Bitcoin, the Ethereum platform and its applications, as well as other aspects. The third, denominated Epilogue, shows the author's take on how blockchain is being promoted by the media, in addition to future prospects – at times, overly optimistic, in his view – of its impact on economic and social relationships.

According to Diedrich, none of today's platforms is prepared for what will be required of them in the future. While Ethereum is considered the most dynamic, it has significant speed, capacity and scalability limitations. Therefore, the author believes that the current versions are a step forward towards developing other, more mature ones. Recently, a new version of the platform was announced, the Ethereum 2.0, to be launched in 2020 with the promise to increase transaction speed and scalability (Dimitrov, 2019). This could be the "step forward" the author expects.

This book may be evaluated regarding both its form and content. The form shows Diedrich's concern with providing a comprehensive review of the terms and concepts the reader may come across in a discussion on the subject. That is why the book is comprised of an extensive collection of terms, which

resembles a small "encyclopedia" of blockchain. While it may be useful in terms of access to initial understanding, the form compromises the narrative's progression. In the second and third blocks, this becomes particularly challenging, since the terms are independent and, therefore, the connection between them grows fragile as the reading advances.

As for the content, Diedrich argues that blockchain is not an exaggerated fad. The technology has the potential to bring about changes, and the Ethereum platform is the most advanced to date. However, the book provides few practical examples of how organizations are implementing this technology, and what the outcomes are. In a complementary view, the book *The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology*, by William Mougayar (2016), shows the reader many companies that have applied blockchain, such as Paypal and Applepay, as well as their outcomes.

Despite these limitations, the book provides the reader with an enthusiastic guide. To the newcomer, it explains the various new terms that emerge in this discussion. To those already familiar with the subject, the book is an opportunity to read the optimistic reflections of an expert in the technology. Thus, Diedrich's goal for his book is not to exhaust the subject of blockchain, quite the opposite. All the time, he means for it to be an entrance to a huge discussion in course. Using his words, "take the red pill" and enjoy this new reality that unfolds.

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The authors declare that they participated in all stages of development of the manuscript. From the conceptualization and theoretical-methodological approach, the theoretical review (literature survey), and finally, writing and final review the article.