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EDITORIAL

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Maria José Tonelli
Editor-in-Chief



Felipe Zambaldi
Assistant Editor

SCIENCE AND SOCIETY

During these dystopian times in which we are living, it is worth remembering the questions proposed by Rousseau in the eighteenth century: Will science destroy our habits? Will it maintain our virtues? Has science been useful in reducing inequalities? Santos (2008) affirms that we have reached a moment of rupture in the scientific order which asserted its hegemonic rule over scientific development in the last centuries. He believes that the twenty-first century will not distinguish between the natural and human sciences, and that the social sciences will free themselves from positivism, since this is, in effect, "also a totalitarian model" (Santos, 2008, p.11). In this model, the author continues, "to know means to quantify" (Santos, 2008, p.15), but this implies a reduction in complexity, in a mechanistic determinism that does not contemplate the contemporary view that "all natural scientific knowledge is social scientific knowledge" (Santos, 2008, p. 37). In fact, it is impossible to ignore Berger and Luckmann (1974) in their classic text *The Social Construction of Reality*, or Bourdieu (2002), who informs us that science is a social field in dispute like any other, a place of competitive battles between men. We must consider here that Bourdieu's text precedes the intense feminist debate of the last decades and that we should include women in the power struggles of the various scientific fields. However, this is another conversation. Santos (2008) may dream that the sciences will one day be more social, but what we continue to see today is reason held captive within supposedly scientific principles, and that our cherished scientific rationality may not be so innocent (Rouanet, 1985). As Habermas (1987) argues, technology and science have been transformed into ideologies. However, none of this should discourage us, since this condition only replicates the dogmatic forces that have been present throughout the history of humanity. Rousseau's questions are still relevant, and perhaps another question to bear in mind is: What science do we perform and for which society?

Following the pluralist approach of the *RAE*, this edition has articles from different areas of study (Marketing, Finance, People Management, Organizational Studies, Entrepreneurship, Operations and Logistics), in addition to the Perspective section, in which Sandro Cabral and Marcelo de Souza Bispo discuss the theme "Challenges in reviewing scientific articles on Administration in Brazil". Two book reviews conclude this edition, which focus on Martin Lindstrom's *Buyology: Truth and Lies About Why We Buy*, written by Lucas Rodrigo Santos de Almeida, and *The End of Accounting and the Path Forward for Investors and Managers*, by Baruch Lev and Feng Gu, written by Joyce Mariella Medeiros Cavalcanti, Hudson Fernandes Amaral and Laise Ferraz Correia, in addition to the book recommendations of "Gestão da ciência, tecnologia e inovação" by Bruno Brandão Fischer and "Relação universidade-empresa" by Renato Garcia and Wilson Suzigan.

Happy reading!

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ARTICLES

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DETERMINANTS OF INNOVATION IN MICRO AND SMALL ENTERPRISES: A MANAGEMENT APPROACH

Determinantes da inovação em micro e pequenas empresas: Uma abordagem gerencial

Determinantes de la innovación en micro y pequeñas empresas: Un enfoque de gestión gerencial

ABSTRACT

The article sought to evaluate the impact of management factors on the innovation capability of micro and small enterprises (SMEs). A total of 315 SMEs were analyzed in Pernambuco in the period 2015–2016. The following internal factors were considered: leadership, people management, information and knowledge, customer relationship, business-society relationship, results, age, and size. The innovation capability was measured by the degree of sectoral innovation. The relationships were analyzed by means of multiple linear regression and data envelopment analysis. The results demonstrated that leadership, information and knowledge, customer relationships, and society positively influence innovation capability and its efficiency.

KEYWORDS | Innovation capability, determinants of innovation, micro and small businesses, data envelopment analysis, multiple linear regression.

RESUMO

O artigo buscou avaliar o impacto de fatores gerenciais sobre a capacidade inovativa de micro e pequenas empresas (MPEs). Analisaram-se 315 MPEs em Pernambuco, no período 2015-2016. Foram considerados como fatores internos: liderança; gerenciamento de pessoas; informações e conhecimentos; relacionamento com clientes e sociedade; resultados; idade; tamanho. A capacidade inovativa foi mensurada pelo grau de inovação setorial. As relações foram analisadas por meio de regressão linear múltipla e análise envoltória de dados, cujos resultados demonstraram que a liderança, informações e conhecimentos, relacionamento com clientes e a sociedade influenciam positivamente a capacidade inovativa e sua eficiência.

PALAVRAS-CHAVE | *Capacidade inovativa, determinantes da inovação, micro e pequenas empresas, análise envoltória de dados, regressão linear múltipla.*

RESUMEN

El artículo tiene como objetivo evaluar el impacto de los factores gerenciales sobre la capacidad innovadora de micro y pequeñas empresas (MYPE). Se analizaron 315 MYPE en Pernambuco, en el período 2015-2016. Se consideraron como factores internos: liderazgo; gestión de personas; información y conocimiento; relaciones con los clientes y la sociedad; resultados; edad; y tamaño. La capacidad innovadora se midió por el grado de innovación sectorial. Las relaciones se analizaron mediante regresión lineal múltiple y análisis envolvente de datos, los resultados mostraron que el liderazgo, la información y conocimiento, y las relaciones con los clientes y la sociedad influyen positivamente en la capacidad innovadora y su eficiencia.

PALABRAS CLAVE | *Capacidad innovadora, determinantes de la innovación, micro y pequeñas empresas, análisis envolvente de datos, regresión lineal múltiple.*

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INTRODUCTION

Innovation represents the search for novelty that enables organizations to increase their competitiveness and face competition (Schumpeter, 1988). The ability to innovate is seen as an important element for the performance of organizations and the economic sector, since it allows the market to leave the steady state. According to this author, large organizations have access to greater business opportunities and find it easy to innovate because they have a superior management structure.

Micro and small enterprises (MSEs) face difficulties in accessing technological resources because they have fewer resources and limited capacities, (Laforet & Tann, 2006), which restrict their innovation capability. This capability results from several capacities developed by the firm, such as technological, operational, managerial, and commercial capabilities (Zawislak, Alves, Tello-Gamarra, Barbieux, & Reichert, 2012). If on the one hand, MSEs have constraints on those capabilities driven by technology, then on the other hand the business-driven capabilities, such as managerial and commercial, can be crucial for developing innovation and gaining a competitive advantage. Therefore, obtaining a greater understanding of the innovation stage in MSEs and how managerial and business capabilities can foster innovation are beneficial to these organizations. Thus, studying this issue is essential to understanding how different factors act and impact organizational performance (Ganau & Maria, 2014).

Therefore, it is necessary to know the resources associated with the capacities and analyze their impact on the innovation capability of the firm. Based on the Resource-Based View (RBV) (Wernerfelt, 1984), authors such as Bayarçelik, Taşel, and Apak (2014), Genis-Gruber and Öğüt (2014), and Jong and Vermeulen (2006) analyzed this relationship, evaluating the importance of managerial factors in the development of innovation in small companies. They demonstrated the relevance of aspects, such as leadership (Bayarçelik et al., 2014), financial results (Bayarçelik et al., 2014), and customer orientation (Genis-Gruber & Öğüt, 2014).

Despite the focus on managerial aspects, the authors adopt a limited perspective of organizational management and do not understand how several managerial factors and their interactions influence innovation. Moreover, cultural and sectoral aspects can affect established relationships (Genis-Gruber & Öğüt, 2014). Managerial aspects of innovation remain scarcely exploited (Kamasak, 2015), and the absence of studies addressing these relationships in SMEs in developing countries contributes to this gap (Elj & Abbassi, 2014).

In this context, this work proposes to answer the following research question: Which factors related to organizational management impact the innovation capability of MSEs?

From the development of the research, we intend to get to know the managerial factors that propitiate the innovation, allowing the organizations to identify and develop the necessary capabilities for the activity. Also, analyzing the stage of innovation of the MSEs makes it possible to understand the differences before large organizations, stimulating the development of public policies focused on needs.

THEORETICAL FRAMEWORK

The competitive advantage obtained by the firm can be understood in terms of the dynamic capabilities it develops (Teece, 2007; Teece, Pisano, & Shuen, 1997) and its ability to build and reconfigure internal and external competencies to respond rapidly to environmental changes.

In this sense, innovation can be seen as an expected result of having such capacities, since innovation capability is a special resource of the firm that leads it to the achievement of competitive advantage and, consequently, of extraordinary profits (Schumpeter, 1988).

According to Guan and Ma (2003), the firm's innovation capability is related with internal experiences and experimental acquisition. It is related with the "ability to absorb, adapt and transform a given technology into specific management, operations, and transaction routines that can lead a company to Schumpeterian profits" (Zawislak et al., 2012, p. 15).

These authors see the innovation capability as a result of the set of capabilities, driven by technology and business. In the technological context, it is possible to find the capacity to apply knowledge to transform resources into products through routines, that is, technological development and operational capabilities. In the business context, in turn, it is possible to find the capacity of the firms to launch developed solutions in the market with a low transaction cost, that is, managerial and commercial capabilities.

Although firms have all four capabilities, one of them is expected to dominate over a certain period (Zawislak et al., 2012). Although MSEs do not have deep knowledge and skills to develop and operate a new technology (Laforet & Tann, 2006), their managerial and commercial capability can be decisive to innovate. Their management structure allows them to have flexibility and entrepreneurial attitude, which could facilitate innovation (Scherer, 1988).

As Teece (2007) points out, managerial and organizational competencies enable the firm to gain competitive advantage and to transform continually to maintain this advantage. These

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competencies are central elements of the dynamic capabilities (Teece et al., 1997), and greatly important for the innovation performance (Alves, Barbieux, Reichert, Tello-Gamarra, & Zawislak, 2017). Therefore, the company's decision about its innovation process depends on the organizational structure and the management resources (Ganau & Maria, 2014), while external resources complement this capacity (Teece, 2007).

The model proposed by Zawislak et al. (2012) uses the RBV, in which innovation is the result of the combination of the firm's capacities and resources, affected by market conditions. Therefore, the firm's capability results from the deployment of resources in combination through organizational processes to achieve the desired end (Amit & Schoemaker, 1993). Therefore, analyzing the effects of managerial and commercial capability on the innovation capability of MSEs involves analyzing the managerial and commercial resources (here called managerial factors), that is, specific assets controlled by the firm, that allow developing innovation.

Determinants of innovation capability

Reichert, Camboim, and Zawislak (2015) define managerial capability as "the set of skills and routines to carry out the overall task of coordinating the business and its resources" (p. 166), which refer to the ability to manage assets and activities, seeking efficiency. Commercial capability, in turn, refers to the ability to put into operation marketing and trading processes (Reichert et al., 2015), whose resources allow the transaction cost to be reduced (Williamson, 1985).

Sharing the RBV, a literary review was carried out that allowed the identification of six constructs through an exploratory approach. These constructs represent the managerial factors capable of influencing the innovative performance: (i) leadership; (ii) people management; (iii) information and knowledge; (iv) customer relationship; (v) business-society relationship; and (vi) results.

Furthermore, we also considered the variables size and age, given their relevance in the studies analyzed. The determinants considered are not intended to exhaust managerial factors, but rather to exemplify their multidimensionality.

Leadership

According to Schumpeter (1988), the entrepreneur is the transforming agent who, in search of bigger profits, develops innovation and induces economic development. The author emphasizes the importance of the entrepreneur in innovation, which is explored by Bayarçelik et al. (2014) when demonstrating that the management practiced by the leaders is a component of the capability of organizational innovation.

The experiences and knowledge acquired by the leaders influence this capability (Elj & Abbassi, 2014; Farace & Mazzota, 2015; Romijn & Albaladejo, 2002), and also the management style can facilitate and promote its development (Bayarçelik et al., 2014). After all, leadership can "provide resources and expertise, reduce bureaucratic layers, and promote collective understanding and interpersonal trust" (Bayarçelik et al., 2014, p. 206)

Thus, the maintenance of dynamic capability also requires the ability of entrepreneurs and managers to create special value by combining assets in the firm (Teece, 2007), thus the following research hypothesis is proposed:

> H1: Leadership positively influences the innovation capability of MSEs.

People management

As it is an interactive process, innovation requires the combination of different knowledge and points of view (Söllner, 2010). Human capital diversity can positively affect innovation generation in the organization (Farace & Mazzota, 2015; Söllner, 2010), which shows the importance of people management in the innovative process. These authors demonstrated that innovation capability depends on the abilities of the entrepreneurs, as well as of the employees.

Management practices of selection, training, and employee motivation tend to contribute to innovation. As Lehtoranta (2005) and Laforet (2011) point out, the process of recruiting skilled labor leads to an environment conducive to change, which promotes well-being in the enterprise and, consequently, results in innovation, allowing the proposition of the following hypothesis:

> H2: People management positively influences the innovation capability of MSEs.

Information and knowledge

Gathering information allows the reduction of information asymmetry and, consequently, of transaction costs (Williamson, 1985) and provides valuable advantages for achieving innovative performance (Kamasak, 2015).

Workforce skills become more important as the awareness of the role of internal and external networks in the organization grows (Farace & Mazzotta, 2015). The establishment of networks

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promotes the sharing of knowledge between firms (Jong & Vermeulen, 2006), sharing the risks associated with innovations, which are highly onerous and risky to be undertaken alone (Love & Roper, 2001).

Such consequences are not only perceptible in relations with technological and research centers. The relationship with suppliers and competitors can offer the company advantages in obtaining valuable information and knowledge (Kamasak, 2015).

The absorption of information and knowledge from the network is capable of leading to innovation (Laforet, 2011), providing opportunities to develop radical and sustainable innovations. Besides, it is possible that network activities can influence other managerial aspects (Love & Roper, 2001) since their use without investing in other resources will not result in superior innovative performance. For this reason, the following research hypothesis is proposed:

> H3: Information and knowledge obtained by MSEs positively influence their innovation capability.

Customer relationship

The search for information about customers and the market allows the company to understand its needs better, facilitating the development of innovation and its acceptance in the market (Jiebing, Bin, & Yongjiang, 2013). The ideas and information the company receives from customers, through satisfaction surveys, for example, can help identify needs and provide customized products (Jiebing et al., 2013).

Customer relationship is important in the development of new ideas and product launches, process and organizational innovations, and business strategy (Genis-Gruber & Öğüt, 2014; Kamasak, 2015; Laforet, 2011). It allows the identification of opportunities in a more efficient way, reducing the risks of innovation, which supports the following research hypothesis:

> H4: Customer relationship positively influences the innovation capability of MSEs.

Business-society relationship

Regulatory issues are seen as inhibiting and also facilitating innovation. Although it is an external factor to the company, the attendance to regulatory, social, and environmental aspects can contribute to the innovation capability.

For Nidumolu, Prahalad, and Rangaswami (2009), companies that comply with regulations become more proactive to innovate, since knowledge and compliance with regulatory issues can be used as a source of competitive advantage. Companies that comply with the most stringent regulations (whether economic, social or environmental), even before they are applied, have substantial advantages in terms of innovation (Nidumolu et al., 2009).

These authors emphasize regulatory aspects and sustainability as a driver of innovation. Companies that seek sustainability increase the chances of becoming a leader in the innovation process (Deloitte, 2013), as this allows approaching a point of view differently and exploring new ideas. In this sense, the following hypothesis is developed:

> H5: Business-society relationship positively influences the innovation capability of MSEs.

Results

For Bayarçelik et al. (2008) the company's innovation capability is associated with its resources, especially the ones related to financial factors, supporting the studies of Lecerf (2012), Laforet (2011), and Romijn and Albaladejo (2002). These studies point out to the influence of financial factors on innovation, agreeing with the Schumpeterian perspective that considers credit a necessary condition for innovation.

Sustainable financial performance allows the retained profit to be invested in innovation, and also makes leverage possible to carry out the activity. Souza-Pinto (2015) emphasizes not only the importance of the result per se but also draws attention to the controls on financial and non-financial results to improve innovation performance, supporting the following hypothesis:

> H6: Results obtained by MSEs positively influence their innovation capability.

Age

The age of the company represents the experience and the knowledge accumulated throughout its history and is related to the best management of communication, creativity, and the capability of absorption (Galende & Fuente, 2003). As it allows to measure the experience and the learning of the companies, age is used to measure the organizational resources (Ganau & Maria, 2014). Thus, it is expected that older companies are more likely to innovate, given the accumulated knowledge and experience, supporting the following hypothesis:

> H7: Age positively influences the innovation capability of MSEs.

On the other hand, Thornhill (2006) found negative effects of age on innovation, related to the obsolescence effect identified by Sorensen and Stuart (2000). As firms mature, they develop

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routines and skills that are used to innovate and facilitate the learning process (Dosi, Nelson, & Winter, 2000). However, as they focus on these competencies, they become obsolete, making innovation difficult (Sorensen & Stuart, 2000).

Size

According to Schumpeter (1988), firm size determines innovation, since larger firms have a superior management structure that facilitates access to business opportunities (Thornhill, 2006). Thus, larger firms have more opportunities to develop innovations and benefit from their results.

> H8: Size positively influences the innovation capability of the MSEs.

The determinants addressed in this research are compatible with the organizational characteristics discussed by Souza-Pinto (2015) through the framework of the absorptive capability of Machado and Fracasso (2012). However, the literature review allowed the inclusion of new variables and the exclusion of others, leading to the design of the eight research hypotheses, according to Exhibit 1.

Exhibit 1. **Research hypotheses**

Hypothesis	Description
H1	Leadership positively influences the innovation capability of MSEs.
H2	People management positively influences the innovation capability of MSEs.
H3	Information and knowledge obtained by MSEs positively influence their innovation capability.
H4	Customer relationship positively influences the innovation capability of MSEs.
H5	Business-society relationship positively influences the innovation capability of MSEs.
H6	Results obtained by MSEs positively influence their innovation capability.
H7	Age positively influences the innovation capability of MSEs.
H8	Size positively influences the innovation capability of MSEs.

METHODOLOGY

The present section aims at demonstrating the method used to reach the proposed goal.

Population and research sample

The population used in this study consisted of MSEs participating in the Local Agent of Innovation (ALI) program, located in Pernambuco, during 2015 and 2016. We considered as MSEs those organizations covered in the Complementary Law No. 123 (2006).

Out of the 2,838 companies participating in the program in 2016, 315 were randomly selected, providing a 5.21% error and a 95% confidence level. For the selection, the most representative segments in the program were prioritized: food industry, furniture, clothing, gastronomy, and tourism industry. The data used refers to the initial diagnosis performed by the program, before the effective participation of the company, so that the actions developed by the ALI did not affect the results obtained.

Although the sample was not stratified between the segments, it does not show any discrepancy between the frequencies of the groups, being representative of the population, as demonstrated in the Chi-square test ($x^2 = 3.714$, with a significance level of 0.466 and $\alpha = 0.05$).

Econometric model

The purpose of this paper is to identify and quantify the impact of managerial factors on the innovation capability of MSEs. Therefore, multiple regression consists of an appropriate statistical method, allowing to determine the effect (quantity and direction) of the independent variables on the dependent variable (Galende & Fuente, 2003). Given the suitability of the method to the objective, Kamasak (2015) and Galende and Fuente (2003) used multiple regression to measure the impact of different variables on innovation.

The equation below presents the proposed econometric model:

$$CI_{i,t} = \alpha + \beta_1 X_{n,i,t} + \beta_2 Age_{i,t} + \beta_3 Size_{i,t} + \beta_4 Sector_i + \varepsilon_{i,t} \quad (1)$$

where:

$CI_{i,t}$: innovation capability of the firm i at time t; α is the constant; $X_{n,i,t}$: managerial factors n of firm i at time t; $Tamanho_{i,t}$: neperian logarithm of the age of firm i at time t; $Idade_{i,t}$: neperian logarithm of firm size i at time t; $Setor_i$: dummy referring to the sector of the company i; e $\varepsilon_{i,t}$: error term referring to company i at time t .

For tabulation and analysis, the software packages Statistical Package for the Social Sciences (SPSS®) version 21 and STATA® version 12 were used.

Independent variables

The managerial factors, considered independent variables in the model, were composed of the constructs presented in the literary review. Moreover, a dummy variable referring to the economic sector was included in the regression.

The constructs were measured by the arithmetic mean of different components, which reflect the different aspects considered in the literature, based on the structured questionnaire provided by the ALI, used by Vasconcelos, Mello, and Melo (2016). The components are described in Exhibit 2.

Exhibit 2. **Internal factors related to organizational management**

Dependent variables	Nº components	Aspects considered by the components
Leadership	7	It analyzes how managers exercise leadership and invest in managerial development. It observes the formulation of the mission, communication, and information sharing with employees and the promotion of innovation.
People	5	It observes the definition of roles and responsibilities in the firm. It considers the selection and empowerment of people, the risks, and hazards associated with work, and the well-being practices carried out by the organization.
Information and knowledge	3	It analyzes the information necessary to carry out the company's activities and to make decisions. It observes the sharing of knowledge and the use of comparative information in performance analysis.
Customers	5	It verifies how the needs and expectations of potential and current customers are identified, how the products' promotion is conducted, and how customer relationship is maintained.
Society	3	It analyzes the management practices of the company in relation to society by complying with legal requirements, environmental and social aspects.
Results	6	It analyzes the results presented by the company, relating to customers, employees, main processes and financial performance.

Dependent variable

Many of the studies that analyze innovation capability associate it with technological innovation, research and development or patents. However, different companies may have different types of innovation throughout life cycles, not necessarily associated with technology (Alves et al., 2017).

Therefore, innovation capability was analyzed through the innovation radar to approach innovation holistically (Bachmann & Destefani, 2008; Sawhney, Wolcott, & Arroniz, 2006), as shown in Exhibit 3.

Exhibit 3. **Dimensions of innovation radar**

Dimension	Definition
Offerings	Development of new products or services for the market.
Platform	Sharing of components, methods or technologies to make the production system more adaptable to the products or services offered.
Brand	Use of the brand to leverage new market opportunities.
Customers	Discovery of new segments or unmet needs.
Solutions	Custom and integrated combination of goods, services and information capable of solving customer problems.
Customer experience	Formulation of the customer experience and its interface with the organization.
Value capture	Capturing the created value by discovering untapped revenue streams or by interacting with customers and partners.
Processes	Change of the activities of operations internal to the company to obtain greater efficiency, better quality or faster cycle time.
Organization	Changes in the structure of the company, in the role of employees and partnerships.
Supply chain	Logistics aspects of the business.
Presence	New forms of commercialization and/or distribution to make the products available.
Networking	Improvements in communication resources to increase the value of the company.
Innovative environment	Sources of knowledge in innovation used by the company.

Source: Based on Sawhney et al. (2006) and Bachmann and Destefani (2008).

Thus, the innovation capability was analyzed in a wide way and can occur in any dimension of the business system, since in all of them, opportunities to innovate that are capable of generating value for the organization can be found. Furthermore, it is possible to observe an association between the 13 dimensions of the innovation radar and the seven dimensions of the innovation capability proposed by Guan and Ma (2003).

Innovation capability was measured by the Degree of Sectorial Innovation (DSI) proposed by Oliveira, Cavalcanti, Paiva, and Marques (2014) to incorporate the heterogeneity of the sectors to which the companies belong. Thus, the impact of the dimensions of each segment of the organization was calculated using equations 2 and 3.

$$GI_{Mt} = \sum_{k=1}^{13} p_k D_{Mk} \quad (2)$$

$$CI_{i,t} = GIS_{it} = \frac{\sum_{k=1}^{13} p_k D_{ik}}{\sum_{k=1}^{13} p_k D_{Mk}} \quad (3)$$

Where:

GIS_{Mt}: degree of sectorial innovation for sector M at time t; GIS_{it}: degree of sectorial innovation of the firm i at time t;D_{ik}: value of innovation dimension k for firm i;D_{mk}: value of innovation dimension k for sector M; p_k: weight of innovation dimensions k.

The weight of the innovation dimension p_k is obtained by:

$$\max \sum_{k=1}^{13} p_k D_{Mk} \quad (4)$$

subject to:

$$\sum_{k=1}^{13} p_k = 1$$

$$p_k \geq 0{,}05 \quad for\ \forall k$$

$$D_{Mk} p_k \leq 0{,}5 \quad for\ \forall k$$

Data envelopment analysis

Although regression represents a good method for analysis, derived models can provide misguided prediction measures (Klimberg, Lawrence, Yermish, La, & Mrazik, 2009), since the relative weight of independent variables can vary between comparable units.

Thus, the determinants of innovation were also evaluated by the Data Envelopment Analysis (DEA), calculating the importance of each factor for the weights that assign the highest possible score for each firm evaluated, providing a better breakdown of the explanatory variables. The DEA allowed the identification of the organizations that obtained optimal allocation between the determinants of innovation (inputs) and the innovations generated (outputs), that is, that obtained efficiency.

The DEA analyzed the input to observe the efficiency in the use of the resources in the generation of the innovation capability. Therefore, the managerial factors were the inputs of the model, while the innovation dimensions were the outputs. It was also assumed that the model does not require constant returns of scale, since an increase in the inputs can promote increase or decrease in the output, not necessarily proportional. Therefore, the variable-scale return model (Banker, Charnes, & Cooper, 1984) was used, using MaxDEA® software in version 6.13.

Table 1. **Sample composition**

		Nº of companies	Frequency
Sector	Food industry	71	22.5%
	Furniture	53	16.8%
	Clothing	68	21.6%
	Gastronomy	66	21.0%
	Hotel and Tourism	57	18.1%
Age	1-5	127	40.3%
	6-15	111	35.2%
	16-25	56	17.8%
	25	21	6.7%
Size	1-10	182	58.0%
	11-20	71	22.6%
	21-40	44	14.0%
	40	17	5.4%
Region	Metropolitan Region of Recife	273	86.7%
	Other regions of the state	42	13.3%

RESULTS

In this section, the research results are presented and discussed.

Descriptive statistics

In Table 1, it is possible to observe that the distribution of the sample shows a higher concentration in the food industry segments and lower concentration in the furniture industry. However, as stated, the frequencies between the segments do not show statistical differences, according to Chi-square test.

About 40% of MSEs analyzed have been in existence for between one and five years; lower the frequency, greater the age range, revealing a tendency to mortality over the years (Brazilian Service of Support to Micro and Small Enterprises [SEBRAE], 2013). It was observed that 58% of companies have up to 10 employees, and that the lower the frequency, the bigger the size. A higher concentration of companies (86.7%) in the Metropolitan Region of Recife (RMR) was observed, and the other regions (south coast, north coast, agreste, and sertão) represented 13.3% of the sample.

Innovation capability

Table 2 presents the dimensions of the innovation radar, related to the innovation capability of the firms. It is possible to observe that the innovations developed by the MSEs that were analyzed do not cover equally all dimensions of the radar. On the contrary, there is a concentration in certain activities, revealing that MSEs find it easy or difficult to innovate in some dimensions.

The expressiveness of the "supply" and "platform" dimensions reveal the focus on product innovations. As pointed out by Nooteboom (1994), the prioritization of product innovations, especially in market niches, aims at overcoming the shortcomings before the large companies.

Although the innovations developed by the MSEs are not related to technological innovation, it is possible to observe that the analyzed companies are engaged in activities of development of new products and services, new operational arrangements, seeking proximity to customers and stakeholders, as contemplated by commercial innovations (Reichert et al., 2015).

Unlike the firms analyzed by Guan and Ma (2003), the results suggest that MSEs seek to focus on core innovation assets rather than supplementary assets. Innovations prioritized by

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MSEs (supply, platform, customers, relationship, network) are related to the manufacturing and marketing capability related to core assets. Less prioritized innovations (supply chain, organization, processes, innovative environment), in turn, are related to the firm's capacity to support and harmonize the basic capability for innovation to effectively play its role regarding supplementary assets.

Table 2. **Average of innovation dimensions by segment**

Dimension	Food industry	Furniture	Clothing	Gastronomy	Hotel/ Tourism	All segments
Offerings	2.74 *	3.40 *	2.97	3.34 *	2.08	2.91
Platform	4.41 *	4.57 *	4.54 *	4.06 *	4.16 *	4.34
Brand	3.01 *	2.45	3.69 *	3.76 *	3.64 *	3.34
Customers	2.15 *	3.04 *	3.07 *	2.49	2.95	2.71
Solutions	1.46	2.66	2.28	1.77	3.03 *	2.19
Customer experience	2.13	2.11	3.24	2.64 *	3.78 *	2.77
Value capture	1.27	1.75	1.79	1.83	1.55	1.63
Processes	1.64	2.13	1.99	1.68	2.33	1.93
Organization	1.64	2.26	2.11	2.13	2.63	2.13
Supply chain	1.42	2.13	1.88	2.00	2.66	1.99
Presence	1.18	1.55	1.79	1.38	2.38	1.64
Networking	1.56	2.89 *	2.24	1.36	3.86 *	2.31
Innovative environment	1.72	2.16	1.75	1.94	2.52	1.99

*p_k>0.05

Although supplementary assets complement core assets, they are crucial for the firm to achieve competitiveness sustainably. The low engagement of MSEs in these innovations can contribute to a lower performance before large companies.

Table 2 also shows the most relevant dimensions for each segment (p_k>0.05), obtained by equation 4, in which it is possible to visualize similarities and differences in the profile of the innovations. The "offering," "platform," and "brand" dimensions are relevant for most segments; the "customers" dimension is considered critical for the food, furniture, and clothing industry segments; and "solutions" is relevant for the hotel and tourism segment. The "customer experience" dimension stands out in the clothing, gastronomy, and hotel and tourism segments; and "networking" is impressive for furniture and hotel and tourism.

By the averages and weights (p_k) obtained, the degree of sectorial innovation (DSI_{Mt}) was calculated using equation 2. Obtaining the DSI_{Mt} made it possible to incorporate the characteristics of the respective segments in the evaluation of the innovation capability, and to make comparisons between them.

While hotel and tourism was the most innovative segment, the food industry appears to be the least innovative. The Kruskal-Wallis test demonstrates that the differences between the means of the segments are significant. Compared to Oliveira et al. (2014), DSI growth is observed in all segments between the period analyzed by these authors (2010-2011) and of this research (2015-2016), demonstrating a commitment to the development of innovations.

Table 3. **Degree of sectorial innovation**

	Food industry	Furniture	Clothing	Gastronomy	Hotel / Tourism
Degree of Sectorial Innovation (DSI_{Mt})	2.39*	2.83*	2.90*	2.71*	3,20*

*significant difference for a *p-value*<0.05 according to the Kruskal-Wallis test

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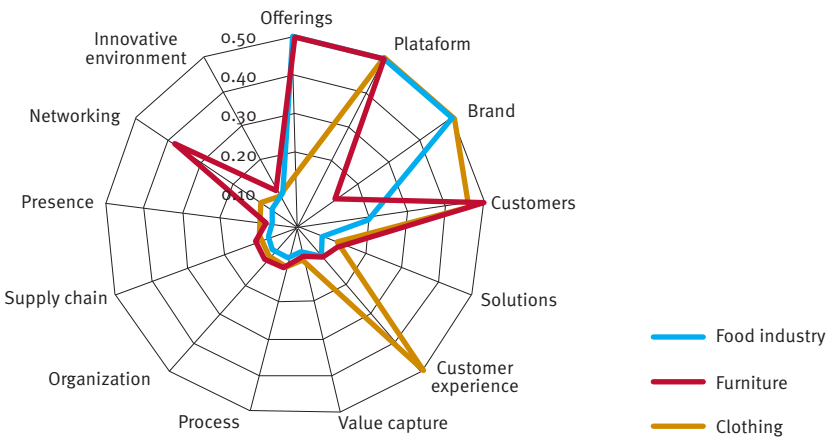
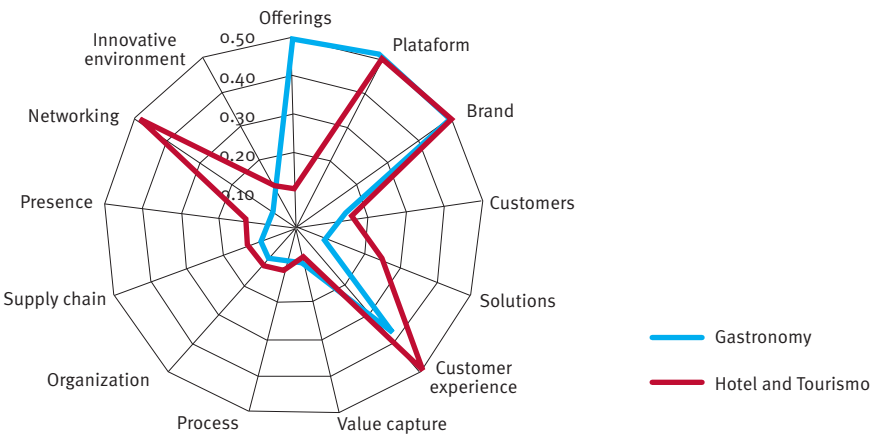
Graphs 1 and 2 present the innovation dimensions for the industry and service sectors, by measuring the weight (p_k) and the mean innovation size for the segment (D_{Mk}). Despite the differences between innovation intensities, it is possible to identify similarities between the segments studied. While innovations in core assets were prioritized, they received few investments in industry and service in the supplementary assets.

Graph 1. **Radar of innovation for the industry sector**



Graph 2. **Radar of innovation for the service sector**



Regression results

DSI_{it} was calculated for each company using equation 3, representing the innovation capability ($CI_{i,t}$). As proposed in the model, the $CI_{i,t}$ refers to the dependent variable, and the managerial factors refers to the independent variables.

Table 4 shows the correlation matrix of the analyzed variables. All dependent variables have a positive correlation with innovation capability, agreeing with the literature. However, managerial factors are also positively and moderately related to each other, since the development of one management resource can foster another (Jong & Vermeulen, 2006; Love & Roper, 2001). Despite the correlation, no multicollinearity was found in the regression.

Table 4. **Spearman Correlation**

	Leadership	Customers	Society	Info. and know.	People	Results	*ln*Age	*ln*Size	DSI_{it}
Leadership	1								
Customers	0.582	1							
Society	0.498	0.266	1						
Info. and know.	0.628	0.614	0.410	1					
People	0.650	0.459	0.94	0.536	1				
Results	0.438	0.518	0.187	0.419	0.383	1			
Ln Age	0.036	-0.211	0.133	-0.098	0.067	-0.062	1		
Ln Size	0.264	0.08	0.259	0.112	0.326	-0.009	0.252	1	
GIS_{it}	0.485	0.382	0.394	0.496	0.371	0.208	0.07	0.213	1

Table 5 shows the results of the multiple linear regression and assumptions for the 315 companies. The proposed model presented good predictive power, with R^2 of 33.6%, superior to the models of Alves et al. (2017), Farace and Mazzota (2015), Ganau and Maria (2014) and Galende and Fuente (2003). Although this study focuses only on managerial and commercial resources, the variables considered presented good explanatory power about the firm's innovation capability.

Table 5. **Multiple linear regression**

Variable	Coefficient	*p-value*	Collinearity	
			Tolerance	FIV
Constant	0.700	0.000 *		
Leadership	0.084	0.009 *	0.398	2.514
Customers	0.051	0.098 **	0.468	2.136
Society	0.071	0.006 *	0.658	1.519
Information and knowledge	0.146	0.000 *	0.459	2.177
People	-0.024	0.467	0.480	2.083
Results	-0.017	0.196	0.580	1.723
*Ln*Age	0.015	0.251	0.744	1.344
*Ln*Size	0.015	0.133	0.797	1.254
Sector	-0.013	0.539	0.702	1.424
R^2	0.336			

Dependent variable: GIS_{it}

*p-value<0.05 **p-value<0.10

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The regression result showed that "leadership," "customers," "society," and "information and knowledge" had a positive and significant impact on innovation generation, emphasizing the importance of these resources for the development of dynamic capability. However, the variables "people," "results," "age," and "size" were not relevant.

The significance of the variable "leadership" corroborates with Teece (2007), who considers the entrepreneur an important component of dynamic capability. His previous experiences, knowledge, and skills play a crucial role in the development of innovation (Farace & Mazotta, 2015; Romijn & Albaladejo, 2002).

Obtaining customer information allows to know their needs and identify opportunities to develop new products or services. Therefore, customer relationship is a source of innovation (Genis-Gruber & Öğüt, 2014; Kamasak, 2015; Laforet, 2011). Similarly, knowledge of regulatory, social, and sustainable aspects allows organizations to think differently and develop new ideas, achieving superior innovative performance (Nidumolu et al., 2009).

The behavior of the variable "information and knowledge" was consonant with Farace and Mazzota (2015), Kamasak (2015), and Jong and Vermeulen (2006). Information retrieval and sharing can be used to improve or develop new products or services, new marketing methods, to reduce the risks of the innovation process and the transaction costs (Williamson, 1985).

However, the knowledge and experience acquired by the employees did not have a significant impact on the innovation capability. Stiffness in task definition and execution and the capacities that reinforce operational skills can slow down the development of innovation. The results suggest that employees make a limited contribution to the innovation processes, given the restriction of their activities to common tasks (Elj & Abbassi, 2014).

The innovation capability of the firms analyzed seems not to be affected by the results obtained by the companies. It was also observed that many of the MSEs analyzed do not have financial control, so this is not related to innovation. The Schumpeterian hypothesis that size positively influences the innovation capability of firms has also not been confirmed in the regression, thus disengaging this capacity from the possession of these resources. Contrary to what is proposed in the literature, the "age" variable did not influence the innovation of MSEs, but it is consistent with the works of Genis-Gruber and Öğüt (2014) and Kamasak (2015).

These results demonstrate the relevance of obtaining these resources and capacities for the competitiveness of the MSEs. However, as expected, only part of the innovation capability is explained by them, revealing the importance of aspects external to the organization to innovate. After all, more than accumulated experiences and resources acquired (Galende & Fuente, 2003; Ganau & Maria, 2014), innovation capability is mainly the result of strategic decisions (Hadhri, Arvanitis, & M'henni, 2016).

Data envelopment analysis results

For DEA, we considered the significant variables in the regression, since the wrong specification of the model may affect the quality of the results (Klimberg et al., 2009). The analysis of the decision-making units showed that the sample had an average efficiency of 0.86, in which 174 companies were considered efficient and 141 companies were not efficient regarding innovation capability.

Table 6 shows the contribution of outputs to efficiency. In general, it is observed that the "offerings," "platform," "processes," and "innovative environment" dimensions have a greater contribution to the efficiency of the innovation capability.

Product innovations, addressed in the "supply" and "platform" dimensions, allow MSEs to explore new market niches and overcome their shortcomings, as pointed out by Nooteboom (1994). On the other hand, innovations in processes and environment are associated with changes in the productive and managerial processes, in obtaining new sources of knowledge that can generate reductions in information asymmetry and transaction costs (Willianson, 1985).

Table 6. **Contribution of outputs**

Outputs	Contribution
Offerings	11%
Platform	16%
Brand	8%
Customer	5%
Solutions	9%
Customer experience	8%
Value capture	3%
Processes	10%
Organization	7%
Supply chain	5%
Presence	3%
Networking	4%
Innovative environment	11%

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While the results obtained by DSI demonstrate the innovations prioritized by MSEs, the results obtained by DEA demonstrate the innovations that contribute to the efficiency of this capability.

By comparing GIS and DEA, it is possible to observe that innovations valued by firms are not necessarily the ones that contribute most to their efficiency. Innovations in processes and innovative environment, related to supplementary resources were not relevant in any of the segments studied. However, DEA has demonstrated that they are among the innovations that most contribute to the efficiency of the firm's capacity, suggesting a mismatch in the innovation strategies practiced by MSEs.

Table 7 shows the contribution of the inputs, in which it is possible to observe the importance of leadership, customers, society, and information and knowledge for the efficiency of the innovation capability, as found in the regression.

Table 7. **Contribution of inputs**

Inputs	Contribution
Leadership	27%
Customers	20%
Society	31%
Information and knowledge	22%

While "information and knowledge" showed a higher coefficient in the regression, it showed the lowest contribution in the DEA. These differences reflect the analysis method used by the models, since DEA generates a different set of weights for each company, whose estimates are less affected by the correlations of the variables (Klimberg et al., 209).

Therefore, using DEA in the regression may result in better prediction estimates (Klimberg et al., 2009). Tables 8 and 9 show the results of the regressions for efficient and inefficient firms.

Table 8. **Multiple regression for efficient firms**

Variable	Coefficient	p-value	Collinearity	
			Tolerance	VIF
Constant	0.800	0.000 *		
Leadership	0.090	0.013 *	0.460	2.172
Customers	0.084	0.019 *	0.497	2.012
Society	0.095	0.001 *	0.758	1.319
Information and knowledge	0.178	0.000 *	0.468	2.136
Sector	-0.028	0.001 *	0.757	1.320
R^2	0.497			

Dependent variable: GIS_{it}

*p-value<0.05

Table 9. **Multiple regression for inefficient firms**

Variable	Coefficient	*p-value*	Collinearity	
			Tolerance	VIF
Constant	0.717	0.000 *		
Leadership	0.052	0.123	0.541	1.847
Customers	0.012	0.691	0.646	1.547
Society	0.071	0.021 *	0.741	1.350
Information and knowledge	0.203	0.000 *	0.557	1.796
Sector	-0.018	0.010 *	0.978	1.023
R^2	0.409			

Dependent variable: GIS_{it}

*p-value<0.05

The addition of efficiency in the regression increased the explanatory power of the model (R^2 = 49.7 for the efficient firms and R^2 = 40.9 for the inefficient firms) when compared to the regression presented in Table 5. The significance of the sectoral dummy indicates that the innovation capability in the industry is lower than in the service sector.

While the regression of efficient firms showed results close to the regression without DEA, inefficient firms showed some distinctions. It is observed that the innovation capability of inefficient companies is determined by their compliance with the norms and regulations of the sector and the information obtained by knowledge networks.

However, "leadership" and "customers" were not significant, indicating that inefficient firms may have difficulty in transforming customer information into innovation and in using the leaders' experiences and knowledge in this process.

Efficient development of innovation was the only significant variable, which reinforces the importance of these resources for organizational competitiveness. The figure of the entrepreneur that is close to the customer is related to the discovery of new opportunities, identification of improvements, and coordination of resources (Teece, 2007), which are central resources for the development of innovation and profit-making.

Exhibit 4 summarizes the results obtained for the hypotheses of the study.

Exhibit 4. **Results of the research hypotheses**

Hypothesis	Description	Results	
		Efficient	Not efficient
H1	Leadership positively influences the innovation capability of MSEs.	+	N / S
H2	People management positively influences the innovation capability of MSEs.	N / S	N / S
H3	Information and knowledge obtained by MSEs positively influence their innovation capability.	+	+
H4	Customer relationship positively influences the innovation capability of MSEs.	+	N / S
H5	Business-society relationship positively influences the innovation capability of MSEs.	+	+
H6	Results obtained by MSEs positively influence their innovation capability.	N / S	N / S
H7	Age positively influences the innovation capability of MSEs.	N / S	N / S
H8	Size positively influences the innovation capability of MSEs.	N / S	N / S

N/S: non-significant relationship
+: significant and positive relationship

CONCLUSIONS

This study aimed at analyzing the influence of management factors on the innovation capability of MSEs, and measuring their impact. To this end, the present study integrated the perspectives of the RBV (Bayarçelik et al., 2014; Genis-Gruber & Öğüt, 2014; Kamasak, 2015; Wernerfelt, 1984) and dynamic capability (Alves et al. 2017; Teece et al., 1997; Zawislak et al., 2012) approaches to discuss innovation capability.

Although Teece et al. (1997) suggest that the formulation of excess strategies may lead to disinvestment in dynamic capabilities, the present article shows that the formulation of efficient strategies of innovation can occur through the investments in dynamic capabilities and the central resources of management.

Thus, the skills needed to develop the innovation capacities addressed by Zawislak et al. (2012) have been "translated" into a series of resources that can be manipulated by the firm. These resources allow the identification and measurement of abstract capabilities, enabling firms to obtain the necessary resources for competitiveness in terms of innovation.

Although the study adopted a limited perspective of the model of Zawislak et al. (2012) because it focuses only on resources related to managerial and commercial capabilities, the results emphasize its importance for obtaining competitive advantage in MSEs. This perspective is important as many studies focus on large organizations, where technological resources are prioritized. As MSEs face difficulties in accessing and operating technologies, the article demonstrates that managerial and commercial capabilities become decisive for innovating.

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Thus, the study suggests that the innovation capability resulting from dynamic capabilities lies not only in the figure of the entrepreneur and the strategic management exercised, as proposed by Teece (2007), but it is also associated with information and knowledge obtained by knowledge networks, and customer relationship and business-society relationship.

Although innovation is associated with entrepreneurial activity (Schumpeter, 1988), the figure of the leader may be insufficient to generate competitive advantage, thus the acquisition of other resources is necessary. Likewise, the results also suggest the existence of barriers that do not allow MSEs to use financial resources and the skills of employees to generate innovation, which may be responsible for the low development of supplementary innovations associated with sustainable growth (Guan & Ma, 2003). However, we observed that the nature of the data prevented a dynamic analysis of established relationships. The data reveal the manager's perception of the company, not necessarily the organizational reality.

Finally, we emphasize that the internal perspective is responsible for only a part of the innovation capability. Further studies proposing models analyzing other capacities, as well as environmental variables, would obtain greater explanatory power. Moreover, the use of other econometric methods, such as data panel or quantum regression, would result in more robust results.

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BRAND EQUITY IN AGRIBUSINESS: BRAZILIAN CONSUMER PERCEPTIONS OF PORK PRODUCTS

Brand equity no agronegócio: Percepção do consumidor brasileiro de carne suína

Brand equity en la agroindustria: Percepciones del consumidor brasileño de carnes porcinas

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ABSTRACT

Even sectors that usually offer similar products, such as agribusiness, can develop brand strategies that are potentially capable of promoting a greater perceived value in the eyes of consumers. This paper discusses how the origin of product, perceptions, and attitudes of Brazilian high-income consumers concerning food production processes, and brand equity assigned by consumers to certification processes affect the formation of brand equity in agricultural commodities.

KEYWORDS | Consumer behavior, brand, marketing strategy, agricultural commodities, pork.

RESUMO

Até mesmo setores que geralmente oferecem produtos com um alto grau de semelhança, como é o caso no agronegócio, podem desenvolver estratégias de branding, que são potencialmente capazes de promover um maior valor percebido por parte dos consumidores. Este artigo discute como a origem dos produtos, as percepções e atitudes dos consumidores brasileiros de alta renda sobre os processos de produção de alimentos e o valor de marca atribuídos pelos consumidores aos processos de certificação afetam a formação de brand equity em commodities agrícolas.

PALAVRAS-CHAVE | *Comportamento do consumidor, marca, estratégia de marketing, commodities agropecuárias, carne suína.*

RESUMEN

Aun sectores que generalmente ofrecen productos semejantes, tales como la agroindustria, pueden desarrollar estrategias de marca que son potencialmente capaces de promover un mayor valor percibido a la vista de los consumidores. Este estudio analiza cómo el origen del producto, las percepciones y las actitudes de los consumidores brasileños de alto poder adquisitivo con relación a los procesos de producción de alimentos, y el brand equity asignado por los consumidores a los procesos de certificación, afectan la formación del brand equity en los commodities agropecuarios.

PALABRAS CLAVE | *Comportamientos del consumidor, marca, estrategia de marketing, commodities agropecuarios, carne porcina.*

INTRODUCTION

Concerns regarding the use of consumer-oriented production systems are common in many areas of economic activity (Jaworski & Koli, 1993). To some authors, this is a potential source of competitive advantage and a major force in shaping organizations' marketing activities (Hanf & Kühl, 2005), including those in the field of agribusiness.

In agribusiness, differentiation can be seen as the organizations' strategy to achieve leadership in their field through the introduction of quality attributes in their products or services (Saes & Spers, 2006). By introducing or highlighting attributes that are desirable in consumers' eyes, higher fidelity can be achieved, thus facilitating the entry of the company and its products to niche markets that are more profitable. Some attention has been directed to the study of confidence attributes and how actual consumer perception encourages the implementation of branding strategies (Oliveira & Spers, 2011).

According to Ramirez (2013), consumers tend to adopt green and environmentally responsible products based on their personal preferences and perceptions of producers' credibility. Therefore, adoption is enhanced when marketers show competence by clearly stating the attributes that differentiate products and their benefits.

The study of high-income consumers is especially interesting. Growing income levels in developing countries have resulted in diet upgrades with increased demand for meats, dairy products, and other higher-value food products (Regmi & Gehlhar, 2005). Increasing affluence has coincided with growth in sales of labor-saving and specific food products. As the food marketing and retail sector evolves in middle-income countries, they undergo a "shift from commodity markets to product markets" (Reardon & Timmer, 2007). It is expected that the study of high-income consumers may point to future trends in the evolution of the buying behavior of "regular" consumers. Furthermore, high-income consumers are better educated, less sensitive to higher prices, and more open to differentiated products with higher quality and prices.

Extrapolating for countries, Regmi, Takeshima, and Unnevehr (2008) found a high degree of convergence in global food systems, with middle-income countries appearing to be following trends set by high-income countries. Convergence was found to be more apparent in most important food-expenditure categories and in indicators of food-system modernization, such as supermarket and fast-food sales.

For Stanton and Herbst (2005), companies producing agricultural commodities need to adapt to consumers' changing demands, particularly those who are increasingly ready to use such products. However, consumers have little knowledge about the mode of production. Thus, the purchase decision becomes increasingly complex and difficult. According to these authors, this scenario provides opportunities for the use of branding strategies as brands act as quality indicators, signaling worthwhile purchases, and facilitating decision-making. Most food products can be classified as agricultural commodities, including various types of meats, grains, and lightly processed vegetables. The process of branding for these products, understood as the process of creating and strengthening brands, is a reality that has gained importance over the past decades (Kaufman, Handy, McLaughlin, Park, & Green, 2000).

Measurement of brand value (brand equity) is a topic that has been researched extensively and several authors have proposed models for its estimation (Aaker 1998; Keller 1993; Yoo Donthu, & Lee, 2001). According to Keller (1993), brand equity can be defined as the marketing effects attributable to the brand only. The same author proposes the concept of consumer-based brand equity, which can be defined as the differences in consumer response to marketing actions conducted by a given brand, attributed to prior knowledge of this brand, in comparison with a fictitious or non-existent brand.

Other attempts to develop brand equity measurement have also taken into account the market performance of the brand. Huang and Sarigöllü combined survey data with real market data and proposed two types of brand equity measurements: customer mind-set measures (involving brand knowledge and more directly related to Aaker's initial propositions) and product-market performance measures. The results of the customer measurements confirmed that they captured the effects of the brand-building processes, while the market effects measure (the revenue premium consumers are willing to pay because of the brand) seems to be a better choice for the continuous tracking of brand equity because it is a more accurate and practical measure.

Another interesting point addressed in the behavior of brand equity is its relation with country-of-origin effect (COO). Kakati and Choudhury (2013) conducted a study in India with consumer durables companies. They compared local brands to global brands using Keller's (2003) consumer-based brand equity model. The results revealed that the strength of global brands is much higher than Indian brands. Indian brands scored significantly less for "brand preference" and consequently "brand strength" was much lower than that of global brands. This appears to indicate that COO probably has an influence on brand equity.

Regarding the research on this subject in Brazil, some insightful papers have been produced. Spers, Zylbersztajn, and

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Lazzarini (2003) studied the influence of formal and informal factors on consumer perceptions of food quality and safety mechanisms. As informal mechanisms, the brands are pointed by the authors as being the main action to be conducted by companies to establish effective relationships and generate value for their products. This is especially true for issues, such as the origin, quality, and other product benefits. For the formal mechanisms, governmental norms and regulations on the production processes appear as the main force that influences quality perception by consumers. Consumers ordered their preference based on whatever factors gave them a greater or lesser perception of safety and quality: firstly, effective governmental inspection (42.05%), followed by price (29.66%), and brand awareness (28.9%). Greater the brand awareness and value attributed to the rigor of inspection, greater is the perception of quality. There is a perception of consumer restriction on high prices – above a given price threshold, consumers fail to relate a higher price with quality.

In an interesting study with consumers from São Paulo state in Brazil, Cunha, Spers, and Zylbersztajn (2011) assessed their real perception of "sustainable" labeled products. The products were chosen from retail establishments that had a label of "Guarantee of Origin" (GO) and were selected because they have suppliers committed to environmental and social concerns (Zylbersztajn, Spers, & Cunha, 2009). The consumer clearly understood that GO is a differentiated product, with a greater appeal for food safety and environmental preservation and is independently certified.

Guilhoto (2001) made an interesting review of the effects of the COO on consumer's perception of quality. The author pointed out that culture is one of the moderating factors on the acceptance of products of foreign origin and that segmentation based on cultural traits can be more effective than segmentation by geographical or political borders. The image of the exporting country is transmitted to its products and a country with a favorable image tends to have its products better accepted. For companies that operate in countries where the COO is unfavorable, it is advisable to adopt strategies that minimize this negative impact. Guilhoto (2001) suggests the construction of a stronger brand, establishment of a price that matches the value consumers attribute to the product, and to establish partnerships in the supply chain to build a sufficiently strong and structured distribution process.

Measuring brand equity of agricultural commodities is necessary. However, there are no methodological proposals in literature for it. Therefore, the research hypotheses outlined here considers what Stanton and Herbst (2005) pointed out: aspects related to quality are closely linked to the creation and promotion of brands in the agricultural commodities industry and that other factors, such as food safety, product origin, presence or absence of certifications (how consumers interpret and evaluate them), and consumers' knowledge about production processes influence their perceptions and attitudes. All these points are discussed in detail later in this paper.

Thus, the objective of the research is to assess how the following factors affect the formation of brand equity in agricultural commodities: 1) origin of product, 2) perceptions and attitudes of consumers regarding food production processes, and 3) brand equity assigned by consumers to certification processes.

RESEARCH HYPOTHESES

Of particular interest in this study are the factors influencing high-income consumers' brand equity evaluations and how these factors influence attitudes toward agricultural commodities. This paper includes evaluation of willingness to pay (WTP) higher prices for products that have different attributes, in this case, products with certifications regarding quality and traceability. The research studies how high-income consumers evaluate the above constructs, using pork consumption as the research object. Figure 1 illustrates the explanatory theoretical model used to test the hypotheses.

It is speculated that more positive the image that high-income consumers hold of the origin of pork products, the higher (or more positive) will be the brand equity, as well as consumers' attitudes toward food production processes. Additionally, consumers will assign a higher value to certified brands. Some studies have already correlated brand value with the COO (Han & Chu, 2010) but few articles have assessed the interaction between this construct and brand equity. This work aims to extrapolate the concept of COO to the origin of the domestic or imported product itself.

> H1a: Positive perceptions of the origin of pork products are positively related to the formation of perceived brand equity.

> H1b: Positive perceptions of the origin of pork products are positively related to favorable perceptions of and attitudes toward food production processes.

> H1c: Positive perceptions of the origin of pork products are positively related to the brand equity attributed by high-income consumers to certification processes.

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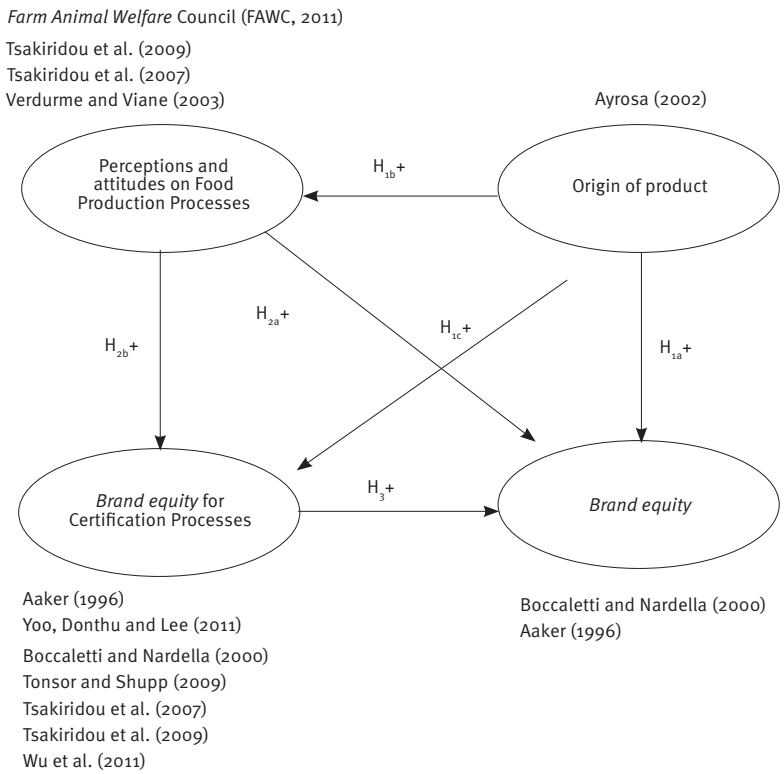
Figure 1. **Proposed explanatory theoretical model**



To test these hypotheses, we decided to introduce an adaptation to the COO construct for evaluating the origin of pork products (domestic *versus* imported). We also included an adaptation of the scale developed by Ayrosa (2002) to assess Brazil's image to match it to the target product of this study. Instead of evaluating the perception that foreigners have of Brazil and Brazilian products, we measure the image that Brazilian high-income consumers have of pork products originating from their own country *versus* imported products. The questionnaire focused on two distinct aspects: consumption of meat produced in Brazil and consumption of imported meat. A similar approach has already been employed to evaluate the influence of the image held by Chinese consumers of domestic manufactured products on their willingness to buy them (Chao, Seeman, & Grein, 2010).

It is believed that there is a positive relationship between consumers' perceptions and attitudes regarding food production processes (animal welfare, traceability, sanitation, and social and environmental responsibility) and the brand equity that consumers attach to the certification processes, as well as the brand equity that high-income consumers develop for a given product.

> H2a: Positive perceptions of and attitudes toward food production processes are positively related to the formation of brand equity.

> H2b: Positive perceptions of and attitudes toward food production processes are positively related to the brand equity attributed by high-income consumers to certification processes.

Some studies have evaluated the degree of consumers' awareness concerning aspects of food production processes, organic mode of production, genetically modified foods (GMF), traceability, animal welfare, influence on constructs such as WTP, and perceptions and attitudes toward such products (Tsakiridou, Mattas, & Mpletsa, 2009; Tsakiridou, Tsioumanis, & Papastefanou, 2007; Verdume & Viaene, 2003). However, few studies have addressed the direct relation between these constructs and

brand equity. Moreover, there have been instruments to measure brand equity changes due to the presence of a certification seal or certificates. It is postulated that higher the brand equity assigned by high-income consumers to the presence of a certification seal or certificates, the greater will be their perception of food safety regarding the consumption of this product. Therefore, consumers will assign a greater value to these brands.

> H3: The brand equity assigned by high-income consumers to the certification process is positively associated with the formation of brand equity.

Following the adaptation of a model proposed by Yoo et al. (2001), we employed three different dimensions to assess brand equity assigned by high-income consumers to certified brands: *perceived quality* (intrinsically linked to the issue of food security), *differentiation of value* (involving consumers' willingness to pay a differentiated price for the product (WTP), the perceived value, and the status associated with the consumption of this product), and *total brand value*. We used the scales originally developed for measuring brand equity by Aaker (1996) after adapting it to the case of pork and related brands. We included questions and/or adapted the questionnaire to ensure that the brand certification processes were also considered.

Operationalization of constructs

In the following section, all constructs used in the proposed model are presented with a brief explanation on how they were operationalized.

Origin of product

The country of origin (COO) is the place where a product is made, usually given by the expression "Made in (name of country)." In today's globalized market, consumers have access to products from different countries and can easily acquire information about these products. Thus, comparisons between different sources of origin, formerly more difficult, can now easily be undertaken through comparisons of price, quality, and other characteristics. It is believed that COO is one of the most important clues employed by consumers in their evaluation of product quality and therefore, a strong component in the purchase decision (Ahmed & D'astous, 1996; Ahmed, Johnson, Ling, Fang, & Hui, 2002).

Giraldi (2006) comments that the COO construct is developed from the idea that people have stereotyped views about other people and countries, and consequently the products manufactured in these countries (Balabanis, Mueller, & Melewar, 1999). To some extent, these stereotypes can transcend the evaluations of specific brands or products and determine purchase intentions and people's behavior. The same author quotes several papers published in Brazil on COO and consumer attitudes toward certain products. These include Ayrosa (2002), Carvalho (1993), Chong (1993), and Vazquez (1994).

Another interesting aspect of COO brand reputation is the presumed predisposition of consumers to pay a differentiated price for products with warranty. Koschate-Fischer, Diamantopoulos, and Oldenkotte (2012) performed three experiments, changing the COO (favorable vs. unfavorable) and the brand familiarity (high vs. low). The results of their experiments reveal that COO does have a positive impact on consumers' WTP.

Kim (2008) conducted an interesting study on the behavior of Japanese pork consumers, analyzing the trade-offs between price and intrinsic and extrinsic "tips" of product quality. The influence of COO on purchase decisions could widely be observed. The results show that Japanese consumers rely heavily on COO as an indicator of quality when buying meat. When consumers face a situation where they are forced to evaluate the trade-off between different quality signals (or consumption "tips"), both extrinsic and intrinsic, they seem to rely more heavily on a specific extrinsic signal – COO. This may suggest that consumers use this particular information as a risk reduction strategy.

In our study, a comparison is made between the image that consumers have of pork products produced in their own country and abroad (hypothetical country). This choice is justified by the difficulty encountered in exploratory qualitative interviews, conducted in the initial stages of this research, and used as the basis for the development of the questionnaire employed at a later stage. In these interviews with Brazilian consumers, the difficulty of realizing a crossover study involving pork produced in other countries became evident. Both in Brazilian and international markets, there are no clear signs of origin for pork. Therefore, we decided to examine the effect of consumers' views of their own country and how these could be applied to this product category. An adaptation of the scale originally proposed by Ayrosa (2002) for the measurement of COO was adopted in this survey.

Perceptions of and attitudes toward food production processes

Several studies have considered the degree of knowledge that consumers have about food production processes, linked to the measurement of different constructs. As previously discussed,

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perceptions of food safety are included within the assessment of consumers' WTP a premium price for different foods and the acceptance of genetically modified foods (GMF), among other aspects. However, perceptions of food safety have not yet been accessed independently as an isolated construct. Although some reports, such as that of Boccaletti and Nardella (2000), have specifically quoted this measurement in their questionnaires, this type of evaluation is often relegated to a second-level condition, used to corroborate and support the measurement of better-established constructs.

More recently, Weinrich, Kühl, Zühlsdorf, and Spiller (2014) have pointed out that in Germany milk and milk products are increasingly advertised with additional features for product differentiation. Differentiated traits include freeness from genetic modification, fair payment for dairy farmers, regional origin, quality attributes, and environmental and animal welfare. Milk consumers tend to value fresh and aromatic taste, safety, high nutritional quality, a proper price–quality ratio, and a subjectively appropriate price.

The choice is made to address food safety as part of the construct "Perceptions of and Attitudes toward Food Production Processes," but in a separate section of the questionnaire. This choice is justified by the intention to take the example of pork and postulate a generalization that applies to all agricultural commodities. The subject is treated independently in the questionnaire, without mentioning the specific product. Thus, we assess the degree of consumer knowledge on food safety along with issues, such as animal welfare, traceability, and socio-environmental responsibility. These items were combined to assess the impact of food production on consumer health issues and the environment.

We also included themes, such as product certification, government regulation, ethics concerning the treatment of animals intended for human consumption, and food security in the questionnaire. We wanted to generate data applicable to similar studies for different agricultural commodities.

Four dimensions were used to evaluate and measure perceptions of and attitudes toward food production: animal welfare, traceability, social and environmental responsibility, and the WTP of consumers for different prices of products with these characteristics.

Brand equity of certification processes

The work of Aaker (1996) "Measuring brand equity across products and markets" has been applied in many different situations. This study also applies the concept to quantify the value that consumers attach to brands of pork products and to accompanying seals and certificates.

As trust attributes are increasingly being valued within the field of food production, companies and brands involved in this activity should pay attention to the effective delivery of value along the entire supply chain engaged in their production (Hanf & Kühl, 2005). Today, the effective measurement of brand equity for food and agricultural commodities assumes an unprecedented importance.

The fact that consumers are increasingly valuing "safety" certificates is exemplified by the case of traceability. Lilavanichakul and Boecker (2013) performed a study on consumer acceptance of a new traceability technology – internal tagging – added substances that act as tracers. Consumers tend to be suspicious of the introduction of new substances in food. However, this research showed that consumers accept products with added internal tags and prefer a regional brand over a national one. This indicates that concerns with safety surpass consumers' natural fear of new technologies.

Seals and certifications of origin, food security, and unique characteristics of products (free of pesticides and specific contaminants, specific geographical origin, or a specific production process) are understood by the market to be increasingly valued by consumers. Nevertheless, studies indicate that the degree of consumers' awareness of certifications is below desired levels (Boccaletti & Nardella, 2000; Botonaki, Polymeros, Tsakiridou, & Mattas, 2006).

The models proposed by Aaker (1996) and Yoo et al. (2001) for measuring brand equity have some shortcomings for certification brands. Many of the dimensions used are difficult to detach from the case of "real" and tangible products for which they were designed. Qualitative interviews with consumers aimed to identify some of these issues and attributes that come to consumers' minds when they were asked about food seals and certificates. The interviews demonstrated that questions related to the marketing mix have no particular importance in this specific situation. However, to the respondents, the question of quality played a decisive role in consumers' WTP when faced with a premium price for a product differentiated by the presence of a seal. The value added to the final product by the presence of a seal or certificate was also clear in the statements of the interviewees.

There are five dimensions involved in the determination of brand equity as presented by Aaker (1998): loyalty, perceived quality, brand association and differentiation, brand knowledge, and brand market behavior. Among these, the one with greater affinity to certification brands (according to results of qualitative interviews and literature review) is perceived quality. Some issues related to loyalty

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(consumer experience and recommendation to others) and other related associations and differentiation measurements (especially those related to organizational associations and differentiation) are adequate for the quality dimension. This is explained by the nature of certification brands, which is usually created and promoted by entities independent of the owners of final branded products and involves the issue of differentiation.

The problem of adapting brand equity measurement to a certification brand remains, given the subjectivity inherent in such kinds of branding. However, the scale for total brand value proposed by Yoo et al. (2001) may be used, if necessary adjustments are made, especially when the issue of value added of the final product afforded by the certification brand is considered. The results of the qualitative interviews reinforce this proposition, as shown later in this article.

As seals and certificates deal mainly with value differentiation, this paper proposes the creation of such dimension, including the WTP and the status conferred by the consumption of this product type. This dimension is based on the work of Aaker (1996) with some new questions incorporated in the dimensions of loyalty, associations, and differentiation measurements (especially those related to the consumption experience).

Brand equity

The models of Aaker (1996) and Yoo et al. (2001) were used as the main base for questionnaire construction. According to D'Emidio, Zwicker, Rocha, and D'emidio (2010), Aaker's (1998) model is the most cited for understanding brand value. The uniqueness of this model is that it proposes the use of both active and passive aspects in brand valuation, generating the intrinsic possibility of a negative evaluation of brand value. The model defines five basic dimensions for assessing brand value: loyalty, brand awareness, perceived quality, associations, and other assets of the brand.

The originality of the Yoo et al. (2001) model lies in the use of marketing mix elements in the evaluation of brand equity. According to them, despite considerable research efforts made regarding the subject, few works have focused on assessing which elements of marketing activities effectively build brand equity. Unlike the model proposed by Keller (1993), which comprised only awareness and brand image, the authors consider more "tangible" factors involved in the product marketing mix, such as price, image at point of sale, distribution intensity, advertising spending, and price agreements in retail.

This paper, after model purification procedures, has used the perceived quality dimension based on Aaker (1996) and two additional dimensions – brand loyalty, brand associations and brand awareness, which are based on the work of Yoo et al. (2001). The composition of the brand equity evaluation adapted to the case of agricultural commodities is presented in Figure 2. It describes how this construct (part of the Theoretical Model presented in Figure 1) was built. Seven indicators, grouped in three formative dimensions, were used to measure Brand Equity.

METHODOLOGY

To aid in the validation of the questionnaire, 10 semi-structured interviews were conducted with high-income consumers of pork. Initially, all respondents said they were at least occasional consumers of pork and were responsible for the purchase of pork products for their homes. Consumers who responded affirmatively to both these questions were asked to make free associations with pork and were encouraged to talk about the features and attributes they considered in buying it.

Sampling technique was used in online surveys. After the publication of the questionnaire, an invitation was sent to people on the contact list of the authors and their advisors (who themselves can be considered high-income consumers), requesting their responses. They were asked to share the link within their own circle (also expected to be high-income consumers). Potential respondents were asked to complete the questionnaire only if they had eaten pork in the last month.

The final questionnaire included 52 questions divided into six sections, namely: Part 1 – Product Origin (Brazilian or imported); Section 2 – Perceptions of and Attitudes to Food Production Processes; Section 3 – Perceptions of Food Safety; Section 4 – Brand Equity of Certification Processes; Section 5 – Perceived Brand Value; Section 6 – Identification of Consumers. All information obtained from the qualitative phase of the research was used in the final draft of the questionnaire.

An initial pretest questionnaire was applied with six trial respondents. After some minor corrections suggested by the pretest respondents, the questionnaire was released for access by those who received an invitation link. An e-mail was sent to the people included on the contact lists, requesting their response. After two weeks, a new invitation was sent reinforcing the request. A good response rate was observed (from approximately 300 contacts initially approached, 132 valid questionnaires were collected). A very common behavior was the display of messages from these contacts passing the request to other contacts in their personal lists on their own initiative.

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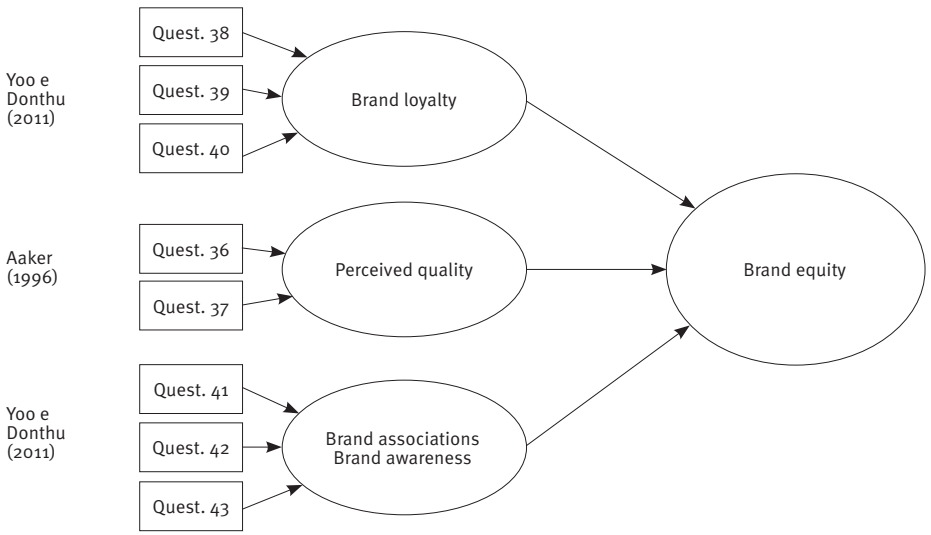
Figure 2. **Dimensions used in the evaluation of brand equity**



To ensure that all research objectives were covered, the plan for data analysis consisted of five stages, following the analytic framework suggested by Carvalho (2000): error analysis and extreme values (outliers), factorial analysis of the scales, checking of the reliability of the scales, and analysis using the techniques of structural equation modeling (SEM). These verified the assumptions and the proposed theoretical model could be confirmed by empirical data. Results were tabulated in Excel files and an initial analysis was undertaken. For the frequency distribution of the indicators, correlations between indicators, exploratory factorial analysis, and cross tabulations, we used SPSS version 22.0 software. For confirmatory analysis using SEM, AMOS 18.0 software was used.

The exploratory factorial analysis (EFA) was chosen as the first step in data analysis following the example of Gerbing and Hamilton (1996), who said that it is always preferred to begin an analysis as far along the confirmatory end of the continuum as possible. The authors argued that the methods provided by confirmatory factor analysis (CFA) for data-driven model specification are more appropriate for "fine tuning" the model than for large-scale specification of models that are wrongly specified. Since some adjustments had been made in the model, it was found necessary to "start over" the indicator grouping analysis from an exploratory technique.

Marsh, Morin, Parker, and Kaur (2014) pointed out that while EFA is an important precursor of CFA/SEM, it has been widely seen (wrongly) as less useful, partly on the basis of the semantically based misconception that it is purely an "exploratory" method and should be used only when the researcher has no prior assumptions regarding factor structure. But the authors argue that in EFA, the factors are extracted from the data without specifying the number and pattern of loadings between the observed variables and the latent factor variables. In contrast, confirmatory factor analysis specifies the number, meaning, associations, and pattern of free parameters in the factor loading matrix before a researcher analyzes the data. Since, we adapt a considerable part of the scales and develop others from a collection of authors, a "step back" with EFA was considered useful.

RESULTS AND DISCUSSION

A total of 212 questionnaires were collected. After an initial screening to discard incomplete responses, 132 responses were considered valid. The average age of respondents was 40.68 years, and consisted of 60.55% men and 39.45% women. The average monthly family income of the respondents was around U$ 6000. This, according to Brazilian government data, corresponds to a high-income profile. Regarding the frequency of pork consumption, 37.61% of respondents were classified as sporadic consumers, 39.45% said they bought the product "fairly regularly," and 22.94% were frequent users.

After an initial analysis, the model was found to present unsatisfactory fit indices. A separate analysis of each of the constructs was then conducted, together with an analysis of the convergent validity of the model, performed by measuring the composite confidence (CC) and analysis of variance extracted (AVE) of each construct, following the recommendations of Prado (2006). The standards set as ideal are CC› 0.7 and AVE› 0.5 (Hair et al. 2009). Using data from the output of the AMOS software, the values for CC and AVE for each construct were calculated.

To obtain constructs with greater explanatory power, a decision was made to eliminate indicators with lesser explanatory power for total observed variance. This procedure was repeated for each construct until acceptable CC and AVE values were achieved.

Four indicators (questions) were removed from the construct "Origin of Product." Although, the AVE value did not reach the minimum of 0.5 (the result was 0.4), the construct was accepted based on the argument by Mulaik et al. (1989) that it is necessary to consider both the theoretical reasonableness of the construct and the potential to add knowledge to the field of study in the evaluation of the convergent validity. Regarding "Perceptions of and Attitudes toward Food Production Processes," four indicators were excluded – questions 13, 15, 18, and 20. For the construct "Brand Equity of Certification Processes," questions 24, 30, 33, and 34 were removed. Finally, questions 42, 44, and 45 were removed from "Brand Equity."

Once the purification procedures had been completed and the convergent validity of the model could be established, the covariance between the constructs was reviewed to determine the discriminant validity of the model. This determines whether the constructs relate to each other in a satisfactory manner (Churchill & Yacobucci, 2005). Based on the results obtained using AMOS for correlations between the constructs, we undertook AVE analysis. Fornell and Larcker (1981) have showed that it is possible to affirm there is discriminant validity of the model if the AVE value for each construct is less than the correlation value of that construct with other constructs squared. This requirement was met for all remaining constructs in the validated theoretical model. AVE values and the square values of correlations between constructs are presented in Table 1.

Table 1. **Calculations of discriminant validity for constructs in the purified model**

	Origin of Product	Perceptions and Attitudes on Food Production Processes	Brand Equity of Certification Processes	Brand Equity
Origin of Product	0.40			
Perceptions and Attitudes on Food Production Processes	0.06	**0.51**		
Brand Equity of Certification Processes	0.00	0.00	**0.51**	
Brand Equity	0.00	0.20	0.00	0.51

Notes: Numbers in bold are the AVE. All other data represents the square values of the correlations between the constructs.

As the constructs resulting from the purification of the model met the conditions set by Fornell and Larcker (1981), it was possible to state that the model has discriminant validity. A check of the internal reliability of constructs was conducted using Cronbach's α. According to Hair et al. (2009), values above 0.6 and 0.7 are acceptable. All scales used reached the level required for validation.

It is interesting to notice that elimination of such indicators signified no relevant theoretical background change. Constructs were the same - it was only a question of using the indicators with greater explanatory power. Since the whole construction of the model was based upon adaptations of pre-existent scales that were developed for use under different circumstances, some degree of fine adjustment was to be expected.

Boomsma (2000) states that after several modifications it is the researcher's responsibility to answer questions about the validity of that model. Serious attempts should be made to realize some form of cross-validation with respect to the set of models considered in a sequence of model evaluations. The author suggests testing the validity of the proposed modified models, ideally using an independent, fresh sample from the same population. Thus, a second round of data collection was conducted, using the final questionnaire after model purification and the same data collection strategy.

In the second round of data collection, a total of 116 questionnaires were considered valid. The average age of respondents was 35.58 years and consisted of 39.81% men and 60.19% women. The average monthly family income of the

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respondents was around U$ 4500 (this corresponds to a high-income profile). Regarding the frequency of pork consumption, 26.85% of respondents were classified as sporadic consumers, 47.22% said they bought the product "fairly regularly," and 25.93% were frequent users. Except for the gender proportion, all traits of this second sample were consistent with the population of the first round of data collection.

This gender difference could be important and responsible for part of the differences found in the analysis of these two samples. Women's diets are healthier than men's. According Prättälä et al. (2006) Finnish women eat more fruits and vegetables but less meat than men. For Gossard and York (2003), gender has a particularly strong influence on meat consumption. However, the authors could not provide physiological reasons to explain why men would require more meat than women. They found that women consume substantially less meat than men (74 grams a day less), and also consume less beef (almost 17 grams a day less).

To test the hypotheses and their level of significance, we used the t-test, the results of which are shown in Table 2. For acceptance of the hypotheses, the critical ratio (CR) must be greater than 1.96% for a significance level of 0.05 and above 2.58% for a significance level of 0.01% (Hair et al. 2009). Both data collection rounds were tested separately and the final result on support for each hypothesis were presented.

Table 2. **Results of t-tests for hypothesis testing in the purified theoretical model in both 1st and 2nd rounds of data collection.**

Hypothesis	Relationships between the constructs			Round of data	λ[a]	CR[b]	Sig. (p)[c]	Results
H1a	Origin of Product	⇢	Brand Equity	1st	0.473	3.935	0.000	Supported
				2nd	0.129	1.197	0.231	Not supported
H1b	Origin of Product	⇢	Perceptions and Attitudes on Food Production Processes	1st	0.189	1.139	0.255	Not supported
				2nd	0.155	0.840	0.401	Not supported
H1c	Origin of Product	⇢	Brand Equity of Certification Processes	1st	0.334	2.430	0.015	Supported
				2nd	0.519	4.717	0.000	Supported
H2a	Perceptions and Attitudes on Food Production Processes	⇢	Brand Equity	1st	-0.181	-2.626	0.009	Supported
				2nd	0.067	1.370	0.171	Not supported
H2b	Perceptions and Attitudes on Food Production Processes	⇢	Brand Equity of Certification Processes	1st	0.218	2.625	0.009	Supported
				2nd	0.044	0.827	0.408	Not supported
H3	Brand Equity of Certification Processes	⇢	Brand Equity	1st	0.269	2.745	0.006	Supported
				2nd	0.393	3.074	0.002	Supported

Notes: (a) standardized path coefficient; (b) Critical Ratio; (c) level of significance.

For the construction of the final model, only the relationships between variables that were supported on both data collection rounds were considered valid. According to Boomsma (2000) who, quoting Steiger (1990), highlighted the relative importance of replication and cross-validation most forcefully: "An ounce of replication is worth a ton of inferential statistics" (p. 176).

Furthermore, the hypothesis confirmed in both samples gain an extra reliability, once they were tested and confirmed with populations that show important demographic and behavioral differences, but both consistently show a high-income profile. If they prevail on these different circumstances, it could be assumed that the correlations between the constructs involved in this confirmed hypothesis really exists.

The final model after purification procedures, validation, and considering the assumptions stated above, is shown in Figure 3.

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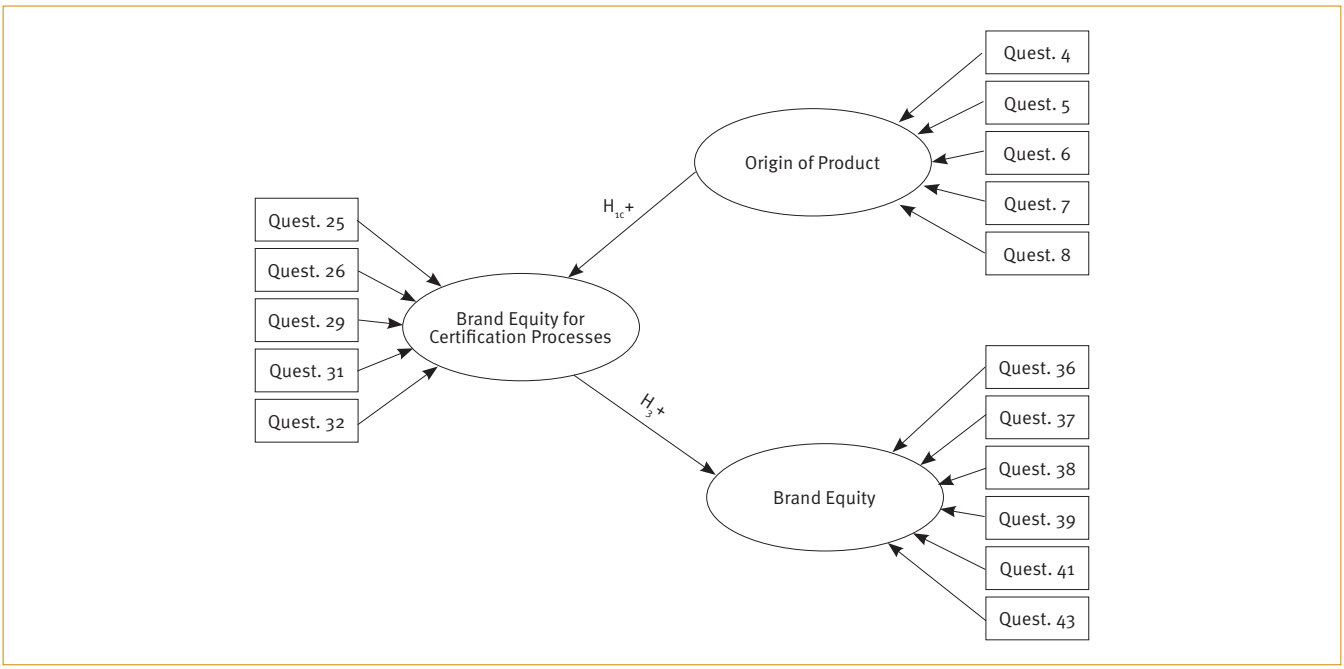
Figure 3. **Theoretical model after purification and validation processes, considering first and second rounds of data collection**



Regarding hypotheses concerning the construct "Origin of Product," the only hypothesis supported is H_{1c}, showing a positive correlation with brand equity for certification processes. Thus, better the image consumers have of products produced in Brazil, greater the value they will give to a brand for a certification process.

Origin is closely related to trust. Jiménez e San Martín (2014) studied the action of trust as mediator of COO and found that in an emerging market economy (such as Brazil), the COO's brand reputation influences trust and purchase intention more than in a mature market. Also, the results show that trust plays an important role in different markets because it mediates the effect of COO's brand reputation on consumers' purchase intention in both emerging and mature economies. Therefore, it is reasonable to assume that greater the confidence consumers have on the product and its origin (and in the whole production chain by association), the more they will believe in certifications granted under the same scenario.

Several studies affirm that the degree of consumers' awareness of certifications is below desired levels (Boccaletti & Nardella, 2000; Botonaki, Polymeros, Tsakiridou, & Mattas, 2006), and it is reasonable to assume that when consumers positively evaluate the origin of a product, they will tend to compensate their lack of knowledge about certifications with this origin cue. This paper's results corroborate those of Kim (2008), who studied how Japanese consumers of pork evaluated the trade-offs between price and intrinsic and extrinsic "tips" of product quality and found an evident effect of the origin of products in the choices of the respondents. They stated that there is a positive effect of Origin of Product on perceived brand equity. It is reasonable to assume that this favorable brand equity perception could be transferred to a certification brand.

Giraldi and Lopes (2010) found that the beliefs about communication and distribution of Brazilian fruits affects the image Dutch consumers have of Brazil and that better the country image, better is consumer's attitudes toward this kind of product. If certification seals could be understood as a way to communicate special traits and attributes of products, the H1c hypothesis would be in consonance with the findings of Giraldi and Lopes (2010).

The H1c relationship is also reinforced by results of Lilavanichakul and Boecker (2013) who showed that consumers accept better products with important technological improvements (internal tags to trace animal products) when they have regional (and better known) brands. Authors postulate that this indicates that concerns about safety surpass consumers' natural fear of new technologies and a "closer" brand tends to minimize such fears.

H3 hypothesis was supported, indicating that greater the value consumers attribute to seals and certifications, more they value brand equity in the final product. As stated before, studies indicate that the level of consumer awareness of certifications is below desired levels. Nevertheless, this study confirms a

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positive relationship between the value that consumers attribute to certification processes and brand equity in the final product.

This confirms the findings of Weinrich et al. (2014) who pointed out that in Germany, milk and milk products are increasingly advertised with additional features for product differentiation, aiming at value creation in consumers' minds. German consumers are paying extra prices for milk from cows raised on pastures – a procedure that was the norm a few decades ago, but that has been replaced by fully housed systems. More than 50% of respondents consider fully housed systems problematic and are willing to pay more for milk produced by respecting animal welfare.

We postulate that the high-income profile of the population also played a role in reinforcing the value attributed by consumers to certifications and seals. Such findings are in consonance with results from Shukla, Banerjee, and Adidam (2013) who found that high-income and highly educated shoppers perceive themselves to be smart, as opposed to low-income shoppers with lower education. They tend to believe that they make better judgements when they are well informed about products, especially when helped by seals and certifications.

Zakowska-Biemans (2011) segmented Polish consumers by their socio-demographic variables and intention to buy organic food. The group named "Conscious," which have a higher level of income and better education, proved to be a bigger consumer of organic products. The author states that in the case of organic food, consumers could verify its authenticity by information included on the label. This confirms that the valorization of seals and certificates implies a higher value (higher brand equity) attributed to the final product. An interesting point highlighted by Zakowska-Biemans (2011) is that price is another factor hindering consumption of organic food in Poland, since prices often exceed the acceptable difference between organic and conventional food. Given that Poland is also an emerging market as Brazil, it will be interesting to address this question of price in further studies.

Another study that is aligned with the findings presented here is the one by Larceneux, Benoit-Moreau, and Renaudin (2012). They studied the effect of a certification label as moderator for brand equity of host product. The authors proposed that a third-party label (a certification brand) constitutes a specific type of brand, acting as cobranding. They define "label equity" as awareness and a set of associations or beliefs that provide a strong, sustainable, differentiated advantage, compared with that achieved by unlabeled products. In this perspective, when a brand adds an organic label to its product packaging, the result is enhancement of the brand equity for the host product.

The dimensions proposed here for the evaluation and measurement of brand equity attributed by consumers to certification processes are promising. The use of perceived quality (based on Aaker, 1996) and total value of brand (based on Yoo et al. 2001) are adaptations of scales already proposed for other purposes, but the set of measurements used here also includes a novelty – the status related to consumption of differentiated products. That is a contribution to the measurement of brand equity for seals and certificates. The status evaluation is based on the work of Wu, Xu, and Gao (2011), which examined the willingness of Chinese consumers to consume certified products (after a crisis of milk contaminated by dyes) and the status conferred by this attitude.

This combination of measurements has proved quite suitable for this study. The results of the exploratory factor analysis and the confirmation of the hypotheses concerning these constructs through SEM, in both first and second data collection rounds, indicate that this relation exists. The model is promising and should be refined and improved by future studies.

Hypotheses H1a (Origin of Product Influencing Brand Equity), H2a (Perception and Attitudes on Food Production Processes influencing Brand Equity), and H2b (Perception and Attitudes on Food Production Processes influencing Brand Equity of Certification Processes) were supported in the first round of data collection, but not in the second. Nevertheless, they should be included in future studies, especially those related to "Perception and Attitudes on Food Production Processes" construct. All indicators used in this construct were first proposed here. These clearly demand further refinement, validation, and confirmation. But the partial support obtained in the first round of data collection points to the worthiness of future studies, along with literature support presented in the section on operationalization of constructs.

Hypothesis H1b was not supported in both data collection rounds. Therefore, based on the principles presented above to validate the hypotheses that were corroborated in both rounds of data collection, it may be advisable to exclude the postulation of an effect of "Origin of Product on Perception and Attitudes on Food Production Processes" in further studies. A simpler model could have greater explanatory power and a relation that has been proven as not valid in two distinct populations, could be excluded in the future.

The choice of pork as an object of study is justified. The pork supply chain is very developed in Brazilian and international agribusiness, having high levels of professionalism and productivity. Brazil now ranks fourth in the world as producer and exporter of pork. The industry is a source of numerous

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direct and indirect jobs in the country. This study represents an attempt to generate subsidies for companies willing to adopt branding strategies that could attach higher perceived value to their products. This particular product was chosen, given the characteristics of its production chain (highly organized and vertically coordinated), believing that the conclusions reached here could be easily extrapolated to other commodities.

CONCLUSIONS

The final model obtained after two rounds of data collection is much simpler than the original one proposed in the Figure 1, but the hypotheses confirmed in both rounds have solid data and theoretical background supporting them. Both replication of results obtained in the two sets of data and literature support, as exposed in the results and discussion section of this paper, assure the validity of these findings.

Two hypotheses were supported after all validation and refinement procedures: H1c, which states that Origin of Product positively influences brand equity of certifications processes; and $H_{3,}$ which relates brand equity of certification processes with brand equity in the final product.

Looking at Figure 3, which represents the final purified and validated model, one can find a decision chain for the consumer. For an average consumer, Figure 3 represents a fairly good step-by-step decision guide. "Do I believe that this country produces trustworthy pork products?" If he believes, he will be willing to also believe that this country can deliver acceptable standards of certification regarding the production processes. And, finally, if he positively evaluates both origin and certificates, he would also surely assign a higher brand equity on final products produced under such a scenario.

These practical considerations are in consonance with the data and literature presented above. It seems reasonable to believe that consumers may actually have this decision process in mind when they are faced with decision-making about branded pork products. Whether they do so is something to be addressed in future studies. Data collected in this research seems to enforce that this assumption is true.

From a managerial point of view, through the characterization and measurement of the factors involved in the formation of brand equity of the final product in agribusiness commodities, this study hopes to contribute to the development of branding strategies, potentially enabling managers to develop products with higher perceived value for consumers, and thus providing greater competitive advantage for their organizations. Brazil's major export products are agricultural commodities and there are few studies evaluating brand equity for these.

Based on the results presented here, managers are advised to care closely about COO image. Managers should develop a third-party label, especially if there is a favorable association with Brazil for the product. The results also suggest that if you have a certification brand assuring a higher quality standard, it is expected that consumers will assign a higher brand equity.

The limitations of this study include small data samples. After the first round of data collection, purification, and validation procedures, a larger sample should have been collected. This was not possible due to time restrictions and lack of resources. It is also recommended to repeat this study with broader samples and to assess people with lower income. Apart from better representing Brazilian society, a comparison between high and low-income segments would be important for theoretical construction.

For future studies, it is suggested to better understand how the construct "Perception and Attitudes on Food Production Processes" could be operationalized. This research is only the first step towards development of a reliable instrument to assess this important construct.

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THE MEDIATING ROLE OF VIRTUOUSNESS IN HUMAN RESOURCE MANAGEMENT AND JOB OUTCOMES

Papel mediador da virtuosidade na gestão de recursos humanos e resultados do trabalho

El rol mediador de la virtuosidad en la gestión de recursos humanos y los resultados del trabajo

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ABSTRACT

In this study, we explore the role of organizational virtuousness (OV) as a mechanism through which human resource management practices (HRMPs) affect employee outcomes. We propose that HRMPs lead to higher levels of organizational citizenship behaviors and affective commitment by stimulating OV. Using a sample of 525 workers, from 22 stores of a retailing company, we found evidence that HRMPs predict OV, thereby predicting members' citizenship behaviors and affective commitment. By suggesting this new mediator, this study contributes to a better understanding of the causal chain linking HRMPs and performance.

KEYWORDS | Human resource management, organizational virtuousness, organizational citizenship behavior, affective commitment, mediation.

RESUMO

Nesta pesquisa, exploramos o papel da virtuosidade organizacional como um mecanismo por meio do qual as práticas de gestão de recursos humanos (PGRH) influenciam os resultados no nível dos colaboradores. Propomos que as PGRH conduzem a níveis mais elevados de comportamentos de cidadania organizacional e comprometimento afetivo, estimulando a virtuosidade organizacional (VO). Numa amostra de 525 colaboradores, de 22 lojas de uma empresa de retalho, encontramos evidência de que as PGRH predizem a VO e que esta prediz os comportamentos de cidadania e o comprometimento afetivo dos membros da organização. Ao propor esse novo mediador, este estudo contribui para uma melhor compreensão da cadeia causal que liga as PGRH e o desempenho.

PALAVRAS-CHAVE | *Gestão de recursos humanos, virtuosidade organizacional, comportamento de cidadania organizacional, comprometimento afetivo, mediação.*

RESUMEN

En esta investigación exploramos la función que tiene la virtuosidad organizacional como un mecanismo a través del cual las prácticas de gestión de recursos humanos (PGRH) influencian los resultados del trabajo. Así, nuestro objetivo es plantear que las PGRH aumentan el nivel de comportamientos de ciudadanía y de compromiso afectivo cuando se incentiva la virtuosidad organizacional. En una muestra de 525 trabajadores pertenecientes a 22 tiendas de una empresa minorista encontramos pruebas de que las PGRH predicen la virtuosidad organizacional y esta, a su vez, predice los comportamientos de ciudadanía y el compromiso afectivo de los miembros de la organización. Al proponer este nuevo mediador, este estudio contribuye a una mejor comprensión de la cadena causal que conecta las PGRH y el desempeño

PALABRAS CLAVE | *Gestión de recursos humanos, virtuosidad organizacional, comportamientos de ciudadanía, compromiso afectivo, mediación.*

INTRODUCTION

The study of the relationship between human resource management practices (HRMPs) and performance has received considerable attention, and empirical research yields abundant confirmatory evidence (Combs, Liu, Hall, & Ketchen, 2006; Jiang, Lepak, Hu, & Baer, 2012). This relationship is usually seen as a chain starting with HRMPs and finishing with operational and financial organizational outcomes (Becker, Huselid, Pickus, & Spratt, 1997; Dyer & Reeves, 1995). In the middle, this causal chain comprises employee-level attitudes and behaviors (Kehoe & Wright, 2013), such as job satisfaction and commitment (Takeuchi, Chen, & Lepak, 2009) or service-oriented citizenship behaviors and turnover (Sun, Aryee, & Law, 2007). HRMPs affect those outcomes, thereby leading to enhanced organizational performance. However, studies on mechanisms linking HRMPs and organizational performance, such as the abovementioned proximal employee outcomes, are underdeveloped, demanding more attention on understanding the relationship (Takeuchi, Chen, & Lepack, 2009; Kehoe & Wright, 2013).

Current explanations of the relationship between HRMPs and attitudinal and behavioral proximal outcomes are mainly based on the social exchange theory, regardless of these explanations being explicit (Gong, Law, Chang, & Xin, 2009; Sun et al., 2007; Takeuchi, Lepak, Wang, & Takeuchi, 2007) or implied in intervening variables such as justice (Heffernan & Dudon, 2012) or organizational support (Kuvaas, 2008). Within this perspective, HRMPs are part of an exchange relationship that organizations establish with employees. If employees' perceptions of their organization or job are positive, they reciprocate with greater commitment, satisfaction, loyalty, and productivity. However, empirical research reports inconsistent relationships between HRMPs and employee attitudes and behaviors. For instance, while Ahmad and Shroeder (2003) found positive relationships between HRMPs and organizational commitment, Bal, Kooij, and De Jong (2013) reported much less intense or insignificant relationships between different HRMPs and affective commitment. In our view, an intervening variable might explain this inconsistency. By studying the relationship between HRMPs and affective commitment at the individual level within a social exchange framework, Meyer and Smith (2000) found that perceived organizational support and procedural justice mediate these relationships, leading the authors to conclude that HRMPs can be valuable in establishing and maintaining employees' commitment; however, their effect was not direct or unconditional. We concur with Meyer and Smith (2000) regarding the existence of an intervening variable in the relationship between HRMPs and employee attitudes and behaviors; however, instead of relying on the social exchange theory as an explanation, we suggest that organizational virtuousness (OV) offers a viable, alternative explanation.

OV is an organizational level attribute and refers to "individuals' actions, collective activities, cultural attributes or processes that enable dissemination and perpetuation of virtuousness in an organization" (Cameron, Bright, & Caza, 2004, p. 768). Virtuousness is associated with Aristotelian goods of first intent meaning "that which is good in itself and is to be chosen for its own sake" as opposed to goods of second intent which are "good for the sake of obtaining something else" (Cameron et al., 2004, p. 769). As part of the positive scholarship, OV is based on a set of assumptions about human and organizational nature encompassing honesty, compassion, loyalty, respect, and forgiveness, a phenomenon studied through theories on extraordinary performance, positive deviance, and the positive spiral of flourishing. This perspective contrasts with the more commonly accepted view of social relationships based on conflict, retribution, and contract breaking, studied with theories of reciprocity and justice, overcoming resistance, or competition (Cameron, Dutton, & Quinn, 2003).

In general, virtuousness involves a positive impact on human beings, moral goodness, and the prevalence of societal benefit rather than individual interests (Bright, Cameron & Caza, 2006). Instead of reciprocity as the main motivator for employees' pro-organizational attitudes and behaviors, OV emphasizes the motivational influence of doing the right thing for the sake of people (Cameron & Winn, 2012). Experiencing OV has a strong prescriptive effect on individuals, leading them to act consistently and as role models for other individuals, thus generating a collective positive pattern of behaviors and emotions that creates a self-reinforcing virtuous spiral. Thus, employees' positive attitudes and behaviors are constituents of OV and not the consequences of a favorable exchange relationship between employees and organizations.

Organizations can create practices to instill positive interpersonal relationships, meaningful work, enhanced learning, and personal development of employees, whose impact on humans enables virtuousness at the organizational level (Cameron & Win, 2012). Thus, we suggest that HRMPs such as training, job design, or careers, if perceived as appropriate to advance individuals and organizations, i.e., viewed as goods of first intent and inherently worthy by employees, can foster a shared perception of OV. Embedded within a virtuous context, employees will display organizational citizenship behaviors and affective commitment—integral parts of the virtuous character of the organization.

Thus, our research aims to contribute to the debate regarding the chain of causal linkages between HRMPs and

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organizational outcomes by suggesting OV as an explanatory mechanism. We predict that HRMPs leads to higher perceptions of OV, which mediates the relationships between HRMPs and organizational citizenship behaviors and between HRMPs and affective commitment. Data obtained from a sample of 525 workers from 22 stores of a retailing company support our predictions.

This study is organized as follows. The next section presents a theoretical background on OV's research domains and its foreseeable relationship with HRMPs, affective commitment, and organizational citizenship behaviors. The third section describes methods – data collection, sample, measures and statistical procedures. The fourth section reports data analysis and results, which are discussed later in the fifth section. The last section contains conclusions and limitations, implications for practice, and suggestions for future research.

THEORETICAL FRAMEWORK

Organizational virtuousness

With roots in ancient Greek philosophical traditions (Bright, Winn, & Kanov, 2014), but having its own distinctive features (Sison & Ferrero, 2015), the concept of OV emerges from a stream of positive studies on organizations (Cameron & Winn, 2012). According to early approaches, virtuousness has three major properties (Bright et al., 2006): human impact, moral goodness, and unconditional societal benefit. Here, virtuousness describes desirable or right actions in a society, entails a positive effect on humanity, and transcends self-individual interests to benefit society. More recently, at the individual level, Cameron and Winn (2012) expanded this view by adding the so-called eudaemonic and inherent value assumptions. Both assumptions take a strong position regarding what fundamentally motivates human beings. Briefly, humans are seen as entities characterized by a proclivity to seek what is good and inherently worthy, the eudaemonic and inherent value assumptions, respectively. At the collective level, Cameron and Winn (2012) suggest the amplifying effect as another property of virtuousness, wherein the experience of virtuousness motivates people to feel empowered to act in a consistent way and create a context that inspires others to act accordingly, generating positive emotions and increased individual performance, thereby reinforcing OV. In line with this attribute of virtuousness at the collective level, research has adopted a more pragmatic approach by studying OV's impacts on performance at both organizational and individual levels (Cameron, Mora, Leutscher, & Calarco, 2011).

OV is described as a multidimensional construct integrating five dimensions: optimism, trust, compassion, integrity, and forgiveness (Cameron et al., 2004). Optimism is a sense of purpose implying doing good besides doing a good job and also the belief in being successful despite challenges. Trust refers to emphasis on establishing mutually trustful relationships among organizational members and involves treating people with courtesy, consideration, and respect. Compassion includes the recurrent exhibition of acts of kindness, care and concern for others, and the use of stories of concern and compassion as reinforcing mechanisms. Integrity comprises honesty, loyalty, honor, and high standards of reliability. Forgiveness reflects being compassionate and able to forgive mistakes once recognized, corrected, and used as learning opportunities. This set of organizational level attributes creates a context that stimulates consistent actions among members who will experience positive emotions, increased willingness to help customers, become more attentive and respectful toward co-workers, and be more likely to search for innovation to benefit the organization. Thus, the process by which OV influences employees' attitudes and behaviors is the same as in other organizational level constructs, such as culture and climate. The inherent value of OV's content differentiates it from other concepts. This argument echoes with the notions of stewardship (Hernandez, 2008), self-determination (Deci & Ryan, 2008), or job crafting (Berg, Dutton, & Wrzesniewski, 2013), because they emphasize the importance of altruistic motives in contrast to individual agency, the motivational effects of intrinsic or integrated regulation compared to extrinsic-based motivation, and the energizing effect of extracting meaning from the job instead of merely performing narrow tasks.

Organizations can create practices to perpetuate flourishing interpersonal relationships, meaningful work, employees' enhanced learning, and personal development, whose impact on humans enables virtuousness at the organizational level and embedded pro-organizational attitudes and behaviors. Thus, we argue that HRMPs such as training, job design, enhancing participation, and career-focused practices are perceived as goods of first intent and inherently worthy, and foster a shared perception of OV that induces employees' emotions and behaviors mirroring, at the individual level, the virtuous character of the organization, thus reinforcing this characteristic.

The relationship between HRMPs and OV

OV is still a relatively unexplored concept in the field of HRMPs, although some authors include a moral dimension in their explanations of the effect of HRMPs and outcomes, which is akin to OV (Park & Peterson, 2003), or argue that virtue, a moral

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character developed through learning the fundamental principles of organizations, becomes a major generator of the happiness that organizations should create among their employees (Gavin & Mason, 2004). Similarly, Bernacchio and Couch (2015), using the case of Mondragon Cooperative Corporation, show how organizations can use participatory management practices to institutionalize a concern for the common good.

Research on HRMP's impact on ethical climates (Weaver & Treviño, 2001) suggests that organizations can improve their climate's ethical nature by focusing on two types of HRMPs: value-oriented, when practices stimulate a generalized commitment to act ethically in a self-management way, and compliance-oriented, when practices impose rules and standards of ethical conduct. Especially value-oriented programs, but also compliance-oriented ones, are designed to influence organizational members to move away from egoistic interests towards other concerns, such as the well-being of the organization, co-workers, and other stakeholders. More recently, Guerci, Radaelli, Siletti, Cirella, and Shani (2015) expanded this argument by stating that HRMPs themselves can embody both value-oriented and compliance messages, creating less egoistic ethical climates. Empirical evidence supports the authors' proposition. We take this further by asserting that HRMPs are part of organizational processes that influence perceptions of OV, although they are not explicitly designed to include a virtuous character or another ethical meaning. Because management can be seen as a humanistic endeavor (Arnaud & Wasieleski, 2014) when "its outlook emphasizes common human needs and is oriented to the development of human virtue" (Melé, 2003, p. 77), HRMPs are important sources of OV.

Based on a humanistic management argument composed of a set of practices created to foster human dignity (Spitzeck, 2011), we can argue that a properly designed workplace should allow members to exercise their freedom, create developmental challenges for individuals' potential, and send signals of recognition and acceptance so that members are not just considered as a means for organizational ends (Arnaud & Wasieleski, 2014). HRMPs are thus a privileged vehicle for employees to infer the moral goodness, human impact, and generalized benefit provided by organizations. Because HRMPs can signal the importance of customers and contribute to creating a service climate (Yagil, 2014), when signaling dignity and respect, support, caring, meaning, forgiveness, and inspiration (Cameron et al. 2011), they can generate virtuousness. Although some specific HRMPs such as selection or training could affect specific dimensions of OV such as integrity or forgiveness, we suggest a generalized influence. In the strategic human resource management literature, there is consensus regarding the synergistic effect of bundles of HRMPs or the Human Resource Managment system characterized by several interdependent and mutual reinforcing practices, or the so-called horizontal alignment (Gratton & Truss, 2003) that creates positive effects on organizational performance (Guest, 1997; Becker et al., 1997). Accordingly, we posit the following hypothesis:

> H1: HRMPs are positively related to OV.

OV, organizational citizenship behaviors, and affective commitment

We suggest that OV induces pro-organizational attitudes and behaviors because positive outcomes are a part of OV based on the literature on organizational climate (Ehrhart, Schneider, & Macey, 2014) and culture (Chatman & O'Reilly, 2016). Although these are distinct constructs with a different history and rooted in non-coincident intellectual traditions (Schneider, González-Romá, Ostrof, & West, 2017), they both refer to organizational level attributes that allow employees to give meaning to their experiences in organizations and become aware of which behaviors are rewarded, supported, and expected (in the case of climate), and offer a system of shared values and assumptions that explains why organizations do what they do (in the case of culture). In both the cases, an organizational level characteristic, among other things, prescribes the appropriate way of feeling, thinking, and acting for its members (Schein, 2010). OV describes an organization characterized by optimism, trust, compassion, integrity, and forgiveness, a set of characteristics that will signal pro-organizational behaviors as the appropriate way to act in organizations and an affective connection between individuals and their organizations as the appropriate way to feel.

More specifically, the OV theory suggests that pro-social behavior is a consequence of virtuousness at the individual level (Cameron et al., 2004; Staw & Barsade, 1993). Employees with positive experiences at work and who are subject to various forms of virtuosity, are more likely to exhibit client-centric behaviors, help colleagues, protect the organization spontaneously, and make constructive suggestions. This proposition has already received empirical support, given that research shows a positive relationship between OV dimensions and organizational citizenship behaviors (Ribeiro & Rego, 2009; Rego, Ribeiro, & Pina e Cunha, 2010). Accordingly, our hypothesis is as follows:

> H2: OV is positively related to organizational citizenship behaviors.

Current explanations for variations in organizational commitment highlight the role of positive experiences, especially those arising from positive jobs and work experiences (Meyer &

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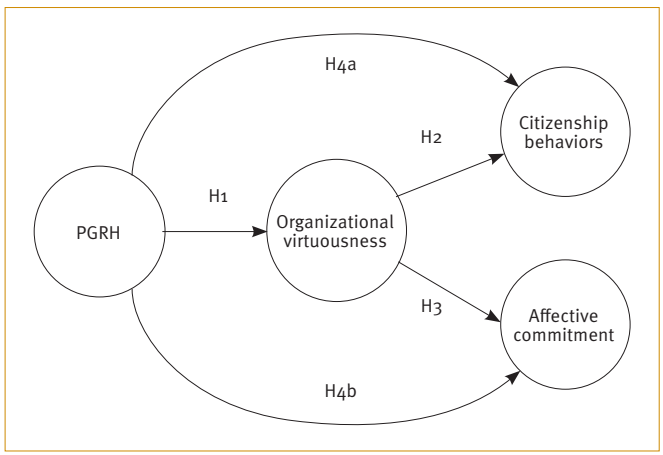
Allen, 1991). However, when HRMPs are invoked to explain affective commitment, is how practices communicate organizational support, fair treatment, and interest in building employees' self-worth and importance that are con sidered important and not the practices themselves (McElroy, 2001), pointing to an indirect relationship between HRMPs and commitment. Again, we suggest that OV can appropriately fulfill this mediating role. Employees that perceive organizations as promoting OV learn by personal experience and observation to live in a context requiring a positive attachment from its members, herein conceptualized as affective commitment. Thus, we hypothesize the following:

H3: OV is positively related to affective commitment

Although our argument, expressed in hypotheses two and three, points to the full mediation of the relationship between HRMPs and citizenship behavior and affective commitment by OV (Figure 1), the literature offers arguments suggesting the existence of a direct relationship between HRMPs and these two outcomes. Thus, OV would partially mediate the above relationships. Testing that possibility is relevant because it will enable a better understanding of the nature of linkage between HRMPs and individual-level outcomes.

Figure 1. **Theoretical model and hypotheses**



Considering organizational citizenship behaviors, the literature also supports a direct relationship with HRMPs (Morrison, 1996; Sun et al., 2007). By managing recruitment, selection, and socialization of new employees, evaluating their performance, rewarding them, and creating internal regulations and formal job descriptions, organizations can influence citizenship behaviors. Newman, Miao, Hofman, and Zhou (2016) showed that both employee- and facilitation-oriented HRM models have a positive effect on organizational citizenship behaviors. Similarly, the direct relationship between HRMPs and commitment has also been studied. Based on the social exchange theory, Tsui, Pearce, Porter, and Tripoli (1997) found a significant and positive relationship between HRMPs, representing mutual investment and overinvestment, and affective commitment. Similarly, Whitener (2001) found an influence of HRMPs upon employees' commitment, and more recent research points in the same direction (Bal, Kooji, & De Jong, 2013; Lamba & Choudary, 2013; Fabi, Lecoursiére, & Raymond, 2015). Moreover, the study by Kehoe and Wright (2013) found that employee's perceptions of HRMPs were related to both affective commitment and organizational citizenship behaviors. Consequently, the following hypothesis is proposed:

H4: OV will partially mediate the relationship between HRMPs and a) citizenship behaviors and b) affective commitment.

METHOD

We tested the model and hypotheses using a sample of employees from 22 stores of a food retailing company. Data collection from individuals who work in the same company's stores is a common sampling strategy (Koys, 2001; Bell & Menguc, 2002; Wright, Gardner, & Moynihan, 2003; Schneider, Ehrhart, Mayer, Saltz, & Niles-Jolly, 2005), which is useful in finding the variance in HRMPs within organizations and studying employee perceptions and reactions to these practices, allowing researchers to control for unidentifiable sources of variance that are common in research wherein data is collected from different companies and sectors of activity and thus providing a clearer view of the HRMPs impact on relevant outcomes (Wright et al., 2003; Lepak, Liao, Chung, & Harden, 2006). The information provided by the Human Resources department led us to consider that, while there is uniformity in HRMPs within the company, the stores have some autonomy in their application, which allows some variation between stores. We calculated the intra-class correlation for HRMPs revealing that 18% variance is due to differences between stores.

Sample

Data were collected from each company store, resulting in a sample of 525 employees, which comprised 50.9% male respondents with a mean age of 37.8 years (standard deviation = 8.9). The predominant level of schooling was secondary education (67.4%). On an average, the respondents had 10.6 (s.d. 7.9) years tenure and 8.0 (s.d. 7.0) years in the present job. The majority of respondents (72.8%) had operational functions, comprising customer service, and 12% had managerial jobs. Most respondents (89.3%) had direct contact with customers, and 89% were permanent employees.

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Measures

All the survey items were answered on five-point rating scales, ranging from strongly disagree (1) to strongly agree (5).

Service-oriented organizational citizenship behaviors

We used the scale developed by Bettencourt, Gwinner, and Meuter (2001) for measuring organizational citizenship behaviors as a context-sensitive measure applied to services, because it fits the nature of the retailing context wherein we tested our model. This measure encompasses three dimensions: loyalty (e.g. item: "Says good things about the store to others"), service delivery (e.g. item: "Follows customer service guidelines with extreme care"), and participation (e.g. item: "Makes constructive suggestions for service improvement"). We performed confirmatory factor analysis (CFA) to assess the data fit of a three-dimensional scale. An overall second order factor revealed acceptable values of fit ($x^2(95) = 266.84$; $p = 0.000$, $x^2/df = 2.81$; CFI = 0.96; RMSEA = 0.06; GFI = 0.94; TLI = 0.95; SRMR = 0.04). Additionally, all subscales showed good reliability with Cronbach's alpha above 0.80. We used composites of each subscale as indicators of the latent variable of service-oriented organizational citizenship behaviors (Chuang & Liao, 2010; Zacharatos, Barlin, & Iverson, 2005).

Affective commitment

We measured affective commitment with a Portuguese adaptation of the six-item scale created by Meyer and Allen (1997), developed by Nascimento, Lopes, and Salgueiro (2008), a e.g. item being: "I feel a strong sense of belonging to this store." Based on the CFA results, we accepted four items after eliminating items with loads below 0.40. The fit for this scale was acceptable (x^2 (2) = 3.44; P = 0.17; $x^2/df = 1.72$; CFI = 0.99; RMSEA = 0.03; GFI = 0.96; TLI = 0.99; SRMR = 0.01), as was its reliability (Cronbach's Alpha = 0.79).

OV

Perceptions of OV were measured using the 15-item scale proposed by Cameron et al. (2004). We conducted CFA to test the existence of the five components proposed: optimism (e.g. item: "We are optimistic that we will succeed, even when faced with major challenges"), trust (e.g. item: "Employees trust one another in this store"), compassion (e.g. item: "Acts of compassion are common here"), integrity (e.g. item: "This organization demonstrates the highest levels of integrity"), and forgiveness (e.g. item: "This is a forgiving, compassionate store in which to work"). The overall second-order model yielded an acceptable fit (x^2 (78) = 184.51; P = 0.00; $x^2/df = 2.36$; CFI = 0.98; RMSEA = 0.05; GFI = 0.96; TLI = 0.97; SRMR = 0.03). All sub-scales showed good reliability, with Cronbach's alpha ranging from 0.74 to 0.85. We used composites of each subscale as indicators of OV.

Human Resources Management Practices

Perceptions of HRMPs were measured based on the scale developed by Sun et al. (2007), seeking to cover a set of practices describing a high-performance work system. The original scale included items for the following practices: training (e.g. item: "Extensive training programs are provided to employees"), recruitment and selection (e.g. item: "Great effort is taken to select the right person"), participation (e.g. item: "Employees in this job are often asked by their supervisor to participate in decisions"), compensation (e.g. item: "There is a close tie or matching of pay to individual/group performance"), mobility (e.g. item: "Employees have clear career paths in this store"), job security (e.g. item: "Job security is almost guaranteed"), job description (e.g. item: "This job has an up-to-date description"), and performance appraisal (e.g. item: "Performance appraisals are based on objective quantifiable results").

Based on exploratory factor analysis, comparing our solution with the original one, two changes were introduced: a) items pertaining to participation and performance assessment saturate the same factor; to acknowledge this association, we labeled this dimension "involvement and performance assessment"; b) items measuring job security and compensation also saturated the same factor; hence, we labeled this dimension as "employment conditions." We submitted all remaining items to CFA and identified a second-order factor model with six dimensions with a good fit (x^2 (176) = 408.35; $P<0.001$; $x^2/df = 2.32$; CFI = 0.95, RMSEA = 0.05; GFI = 0.93; TLI = 0.94; SRMR = 0.04). The final retained dimensions were involvement and performance, recruitment and selection, training, employment conditions, internal mobility, and job description. These dimensions reflected the perceptions of HRMPs as implemented in stores, and hence, were retained. All subscales showed good internal consistency, with Cronbach's alpha ranging between 0.74 and 0.87.

Control variables

Although research on the effects of demographic or professional variables on organizational citizenship behaviors and affective commitment tend to reveal no or weak relationships (Mathieu & Zajack, 1990; Podsakoff, MacKenzie, Paine, & Bacharach, 2000), we included several variables deemed relevant to the analysis:

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age, gender, job tenure, and education in correlation analyses. The results confirm the already established tendency of low or nonexistent relationships.

Analyses

Because all variables were collected from the same source, the data are vulnerable to common method variance. Hence, we used Harman's one test factor (1967), which resulted in 13 factors, the first explaining only 28% of the total variance. Second, following Podsakoff, MacKenzie, Lee, and Podsakoff (2003), we included a method factor in the measurement model, explaining 12% of the variance. Finally, we tested a measurement model including predictor, mediator, and criterion variables, a procedure that yields acceptable results (x^2 (123) = 320.08; p<0.001; x^2/df = 2.6; RMSEA = 0.05; TLI = 0.94; SRMR = 0.06). Thus, although common method bias cannot be discarded completely, common method variance should not affect the validity of the findings. The hypotheses were tested using structural equation modeling.

RESULTS

Descriptive statistics, intercorrelations, and reliabilities for all variables are reported in Table 1. For control variables and considering only significant relationships, we found that older employees have more positive perceptions of HRMPs (r = 0.13; p<0.01), higher levels of organizational citizenship behaviors (r = 0.21; p<0.01) and affective commitment (r = 0.14; p<0.01); the only significant and positive relationship of gender is with affective commitment (r = 0.14; p<0.05), with higher scores for males. Positive correlations were found between the predictor and criteria variables, according to the hypothesized relationships. Thus, HRMPs perceptions showed a positive correlation with OV perceptions (r = 0.73; p< 0.001). HRMPs was correlated significantly with service-oriented organizational citizenship behaviors (r = 0.46; p<0.001) and with affective commitment (r = 0.38; p<0.001). OV showed positive correlations with service-oriented organizational citizenship behaviors (r = 0.54; p<0,001) and with affective commitment (r = 0.43; p<0.001), as predicted.

The proposed research model showed a good fit for the data (x^2(132) = 331.90; p<0.001; x^2/df = 2.51; RMSEA = 0.05; SRMR = 0.06). The data supported hypothesis 1 of positive association between HRMPs and OV (Beta = 0.73; p<0.001; R^2 = 0.54). Hypothesis 2 proposed a positive association between OV and organizational citizenship behaviors and is also supported (Beta = 0.51; p<0,001; R^2 = 0.20). Hypothesis 3 suggested a positive relationship between OV and affective commitment and was supported (Beta = 0.45; p<0.001, R^2 = 0.26). Figure 2 depicts these results.

To test hypothesis four, we added two additional paths to the model presented in Figure 2, linking HRMPs directly to organizational citizenship behaviors and affective commitment, thus testing the partial mediation role of OV. Fit indices of the model with direct paths achieved acceptable thresholds (x^2(130) = 327.80; p<0.001; x^2/df = 2.52; RMSEA = 0.05; SRMR = 0.06), and the test of the difference between the fit of both did not yield statistically different results (p = 0.13). Direct and indirect effects of HRMPs on organizational citizenship behaviors and affective commitment were calculated according to Cheung and Lau's (2008) procedure for determining parameters and confidence intervals based on resampling from the original dataset (in this study, 2000 bootstrap samples). Concerning the relationship between HRMPs and organizational citizenship behaviors, the direct effect estimate was 0.11 (p< 0.14), and the standardized indirect effect, mediated by OV, was 0.24 (p< 0.02; 95% CI 0.11 to 0.31). Regarding affective commitment, the estimate for the direct effect of HRMPs was 0.14 (p< 0.10), and the standardized indirect effect, mediated by OV, was 0.37 (p<0.02; 95% CI = 0.21 to 0,40). In both cases, the confidence intervals for the indirect effect did not include zero (Taylor, MacKinnon, & Tein, 2008); hence, the results support the full mediation model.

CONCLUSION

In this study, we discuss the relationship between HRMPs and performance by focusing on the more proximal employee outcomes—organizational citizenship behaviors and affective commitment. We suggest virtuousness as an alternative explanation of the relationship. We propose that HRMPs can enhance both the outcomes because they can be designed to give employees the amount of autonomy required for self-determination, create opportunities for individual development, and allow people to extract more meaning from their jobs, thus linking them to higher collective purposes. Thus, HRMPs can be perceived by members as moral in an Aristotelian sense, becoming signals for employees to perceive moral goodness, human impact, and generalized benefit provided by organizations. Because HRMPs can be seen as good practices and inherently worthy, satisfying the eudaemonic and inherent value (Cameron & Winn, 2012), they strengthen OV. Similar to other organizational level attributes and due to its inherently worthy content of optimism, trust, compassion, integrity, and forgiveness, OV prescribes appropriate ways of thinking, feeling, and acting: an affective connection between individuals and organizations and a proclivity to act in favor of organizations.

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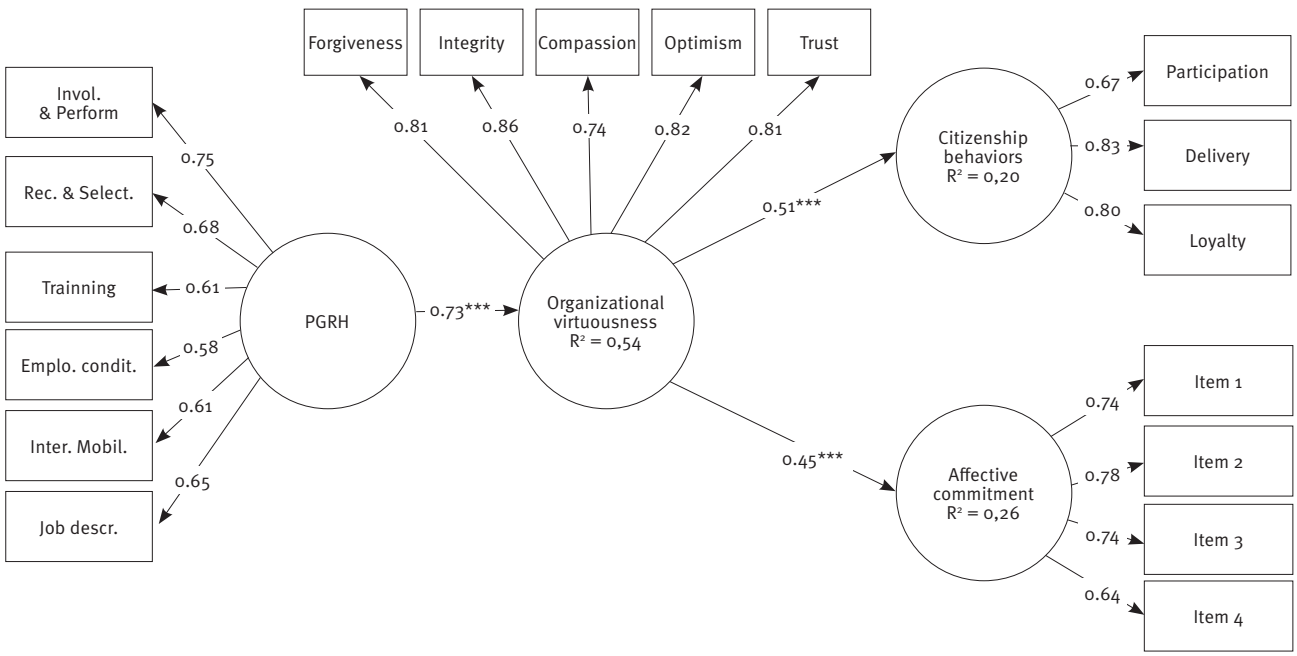
Table 1. Descriptive statistics and correlations

Variables	Mean	s. d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Age	37.86	8.91	-																				
2. Gender	0.52	0.49	0.02	-																			
3. Tenure	10.69	7.96	0.58**	-0.06	-																		
4. Education	1.78	0.50	-0.22**	-0.15**	-0.14**	-																	
5. HRMPs	3.50	0.54	0.13**	0.00	-0.01	-0.06																	
6. SO-OCB	3.95	0.42	0.21**	0.12**	0.09	0.00	0.46***																
7. OV (OV)	3.34	0.70	0.05	-0.03	-0.06	0.05	0.73***	0.54***															
8. Affective commitment	4.07	0.71	0.14**	-0.03	0.12**	0.08	0.38***	0.44***	0.43***														
9. HRMP Involvement & performance	3.53	0.68	0.05	-0.09	-0.06	0	0.75***	0.34***	0.55***	0.29***													
10. HRMPRecruitment & selection	3.32	0.77	0.06	-0.02	-0.08	-0.09	0.68***	0.31***	0.50***	0.26***	0.51***												
11. HRMP Training	3.70	0.78	0.13**	-0.04	0	-0.03	0.61***	0.28***	0.44***	0.24***	0.46***	0.42***											
12. HRMP Employment conditions	3.74	0.60	0.11*	-0.05	0.14**	-0.10*	0.58***	0.27***	0.42***	0.22***	0.44***	0.40***	0.36***										
13. HRMP Internal mobility	2.83	0.87	0.06	-0.06	0.03	-0.12**	0.61***	0.28***	0.44***	0.23***	0.46***	0.41***	0.37***	0.35***									
14. HRMP Job description	3.67	0.74	0.07	-0.03	-0.02	-0.05	0.65***	0.30***	0.47***	0.25***	0.49***	0.44***	0.40***	0.38***	0.39***								
15. SO-OCB_ Participation	3.76	0.54	0.20**	0	0.08	0.03	0.31***	0.69***	0.37***	0.30***	0.24***	0.21***	0.19***	0.18***	0.19***	0.20***							
16. SO-OCB_ Service delivery	4.07	0.46	0.14**	0.02	0.06	0.01	0.38***	0.84***	0.45***	0.36***	0.29***	0.26***	0.23***	0.22***	0.23***	0.25***	0.58***						
17. SO-OCB_ Loyalty	4.00	0.48	0.18**	0.02	0.14**	-0.04	0.37***	0.82***	0.44***	0.36***	0.28***	0.26***	0.23***	0.22***	0.23***	0.24***	0.56***	0.68***					
18. OV_ Forgiveness	3.28	0.86	0.05	0.05	-0.09	0.02	0.59***	0.43***	0.81***	0.35***	0.44***	0.40***	0.36***	0.34***	0.36***	0.38***	0.30***	0.36***	0.35***				
19. OV_Integrity	3.51	0.81	0.10*	0.01	0.03	0.05	0.63***	0.46***	0.86***	0.37***	0.47***	0.43***	0.38***	0.36***	0.38***	0.41***	0.32***	0.39***	0.38***	0.70***			
20. OV_ Compassion	3.05	0.89	-0.01	0.05	-0.09	-0.01	0.56***	0.41***	0.76***	0.33***	0.42***	0.38***	0.34***	0.32***	0.34***	0.36***	0.28***	0.34***	0.33***	0.62***	0.66***		
21. OV_Trust	3.25	0.83	0.04	0.03	-0.07	0.05	0.59***	0.43***	0.81***	0.34***	0.44***	0.40***	0.36***	0.34***	0.36***	0.38***	0.30***	0.36***	0.35***	0.66***	0.69***	0.62***	
22. OV_Optimism	3.56	0.69	0.07	0	-0.01	0.03	0.60***	0.44***	0.82***	0.35***	0.45***	0.41***	0.37***	0.35***	0.36***	0.39***	0.30***	0.37***	0.36***	0.67***	0.71***	0.63***	0.66***

Observação: *p<0,05; ** p<0,01; ***p<0001
Sexo: 1 = Masculino, 0 = Feminino
N = 525

Figure 2. **Results for hypothesized model**



Note: All path values between observed and latent variables are significant at p<0.001

***p<0.001

The results support the general framework wherein OV fully mediates the relationship between HRMPs and employee attitudes and behaviors. Members who perceive their work context as promoting optimism, trust, compassion, integrity, and forgiveness show higher levels of citizenship behaviors and affective commitment. Describing HRMPs in use in their contexts as promoting participation and performance, careful recruitment and selection, training opportunities, good employment conditions, internal mobility opportunities, and carefully designed jobs, practices that fall into the moral/ethic nature of the humanistic management trend (Spitzeck, 2011; Arnaud & Wasieleski, 2014) leads employees to infer that a virtuous character exists in organizations. Higher levels of OV engender positive emotions and willingness to act positively toward the organization, operationalized as affective commitment and citizenship behaviors. Although this effect was not studied, these emotions and behaviors as a collective pattern, can reinforce the OV level (Cameron & Winn, 2012).

Our study proposes a distinct alternative path for the relationship between HRMPs and employee outcomes, contributing to knowledge on the causal chain linking HRMPs to organizational outcomes. Inconsistencies in the literature on relationships between HRMPs and employee outcomes (Yu, Ahmad, & Yap 2012; Bal et al., 2013), can be interpreted as a lack of explanatory power of the social exchange theory and its associated constructs, such as support or justice (Cropanzano & Mitchel, 2005). Instead of describing psychological states resulting from a roughly balanced exchange relationship between individuals and organizations, as an organizational level attribute, OV and its content becomes a fundamental part of employees' context facilitating their understanding of the behaviors required and supported and the appropriate ways of thinking, feeling, and acting. Well- designed HRMPs and corresponding high levels of OV underscore altruistic motives, promote intrinsic or integrated regulation, and help extract a richer meaning from the jobs employees perform. Thus, HRMPs influence organizational citizenship behavior and affective commitment by creating OV.

Further, we linked HMRP literature to the OV approach. Although virtuousness is defined as a fundamentally positive human organizational attribute (Cameron & Winn, 2012; Cameron

et al., 2011), research is still lacking on OV's antecedents. Most authors exploring this construct are more interested in its consequents at the individual or organizational level. The limited research on virtuousness' antecedents focuses on authentic (Rego, Reis, & Pina e Cunha, 2015) or servant (Searle & Barbuto, 2011) leadership, which is foreseeable due to OV's cultural nature. We expand this literature by highlighting the HRMP's role and proposing that OV is created and nurtured by well-designed HRMPs that stimulate self-determination (Decy & Ryan, 2008), stewardship (Hernandez, 2012), and human dignity and virtue (Melé, 2003; Spitzeck, 2011). Moreover, contrary to Guerci et al. (2015), who suggest that to have a positive impact on ethical climate, HRMPs should encompass ethical elements, we propose that HRMPs can inherently embrace moral goodness, human impact, and generalized benefit for individuals generating OV. Thus, we join earlier proposals about the potential ethical nature of high involvement work practices (Guest, 2007; Legge, 1998; Boxall & Purcell, 2007).

By locating OV in the causal chain linking HRMPs and organizational performance, as a mediator of the relationship between HRMPs and organizational citizenship behaviors and affective commitment, this study provides an enriched view on improving individual and organizational performance. Further, we show that HRMPs need to nurture OV to promote these two important employee outcomes. Thus, human resource managers can design HRMPs with OV in mind, and line managers can work with their subordinates emphasizing the moral nature of practices and the virtuous aspects of their work contexts.

Despite these contributions, this study has limitations. First, despite the procedures used to control for common method variance, the value of some relationships can be inflated. Further, data coming from just one organization are important to control for external factors that can affect the pattern of relationships encountered, but limit the scope of our conclusions for that organization. Future research could address these issues and focus on organizations wherein virtuousness seems to play a more relevant role, such as public and non-profit organizations or the health care sector. However, future research could directly contrast the explanatory power of OV versus social exchange theories variables. Additionally, in service settings such as the one here, service climate (Hong, Liao, Hu, & Jiang, 2013; Bowen & Schneider, 2014) is the best established mediator for the relationship between HRMPs practices and customer experiences leading to organizational level performance by activating individual level outcomes, whose explanatory power could be confronted with virtuousness. In both cases, focusing on the organizational level seems appropriate in future research.

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THE ROLE OF PERCEIVED ORGANIZATIONAL SUPPORT IN JOB INSECURITY AND PERFORMANCE

Papel da percepção do suporte organizacional na insegurança e desempenho no trabalho

El rol de la percepción de apoyo organizacional en la inseguridad laboral y el desempeño

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ABSTRACT

In this study, we develop a conceptual model of the relationship between job insecurity and job performance, which is mediated by affective organizational commitment and moderated via perceived organizational support in a Chilean company that has undergone downsizing. In this cross-sectional study, we focused on 400 Chilean employees from the retail sector. Our findings indicate that job insecurity negatively influences job performance, which is a relationship that is partially mediated by effective organizational commitment. Moreover, a high level of perceived organizational support helped intensify the effects of the relationship between job insecurity and affective organizational commitment. To minimize the negative effects of job insecurity on the active employees of a downsizing strategy, an effective intervention is required by developing a more realistic communication in terms of a worker's expectations toward the organization.

KEYWORDS | Downsizing, job insecurity, job performance, affective organizational commitment, perceived organizational support

RESUMO

Este artigo apresenta o desenvolvimento de um modelo conceitual da relação entre a insegurança laboral e o desempenho laboral, mediada pelo comprometimento organizacional afetivo e moderada pelo apoio organizacional percebido em uma empresa chilena, que sofreu um processo de downsizing. Este estudo baseou-se em um desenho de corte transversal em 400 funcionários chilenos do setor de varejo. Nossos resultados apontam que a insegurança laboral influencia negativamente o desempenho laboral, e tal relação é parcialmente mediada pelo comprometimento organizacional afetivo. Verificou-se também que um elevado nível de apoio organizacional percebido intensifica a relação negativa entre insegurança laboral e comprometimento organizacional afetivo. A fim de minimizar os efeitos negativos da insegurança laboral em relação aos sobreviventes de uma estratégia de downsizing, uma intervenção eficaz é sugerida por meio do desenvolvimento de uma comunicação mais realista em termos de expectativas do trabalhador em relação à organização.

PALAVRAS-CHAVE | *Redução de pessoal, insegurança laboral, desempenho laboral, comprometimento organizacional afetivo, suporte organizacional percebido.*

RESUMEN

Este trabajo presenta el desarrollo de un modelo conceptual de la relación entre la inseguridad laboral y el desempeño laboral mediado por el compromiso organizacional afectivo y moderado por el apoyo organizacional percibido en una empresa chilena que ha sufrido un proceso de reducción de personal. Este estudio se basa en un diseño cross-sectional en una muestra de 400 trabajadores chilenos del sector minorista. Nuestros resultados señalan que la inseguridad laboral influye negativamente en el desempeño laboral; efecto que a su vez es mediado parcialmente por el compromiso organizacional afectivo. Además, se encontró que es probable que un alto nivel de apoyo organizacional percibido intensifique los efectos de la relación entre la inseguridad laboral y el compromiso organizacional afectivo. Con el fin de minimizar los efectos negativos de la inseguridad laboral en una estrategia de reducción de personal, se sugiere una intervención eficaz en los trabajadores sobrevivientes mediante el desarrollo de una comunicación más realista en términos de expectativas del trabajador hacia la organización.

PALABRAS CLAVE | *Reducción de personal, inseguridad laboral, desempeño laboral, compromiso organizacional afectivo, apoyo organizacional percibido.*

INTRODUCTION

To survive in a global market characterized by high competition, over the past few decades, organizational restructuring via downsizing has become a popular solution (Guthrie & Datta, 2008; Shoss, 2017). Downsizing, as a management scheme, aims to eliminate positions or jobs to improve organizational efficiency, productivity, and/or competitiveness (Marques, Galende, Cruz & Portugal, 2014). This concept has also been viewed as a relevant issue for organizational and employment relations (Arshad & Sparrow, 2010; Meyer & Allen, 1991). For instance, Datta, Guthrie, and Pandey (2010) have highlighted many individual and organizational outcomes of such downsizing strategies; e.g., an important factor in the downsizing process is job insecurity, which has been criticized for its negative effect on both organizational and individual performance (Brockner, Grover, Reed, & Dewitt, 1992; Brockner et al., 2004; De Witte, 1999). Because of its importance, job insecurity is defined as the perceived fear of being dismissed from the workforce, as well as a stressor of a threatening work situation.

In this study, we consider that job insecurity may be generated via a downsizing context, which leads to a sense of uncertainty for employees who fear losing their job. Hence, there is a strong negative impact on their attitudes, emotions, and behaviors. In line with previous research (Antón, 2009; Appelbaum, Delage, Labib & Gault, 1997; Datta et al., 2010; Ruvio & Rosenblatt, 1998; Schumacher, Schreurs, Van Emmerik, & De Witte, 2015), we set out to understand the negative relationship between job insecurity and employees' job performance.

Moreover, in line with the definition of survivors, who are a group of workers that have not been laid off and remain in the organization (Brockner et al., 2004, p. 76), we consider that such employees develop a survivor syndrome (Appelbaum et al., 1997; Blackmore & Kuntz, 2011; Brockner et al., 1992; Sahdev, 2003). This syndrome is characterized by symptoms such as "anger, depression, fear, distrust, and guilt" (Devine et al., 2003 as cited in Marques et al., 2014, p. 933). Consequently, these negative emotions have a significant impact on how workers respond in terms of their attitude and work-related behavior (Brockner et al., 1992; López, Bal, Jansen, Leiva, & Alonso, 2017). Thus, in this study, we propose an affective mechanism that enables an understanding of job insecurity's negative correlation to job performance. In fact, we consider that affective organizational commitment can act as a mediator between job insecurity and job performance (De Cuyper & De Witte, 2006; Greenhalgh & Rosenblatt, 1984; Wang, Lu, & Siu, 2015). Although job insecurity generates emotional reactions in employees, such as affective organizational commitment (Meyer & Allen, 1991), in the context of downsizing, job performance is directly affected by job insecurity (Allen, Freeman, Russell, Reizenstein & Rentz, 2001; Schumacher et al., 2015). Thus, because of such importance and in line with similar studies (Arshad & Sparrow, 2010; Marques et al., 2014), we propose that affective organizational commitment assumes a partial mediatory role between job insecurity and job performance.

Although the literature distinguishes between the two other forms of commitment, i.e., continuance and normative (Meyer & Allen, 1991), affective commitment, which presupposes an emotional liaison and identification with organizational values and goals, is characterized by workers wishing to remain in the organization. This attitude subsequently promotes task performance and organizational citizenship behaviors (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Furthermore, as shown by Rodrigues (2011), continuance commitment overlaps with organizational entrenchment and both are delimited by affective commitment, which represents an employee's emotional liaison with the organization.

Thus, we expect that perceived organizational support acts as a relationship mediator between job insecurity and affective organizational commitment, as well as this relationship to be stronger when employees perceive a high organizational support compared to when they perceive low organizational support. Perceived organizational support may be defined as the worker's belief of the organization's consideration of his/her contributions, and the extent to which the organization is concerned about the worker's well-being (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Based on employees' expectations that are not met by organizations, we propose a betrayal perspective (Elangovan & Shapiro, 1998) to understand the influence of perceived organizational support on the relationship between job insecurity and affective organizational commitment. Bal, Chiaburu, and Jansen (2010) considered the betrayal perspective as the inconsistency of expectations in social relationships, i.e., the worker expects the organization to play a supporting role but the organization does not meet his/her expectations. Thus, we expect perceived organizational support to be a contextual factor that moderates the relationship between job insecurity and affective organizational commitment.

Finally, we present both theoretical and practical implications. Through theoretical implications, our model promotes understanding of negative effects of job insecurity on job performance. Moreover, we place greater emphasis on how this effect will partially mediate affective organizational commitment. Our study also contributes to the existing knowledge on the moderating role of perceived organizational support in the

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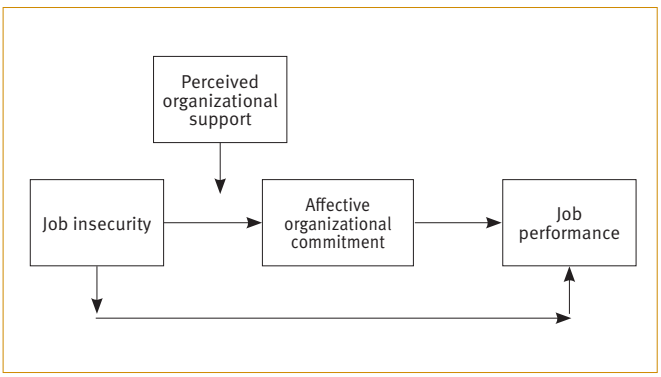
relationship between job insecurity and affective organizational commitment. Thus, we believe a better understanding of the psychological dimensions that motivate organizational performance and, consequently, their contributions to the creation of a more robust theoretical background will be possible.

This study aims to provide practical information aiding the development of strategies that minimize the negative effects of job insecurity in both workers and organizations. Thus, to successfully plan and implement procedures for the post-dismissal working environment, possible suggestions are provided that may be used in the future. Finally, this study also aims to provide new evidence that will contribute to a better understanding of the employees' value within an organization such that the performance-related aims can be effectively achieved. Therefore, organizations should focus their efforts on establishing a solid employment relationship with their workers. To illustrate this relationship, a conceptual model has been developed, which is shown in Figure 1.

Figure 1. **Conceptual model of the current study**



THEORETICAL FRAMEWORK

Job insecurity and job performance

The environmental landscape, characterized by ever increasing and unstable changes, has prompted companies to adapt by developing management strategies such as downsizing. This process, viewed as a planned reduction of the workforce, is a means to increase organizational competitiveness and productivity (Datta et al., 2010). Similarly, changes in the industrial environment, which has shifted from a dominant manufacturing-based economy to a service-based economy, are one of the key factors responsible for generating job insecurity in employees' perception (Greenhalgh & Rosenblatt, 1984; Sora, Caballer, & Peiró, 2010). Hence, because of the adoption of a strategy that achieves higher levels of performance with a lower workforce, there has been a significant increase in the fear of being laid off (Lim, 1996; Roskies & Louis-Guerin, 1990). Given the importance of this context, job insecurity is defined as "the perceived powerlessness to maintain desired continuity in a threatened job situation" (Greenhalgh & Rosenblatt, 1984, p. 438) and a subjective and perceptual phenomenon (Brockner et al., 1992). This indicates that employees who experience job insecurity are uncertain if they will be able to continue working or whether they will lose their jobs in the near future (Ashford, Lee, & Bobko, 1989; Sverke & Hellgren, 2002). Thus, because of unexpected changes, a sudden shift from a feeling of security at the workplace to one of insecurity may negatively affect both the well-being and performance of workers (Blackmore & Kuntz, 2011).

Similar to previous studies (Blau, 1964; Gouldner, 1960), our study is based on the social exchange theory, which provides an adequate perspective to understand whether job insecurity is negatively related to job performance. The social exchange theory (Blau, 1964; Gouldner, 1960) states that reciprocity stimulates a feeling of obligation toward others, primarily because the latter have exhibited past behavior that has proven to be beneficial. Similarly, for individual performance, if an organization treats its employees fairly, they are expected to respond positively (Coyle-Shapiro, 2002; Turnley, Bolino, Lester, & Bloodgood, 2003). However, employees may decrease their level of individual performance when they feel betrayed by the organization (De Cuyper & De Witte, 2006; Robinson & Morrison, 1995). Similarly, when employees feel that the organizations have not fulfilled their obligations or kept their promises, their individual performance has been proven to be negatively affected (Robinson & Morrison, 1995; Turnley et al., 2003).

Thus, when workers feel that their position in the organization is threatened (i.e., job insecurity), they will perceive that the organization is not fulfilling its obligations and reciprocate with the similar levels of obligations toward the organization, resulting in lower performance (Ashford et al., 1989). For example, De Cuyper and De Witte (2006) and Armstrong-Stassen (1993) empirically confirmed that the perception of job insecurity was associated with a lower job performance (self-rated). Similarly, the meta-analytic research and review, developed by Cheng and Chan (2008) and Shoss (2017), respectively, supported this negative relationship between job insecurity and job performance. Based on this theory, an increased perception of job insecurity is expected to diminish the job performance of employees. Thus, hypothesis 1 has been formulated as follows:

H1: Job insecurity negatively influences job performance.

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Affective organizational commitment as a mediator

Affective organizational commitment is one of the most important variables to explain how employees become attached to their organization because of job insecurity. Affective organizational commitment has been conceptualized as "an employee's emotional attachment, identification, and involvement with the organization" (Moshoeu & Geldenhuys, 2015, p. 26). Similarly, Luchak and Gellatly (2007) consider affective organizational commitment to be a subjective experience in which the worker perceives acknowledgment, on the part of the organization, of his/her own contributions. Employees who are emotionally committed to an organization may sense a feeling of belonging, which involves a spontaneous and personal desire to consider their own issues along with the organizational matters and develop their work better (Meyer & Allen, 1991; Meyer, et al., 2002; Siders, George, & Dharwadkar, 2001; Tian, Zhang, & Zhou, 2014).

Furthermore, the social exchange theory (Blau, 1964), "reflecting the socio-emotional aspects of the employment relationship, and thus the perceived quality of the employment relationship" (Bal et al., 2010, p. 257), may be used to understand the relationship between job insecurity and affective organizational commitment. As mentioned previously, this theory suggests that the parties of a relationship develop mutual exchanges and search for reciprocity. Thus, when the organization does not meet employees' expectations, such as providing job security, employees consider the organization to have failed in its reciprocity and reduce their level of affective commitment toward the organization (Arshad & Sparrow, 2010; Lee & Jeong, 2017). Thus, job insecurity plays a threatening role in terms of employees' interests and values, which weakens their affective organizational commitment (De Witte & Näswall, 2003). For example, Allen et al. (2001) observed that, during a downsizing process, a decrease in job security was a predictor of a decrease in organizational affective commitment. Marques et al. (2014) empirically confirmed this negative relationship between job insecurity and affective commitment during a downsizing process.

However, based on the hypothesis that emotional connections are relevant at workplaces, employees who are committed to the organization, whether simply because they like it or identify with it, are expected to maintain positive behaviors in terms of job performance (Casimir, Ngee Keith Ng, Yuan Wang, & Ooi, 2014; Ugboro, 2003; Wang et al., 2015). Balogun, Adetula, and Olowodunoye (2013) studied the importance of this influence by verifying the association of affective organizational commitment with high performance, high organizational citizenship behaviors, and low absenteeism. Thus, for a downsizing process, it is our view that employees' negative appraisal of their job context (i.e., job insecurity) causes a reduction in their affective commitment, which may generate a negative result in the workplace, particularly in terms of their performance (Buitendach & De Witte, 2005; Cheng, Huang, Lee, & Ren, 2012; Lee & Jeong, 2017). In fact, Marques et al. (2014) showed that, during a downsizing process, job insecurity is negatively related to affective commitment, which was in turn related to innovative behaviors.

Therefore, in this study, we focused on the role of affective organizational commitment as a mediator in the relationship between job insecurity and job performance. Hence, hypothesis 2 was formulated as follows:

> H2: Affective organizational commitment will mediate the relationship between job insecurity and job performance such that job insecurity will negatively relate to affective organizational commitment, which will positively relate to job performance.

Perceived organizational support as a moderator of the relationship between job insecurity and affective organizational commitment

The concept of perceived organizational support is based on studies published by Eisenberger et al. (1986). Their definition referred to perceived organizational support as the dimension in which people believe that their organization considers their contributions and is concerned about their well-being. Moreover, perceived organizational support may be observed when employees feel valued by the organization (Allen, Shore, & Griffeth, 2003; Kurtessis, Eisenberger, Ford, Buffardi, Stewart, & Adis, 2017; Rhoades & Eisenberger, 2002). This concept is considered important as it is based on the defense of a supportive work environment, which is often referred to as being responsible for improving the employees' work-related attitudes and behaviors in the context of downsizing (Tian et al., 2014). However, considering how employees perceive this support to understand its consequences is important.

In this study, we propose to explain the impacts of perceived organizational support, which moderates the relationship between job insecurity and affective organizational commitment. The betrayal perspective (Elangovan & Shapiro, 1998) argues that when trust is violated, a high perception of support may aggravate the negative effects on workers' attitudes and work behaviors. In line with this assumption, Suazo and Stone-Romero (2011) observed that perceived organizational support strengthened the relationship between the psychological contract breach and violation, the negative relations between this

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breach or violation, and supervisor-rated employee citizenship behaviors.

According to previous studies, the most significant act of betrayal involves the closest and most important relationships, among which the relationship with the organization may be included. In fact, Eisenberger et al. (1986) argued that employees developed perceived organizational support based on an accumulation of rewards received over time. Thus, an employee's history of rewards, which were obtained from various human resource practices and decisions, would contribute to perceived organizational support (Wayne et al., 1997). A downsizing process indicates that employees are not considered important for either the survival or success of the organization. Furthermore, it suggests disinvestment in employees and shows that their contributions are not recognized (Costa & Neves, 2017). Indeed, job insecurity caused by the downsizing process indicates an organizational disinvestment and under-commitment toward the employee. Therefore, this practice is inconsistent with the perception of a high support that is generated when higher expectations are associated with the role of employees; moreover, such practices lead to greater pressures and obligations because of increasing job insecurity (Morrison & Robinson, 1997). Furthermore, according to the betrayal perspective framework (Elangovan & Shapiro, 1998; Morrison & Robinson, 1997), failure of the organization to prevent instances of job insecurity may be considered as an act of betrayal too. This is because of errors in safeguarding the principles and expectations that are inherent to a good relationship between the worker and the organization. Employees expect their organizations to provide emotional support and resources, which will lead to attitudes of respect, trust, and mutual obligations (Lynch, Eisenberg, & Armeli, 1999). However, the employer's failure to prevent instances of increased job insecurity is considered to be an act of betrayal, to which workers will respond by changing their work attitudes and behaviors (Coyle-Shapiro, 2002).

Moreover, according to the hypothesis of expectation-violation, people tend to react strongly to another party's actions when they violate their prior expectations of behavior (Restubog & Bordia, 2006). Therefore, workers who report high levels of perceived organization support are possibly expected to be helped during a negative work experience such as a higher level of job insecurity. However, in organizations where the workers' expectations have not been fulfilled, the supportive relationship becomes part of the problem and further aggravates the situation of insecurity at the workplace. Thus, according to the expectation-violation framework, employees will decrease their affective commitment.

However, in situations of low organizational support, the theory primarily suggests that the relationship between job insecurity and work attitudes is insignificant (Bal, De Lange, Jansen, & Van der Velde, 2008; Bal et al., 2010). The reason is that an increase in job insecurity is another sign that workers are not being valued as members of the company (Aselage & Einsenberger, 2003). Thus, the slope obtained represents workers having low social exchange with their organization, which is essentially flat with low and high levels of job insecurity; consequently, the individual's attitudes remain unaffected.

Based on the abovementioned arguments, our study proposes that with an increase in job insecurity, workers reduce their individual emotional liaison and expect perceived high organizational support. Moreover, when perceived low organizational support is expected, workers do not alter their affective commitment as job insecurity increases. In conclusion, we may hypothesize as follows:

> H3: The relationship between job insecurity and affective organizational commitment will be moderated by perceived organizational support such that this relationship will be stronger when employees perceive high organizational support compared to when they perceive low organizational support.

METHOD

Design

An empirical study with a quantitative approach was developed to test our conceptual model (See Figure 1).

Participants

The participants were selected through a convenience sample that consisted of 400 Chilean employees who had survived a process of organizational restructuring of a private company in the retail sector. The retail sector was selected because it is a highly competitive industry and is significant to the national economy. Over the past few years, the retail sector has overcome numerous rearrangements, and in accordance with official reports, similar restructuring is foreseen in the near future.

In the sample, which was representative of employees from the retail sector, of the 558 employees, 400 employees returned completed questionnaires (response rate = 70%).

Table 1 lists the sample's demographic characteristics. We believe that the collected data are in accordance with the demographic trends of the Chilean retail sector. Moreover, according to the observations of Stecher (2012), retail companies

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can be characterized by their workers' heterogeneous profiles, i.e., young and middle-aged males and females who may/may not have prior work experience and a level of schooling that ranges from incomplete school education to completed technical studies. Although there is such heterogeneity, there is a predominance of females (60–80% in the stores), young adults (60% under the age of 35 years), and low-skilled workers without much prior work experience and belonging to popular urban retail stores.

Table 1. **Demographic characteristics of the sample**

Gender %	Female	72.0
	Male	21.0
Age	Mean (SD)	34.91 (19.91)
Qualifications %[2]	Up to secondary	53.0
	Technical studies	31.0
	Degree	13.0
	Postgraduate studies	0.5
Tenure	Mean (SD)	3.79 (4.99)
Work experience	Mean (SD	6.45 (6.74)

These percentages do not add up to 100 as not everyone responded to this item

[2]These percentages do not add up to 100 as not everyone responded to this item

Procedures

The participants were contacted by the human resources department and an informed consent was obtained from them. The questionnaire was answered either at the beginning or end of the working day in one of the meeting rooms within the organization. One of the study's researchers met each group of participants to explain the purpose and requirements of the study. All the participants were assured of complete confidentiality and anonymity of their responses and informed that their participation was completely voluntary. The cover letter accompanying the questionnaire in all the surveys indicated that the study was conducted only for scientific purposes.

All measures used in the study were both translated and back-translated from English and Spanish by two of the authors, working independently, who adopted the proposals of Brislin (1970). To assess the questionnaires' usability, a pilot test of the Chilean version with 30 employees was conducted.

Measures

To measure job insecurity, we used De Witte's (2000) scale, which had six items (e.g., "I worry about keeping my job") that were answered on the Likert scale (1 = Completely disagree; 5 = Completely agree).

To measure effective organizational commitment, we used Cook's (1981) scale, which had five items (e.g., "Knowing that my own work had made a favorable contribution to the organization would please me") answered on the Likert scale (1 = Completely disagree; 5 = Completely agree).

To measure perceived organizational support, we used the scale developed by Eisenberger et al. (1986), which had seven items (e.g. "My organization would forgive an honest mistake on my part") answered on the Likert scale (1 = Completely disagree; 5 = Completely agree).

To measure perceived performance, we used Abramis' (1994) scale, which had six items (e.g., "Perform without mistakes?") answered on the Likert scale (1 = Completely disagree; 5 = Completely agree).

Lastly, a confirmatory factor analysis (CFA) was performed to evaluate the construct validity of the study variables as the scales that were used were Spanish translations of constructs that were validated in English. For this purpose, a five-factor model was tested using all items of the scales: job insecurity, affective organizational commitment, perceived organizational support, and perceived performance. Note that these analyses reported a poor goodness of fit of the model ($x2 = 837.121$, $df = 338$, $p = 0.0000$, RMSEA = 0.086, SRMR = 0.097, CFI = 0.77, and TLI = 0.74).

Based on the modification index (Byrne, 2012), we deleted one item each from the affective organizational commitment scale and the perceived organizational support scale and introduced some correlations between residual errors. These modifications resulted in an improvement in the model's fit ($x2 = 600.167$, $df = 240$, $p = 0.0000$; RMSEA = 0.038; SRMR = 0.091; CFI = 0.80; TLI = 0.80). The results showed empirical support for constructing the validity of the four-factor model (job insecurity, affective organizational commitment, perceived organizational support, and perceived performance).

Statistical analysis

For the data analysis, a three-step strategy was used. First, using the MPLUS 6 program (Muthén & Muthén, 2010), the factorial validity of the proposed model was evaluated via confirmatory factor analyses and a reliability analysis (Brown, 2006; Byrne,

2012). These analyses were performed to estimate the robustness of the proposed model's scales, which were supported by the procedure that was described by Bolger, Davis, and Rafaeli (2003).

At the second stage, based on the recommendations of Baron and Kenny (1986), the effects of mediation were examined. Subsequently, to confirm the mediation, the SOBEL (Preacher & Hayes, 2004) statistical test was performed. For this test, we evaluated whether the reduction of the relationship between the variables that were involved in the mediation was statistically significant. Lastly, at the third stage, the moderation hypothesis was evaluated via a moderate multiple regression analysis (RMM), according to the method suggested by Aiken, West, and Reno (1991). To reduce multicollinearity, the study's variables were centered before calculating interactions (Aiken et al., 1991). Finally, the sign and significance of the interaction terms to identify the address patterns of the variables were assessed. The slopes of the relationship between the independent variable and the dependent variables of each of the moderations that proved to be significant were represented by values of ±1SD from the average. These analyses were performed using the macro MODPROBE, which was developed by Hayes and Matthes (2009) for estimating the interactions of the moderate multiple regression analysis (RMM).

RESULTS

We evaluated a conceptual model that considered the relationship between job insecurity and job performance, which was mediated by affective organizational commitment and moderated using perceived organizational support.

Table 2 lists the means, standard deviations, intercorrelations, and realities of Cronbach's α in relation to the variables of this study. The correlation matrix shows that the relationship between job insecurity was significant and negative for the variables of affective organizational commitment, perceived organizational support and perceived performance. The mediating variable of affective organizational commitment was positively and significantly related to perceived performance. Moreover, the moderating variable of perceived organizational support revealed a significant relationship with perceived performance, job insecurity, and affective organizational commitment.

Because our sample showed high variability in some characteristics, i.e., age, organization tenure, and position, we decided to introduce these variables as control variables and introduced age (in years), organization tenure (in months), and position (dummy variable: 0 = operative and technical duties; 1 = supervisor and managers).

H1 stated that job insecurity was related negatively to job performance. Moreover, according to the results shown in Table 3, job insecurity was a significant negative predictor of performance ($B = -0.156$, $p \leq 0.05$). Thus, H1 was supported.

H2 stated that affective organizational commitment would have a mediating effect between job insecurity and job performance. In line with this hypothesis, a significant and negative relationship between job insecurity and job performance became weaker when the mediator was integrated into the regression equation (Step 3, $B = -0.134$, $p \leq 0.05$), which indicated partial mediation. Thus, H2 was supported (see Table 3).

H3 stated that perceived organizational support could moderate the relationship between job insecurity and affective organizational commitment. The results indicated that the interaction term was significantly related to affective organizational commitment ($B = -0.193$, $p \leq 0.05$). Based on the results obtained, the relationship between job insecurity and affective organizational commitment was evidently stronger and more significant at higher levels (+1SD) of perceived organizational support and weaker and insignificant at lower levels (-1SD) of perceived organizational support (see Figure 2). These results supported H3.

Table 2. **Means, standard deviations, and correlations of variables**

	M	SD	1		2		3		4
1. Job insecurity	2.52	0.78	(0.72)						
2. Affective organizational commitment	3.65	0.74	-0.172	*	(0.80)				
3. Perceived organizational support	3.37	0.76	-0.157	*	0.396	**	(0.83)		
4. Perceived performance	4.04	0.69	-0.196	**	0.403	**	0.302	**	(0.82)

Notes: Figures in parentheses indicate the reliability of scales *p ≤ 0.05; **p ≤ 0.01

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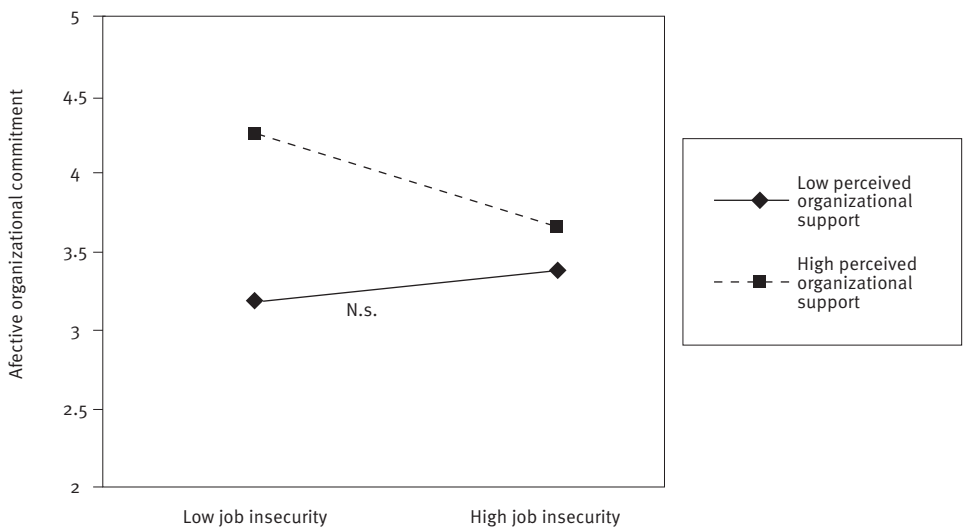
Table 3. **Results of mediated regression for job performance***

Variable			B	*SE*	*t*	*P*
Direct and total effects						
Job performance regressed in job insecurity			-0.156	0.063	-2.463	0.015
Affective organizational commitment regressed in job insecurity			-0.164	0.086	-2.128	0.035
Job performance regressed in affective organizational commitment, controlling for job insecurity			0.325	0.066	4.380	0.000
Job performance regressed in job insecurity, controlling for affective organizational commitment			-0.134	0.058	-2.286	0.024
	Value	*SE*		*p*		
Sobel	-2.30	0.023		0.021		

* We presented the results of the second step after introducing the control variables in the first step: age (in years); organization tenure (in months); position (0 = operative and technical duties; 1 = supervisor and managers).

Figure 2. **Interaction effect of perceived organizational support in the relationship between job insecurity and affective organizational commitment**



DISCUSSION

Theoretical implications

This study is based on theoretical and empirical outcomes and we sought to identify relations of the effects of job insecurity on job performance according to the social exchange theory (Blau, 1964).

Moreover, to understand this relationship, we set out to understand the mediating mechanism (Cheng & Chan, 2008; De Witte & Näswall, 2003; Ruvio & Rosenblatt, 1998; Schumacher et al., 2015; Sora et al., 2010; Sverke & Hellgren, 2002; Ugboro, 2003) and the moderating role (Bal et al., 2010; Blackmore & Kuntz, 2011; Eisenberger et al., 1986; Tian et al., 2014). The observed results of this study confirm the assumptions of the proposed model, i.e., job insecurity is negatively related to job performance, which is better explained by a partial mediation of affective organizational commitment. Moreover, our results

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are consistent with those of the social exchange theory. Therefore, the relationship between job insecurity and affective organizational commitment will be significantly negative. This proves that the core principle of job insecurity playing a threatening role when it comes to employees' interests and values is correct, which ultimately weakens employees' affective organizational commitment. Thus, when employees perceive that organizations have not met their expectations of providing job security, they reduce their level of affective commitment to the organization (Allen et al., 2001; Arshad & Sparrow, 2010; Marques et al., 2014). Similarly, job insecurity induces a negative response to affective organizational commitment, which then reduces individual performance (Buitendach & De Witte, 2005; Cheng et al., 2012).

Furthermore, the relationship between job insecurity and affective organizational commitment is stronger at higher levels of perceived organizational support and insignificant at lower levels of perceived organizational support. Considering the data of previously published studies (Bal et al., 2010; Elangovan & Shapiro, 1998), the abovementioned evidence is in line with the betrayal perspective, i.e., employees perceive the support offered by organizations to be incoherent with their expectations. In fact, when employees perceive their work in a context that considers their contributions and well-being, they expect to receive organizational support to handle and cope with the stresses of uncertain situations (Kurtessis, Eisenberger, Ford, Buffardi, Stewart, & Adis, 2017; Shoss, 2017; Vandenberghe, Bentein, & Stinglhamber, 2004). However, when they perceive job insecurity caused by a downsizing process, they sense a disinvestment for the organization, which is inconsistent with the expectations involved in a supportive context. (Morrison & Robinson, 1997; Costa & Neves, 2017). Therefore, if the perceived organizational support is not in line with employees' expectations, the betrayal effect may intensify the fear of losing the job and reducing affective organizational commitment (Fried et al., 2003; Siders et al., 2001). Thus, we have contributed to the literature on organizational relationships by highlighting contextual and emotional factors affecting individual performance caused by job insecurity.

CONCLUSION

This study presents certain limitations that may affect the analysis of results. It was impossible to arrive at any conclusions for causality because of the study's cross-sectional design; hence, we suggest developing longitudinal studies that may help to achieve causal considerations among these variables. Importantly, the sample consisted of workers who had survived an organizational process of downsizing at a Chilean company from the retail sector. Therefore, whether these findings can be extended to another related sample needs to be checked. Moreover, using self-reported variables may raise questions of common-method bias; thus, multiple procedures were used to minimize this effect. To avoid possible modifications and encourage consistent answers, confidentiality was assured to the participants. Furthermore, to generate a favorable environment and obtain realistic answers, the responses were stated to be neither right nor wrong.

Despite these limitations, some important practical implications can be derived from this study. For job insecurity, employees may experience perceptions of uncertainty, which leads to a fear of being laid-off and affects their performance. Indeed, reduced performance may cause weakening of efficiency and organizational effectiveness, which may have a financial impact. Hence, the impact of job insecurity is an important factor that needs to be addressed at workplaces because it involves employees who remain in the organization and survive a downsizing strategy; consequently, our results aim to endorse an efficient downsizing process.

Moreover, for organizations, as an effective intervention strategy, this study suggests that considering the implementation of actions is important. Furthermore, to promote an enabling environment that effectively helps develop affective organizational commitment among the surviving workforce and to prevent negative consequences in the employee–organization relationship, communication and clarification of expectations related to the organization needs to be encouraged.

However, in the relationship between job insecurity and affective organizational commitment, perceived organizational support assumes a significant role. To minimize negative results, the organization should consider the fear of being laid-off within the scope of the insecurity and downsizing process perceived by the employees. Moreover, organizations should consider employees' expectations more demonstratively, i.e., by trying to be more realistic, avoiding false beliefs, and giving emotional support to their workforce.

To summarize, this study sheds light on the negative relationship between job insecurity and job performance, a relationship that is partially mediated by affective organizational commitment. Moreover, a high level of perceived organizational support intensified the negative relationship between job insecurity and affective organizational commitment; however, in the presence of low levels of perceived organizational support, this relationship was observed to be insignificant.

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ARTICLES

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GOVERNMENT CORRUPTION ON BRAZILIAN CAPITAL MARKETS: A STUDY ON LAVA JATO (CAR WASH) INVESTIGATION

Corrupção governamental no mercado de capitais: Um estudo acerca da operação Lava Jato

Corrupción gubernamental en el mercado de capitales: Un estudio acerca de la operación Lava Jato

ABSTRACT

In recent years, Brazil has faced economic and political crises resulting from the actions of an elaborate syndicate of corruption in the government. The financial literature points to two lines of thought related to corruption. One approach defends the existence or bestowal of benefits, and the other points to losses in the public network. An event study based on the GARCHX-in-Mean model was conducted to understand the relationship between corruption and the decrease in the level of investment, and to identify the potential impact of corruption on selected assets. The results indicate that there was a significant devaluation of the largest state-owned companies traded on the Brazilian Stock Exchange and in American Depository Receipts, leading to money laundering and a decrease in economic growth. This supports the theory of a long-term crisis due to corruption.

KEYWORDS | Event study, return, volatility, GARCHX-in-mean, corruption.

RESUMO

O Brasil apresentou, nos últimos anos, um cenário de crise econômica e política, resultado do funcionamento de uma elaborada rede de corrupção no governo. A literatura financeira aponta duas linhas de pensamento relacionadas ao tema corrupção, uma que defende a existência de efeitos benéficos e outra que aponta os prejuízos no sistema público. A fim de se entender a relação entre a queda no nível de investimento e a corrupção, foi realizado um estudo de eventos, com base no modelo GARCHX-in-Mean, que permitisse identificar a existência e/ou o potencial sentido do impacto da corrupção para alguns ativos selecionados. Os resultados apontam que, no Brasil, houve uma grande desvalorização nas maiores empresas estatais negociadas na bolsa de valores nacional e também em suas American Depositary Receipt (ADR), consequentemente, gerando um cenário de fuga de recursos financeiros e indicando uma queda no crescimento econômico, apoiando a teoria de prejuízo em longo prazo da corrupção.

PALAVRAS-CHAVE | *Estudo de eventos, retorno, volatilidade, GARCHX-in-mean, corrupção.*

RESUMEN

Brasil presentó, en los últimos años, un escenario de crisis económica y política, resultado del funcionamiento de una elaborada red de corrupción en el gobierno. La literatura financiera apunta dos líneas de pensamiento relacionadas al tema corrupción: una que defiende la existencia de efectos benéficos y otra que apunta los perjuicios en el sistema público. A los efectos de entender la relación entre la caída del nivel de inversión y la corrupción, se realizó un estudio de eventos, con base en el modelo GARCHX-in-mean, que permitiera identificar la existencia y/o el potencial sentido del impacto de la corrupción para algunos activos seleccionados. Los resultados indican que, en Brasil, hubo una gran desvalorización en las mayores empresas estatales negociadas en la bolsa de valores nacional y también en sus American depositary receipt (ADR) que, consecuentemente, generó un escenario de fuga de recursos financieros e indicó una baja en el crecimiento económico, lo que apoya la teoría de perjuicio a largo plazo de la corrupción.

PALABRAS CLAVE | *Estudio de eventos, rendimiento, volatilidad, GARCHX-in-mean, corrupción.*

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INTRODUCTION

The world economy has undergone a major change in the last decade. With the advances in technology, the effect of globalization is becoming stronger and increasingly prevalent in everyday life. Connectedness between countries and easy access to information has encouraged growth in international transactions in several markets. Claessens, Klingebiel, and Schmukler (2006), for example, argued that the integration and negotiation of goods and resources between countries impact the agents involved in the economic and legal structures aimed at maintaining national competitiveness and ensuring commercial growth.

Brazil has experienced a great change in its social and economic structure, as pointed out by the World Bank (2015). The country exhibited a 4.5% average growth in the Gross Domestic Product (GDP) between 2006 and 2010, but faced a drop in the following years due to the crisis in the economic and political sectors as a result of public corruption, reaching -3.05% according to the October 2015 report of the Banco Central do Brasil (2015). The scenario of uncertainty and distrust caused by high government expenditure and the increase in inflation and interest rates triggered conditions that made it hard for Brazilian companies to survive and grow, as observed in the changes in returns and an increase in assets risk in the financial market.

Many studies, such as the works of Shleifer and Vishny (1993) and Mauro (1995), have tried to understand the relationship between government corruption and the economic growth of countries. Shleifer and Vishny (1993) defined this phenomenon as the use of power and public influence for personal gain, and found it more often in developing countries due to the common unstable and extremely bureaucratic structure of these governments. In general, the studies disclosed both positive and negative effects of corruption events in the development of each nation, leading to two lines of analysis: (1) *Grease the Wheel*, which presents the beneficial economic results of corruption; and (2) *Sand the Wheel*, which criticizes corruption and seeks to highlight the obstacles and losses it causes. Several social and economic points were considered within these analyses, aiming at the identification of the reasons and factors that contributed to the continuity of the event in question. Still, few studies are specifically focused on the effects within a particular country, and the socioeconomic analysis of this relationship.

In response to the current and growing interest in public corruption, several international entities have opened avenues for discussions on the subject. The World Economic Forum is an organization that aims to discuss various issues around the economic and social development of the member countries. At the January 2017 meeting in Davos, Switzerland, one of the topics was the fight against corruption and each nation's efforts to combat the problem. The agenda for debates highlighted the strong and constant presence of corruption in Latin America, a topic that has attracted international media attention, especially since 2014, and how countries such as Brazil and Chile have adopted proactive positions committed to investigating and punishing those involved in corruption scandals.

When considering the attention and importance with which the international and national communities regard the subject, investigations such as the *Lava Jato* (Car Wash) Criminal Investigation present a fundamental opportunity to understand and quantify the impact that corruption has in Brazil. *Lava Jato* started investigations on March 17, 2014, with the purpose of uncovering financial crimes and the misappropriation of public money, and today has thirty investigation phases. The World Economic Forum has classified it as one of the preeminent corruption scandals reported in Brazil. Initially, the investigations were focused on unraveling crimes involving illicit operations at gas stations; however, as the investigation progressed and new evidence was obtained, a much wider corruption scheme encompassing large sectors of the economy such as oil, civil construction, the finance sector and the country's political sphere was disclosed. Once the extent of corruption in the Brazilian socio-economic system was identified, the study of this event was directed, at first, to assets such as Petrobras (PETR4 and PETR3), Vale (VALE5 and VALE3), and Banco do Brasil (Bank of Brazil) (BBAS3) that are present in the capital market, and that are highly relevant to the composition of the main index of the Stock, Commodities, and Futures Exchange (BM&FBOVESPA). The selection of state-owned companies was due to the strong presence of these assets in the national capital market, and because they represent the country's oil, mining, and financial sectors, as well as being directly linked to decisions and events involving the Brazilian State. Then, the same event and same companies were analyzed through their ADRs for assets listed on the international market on the Nasdaq (n. d.) stock exchange.

Thus, this study presents research focused on the Brazilian reality, and seeks to measure, as far as possible, the impact of corruption on the risk and returns of the main state assets that make up the BM&FBOVESPA index. As a focal event, we studied the effect of the disclosure of public activities resulting from the *Lava Jato* Criminal Investigation, such as search and seizures, coercive driving, and arrests, on the risk premium and volatility of these assets, particularly for the state-owned companies Petrobras, Banco do Brasil, and Vale. The understanding of how

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this event affects the risk premium and its volatility will be of great help for economic agents to re-value their portfolios, and will provide support for compliance policies in organizations in Brazil and Latin America by disclosing how institutional corruption is harmful in the long term, regardless of apparent short-term advantages.

THEORETICAL REFERENCE

This section presents the two main approaches adopted by researchers who have studied public corruption. Initially, we will present the results and theories of researchers who have highlighted the positive points of corruption, entitled *Grease the Wheels*, followed by the second approach, which pursues the negative effects of the event, identified as *Sand the Wheels*.

Grease the Wheels

Several researchers in this field have attempted to prove the existence of beneficial effects of corruption in the social and economic development of countries. The basis of their argument is the existence of a bureaucratic and inefficient government system. Leys (1965) argued that a negative view of corruption due to the moralistic principles imposed by society contaminates the opinion of others, even though corruption itself is a neutral manifestation shaped according to the conditions of the environment.

Huntington (2006) analyzed the bureaucratic and political system of several countries at different moments in their histories. In cases where the author identified histories of highly centralized and bureaucratic governments, he diagnosed a slow and exhaustive public process in the social and economic environment. Key events included a high level of development in the country, accompanied by corruption news and scandals, leading to the belief that the latter is a driving event for the slow system. Following this principle, Lau, Demir, and Bilgin (2013) found a positive effect on the speed of government action, in which the payment of bribes and "kickbacks" is important and ensures that public servants carry out their work and continue to exercise their functions.

When analyzing the gains by public servants, corruption itself manifests a character of privilege and protection for those involved. According to the research of Leys (1965) and Bayley (1966), the occurrence of this phenomenon in the public sphere increases the demand for positions that provide exposure to bribes and a "kickbacks" cycle of receipts. This means that only individuals with aptitude and high qualifications would be selected, and that they gain a guarantee of adequate compensation, since positions in the private sector involve uncertainties and risks. Investigating this point, Dobson and Ramlogan-Dobson (2012) carried out a study to determine the impact of corruption on the growth of the informal sector, and found a negative relationship between the variables.

When considering the enhanced agility in the government sector which accompanies corruption, besides the already mentioned gains, the public projects sector also benefits. Leff (1964) and Bayley (1966) mentioned two benefits for the government and for the population: (1) public bidding for projects will be more efficient, since the companies involved must present themselves as competent to carry out the project and deliver it with the agreed upon quality as a part of the remuneration that the company would receive was used for payment of kickbacks or bribes; (2) when faced with a law that cannot be circumvented, or when attempting to guarantee the interest of another party, the government would evaluate and revise the existing norms. In this way, laws that do not fit the reality of society will be changed and replaced.

Sand the Wheels

While the *Grease the Wheels* approach is based on government inefficiency, the *Sand the Wheels* approach analyzes and argues the points raised based on the long-term impact on, and costs to, the country. Recent research, as presented in this article, strengthens the basis of this approach and adds new data on the true functioning and effects of corruption on economic indexes.

Myrdal (1994) criticized the existing relationship between the increases in the speed of execution in public processes and corruption. He raised two points related to the slowness of the system, which may be slow in reality or appear to be slow. In the first case, there is a short-term gain with corruption, but when analyzed over a longer time horizon, the evolution of the system toward efficiency may be obstructed by corrupt service providers. The same applies to the second case: public servants will tend to maintain and preserve the difficulties of the corrupt activities to ensure illicit gains, thus presenting an obstacle to the country's growth.

After evaluating the systemic issue, Kurer (1993) investigated the impacts related to the members of the cycle and the corruption schemes. In his paper, the author described the effect of the patronage, characterized as a way by which the most powerful and influential member maintains his/her status based on alliances and favors in exchange for protection.

This system is found inside the public machinery, where cliques prevent the entrance of new members as a means of maintaining the clandestine organization and gain distribution. Therefore, the admission of new employees to the public sector will not necessarily result in better workforce qualifications or an increase in service quality, but rather in the maintenance or propagation of the already corrupt and inefficient system.

Regarding the gains obtained from government projects, several authors have criticized and countered the message espoused by the other current of thought. The first one, Rose-Ackerman (1997), pointed out that illegal payments to ensure election in a bidding process does not mean that the most efficient supplier will be chosen, but rather that the one who pays the most will acquire the license. The result is the allocation of public resources to projects with low social return, high cost, and doubtful quality, besides fostering a method to allow the entry of new companies that participate in the payment scheme without necessarily being the most suitable for the project. Bardhan (1997) and Lambsdorff (2003) analyzed the legislative reformulation proposed by corruption; the basis for the contestation relies on the corruption characteristic of reducing the level of companies' confidence in the laws. We observed that the occurrence of this phenomenon increases the risk perceived by the entrepreneurs, both in the country and in its functioning. In this way, the government would not have the means to demonstrate or guarantee legitimacy of its system beyond compliance with laws.

In addition to the points inherent to public functioning, Mauro (1995) analyzed the impact within a country's level of investment and growth. The author considered two variables to evaluate corruption: (1) the efficiency of the bureaucracy: determined by the judicial system, quantity of norms, and corruption indexes; (2) political stability: calculated through institutional and social changes, opposition control, work stability, relationship with neighboring countries, and terrorism index. A strong positive relationship was identified between bureaucratic efficiency and political stability, where the decisive factor for private investment in a country is political stability and confidence in the government. Ciocchini, Durbin, and Ng (2003) tried to identify the impact of corruption in the financial market, as done by Mauro (1995), but focused on the private sector only. They found that investors expect a higher risk premium in countries with high corruption rates, and this is more evident in the emerging countries.

A study by Nguyen and Dijk (2012) in Vietnam pursued the understanding of corruption and its impact on the country. The authors mentioned six factors that promote the emergence of the phenomenon and favor its continuity: (1) type of existing governance, considering the level of government centralization; (2) regional autonomy, related to the power each region has to exercise its laws; (3) public expenses; (4) access to property, considering the necessary expense to gain this access and time consumed; (5) law implementation and consistence, support for laws, and the reasons for its creation; and (6) private sector development policies, divided into entrance costs and time to enter the market.

Nguyen and Dijk (2012) noticed that the factors that reduced corruption levels in the country were the capacity for implementing laws, their consistency, and access to property. These factors were the result of a low level of bureaucratization and high government efficiency. The same research also found that factors related to private sector development policies have a strong positive relation with the development of the event in question. According to the authors, the relation can be explained by a bureaucracy whose actions slow down the process of functioning of private companies.

Current literature offers few studies that are directly linked to the reality of a country, or to a proven corruption case. Brazil is nevertheless interested in studying this phenomenon; however, papers that investigate this subject and address the view of the financial and capital markets through a quantitative methodology are rare. This study aims to bridge this gap in the research.

METHODOLOGY

The basic methodology chosen to investigate the impact of corruption on financial and capital markets has its origin in the field of financial econometrics, and is classified as an event study. According to Campbell, Lo, and MacKinlay (1997), this technique was developed with the purpose of understanding, measuring, and relating the effect of a certain event or phenomenon on the market. The first similar published study is dated 1933 and conducted by Dolley, who investigated the returns for the issuance of new shares in existing companies. Binder (1998) discussed the evolution and sophistication of the methodology, and several researchers contributed to the current model conception.

Campbell et al. (1997) stipulated the main steps for conducting an events study – an important reference resource for field researchers. The first step is considered to be the definition of the event of interest, when one must define the event to be studied, the period in which it occurs, and stipulate its base of entries according to the date. There are no time/space restrictions; in other words, the methodology can be applied to annual, monthly, or daily data, provided that the number of observations is enough to meet the model preconditions (like the Central Limit

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Theorem, in asymptotic cases). Some authors, such as Dann (1981), questioned the relevance of the methodology for daily observations due to the distortion of the normality assumption in the stochastic model component. This effect can be smoothed out when we calculate the natural logarithm of the return, and modify the distribution defined in the model into any distribution with heavier tails as done by Rachev and Mittnik (2000), or by using the methodology of robust parameter estimation to deviations in data normality, as conducted by White (1982).

A daily time unit was considered for the analysis of the event and the returns of the assets in question. Furthermore, as a proxy for the corruption event, we chose the official disclosure of the *Lava Jato* Criminal Investigation deployments, whose dates were important milestones for establishing the analysis period. In this regard, the first step was to define the estimation and event windows, methodologically referred to as the period without the interference of the event, being (1) the estimation window for the Brazilian data from January 3, 2000 to March 16, 2014 (2) and the estimation window for the North American data from June 13, 2006 to March 16, 2014. The second step is to define the event window, i.e., the period in which the studied event was found, dated from March 17, 2014 to December 29, 2016, and applied for both scenarios – national and international.

After defining the window intervals, we performed an evaluation of the impact of events associated with the *Lava Jato* Criminal Investigation, such as search and seizures, coercive driving, and arrests. The data of each operational deployment was obtained directly from the website of the Federal Police (2014). In order to understand news absorption and diffusion, we created time windows of one, two, five, ten, and fifteen days from this disclosure date. Each window represents a binary variable that assumes a value equal to 1 during the considered period, and zero otherwise, resulting in daily or non-daily appearances of the event.

The adopted econometric model for the event study was the *GARCHX-in-mean* (GARCHX-M) model, which was chosen based on the work by Jong, Kemna, and Kloek (1992), which incorporated the presence of volatility and time dependence in the mean equation, and the work by Staikouras (2006), who introduced the exogenous variables in the volatility equation. Mathematically, the adopted model assumed the following structure:

$$\begin{cases} r_{it} - r_{ft} = \beta\left(r_{mt} - r_{ft}\right) + \delta I_{jt} + \epsilon_t \\ \sigma_t^{\,2} = \gamma_0 + \gamma_0 + \gamma_1 r^2_{i(t-i)} + \gamma_2 \sigma^2_{i(t-i)} + \omega I_{jt} \end{cases} \quad (1)$$

so that $\epsilon_t \sim N\left(0, \sigma_t^{\,2}\right)$. Additionally, we considered r_{it} as the adjusted return of company i during period t, so that $i = 1$, 2, 3, representing, respectively, Petrobras, Banco do Brasil, and Vale.r_{ft} ^r_{mt} are respectively the returns of risk free asset, the reference rate of the Special Settlement and Custody System (Sistema Especial de Liquidação e de Custódia [Selic]), and the adjusted return of the market index (Bovespa Index), during period t, for the national market. For the international market, we considered the adjusted return of the *S&P 500* index as the market return, and *Treasury Bills* of the North American market as risk-free asset.

In the system presented by the equations, in 1, the first equation is composed by the *Capital Asset Pricing Model* (CAPM), in which the premium for the risk $(r_{mt} - r_{ft})$ is explained by the market β multiplied by the premium for the risk in the market $(r_{mt} - r_{ft})$. In addition, the parameter δ measures the effect of the event disclosure on the premium by the asset risk and, therefore measures the expected percentage loss (or expected percentage gain) when new developments occur in the event of interest.

In the second equation, we have the GARCHX (1, 1) model for modeling the premium volatility by the risk $(r_{mt} - r_{ft})$, added to the effect of the event on the volatility, given by the ω parameter. The GARCH (1, 1) structure was adopted considering the frequently stylized fact of the good fit of this model in financial time series, as shown by Hansen and Lunde (2005). The parameters in the equations system 1 were estimated by the *Quasi Maximum Likelihood Estimation* (QMLE), a robust method for the handling of deviations in the assumption of normality, as presented by White (1982).

In other words, the QMLE estimator is used for models whose distributions may deviate from the basic assumption. According to the model presented in equations system 1, this assumption is the normality assumption, since $\epsilon_t \sim N\left(0, \sigma_t^{\,2}\right)$. Therefore, the QMLE estimator consistently estimates the vector of the parameters of interest, minimizing the Kullback-Leibler divergence between postulated and specified distribution. This estimator, therefore, is asymptotically normal and consistent, enabling good estimates if the sample is big enough (Cox & Reid, 2004).

The estimates for other model parameters were omitted because they were not the main parameters to be evaluated. However, for all estimated models, the weighted test Ljung-Box, developed by Ljung and Box (1978), for the squared residuals, presented a *p-value* above 5%, thereby indicating that the null hypothesis of absence of residues serial correlation shall not

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be rejected, and then the structure of time dependence was complementarily modeled by the equations system 1 in all cases. The *dummy* I_{jt} variable assumed a value equal to 1 on the dates the operation was carried out, followed by the $j = \{1, 2, 5, 10, 15\}$ windows subsequent to the registration. As mentioned previously, δ and ω represent the effect of disclosing this information in the windows considered for the risk premium and its volatility, respectively. It is also expected that as this window increases, this effect will decrease, representing the rate of "memory loss" of investors. This is because, the more distant from the deployment date, the lower the impact on risk and volatility.

RESULTS

Domestic market

The impact of the event, and its dispersion over time, was individually determined for each asset, taking into account the publication intervals of official news on the *Lava Jato* Criminal Investigation, as disclosed on the website of the Federal Police (2014). The tables reflect the results and present the behavior of risk premiums in relation to events, including the volatility and the expected value, as determined by us, for each time interval of corruption news:

Table 1. **Results without news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PETR4	Return (δ)	-0.15148	0.01571	-9.64120	< 0. 0001
	Volatility (ω)	0.01627	0.00811	2.00600	0.04485
PETR3	Return (δ)	0.012011	0.032418	0.3705	0.711010
	Volatility (ω)	0.371702	0.155426	2.3915	0.016779
BBAS3	Return (δ)	0.10127	0.01151	8.79903	< 0. 0001
	Volatility (ω)	0.01939	0.05998	0.32331	0.74646
VALE5	Return (δ)	-0.21034	0.01688	-12.46080	< 0. 0001
	Volatility (ω)	0.06779	0.01749	3.87590	< 0. 0001
VALE3	Return (δ)	0.020960	0.052565	0.39875	0.690079
	Volatility (ω)	0.031565	0.025443	1.24062	0.214746

Table 2. **Results with two-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PETR4	Return (δ)	-0.16810	0.01128	-14.90430	< 0. 0001
	Volatility (ω)	0.02976	0.00843	3.53060	< 0. 0001
PETR3	Return (δ)	0.003109	0.040926	0.075977	0.939438
	Volatility (ω)	0.417077	0.166138	2.510422	0.012059
BBAS3	Return (δ)	0.10971	0.02332	4.70443	< 0. 0001
	Volatility (ω)	0.19851	0.25180	0.78835	0.43049
VALE5	Return (δ)	-0.22058	0.20020	-1.10178	0.27056
	Volatility (ω)	0.09728	0.21299	0.45675	0.64786
VALE3	Return (δ)	-0.178937	0.010994	-16.2766	< 0. 0001
	Volatility (ω)	0.430601	0.240608	1.7896	0.073512

Table 3. **Results with five-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PETR4	Return (δ)	-0.16997	0.01195	-14.22102	< 0. 0001
	Volatility (ω)	0.02659	0.02465	1.07856	0.28078
PETR3	Return (δ)	-0.001467	0.028938	-0.050679	0.959581
	Volatility (ω)	0.411288	0.088410	4.652056	< 0. 001
BBAS3	Return (δ)	0.11957	0.00815	14.67920	< 0. 001
	Volatility (ω)	0.22717	0.06247	3.63650	0.00028
VALE5	Return (δ)	-0.23161	0.02192	-10.56630	< 0. 0001
	Volatility (ω)	0.09413	0.01496	6.29240	< 0. 0001
VALE3	Return (δ)	-0.324164	0.054404	-5.9585	< 0. 0001
	Volatility (ω)	0.482791	0.225188	2.1439	0.032037

Table 4. **Results with ten-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PETR4	Return (δ)	-0.15743	0.00878	-17.92677	< 0. 0001
	Volatility (ω)	0.01664	0.00569	2.92612	0.00343
PETR3	Return (δ)	0.000705	0.022261	0.031686	0.974722
	Volatility (ω)	0.307617	0.090620	3.394593	0.000687
BBAS3	Return (δ)	0.13385	0.00764	17.51450	< 0. 0001
	Volatility (ω)	0.20553	0.05566	3.69300	0.00022
VALE5	Return (δ)	-0.23259	0.02293	-10.14450	< 0. 0001
	Volatility (ω)	0.08908	0.01421	6.26870	< 0. 0001
VALE3	Return (δ)	-0.187544	0.008857	-21.1758	< 0. 0001
	Volatility (ω)	0.413990	0.197360	2.0976	0.035937

Table 5. **Results with fifteen-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PETR4	Return (δ)	-0.15163	0.00835	-18.16100	< 0. 0001
	Volatility (ω)	0.02003	0.00806	2.48590	0.01292
PETR3	Return (δ)	0.003510	0.021677	0.1619	0.87138
	Volatility (ω)	0.235711	0.090987	2.5906	0.00958
BBAS3	Return (δ)	0.13970	0.00734	19.04480	< 0. 0001
	Volatility (ω)	0.19330	0.05260	3.67520	0.00024
VALE5	Return (δ)	-0.23097	0.02410	-9.58350	< 0. 0001
	Volatility (ω)	0.08622	0.01390	6.20490	< 0. 0001
VALE3	Return (δ)	-0.144889	0.073957	-1.9591	0.050103
	Volatility (ω)	0.019606	0.005226	3.7519	0.000175

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Starting with the Petrobras results, we noticed that the behavior of the variables remained the same for all scenarios. For (PETR4) preferred shares, the dependent variable – understood as the risk premium – dropped at all news divulgement intervals, where the observed corruption event significantly affected the risk premium (and consequently the adjusted return) negatively to a level of 5%, considered a critical level. When we analyzed the determination of risk linked to the asset, i.e., the volatility of the risk premium, we found the same pattern for all scenarios, where the event causes an increase in PETR4 risk perception. The greatest effect appeared in two- and five-day intervals after the disclosure of more corruption news; however, only the two-day window result was statistically relevant for the analysis, at a 5% critical level. Regarding the effect on the common stock (PETR3), we noticed that the event did not present a statistically significant impact on the dependent variable, but it is possible to see an existing and significant relationship with volatility, where all scenarios showed an expressive increase in asset risk at an average of 34%, for a 5% critical level. Comparing the impact on the risk measure for preferred shares (PETR4) and common stock (PETR3), we were able to identify a greater event impact for the second case, which can be explained by the low priority assigned by the holders of these assets to the receiving of dividends or returns on their investment.

In contrast to the effect observed for oil sector assets, the BBAS3 asset increased for both variables in all scenarios. For all post-event day intervals, there was an increase in the risk premium value of Banco do Brasil, statistically relevant at 5%. A possible explanation for the stock valuation is the reaction of economic agents in the Brazilian stock market moving their asset capital like PETR4 into other sectors, still under the veil of the state. The volatility also disclosed positive behavior in the face of the event, where the BBAS3 risk increased at every new disclosure, relevant only for the scenarios with intervals longer than two days after the corruption news were published. This result reinforces the hypothesis of investors' memory regarding market events, the higher volatility value noticed in the five-day window and the drop with the window increase.

The asset linked to Vale (VALE5) displayed a similar behavior to that of PETR4. The return showed a negative trend with statistic relevance to the event appearance in all scenarios, leading us to infer that the corruption event resulted in a devaluation of the closing price adjusted day after day. The risk measure disclosed a positive trend, in which the risk perception of VALE5 increased with each disclosure in all scenarios. However, we saw a drop in volatility with an increase in the post-news interval, which implies an "investor's memory loss" similar to the case of Banco do Brasil.

In addition to the Brazilian stock exchange price, the studied companies present a portion of their resources to the international market. Since the present study seeks to understand the impact of the event on real value and risk in firms, it is important to identify and analyze foreign investors' perception of Brazil for measuring the reaction of the international community in the face of the event, and to gauge how they interpret institutionalized public sector corruption.

International market

As for the domestic scenario, the following tables present the impact of the event on Brazilian assets traded on the US stock exchange through ADRs. The assets refer to the same companies previously studied:

Table 6. **International results without news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PBR.A	Return (δ)	-0.385367	0.022586	-17.062	< 0. 0001
	Volatility (ω)	0.000000	0.004873	0.000	1.000000
PBR	Return (δ)	-0.223702	0.063765	-3.50821	0.000451
	Volatility (ω)	0.158795	0.206887	0.76755	0.442756
BDORY	Return (δ)	-0.327730	0.020041	-16.35296	0.00024
	Volatility (ω)	0.001863	0.003463	0.53806	0.590537
VALE.P	Return (δ)	-0.405261	0.024724	-16.3913	< 0. 0001
	Volatility (ω)	0.037458	0.010913	3.4326	0.000598
VALE	Return (δ)	-0.377874	0.022910	-16.4936	< 0. 0001
	Volatility (ω)	0.034979	0.010419	3.3571	0.000788

Table 7. **International results with two-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PBR.A	Return (δ)	-0.302383	0.066405	-4.5536	< 0. 0001
	Volatility (ω)	0.081036	0.032606	2.4853	0.012945
PBR	Return (δ)	-0.231084	0.039713	-5.8189	< 0. 0001
	Volatility (ω)	0.060436	0.023479	2.5741	0.010050
BDORY	Return (δ)	-0.336692	0.016017	-21.0215	< 0. 0001
	Volatility (ω)	0.016001	0.007801	2.0513	0.040236
VALE.P	Return (δ)	-0.411128	0.024559	-16.7403	< 0. 0001
	Volatility (ω)	0.043638	0.008284	5.2679	< 0. 0001
VALE	Return (δ)	-0.385960	0.022855	-16.88741	< 0. 0001
	Volatility (ω)	0.031614	0.010786	2.93115	0.003377

Table 8. **International results with five-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PBR.A	Return (δ)	-0.254660	0.030124	-8.45367	< 0. 0001
	Volatility (ω)	0.025636	0.026164	0.97982	0.327176
PBR	Return (δ)	-0.226523	0.028605	-7.9191	< 0. 0001
	Volatility (ω)	0.044911	0.019940	2.2522	0.024307
BDORY	Return (δ)	-0.354265	0.071955	-4.923386	< 0. 0001
	Volatility (ω)	0.027545	0.061781	0.445843	0.655710
VALE.P	Return (δ)	-0.420082	0.023681	-17.7392	< 0. 0001
	Volatility (ω)	0.029393	0.019210	1.5300	0.12601
VALE	Return (δ)	-0.390447	0.023769	-16.4268	< 0. 0001
	Volatility (ω)	0.044948	0.013013	3.4541	0.000552

Table 9. **International results with ten-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PBR.A	Return (δ)	-0.195522	0.035540	-5.50142	< 0. 0001
	Volatility (ω)	0.064662	0.073850	0.87559	0.381255
PBR	Return (δ)	-0.184730	0.031245	-5.9124	< 0. 0001
	Volatility (ω)	0.044969	0.014684	3.0625	0.002195
BDORY	Return (δ)	-0.335027	0.043156	-7.76316	< 0. 0001
	Volatility (ω)	0.024560	0.027742	0.88527	0.37601
VALE.P	Return (δ)	-0.40721	0.025095	-16.22704	< 0. 0001
	Volatility (ω)	0.02324	0.012604	1.84389	0.065199
VALE	Return (δ)	-0.384051	0.022037	-17.4273	< 0. 0001
	Volatility (ω)	0.020394	0.010379	1.9648	0.049438

Table 10. **International results with fifteen-day news post-disclosure interval**

Asset		Estimates	Standard error	T-Value	P-Value
PBR.A	Return (δ)	-0.183221	0.036545	-5.0135	< 0. 0001
	Volatility (ω)	0.061386	0.035652	1.7218	0.085103
PBR	Return (δ)	-0.15721	0.034401	-4.5700	< 0. 0001
	Volatility (ω)	0.04764	0.014770	3.2254	0.001258
BDORY	Return (δ)	-0.321569	0.029898	-10.75564	< 0. 0001
	Volatility (ω)	0.023713	0.021583	1.09870	0.27190
VALE.P	Return (δ)	-0.387834	0.027333	-14.18934	< 0. 0001
	Volatility (ω)	0.055259	0.008216	6.72613	< 0. 0001
VALE	Return (δ)	-0.375277	0.022661	-16.5605	< 0. 0001
	Volatility (ω)	0.019299	0.007893	2.4450	0.014485

Petrobras assets – preferred (PBR.A) and common stock (PBR) – traded on the US stock exchange displayed similar behavior for all estimated scenarios. The risk premium was negatively impacted by the reported event, independent from the type of traded stock. Here, we noticed a strong market reaction in the first days, at a critical 5% confidence level, followed by a mitigation of devaluation. Considering all stipulated scenarios, and considering the effect of the "investor's memory," assets suffered an average devaluation of 26.41% for PBR.A and 20.46% for PBR. However, in observing the effect on volatility, only the common stock showed an increase in perceived risk by the market. PBR.A did not present, in any scenario, statistically significant changes, since they exceed the critical level of 5%, while PBR presented significant results after the two-day window of the news exposure to the economic agents, which may represent the time of absorption and reaction of the market to a specific event of the Brazilian reality.

Banco do Brasil (BDORY) shares exhibited a behavior similar to PBR, both being classified as common stock. The risk premium faced devaluation in all scenarios at an average of 33.5%. Volatility appeared as relevant only from the two-day window of the news exposure, and, as observed for PBR, it is possible that foreign investors experience a delay in reacting to and interpreting Brazilian news.

The results of Vale followed the trend identified by the Petrobras results. The preferred shares (VALE.P) and the common stock (VALE) were negatively affected by the event at a 40% average for VALE.P and 38% average for VALE, both within the 5% critical level of analysis, followed by a mitigation of devaluation, which indicates that foreign investors seem to gradually absorb and moderate the impact of the news. In contrast, the risk perception increased in general for both assets, in all scenarios. It was interesting to observe the effect in the case of Vale, in which both the behavior of the risk premium and the risk itself presented a similar smoothing curve over time. This information indicates that the international market has an adaptation period to a specific event of Brazilian politics.

CONCLUSION

Given the estimates associated with the impact of the event on assets in the national and North American stock exchanges, it is interesting to compare the intensity of the effects caused by this phenomenon for each company.

Petrobras offers shares classified as preferred (PETR4 and PBR.A) and common (PETR3 and PBR) in both the domestic and North American markets. Considering the estimates of the event impact on the dependent variable, in all built scenarios, and using only the ones below the established critical level, we noticed that the international market experienced a greater impact from the event than the domestic market, where PBR.A was devaluated by approximately -36.41% and PBR by -20.46%, while PETR4 showed a -15.97% and PETR3 did not show statistically significant evidence of change in its risk premium. When comparing the risks attributed to the assets, we can see that a significant increase occurred in the international market for the common stock; however, for the common stock, the result was the opposite. PETR3 strongly surpassed the risk readjustment in relation to PBR, an understandable result, since we consider that there

was no evidence for the impact of the event on PETR3. Banco do Brasil only offers common stocks in the markets in which it is traded, and presents disruptive behavior. For the Brazilian market (BBAS3), an average valuation of 12% was found, considering only the scenarios whose p-value was below 5%, while for the US stock market (BDORY) there was an average devaluation of 33.5% for the same conditions. The divergence between the effects of the event on the risk premium may be an indication that for national investors, the financial sector presents a viable option to direct their resources amid the political scandals involving Petrobras, while the foreign investor does not realize that there is a difference between the Brazilian sectors, leading to devaluation. The risk measure was positive for BBAS3 and BDORY, but with a more significant effect on the Brazilian scenario than on the international scenario. Perhaps, the most interesting aspect of this relationship is that even with a perception of greater risk, Brazilian investors remain interested and continue to acquire it, while the international market seems to avoid acquiring the stocks.

For the assets linked to Vale, both types of shares presented the highest devaluations abroad. The US stock exchange disclosed average devaluations of 40% for VALE.P and 38% for VALE, while the effect in the domestic market showed an average of almost half of that, with VALE5 devaluated at 22.63% and VALE3 at 20.88%. However, for the volatility analysis, national investors present a much higher level of investment risk than that presented by international investors, similar to that found in BBAS3, which had a greater impact on volatility than on the risk premium. As pointed out by Ciocchini et al. (2003) and Mauro (1995), such evidence explains the drop in the country's investment level, since investors require a greater return on investment for nations where proven suspicions or cases of public corruption occur. Brazil, by failing to meet this requirement and by not showing signs of improvement or change in the scenario, incurs a loss of investment in its public assets.

As we can see from the reported results, Brazil presents a devaluation of its assets and consequent loss of investments of national and international origin. This market response to government corruption is a reflection of Brazil's difficulty to offer returns to its investors. It also contributes to the evidence of real capital loss, and the perception by other economic agents of an increased risk profile, which will result in an increment in capital flight if the reliability and credibility of the country is not restored.

Due to the impact of corruption on the functioning of countries, public discussions concerning corruption and its effects have become internationally popular. As presented by the World Economic Forum in 2016, countries are expected to take proactive measures against corruption. This is especially the case in Latin America, given its high corruption perception indexes. This research presents empirical and significant results that illustrate and prove the harmful effects on the Brazilian economy in the long term. It illustrates that Brazil will lose even more financial resources, and will face grave difficulties to recover from the current economic crisis as long as the climate of scandals persists. The innovative nature of this research lies in the quantified alert in the financial sector, with predictions of loss if the current situation remains constant. Furthermore, this pioneering model for the analysis of a major corruption event as registered in Brazil is an example of and an incentive for new field research to assist with the dismantling of the corruption network in Brazil.

In addition, the present work contributes to the assembling of a Brazilian national literature archive on governmental corruption in the investments sector. Several research papers have already initiated the discussion of this subject in Brazil. Silva (1994) and Brei (1996) have offered concepts, questions, and theoretical solutions for the government corruption, followed by a recent analysis by Marino, Soares, Luca, and Vasconcelos (2016) of the correlation between public corruption and its effects on GDP growth. Caldas, Costa, and Pagliarussi (2016) studied Brazilian public expenditure, and Gehrke, Borba, and Ferreira (2017) proved that during the last few years, including the period chosen for the analysis of this work, Brazil has been occupying space in the international media as a country inextricably linked to public corruption. Such results disclose that the country's international reputation and attractiveness to investors decrease over time, and will persist while good governance measures and policies are absent. Compared to the recent international literature, the main identified focus of investigation is the effect of corruption on public expenses and its generalized effect on the formal and informal economy, as presented by Cooray and Schneider (2013) and Benfratello, Monte, and Pennacchio (2015), albeit without a deep investment-related approach, as presented by this research.

From a financial and business perspective, the research quantitatively demonstrates the importance of corruption events in the calculation and projection of investments in the country. Due to limitations with regard to data and time, it was not possible to identify a quantitative indicator for corruption, therefore justifying the use of the proxy of news disclosure. However, comprehensive indexes that measure and incorporate risk would be more accurate for forecasting models and estimates of returns on investment. It is valid to question whether an assessment of the risk of corruption is already included in the systemic risk or the required rates of return. However, the present study proves that even models such as CAPM, which theoretically addresses

the investor's sensitivity and perception of risk, are not capable of fully capturing the effects of events on the stock market.

Finally, the objective of this research was to verify the impact of corruption on financial and capital markets, which can be approximated to the impact on Brazil's internal and external investment. As presented by the literature, studies on the formation and consequences of state corruption events are discussed, but without applications in the Brazilian scenario. As a means of combating such events through compliance policies and increased efficiency and fundraising, it would be valuable to seek out the real causes of corruption, so that plans can be drawn up to combat corruption with political transparency and public system efficiency.

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ANTECEDENTS AND CONSEQUENCES OF CORPORATE IMAGE: CONVENTIONAL AND ISLAMIC BANKS

Antecedentes e consequências da imagem corporativa: Bancos convencionais e islâmicos

Antecedentes y consecuencias de la imagen corporativa: Bancos convencionales e islámicos

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ABSTRACT

Islamic and conventional banks differ in basic philosophy and objectives although both perform the same service. This study used cognitive, affective, and conative sequence to examine antecedents and consequences of corporate image of conventional and Islamic banks in Pakistan. Self-administered questionnaires collected empirical data from 320 respondents. It was found that non-firm communication and corporate social responsibility significantly relate to brand familiarity and corporate image in case of Islamic banks. Brand familiarity significantly builds corporate image, which confirms the cognitive, affective, and conative sequence. Corporate image creates positive brand attitude and intention to use banking services. In case of conventional banks, only firm communication significantly relates to corporate image and brand familiarity. The relationship of corporate image with brand attitude and intention to use the service are similar to Islamic banks. This study can help banks to invest in building respective antecedents which can increase intention to use their services.

KEYWORDS | Corporate image, Islamic banks, conventional banks, intention to use, mediation.

RESUMO

Bancos islâmicos e convencionais diferem em termos de filosofia e objetivos básicos, embora ambos desempenhem o mesmo serviço. Este estudo utilizou a sequência cognitiva, afetiva e conativa para examinar os antecedentes e consequências da imagem corporativa de bancos convencionais e islâmicos no Paquistão. A partir do uso de questionários auto-aplicados, foram coletaram dados empíricos de 320 entrevistados. Verificou-se que no caso de bancos islâmicos a comunicação não relacionada à firma e a responsabilidade social corporativa estão significativamente relacionadas à familiaridade com a marca e imagem corporativa. A familiaridade da marca tem participação significativa na criação da imagem corporativa, o que confirma a sequência cognitiva, afetiva e conativa. A imagem corporativa é responsável pela criação de uma atitude positiva em relação à marca e pela intenção de usar serviços bancários. No caso dos bancos convencionais, somente a comunicação da firma está relacionada de forma significativa à imagem corporativa e à familiaridade da marca. A relação da imagem corporativa com atitude da marca e intenção de uso do serviço é semelhante para os bancos islâmicos. Este estudo pode ajudar os bancos a investirem no desenvolvimento de seus respectivos antecedentes, o que pode aumentar a intenção de uso de seus serviços.

PALAVRAS-CHAVE | *Imagem corporativa, bancos islâmicos, bancos convencionais, intenção de uso, mediação.*

RESUMEN

Los bancos islámicos y convencionales difieren en su filosofía básica y objetivos, aunque ambos realizan el mismo servicio. Este estudio usó la secuencia cognitiva, afectiva y conativa para analizar antecedentes y consecuencias de la imagen corporativa de bancos convencionales e islámicos en Paquistán. Los cuestionarios autoadministrados colectaron datos empíricos de 320 entrevistados. Se encontró que la comunicación no corporativa y la responsabilidad social corporativa se relacionan significativamente con la familiaridad de la marca y con la imagen corporativa en el caso de los bancos islámicos. La familiaridad de la marca construye significativamente la imagen corporativa, que confirma la secuencia cognitiva, afectiva y conativa. La imagen corporativa crea actitud e intención positivas para usar servicios bancarios. En el caso de bancos convencionales, solamente la comunicación corporativa se relaciona significativamente con la imagen corporativa y la familiaridad de la marca. La relación de la imagen corporativa con la actitud y la intención de la marca de usar el servicio son semejantes a las de bancos islámicos. Este estudio puede ayudar a los bancos a invertir en construir sus respectivos antecedentes que pueden aumentar la intención de usar sus servicios.

PALABRAS CLAVE | *Imagen corporativa, bancos islámicos, bancos convencionales, intención de uso, mediación.*

INTRODUCTION

Islamic banking is being acknowledged as a rapidly growing service industry, not only in Muslim but even in non-Muslim countries (Dusuki & Abdullah, 2007). Globally, over 300 Islamic banks and other financial institutions exist in 48 countries that are managing funds of around $300 billion, with deposits exceeding $ 120 billion (Memon, 2007). Wherever Islamic banks exist alongside conventional banks, it becomes very important to attract and retain customers who are inclined to opt for socially responsible banking services that adhere to Islamic rules. This includes a vision of a just and fair society, as well as brotherhood and cooperation that is in compliance with the Shariah (Iqbal & Molyneux, 2005). While the literature on customer satisfaction and service quality in the banking sector is in abundance, the importance of bank's image as strong influencing a customer's buying behavior has been asserted by Erol, Kaynak, and El-Bdour (1990). Other influences on the selection of banks include religious motivation, economic influences, friends and family (Metawa & Almossawi, 1998). These are more evident in Muslim countries, such as Jordan. Thus, the argument arises that Islamic version of financial products and services no longer remain the exclusive selection criteria to use a specific type of bank. In Malaysia, for example, marketing strategies, including the availability of fast and quality service are emerging as a pertinent selection technique by customers (Dusuki & Abdullah, 2007). In the field of marketing and management, emphasis is on corporate image to acquire and sustain the patronage of customers of Islamic banks (Kaurav, Paul, & Chowdhary, 2015; Richardson & Robinson, 1986).

Pakistan's banking sector continues to grow despite increasing inflation, energy crisis, and security concerns, and it is attracting the interest of academics, researchers, and policymakers alike (Iqbal & Molyneux, 2005). The banking sector of Pakistan underwent major structural changes towards beginning of the millennium, leading to privatization, rapid entry and growth of foreign and Islamic banks, introduction of human resource management systems and diversification of financial institutions and markets (Obaid, 2013). While the establishment of Islamic banking system of Pakistan has its roots in the early 1980s, it was relaunched in 2001 when Meezan Bank became the first certified Islamic bank of the country. By 2007, six full-fledged Islamic banks were operational (Khattak & Rehman, 2010). The central State Bank of Pakistan has made Islamic banking a priority focus, and introduced a comprehensive legal, regulatory, and Shariah compliance framework for its development (Islamic Banking Bulletin, 2016).

Recently, Pakistani Islamic banking industry has been included in the nine core markets of international participation banking industry. Other markets include Bahrain, Qatar, Indonesia, Saudi Arabia, Malaysia, United Arab Emirates, Turkey, and Kuwait (World Islamic Banking Competitiveness Report, 2016). Within Pakistan, Islamic banking system holds over 11.4 percent share in assets and 13.2 percent share in deposits of the country's overall banking system (Islamic Banking Bulletin, 2016). It has over 1200 branches in over 80 districts across Pakistan and has maintained a growth momentum along with an increasing base. By 2018, this is expected to have risen to 2000 branches with a market share of 15 percent (State Bank of Pakistan, 2014). This continued expansion of the rise in Islamic banking is evidence of its growing acceptability among customers. Similar to the global trend, Pakistani Islamic banks are also striving hard to acquire maximum market share, using established strategies offering a portfolio of products and services, focusing on quality of service, offering internet-based services, and building company image in the customers' minds (Ahmad, Rehman, Saif, & Safwan, 2010; Haron, Ahmad, & Planisek, 1994; Mokhtar, Abdullah, & Alhabshi, 2008; Raza & Hanif, 2013). Moreover, it is suggested that Islamic banks may be prone to avoiding issues that negatively affect their corporate image (Maali, Casson, & Napier, 2006).

The Islamic banking industry holds a reasonable share in the world financial sector and is identified as a dynamic segment of the global banking industry, in which traditional marketing rules may not apply in their entirety (Amin, Isa, & Fontaine, 2013). Therefore, we intend to explore the antecedents and consequences of corporate image by conducting a comparison of conventional banks and its rival in the financial market, that is Islamic banks of Pakistan. Hence, we build the following objectives for this study:

1. to understand the influence of antecedents of corporate image on its consequences, such as brand attitude and intention to use behavior in the banking industry and conduct a comparison of conventional and Islamic banking;

2. to examine the mediating role of corporate image between antecedents and consequences of Corporate Image (CI) and compare the influences with respect to different banking systems and

3. to investigate the building influences of those antecedents which are at the discretion of management on those which are not at the disposal of management and discuss the implications of these results.

The rest of this paper presents a critical review of the existing literature and builds a conceptual framework, from which hypotheses are formulated. In order to test the hypotheses proposed in the study, a quantitative survey is adopted and statistical software are used for data analysis. After discussing the salient findings of the study, we address the limitations and future research directions. Finally, a brief conclusion is provided at the end of the paper.

LITERATURE REVIEW

Corporate brand image

Traditionally, corporate image was seen as a concern of the public relations department. However, the concept has evolved and is recognized as a critical asset for competitive advantage. Eventually, contemporary research asserts the need to reactively, if not proactively, manage corporate image (Gray & Balmer, 1998). It has also been identified as the mental image of the tangible and intangible elements of business held by a segment of the public or audience. Through corporate communications, an intended image is first created and then concentrated efforts are exerted on managing this mental picture (Balmer & Greyser, 2003; Gray & Balmer, 1998; Johnson & Zinkhan, 1990).

Regardless of the contestation over the different definitions of corporate image, for the sake of this paper, we contend that the corporate image is the belief of the organization's members of the existing (Dutton, Dukerich, & Harquail, 1994) or future (Whetten, Lewis, & Mischel, 1992) perception of its external stakeholders. In marketing, strong relations have been established between corporate image and perceived customer satisfaction (Hart & Rosenberger, 2004) to the extent that engineering the customer experiences in favor of a corporate image have been suggested (Carbone & Haeckel, 1994; Shee & Abratt, 1989).

In the banking sector, corporate image is the most effective tool for differentiations and the main management tool for banks and is considered most relevant nowadays (Van Riel, Lemmink, & Ouwersloot, 2001; Worcester, 2009). Corporate social responsibility is an important factor determining the bank's image which was ignored earlier (Castelo & Lima, 2006; Souiden, Kassin, & Hong, 2006). In a study Kim (2006) argued that corporate ability (product quality, financial performance, and technological innovation) and all perceptions are gathered by corporate image that the stakeholders have about the firm making corporate image a multidimensional image.

Shariah is a set of rules and guidelines described in Islamic Fiqah (jurisprudence) whose major sources are Quran and Hadiths. Islamic economic system is grounded on the principles of justice, equity, and welfare. Interest is strictly prohibited in Islam and therefore no bank uses interest as pillar of its banking business. Instead, Islam has allowed trade as a source of earnings. Therefore, Islamic banks have to adopt partnership (Musharkah or Mudarbah), rent (Ijarah) or trade (Salam, Murabahah, and Istisana) modes of financing as their source of earnings.

Islamic banks have to follow Shariah principles for their strategic and operational decisions. The State Bank of Pakistan has bound every Islamic bank to constitute a Shariah board which ensures that each business transaction is in line with Shariah principles. Even the transactions which seem doubtful with reference to Shariah transactions is not permissible. As far as credit policies are concerned, Islamic banks cannot finance those businesses which are legal but prohibited in Islamic Shariah, for example cinema and smoking.

Islamic and conventional banks are different in basic philosophy, underlying mechanism and objectives although both perform the same service that is providing solutions to the financing problems of clients. Exhibit 1 describes some major differences.

Antecedents of corporate image

In the banking sector in particular, a strong corporate image is believed to be a major source of differentiation between conventional and Islamic banks (Osman et al., 2015). It has been suggested that customer satisfaction has a stronger effect on corporate image for non-Muslim customers of banks compared to its Muslim customers (Amin et al., 2013) and that it enhances employee engagement (Hussain, Ishak, Daud, & Yunus, 2014). Although, the components of corporate image evolve over time, its measurement has included functional and emotional dimensions, related to types and access to the offered services, human resource, security of transactions, trust, corporate social responsibility and other factors (de Leaniz & Rodríguez, 2016; Hussain et al., 2014; Souiden et al., 2006).

It is not then surprising that much attention has been paid to building a sustainable corporate image through effective financial prospects, corporate communications, and corporate management (Gray & Balmer, 1998; Van Riel, 1997; Yeo & Youssef, 2010) through, for example, brand experiences, brand relationships, and brand communities (Abratt & Kleyn, 2012). In the case of Islamic banks, there is evidence that gaps commonly exist between the communicated and the ideal ethical identities (Haniffa & Hudaib, 2007). Communicating the corporate image can involve campaigns, non-firm communication (word-of-mouth), internet, and firm communication (advertising, annual reports).

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These are generally considered the domain and expertise of marketing and public relations consultants to build corporate identity cues, visuals, and personalities, thereby increasing brand familiarity (Abratt & Kleyn, 2012; Balmer & Greyser, 2006; Darus et al., 2014).

Exhibit 1. **Difference between the financial functions of Conventional and Islamic banking system**

	Conventional	Islamic
Status of money	Money is considered as a commodity. It can be traded and rented out	Money is just a medium of exchange. It can't be traded at a value higher than its face value (Usmani, 1998)
Source of earning	Interest is charged on the basis of time value of money	Profit is earned on trade/rent of assets
Sharing of Loss	Banks charge interest even if the borrower suffers loss	Banks share the profit/loss with the client (Wilson, 2006)
Exchange of goods and services	Exchange/trade of assets is not mandatory for running finance or cash finance.	Exchange/trade of assets is mandatory for every type of financing (Wilson, 2006)
Relationship between bank and client	Borrower and lender	Partners in business
Risk sharing	Business and asset risk are not shared by bank	Bank shares risk of asset
Religious and ethical values	Banks have no problem if client is involved in a business which is legal in a country	Islamic banks are engaged only in legally, ethically, morally, and religiously allowed activities (Siddiqui, 2004)
Late payment penalty	Late payment fine is a source of income for banks.	Islamic banks cannot charge any extra amount on the loan. Therefore, late payment fine is just to discourage clients from default and this income is used for charity (Siddiqui, 2004; Usmani, 1998)

The basic purpose of this paper is to compare the relationship of antecedents and consequences of corporate image of conventional and Islamic banks. We used structural equation model for finding the interdependent relationships of antecedents and consequences of corporate image. Bravo, Montaner, and Pina, (2012) discussed a number of antecedents and consequences of corporate image and built a conceptual model with three dimensions of antecedents' that is firm communication, brand familiarity, and non-firm communication and two dimensions of consequences that is brand attitude and intention to use banking services. In our study we are adding another two dimensions of antecedents that is corporate social responsibility (CSR) and security in the model. In the past, research that compares conventional and Islamic banks has neglected the effect of corporate image on brand attitude and intention to use the specific bank or its products/services.

According to proposed model of Bravo et al. (2012), the corporate image is explained by brand familiarity, firm and non-firm communication and the resulting image would affect brand attitude directly and intention to use the bank services (ITU) both directly and indirectly. This extended relationship that is discussed by Bravo et al. (2012) is given in Figure 1.

Souiden et al. (2006) hypothesized that greater the brand familiarity, the more favorable is the corporate image, hence it leads to our first hypothesis:

> H1: Brand familiarity has a positive relationship with corporate image.

Crane (1990) concluded that corporate advertising in banking services significantly affects the brand awareness, brand familiarity, brand attitude, and indirectly the purchase intention to use the service. The firm communication (advertising and other elements) strengthens the image of the corporation (Villarejo-Ramos & Sánchez-Franco, 2005). Therefore, by considering these arguments and previous literature, we hypothesize the following:

> H2: Positive firm communication has a positive relationship with corporate image.

> H3: Positive firm communication has a positive relationship with brand familiarity.

> H4: Brand familiarity mediates the relationship between firm communication and corporate image.

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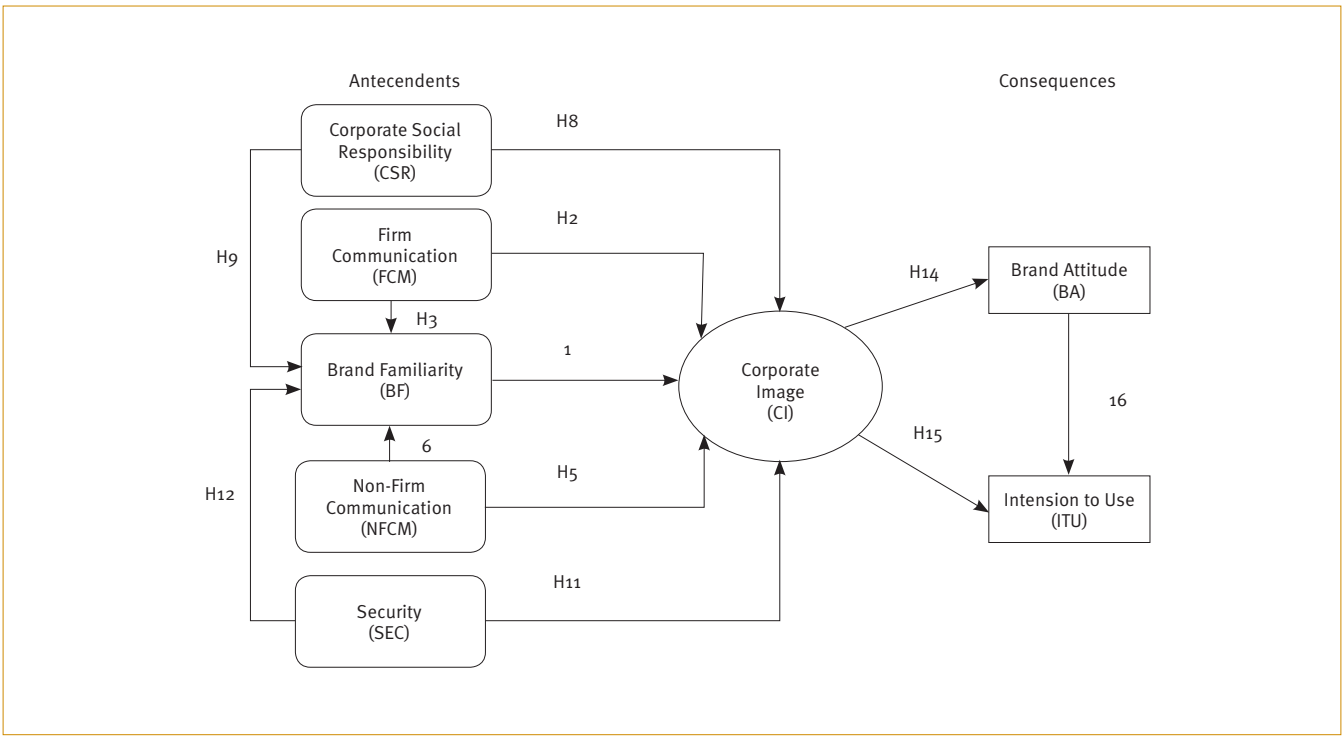
Figure 1. **Conceptual framework**



The consumer perceptions of brand are highly influenced by the opinion of friends, family or other people. Gounaris, Stathakopoulos, and Athanassopoulos (2003) show that the non-firm communication world of mouth (WOM) has significant impact on the corporate image. Peer recommendations affect the evaluation, choices or brand familiarity (Gounaris & Stathakopoulos, 2004). Thus, we advance the following hypotheses:

> H5: Positive non-firm communication has a positive relationship with corporate image.
>
> H6: Positive non-firm communication has a positive relationship with brand familiarity.
>
> H7: Brand familiarity mediates the relationship between non-firm communication and the corporate image.

We extended the Bravo et al. (2012) model by incorporating another two dimensions of antecedents that is corporate social responsibility (CSR) and security in the model. CSR has become useful for differentiating the image of banks and builds brand familiarity in the eyes of customers which ultimately creates a good image for them. CSR is an important factor determining bank image which was ignored earlier (Souiden et al., 2006; Castelo & Lima, 2006). All religions, in general, emphasize caring and Islam, in particular, teaches to help and care for needy persons. We believe that CSR activities are positively related with brand familiarity and corporate image. The following hypotheses are advanced.

> H8: CSR has a positive relationship with corporate image.
>
> H9: CSR has a positive relationship with brand familiarity.
>
> H10: Brand familiarity mediates the relationship between CSR and the corporate image.

The second factor that has been added in the model is the security based on the assumption that security may influence the impression of customers for selection of services and building the banks' image. In relation to internet-based services offered by conventional or Islamic banks, security concerns are of prime significance – this is not tangential to other businesses. However, in the case of Islamic banks, the appearance and dress code of human resources can play an additional role in building trust amongst the minds of the customers (Darus et al., 2014; Haniffa & Hudaib, 2007). Offering secure products and services that comply with Islamic principles is also fundamental in the case of Islamic banks (Amin et al., 2013). Therefore, the adequate provision of security may have a relationship with the brand familiarity and corporate image of the bank. Hence, we hypothesize the following:

H11: Security has a positive relationship with corporate image.

H12: Security has a positive relationship with corporate familiarity.

H13: Brand familiarity mediates the relationship between security and the corporate image.

Consequences of corporate image

Corporate image of banks can affect customer loyalty which is built through trust (Amin et al., 2013). It is seen as a process, in which customers filter the perceptions and experiences of various dimensions of the corporation (Hsiong-Ming, Ching-Chi, & Cou-Chen, 2011), where a negative evaluation of the bank can lead to a negative attitude towards the corporation and vice-versa. Thus, effective management of corporate image and identity is seen as a prerequisite of favorable attitude (Cornelissen & Elving, 2003; Ditcher, 1985). Businesses can leverage positive brand attitude through projection of a specific corporate image that builds a related image and personality of the business in the minds of the consumers (Faircloth, Capella, & Alford, 2001). When customers are clear about the corporate and have developed a positive attitude towards it, uncertainty towards using the products and services offered by the business are lowered and the intention to use is enhanced (Chang & Liu, 2009).

We adopt the view that the effect of corporate image on the behavior of consumers may be taken in terms of cognitive, affective, and conative sequence (Chiou, Droge, & Hanvanich, 2002). We believe that the corporate image will give rise to service brand attitude that is global affective response towards the brand and this attitude will be followed by conative response, such as intention to use the service. Chiou et al. (2002) proved that company trust which is influenced by service quality beliefs, positively enhances the behavior intention. This discussion leads to the following hypotheses.

H14: Corporate image has a positive relationship with brand attitude.

H15: Corporate image has a positive relationship with intention to use the banking services.

H16: Brand attitude has a positive relationship with intention to use the banking services.

H17: Brand attitude mediates the relationship between the corporate image and intention to use the banking services.

METHODOLOGY

Research instrument and data collection

The use of structured, self-administered questionnaire is popular in eliciting responses from respondents spread over different locations, and these have been used in the examination of brand attitude and intention to use services, as well as for other variables under study (e.g. Bryman & Bell, 2015; Lafferty & Goldsmith, 2005; Ruth & Simonin, 2003; Saunders, Lewis, & Thornhill, 2015).

In the same line, primary data for this study was collected through self-administered questionnaire. 400 customers were selected (200 each in conventional and Islamic banks) from four cities of Pakistan, including Multan, Lahore, Karachi, and Islamabad (100 from each city from different branches). This data collection was made during May-September 2016. Using systematic sampling technique, customers of banks were sent printed copies of the questionnaire in pre-paid return envelopes. These questionnaires were filled out by bank customers of different professional backgrounds, for example jobholders, businessmen, and others.

Systematic sampling technique was used such that every 6th customer who visited a specific branch of a specific type of bank (Islamic or conventional) was contacted for the study. 320 usable questionnaires were returned with 80 percent response rate.

The data profile of these respondents is as follows: 62 percent, 23 percent, and 15 percent of the respondents belong to age groups 20-40, 40-50, and above 50 years respectively. 66 percent respondents are males. 71 percent respondents are jobholders and 29 percent are businessmen. 56 percent, 28 percent, and 16 percent of the sample consist of those with undergraduate, graduate, and informal education respectively.

The questionnaire included measures of all the variables which have been discussed above in the literature. Exhibit 2 shows the adapted scales and respective sources. It consists of Likert-type scale for corporate social responsibility, firm communication, brand familiarity, non-firm communication, security, corporate image, brand attitude, and intention to use the banking services. The Likert-type items were anchored at 1 = strongly disagree; 2= disagree; 3= somewhat disagree; 4= neutral; 5=somewhat agree; 6= agree; and 7= strongly agree. In addition to the items for variables, questions were also asked regarding demographics, such as age group, gender, location, bank type, and profession. The survey instrument was pre-tested to ensure its clarity and comprehensibility to the respondents.

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Exhibit 2. **Sources of scales for variables in the survey instrument**

Variable	Scale
1. Corporate Social Responsibility	Adapted from Lichtenstein, Drumwright, and Braig (2004)
3. Brand Familiarity	Adapted from Dawar (1996)
4. Non-Firm Communication	Adapted from Villarejo-Ramos and Sánchez-Franco (2005); Bambauer-Sachse and Mangold (2011)
5. Security	Adapted from Flavián, Torres, and Guinalíu (2004) and Ming-Chi Lee (2008)
6. Corporate Image	Adapted from Evans (1979); LeBlanc and Nguyen (1996); O'Cass and Grace (2004)
7. Brand Attitude	Adapted from Ruth and Simonin (2003); Lafferty and Goldsmith (2005)
8. Intention to Use	Adapted from O'Cass and Grace (2003); Lafferty (2007) and Shukla (2010)

RESULTS

Factor analysis

The quantitative data collected in this study was analyzed by Statistical Process for Social Science (SPSS) software version 16 & IBM AMOS Version 19. As the first step, we conducted principal components factor analysis with varimax rotation on the initial items, using a factor weight of 0.50 as the minimum cut-off value, discarding variables having values below it. Cronbach's alpha coefficient was used to test reliability; all items of the instrument at Likert scale have reliability of 96.3 % which is considered satisfactory in this field (Nunnally & Bernstein, 1994).

Empirical findings support the conceptual framework which extracted five independent constructs of the antecedents of corporate image of Islamic and conventional banks on the corporate brand image. The five key independent variables are found to have positive and significant effect on corporate image, as validated through factor analysis.

For the first construct that is corporate social responsibility, the value of Cronbach's alpha coefficient is 0.881 which is considered reliable enough to examine the construct. There were seven items in the initial questionnaire. In the Confirmatory Factor Analysis (CFA), four items are left which includes bank's charitable contributions to business activities, its ethical way of doing business, its support for good causes, and its environmental friendly policies and objectives. These items were found to be important to make the firm socially responsible. Literature and factor analysis also validates the importance of these items. This construct has Cronbach's alpha coefficient value of 0.881.

Second construct is firm communication which consists of four items. These items are used to measure the impact of the firm's communication on corporate image, as well as on brand familiarity by getting information about the extent of advertising for the bank, whether people like advertising or not, whether these advertising campaigns are conducted frequently or not, and the advertising in comparison to competitor banks. These items were found to be important in deciding the level of firm communication inside the organization. Literature and the factor analysis also validates the importance of these items. This construct has Cronbach's alpha coefficient value of 0.803.

Third construct consists of brand familiarity, which has five items. Literature suggests that these are the possible ways known about a brand to be familiar in public, including by getting information about the recognition level, purchase frequency, having the information, knowledge, and the level of experience about the bank. These items are found to be important in evaluating the familiarity for the specific bank. Literature and factor analysis also validates the importance of these items. This construct has Cronbach's alpha coefficient value of 0.845.

Fourth construct is non-firm communication, which consists of four items. These items are used to measure the impact of non-firm's communication on corporate image, as well as on brand familiarity by getting information about the media speaking highly for the bank or not, media speaking in comparison to its competitive banks, what family or acquaintances think about the bank, whether the customers consult those customers who have good experience with the bank or not, and lastly reading online reviews to know customers' impressions about the bank. These items are found to be important in deciding the role of non-firm communication for the bank's image. The literature and the factor analysis also validates the importance of these items. This construct has Cronbach's alpha coefficient value of 0.809.

The fifth and final independent construct consists of security, which has three items. Literature suggests that the possible ways to know about the security of the bank service in transactions, deposits, and data are as follows: would customers feel safe and secure in providing personal privacy information to the bank or not, whether bank insures fraud or if hackers attack, would the customer feel a potential loss of status or not. Another aspect of security would be when customer starts using online banking and something goes wrong with online transactions, then would their family and friends think less of them or not. These items are found to be important in evaluating the security of the specific bank. Literature and factor analysis also validates the importance of these items. This construct has Cronbach's alpha coefficient value of 0.890. CFA was also applied, and the above constructs extracted in exploratory factor analysis were confirmed with satisfactory parameters of the model. The results of CFA are depicted in fig. 2 and fig. 3. The items are more or less similar for conventional and Islamic banks with different loads.

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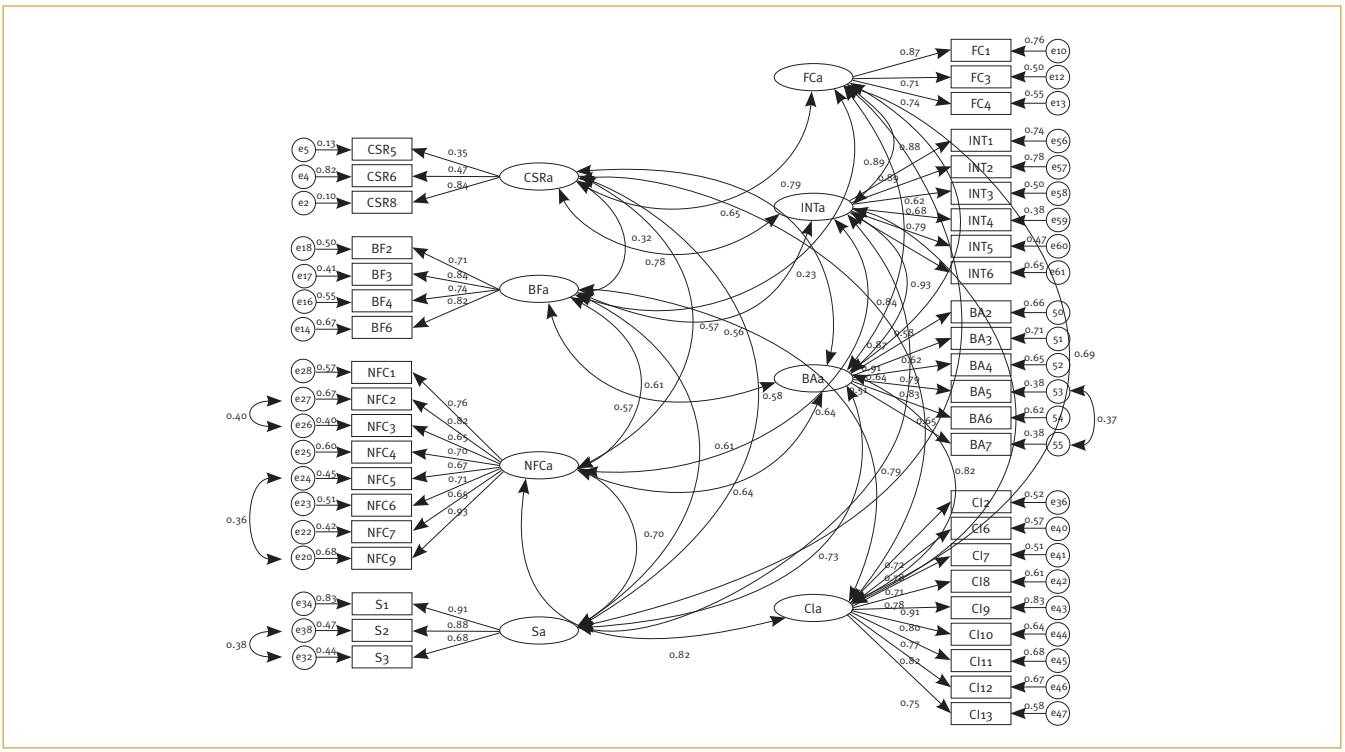
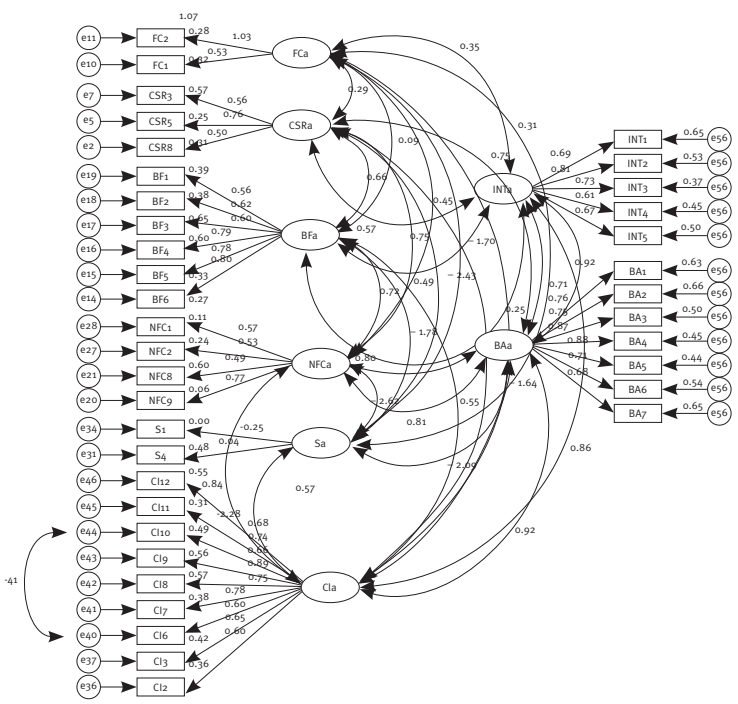
Figure 2. Confirmatory factor analysis for conventional banks



Notes: RMSEA = 0.043; NFIA = 0.947; CFI = 0.963; IFI = 0.965; NNFI = 0.961

Figure 3. Confirmatory factor analysis for Islamic banks



Notes: RMSEA = 0.038; NFIA = 0.932; CFI = 0.982; IFI = 0.947; NNFI = 0.972

The results of validity tests are given in Table 1. The results of λ coefficients for all the observed variables of all dimensions used in this study were significant (t>1.96) with standard loadings and R^2 coefficients greater than 0.50 confirming the convergent validity. Moreover, all the constructs exceed the level of 0.60 for composite reliability and 0.50 level of variance extracted which prove the internal consistency of the scale. The criterion and discriminant validity were also satisfactorily shown by all the constructs.

Table 1. **Indices of measurement model**

Constructs	Conventional banking		Islamic banking	
	CR	Extracted variance	CR	Extracted variance
1. Corporate Social Responsibility (CSR)	0.798	0.746	0.812	0.781
2. Firm Communication (FCM)	0.925	0.841	0.842	0.712
3. Brand Familiarity (BF)	0.816	0.782	0.911	0.815
4. Non-Firm Communication (NFCM)	0.823	0.755	0.921	0.823
5. Security (SEC)	0.713	0.682	0.725	0.692
6. Brand attitude	0.818	0.718	0.824	0.726
7. Intention to use	0.912	0.841	0.922	0.866

Goodness of fit test is provided at the bottom of fig 2 and fig 3 for conventional and Islamic banks respectively. The indices values for RMSEA, NFIA, CFI, IFI, and NNFI for both the banks have acceptable values (Hair, Anderson, Tatham, & Black, 1998; Kline, 2005).

Regression analysis

In Structural Equation Modeling (SEM), linear regression helps to examine the relationship of independent variables with the dependent variables. Linear regression analysis is conducted to examine the relationship between all variables which are interdependent to analyze the significance of relationship between the variables. Significance level is 0.05 or below in regression analysis. The results of the regression analysis with SEM in IBM AMOS software are shown for conventional and Islamic banks below.

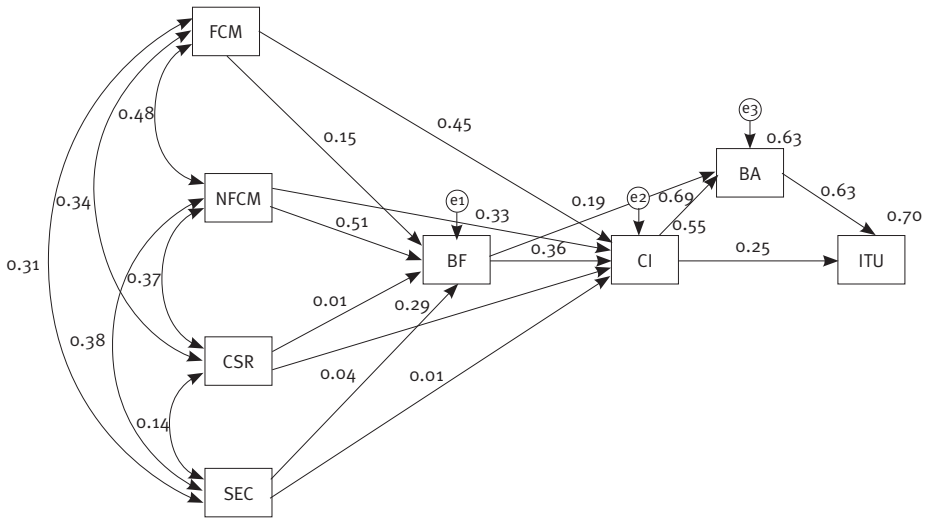
Conventional banks

The direct estimates and indirect estimates of various dimensions on other dimensions and their p-values for the conventional banks are given in Table 2 and Figure 4. The results will be discussed in the results and discussion section.

Table 2. **Regression estimates of different dimensions of corporate image (Conventional banks)**

		Relation		Direct		Indirect		Note
				Estimate	P-Value	Estimate	P-Value	
CI	<---	BF	H1	0.364	0.008			Supported
CI	<---	FCM	H2	0.451	0.019	0.054	0.016	Supported
BF	<---	FCM	H3	0.149	0.022			Supported
CI	<---	NFCM	H5	-0.023	0.633	0.187	0.005	Not supported
BF	<---	NFCM	H6	0.514	0.013			Supported
CI	<---	CSR	H8	0.291	0.012	0.003	0.889	Supported
BF	<---	CSR	H9	0.007	0.889			Not supported
CI	<---	SEC	H11	0.010	0.782	0.013	0.581	Not supported
BF	<---	SEC	H12	0.036	0.599			Not supported
BA	<---	CI	H14	0.693	0.039			Supported
ITU	<---	CI	H15	0.246	0.009	0.436	0.012	Supported
ITU	<---	BA	H16	0.628	0.009			Supported

Figure 4. **Estimates of consequences of corporate image (Conventional banks)**



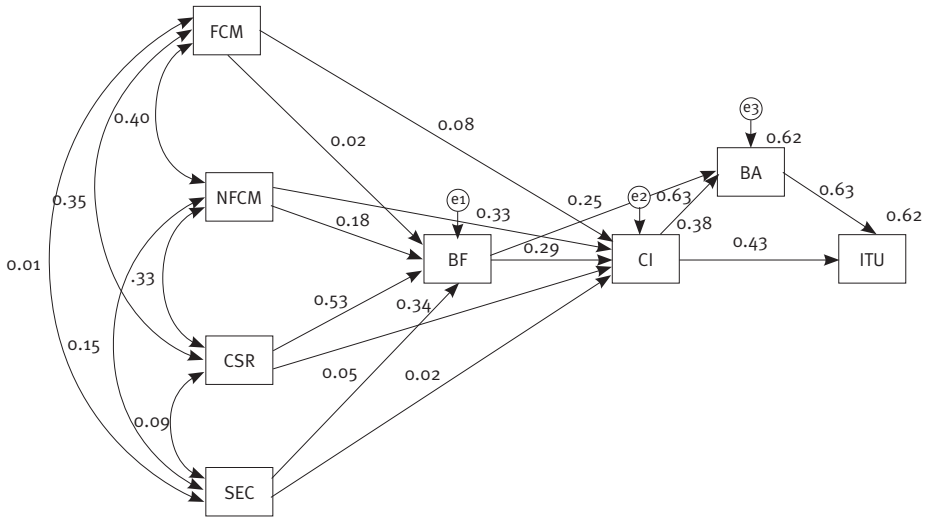
Islamic banks

The direct estimates and indirect estimates of various dimensions on other dimensions and their p-values for the Islamic banks are given in Table 3 and Figure. 5. The results will be discussed in the results and discussion section.

Table 3. **Regression estimates for different dimensions of corporate image (Islamic banks)**

		Relation		Direct		Indirect		Note
				Estimate	P-Value	Estimate	P-Value	
CI	<---	BF	H1	0.294	0.009			Supported
CI	<---	FCM	H2	-0.077	0.293	-0.006	0.746	Not supported
BF	<---	FCM	H3	-0.019	0.766			Not supported
CI	<---	NFCM	H5	0.195	0.032	0.054	0.055	Supported
BF	<---	NFCM	H6	0.183	0.048			Supported
CI	<---	CSR	H8	0.311	0.013	0.157	0.005	Supported
BF	<---	CSR	H9	0.533	0.010			Supported
CI	<---	SEC	H11	0.017	0.759	0.017	0.372	Not supported
BF	<---	SEC	H12	0.057	0.386			Not supported
BA	<---	CI	H14	0.627	0.011			Supported
ITU	<---	CI	H15	0.427	0.005	0.258	0.009	Supported
ITU	<---	BA	H16	0.412	0.019			Supported

Figure 5. **Estimates of Consequences of Corporate Image (Islamic Banks)**



Model Fit

Structural equation modeling (SEM) is being used in this research to test the proposed conceptual framework. Goodness-of-fit test was conducted with different values. As a whole, the indicators lie in the acceptable range established by Hair et al. (1998) and Kline (2005) as shown in Table 4 below for both types of banks.

Table 4. **Goodness of Fit Test**

Fitness index	Required value	Conventional results	Islamic results
Chi-Square P-value	›0.05	0.046	0.055
CMIN/DF	2.00-5.00	2.404	5.087
GFI	›0.90	0.964	0.929
AGFI	›0.90	0.964	0.909
RMSEA	‹0.08	0.084	0.075
RMR	‹0.08	0.065	0.076
IFI	›0.90	0.979	0.917
NFI	›0.90	0.965	0.902
CFI	›0.90	0.979	0.914
NNFI/TLI	›0.90	0.936	0.918

DISCUSSION

The results of regression analysis for conventional banks are listed in Table 2. The firm communication is significantly related to the corporate image (p=0.019) and moderately related to brand familiarity (p=0.022) whereas brand familiarity has significant effect on corporate image (p=0.008). The indirect effect of firm communication is also significant. This result shows that brand familiarity plays the role of partial mediator between firm communication and corporate image. This result is in line with a prior study of Bravo et al. (2012). The security has no effect on corporate image and brand familiarity. CSR has significant effect on corporate image (p=0.012) but no effect on brand familiarity (p=0.889); CSR has only direct effect on corporate image and brand familiarity has no role of mediator. The non-firm communication has no effect on corporate image (p=0.633) whereas it affects brand familiarity (p=0.013) and the indirect effect of non-firm communication through the mediator, brand familiarity, is significant. The corporate image very strongly affects the intention to use banking services. (p=0.009) but moderately influences the brand attitude (p=0.039). The brand attitude significantly affects the intention to use banking services (p=0.009). This study reveals that non-firm communication and security does not have a direct effect on corporate image. However, the non-firm communication is positively related to brand familiarity and has an indirect effect on corporate image. Security has no indirect effect, even on corporate image, as it has no

relationship with brand familiarity. The variable of security, which had been introduced to the model, has no role to play for building of brand familiarity or corporate image. Remaining variables, including brand familiarity, CSR, and firm communication are found important for directly affecting the corporate image, which in turn directly affects brand attitude and intention to use banking services.

The results of regression for Islamic banks are listed in Table 3. The firm communication is not related to corporate image (p=0.293) and brand familiarity (p=0.766). But brand familiarity has significant effect on corporate image (p=0.009). Security has no effect on corporate image (p=0.759) and brand familiarity (p=0.386). CSR has significant effect on corporate image (p=0.013) and on brand familiarity (p=0.010) and the indirect effect of CSR through the mediator, brand familiarity, is also significant. This result shows that brand familiarity is playing a role of partial mediator between CSR and corporate image. These results of CSR positively influencing, directly or indirectly, corporate image support the earlier results of Ailawadi, Luan, Neslin, and Taylor (2011) and Lindgreen and Swaen (2010) who said that if consumers see a company as socially responsible then their attitude towards company's products become positive and their intention for repeated purchase increases.

Non-firm communication has an effect on corporate image (p=0.032) and it affects brand familiarity moderately (p=0.048). The corporate image very strongly affects the intention to use banking services (p=0.007) and brand attitude (p=0.011). The brand attitude significantly affects the intention to use banking services. (p=0.019).

As far as Islamic banks are concerned, our study found that firm communication is not in line with the prior study of Bravo et al. (2012). Security has no effect on brand familiarity and corporate image directly and also there is no indirect effect of this factor on corporate image. Conversely, brand familiarity and CSR highly affect corporate image. We also observed that corporate social responsibility has a significant effect on corporate image through brand familiarity. Non-firm communication is moderately related to brand familiarity, as well as corporate image. This factor also indirectly influences corporate image through brand familiarity. Corporate image had significant impact on brand attitude and intention to use the banking services. Brand attitude plays the role as the partial mediator between corporate image and intention to use banking services. Brand familiarity does have a positive relationship with corporate image as it is influenced by non-firm communication. Consumers in Pakistan are not conscious about the security issue of banking. Possible reasons could be that people do not heavily use online and internet banking facilities as yet in Pakistan. Also, the central bank has a very strong control over the banking industry and customers have a strong trust in this control.

It is, however, encouraging to see that corporate image creates positive brand attitude and more importantly intention for use of services of banks. Therefore, investment in the creation of positive non- firm communication is appreciated, based on the belief that Islamic banking is truly meeting the requirements of Shariah. This would result in creating strong intention to use banking services. Banking customers are also gaining awareness and are more conscious about the societal obligations of organizations, as we found that CSR does seem to build the corporate image.

As expected, the results of this study confirm the cognitive-affective-conative behavior model (Chiou et al., 2002) for the determinants of brand familiarity and corporate image, as well as corporate image, brand attitude, and intention to use services.

Managerial implications

The study aimed to find out the antecedents and consequences of corporate image of banking sector in Pakistan, as well as to assess its mediating role and to make a comparison in two sectors of the banking industry: conventional and Islamic banks. With the help of a conceptual framework, this study demonstrates how efforts made towards better corporate image benefits banks in the form of better brand attitude and theory to use banking services. It also shows how the benefits of better bank image can be leveraged to increase outcome of banks in the form of success of banks (in terms of loyalty and development of brand attitude). The study reveals that better firm communication leads to better brand familiarity that ultimately results in a better corporate image in case of conventional banks. Investment in CSR activities directly builds the corporate image. Non-firm communication and CSR build the brand familiarity of Islamic banks. This ultimately enhances the corporate image of the Islamic banking industry in the country. The study shows that compared to other items, security does not make significant difference in improving the bank image, either of Islamic banks or conventional banks. In particular, customers seem to prefer Islamic banks over conventional banks based on brand familiarity of Islamic banks, the non-firm communication (word-of-mouth) and investment in CSR activities. On the other hand, the customers of conventional banks prefer their services are based on firm communication over the Islamic banks.

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Limitation and Future research

This comparative study was aimed at consumers in Pakistan. It is necessary to check this model for different cultures and regions. We have extended the model of Bravo et al. (2012) with the additional two dimensions of corporate social responsibility and security. This model can further be extended to include other firm and non-firm communication sources, such as employees, publicity, and others.

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PERSPECTIVES

Invited article
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AUTHORS, REVIEWERS, AND EDITORS: THE TRIPOD OF THE REVIEWING PROCESS OF SCIENTIFIC ARTICLES

INTRODUCTION

When interacting with people who are not close to me, or who, although close to me, are not involved in the academic environment, I often hear the following question: "Don't you work? You just teach, don't you?" The years have taught me to respond carefully to this apparently confronting question (I say apparently because no one is obliged to know the details of another's profession). My replies tend not to be pleasant experiences. Either making myself understood is difficult, or, the unpleasantness emerges from my interlocutor's expression of annoyance in hearing that much of the time when I am not giving classes is spent with activities of little glamour and difficult mental abstraction.

As a rule, the conversation ends there. However, from time to time, it continues. To these interlocutors, I define my duties as typically giving undergraduate to doctoral classes, grading tests (help!), participating in thesis defense, workshops, and evaluation commissions, researching, writing articles for periodicals that few people read, and writing articles for the press that a few more people read. I also advise students, do administrative work (I can hear a voice in the background screaming: Boring...), provide services to the community, and attend to the specialized press when I am asked to. Last, but not the least, I mention that I also review scientific articles that can affect the fate of professional colleagues in Brazil and abroad. .

I believe that academics who read the above report have already gone through this situation. I also believe that a significant number of colleagues subject to the same tasks described above feel chills when they see requests for reviewing articles in their mailboxes. To decline or to accept reviewing an article: that is the question. We can refuse if the article does not belong to our area of knowledge or if we are too busy and cannot meet the deadline with the necessary quality. In such cases, in respect to authors and editors, it is better to communicate promptly and not accept the task. Whenever possible, however, we should accept it, especially if we frequently publish in the outlet that invited us, to help keeping the wheels in motion, making our knowledge available to the community that, whether we like it or not, we are part of.

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Good results from interactions of the triumvirate of authors, reviewers and editors depend on a non-trivial alignment of interests of the parties. Like a three-foot table, isolated problems at one end compromise the balance of the whole. However, the search for a harmonious arrangement requires an understanding of the expectations of each part of the tripod so that one can explore the existing complementarities and ensure that what is published is rigorous and relevant, generating value for the scientific community and society. In this sense, "salami research," which is one that seeks to slice the findings into several by-products to maximize the number of publications (Diniz, 2018), is not in line with this set of values. It must be tackled by reviewers and editors (*gatekeepers*), at least to maintain the credibility of the community.

Next, I will discuss the three perspectives and try to reconcile their similarities, somewhat regarding "focus on what unites us, not on what separates us." I hope this helps in viewing possible ways to overcome the challenges that are presented in the process of reviewing scientific articles in the area of administration in Brazil. At times, I will resort to the use of the first person plural, because I act as author, reviewer, and editor for scientific journals.

THE AUTHORS IN THE EDITORIAL PROCESS

We strive to shape an attractive academic contribution, capable of informing some aspect not yet explored in the literature, of shedding light on certain consolidated concepts with different theoretical or methodological perspectives or, even, potentially clarifying existing tensions between conflicting understandings. However, despite this, our goal is to see our articles published, preferably in vehicles that are read and quoted by our peers. Although we know that our profession involves the judgment of our work by peers who are specialized in the subject, we are often enraged to receive opinions that are not to our liking, either negative responses or requests for reviews addressing points that we understand to be little relevant.

Much of our disappointment comes from the fact that we attribute to ourselves a value greater than we possess, as explained by the theory of social comparison (Festinger, 1954). Part of this is also because of our inability, perhaps from immaturity, to understand the dynamics of the editorial process and to imagine ourselves as editors. However, editors cannot always choose ideal reviewers, and reviewers are people like us, with limited knowledge about certain subjects and who make some mistakes as well. Among these failures is the incessant search for perfection in others without observing our particular limitations. In fact, we usually observe the speck in the eye of our interlocutors without noticing the beam in our own. If we often act this way, why should we expect different behavior from others? Likewise, authors who are most critical of the delay in receiving responses to their articles are often the ones who are unresponsive to the calls of editors, often simply ignoring them.

Instead of transferring blame, to deal with the frustrations inherent in the profession, another exercise is recommended: self-criticism. It may be prudent to ask ourselves if we are genuinely striving to identify a relevant research problem. Have we carried out a comprehensive sweep of the state of the art of the literature; if our theory, in the case of deductive research, offers testable hypotheses that represent an advance, not just a summary of obvious and expected phenomena? Are our data and methods sufficient and adequate to ensure some validity in our findings? Authors who are capable of this type of self-reflection in producing articles will have a better chance of surviving the uncertain process of peer review in the outlets of their choice. Unfair and unhelpful opinions are frequent and will not cease, but they are a result of the maturing process of the academy, which today is certainly much better than ten or 20 years ago.

In this way, the review process is part of our growth, because even though we do not have our supposed contribution accepted, the opportunity for learning provided by peer dialogue tends to be beneficial to all involved, as long as there is a true commitment to generate effectively relevant scientific outputs. Authors who are not aware that producing for its own sake is not enough, and who write merely to generate outputs instead of meaningful contributions (Cabral & Lazzarini, 2011), do not deserve the selfless effort of editors and reviewers interested in improving the levels of what is published.

REVIEWERS SEEN IN PERSPECTIVE

The peer review process, while widely used and accepted, is not without criticism. However, peer review, like democracy, seems to be the worst system except for all the others (Miller, 2006). Amid this imperfect process, reviewers have immense power over the development of the fields of knowledge and their own vitality (Bedeian, 2003). This is especially so when editors act as mere intermediaries and outsource editorial decisions (in theory their responsibility) to reviewers. Such a distortion, by the way, is relatively common in many of the journals of the administration field in Brazil.

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Unlike authors, reviewers can have multiple motivations when reviewing scientific articles, besides a selfless contribution to the progress of science. Reviewers at the beginning of their careers or starting in a new area, on the one hand, can be extremely careful in their opinions, constructive for the authors and, at the same time, very useful in the editorial decision process. On the other hand, as well as satisfaction for a duty fulfilled, they leverage their reputational capital to editors. A new broom sweeps clean. The downside is that, due to lack of experience, excessive zeal or too much willingness to show service, this type of reviewer can be more rigorous than necessary and demand minor modifications of little relevance or even recommend rejection of articles that could evolve during successive interactions of the reviewing process. Editors who compare the reviewers' reports and the manuscripts submitted by the authors are essential to avoid side effects caused by the asymmetry between reviewers and authors.

Another type of reviewer can be quite unpleasant to authors and potentially harmful to the editorial process: the resentful reviewer, who, after being treated in a harsh and sometimes disloyal manner by other reviewers, seeks to revenge their past suffering in the work of the unfortunate author who had the privilege of having her/him as an evaluator. This situation is similar to the middle brother who, when taking a beating by his older brother, beats the younger one, who then beats the dog. There is an element of sadism, it is true, which cannot be ignored. Reviewers who take revenge on authors for not being cited or because the articles they evaluate put their previous work in perspective can also provide a nasty experience for authors. Similarly, authors suffer when reviewers can identify the authorship of the work and, to prevent the success of detractors or competitors (real or imaginary), place additional obstacles before them. In such cases, editors must arbitrate for the good of the editorial process and the sanity of all those involved. In any case, authors need to be able to deal with this process, avoiding useless animosity with reviewers and, above all, making the necessary efforts to include what is pertinent and improve the article.

Being aware of reviewers is essential to the process of a constructive review. Before all else, it is good to remember that reviewers are also authors and should understand how frustrating it is to receive an unconstructive opinion after years of work. More experienced reviewers are not subject to the same incentive structure as younger researchers, tend to be involved in other functions, and more frequently decline to review articles in periodicals (Northcraft, 2001). Authors, editors, and academy staff all suffer from this refusal and lose the benefit of accumulated knowledge.

EDITORS: GUARDIANS OF THE EDITORIAL PROCESS

While still a doctoral student, I had the opportunity to attend a roundtable with periodical editors, at the 2003 ENANPAD in Atibaia, Brazil. At the time, the editors of the few "A" outlets in the management area exposed the prospects and hardships of the profession. It was the first time I saw the recurrent (and infamous) association of the editorial process and running the gauntlet in the midst of reviewers with stone clubs, pieces of wood with nails, and other instruments of torture. Having an article approved would be a result of surviving the martyrdoms experienced during the editorial process. In the eyes of those who were doing a doctoral thesis on the prison system and had already read Foucault's *Discipline and Punish*, the figure made some sense and was emblematic. I also remember the words of the then editor of the RAE, Thomaz Wood, and his observation about the role of the editor: "One of the most effective ways to accumulate enemies." Perhaps the words were not exactly those, but after working with the editor of O&S and acting as a special issue editor in the Strategic *Management Journal*, I share the diagnosis suggested by Thomaz, delivered on the occasion as a joke, of course.

In fact, where the number of submissions is much greater than can be accommodated in a publication, as a matter of pure arithmetic, editors of scientific periodicals, from the authors' point of view, make more negative decisions than positive. Considering that negative decisions tend to affect the self-esteem and career of their peers, the unpopularity of editors in academic circles is not surprising.

The decision-making process of periodical editors in the administration area in Brazil gains additional complexity, depending on the scope of the field and its epistemological, theoretical, and methodological diversity. No matter those good national journals have established supporting structures based on associated editors and selfless members of their editorial boards to assist in the process of desk-review and the selection of reviewers, the process is still far from controversial. Unlike foreign peers, who can usually count on a reduction in teaching loads to perform editorial activities, national newspaper editors, as a rule, take on such tasks without any compensation. In other words, editors who work hard in Brazil may even generate positive externalities but tend to internalize negatives inherent in the activity, whether in the form of new enemies, neglecting their research agenda, reducing the quality of their classes or, even, in reducing time dedicated to loved ones.

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The difficulty in selecting good reviewers, because they are hard to identify or are unavailable, or who, receive feedback in their articles as authors but hypocritically refuse to act as reviewers, makes it not uncommon for articles submitted to journals (national and international) to not be evaluated by individuals best qualified to judge them. These facts contribute to consolidating the impression that the fate of an article is determined more by the result of the allocation of reviewers than by its intrinsic quality and its potential contribution to scientific progress (Bedeian, 2003).

Editing a reputed scientific journal is about managing scarce resources. To use a concept from the strategy area (Barney, 1991), good and available reviewers are valuable, rare, and difficult to substitute resources. Protecting such sources of sustainable competitive advantage for a scientific journal is the job of the editor. Therefore, editors must promote a rigorous *desk-review* process, avoiding sending to good and selfless reviewers articles with intrinsic weaknesses that will have little chance of surviving the editorial process or, even, articles with little fit to the reviewer's knowledge. In both cases, the time spent (or wasted, if you prefer) of the reviewer with such articles, in addition to being an inefficient allocation of resources, will potentially imply the unavailability of that reviewer for other articles. Considering that one reviewer makes one to two revisions per year, the number of articles submitted to high-end journals exceeds the publication capacity by up to ten times and that, as mentioned, good reviewers do not arise by spontaneous generation, it is essential to avoid unnecessary burdens on this scarce resource.

Editors must be attentive to the evolution of the field and the new generations of better-trained researchers *make not of that*. Good doctoral and recent doctoral students updated on the state of the art of the literature, with mastery of the best research methods and an eagerness to be involved and gain legitimacy in academic circles (in addition to being great choices to compose the team of reviewers of the articles), are essential for the oxygenation and advancement of the field. It is the duty of the more experienced to train novices in necessary functions, and to open the way for new generations so we can continuously improve the process of reviewing scientific articles; as Chico Buarque would say in the song Paratodos: "Euhoe, youth in sight."

In addition to protecting reviewers from bad or inappropriate work for their stature, editors should use their gatekeeper's power to protect authors from inappropriate (or cranky) reviewers. An unfair, badly elaborated, or impertinent review discourages authors and harms the reputation of the editor and his journal. The challenge for journal editors in the management area consists in promoting efforts to change existing cultural standards. This way, editors are expected to obtain a greater number of informative and quick opinions that are capable of advising them in decision-making and guiding authors in the process of improving articles.

CONSOLIDATING THE VISIONS AND GOING AHEAD

This short and, to some extent, cathartic reflection does not exhaust all problems of reviewing scientific articles in the area of management or of pointing to ready-made formulas to solve these problems. The complexity of the theme and limits of space do not allow something definitive, of course. From what has been discussed, however, it is clear that the challenges inherent in the review process can be addressed on various fronts.

Beginning with the premise that without effort, there is no result, authors can observe the style of reference publications in their area, find relevant gaps that can be filled using solid theoretical constructions and rigorous investigation methods where the research is of an applied nature. Reviewers, who are the mainspring of the revision process, provide great services to the scientific community when they dedicate themselves to the task of scrutinizing the work of their peers with due intellectual honesty, and contemplating rigidity in the criteria with kindness and ability to guide authors in improving their works. To editors—who effectively read all material sent to their journal, who create formal and informal advisory networks for decision-making, and who protect their scarce resources—good reviewers, are of great value. They ensure that the evaluation process by peers in the area of management can evolve and generate benefits for the community. The constant exercise of putting oneself in the place of the others involved when working seems to be a good way forward.

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PERSPECTIVES

Invited article
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Translated version

IF PUBLISHING IS NECESSARY, SO IS REVIEWING!

FIRST WORDS

The subject of "reviewing articles" is a relevant part of the daily life of every researcher. However, my experience as an editor and reviewer for Brazilian and international journals indicates that the level of commitment of researchers, in general, is much less when they are reviewing as compared to when they are authoring an article. The prestige of being published in a leading journal is not the same as being an outstanding reviewer in the same journal. Such asymmetry is contradictory, since peer review is the primary system that gauges the quality of scientific output and is as important for the survival of a journal as the submission of articles. The quality of the reviewers and their reviews must be equal or higher than the published articles in order to ensure the system's credibility.

I aim to reflect on the challenges that arise in reviewing scientific articles on Administration in Brazil, as well as contribute some ideas to improve the training of reviewers. I utilize two aspects that I believe are important to carrying out the proposed objective. The first is to discuss the reviewer's role during the review of articles. The second is to reflect on the technical skills necessary to conduct a good review. In addition to these two points, I conclude with a reflection on how the current criteria for evaluating master's and doctoral programs, as well as the granting of research assistance in Brazil, have hindered the training of reviewers and devalued the importance of conducting reviews.

A BRIEF SUMMARY OF THE BRAZILIAN CONTEXT

In recent years, the field of Administration in Brazil has attempted to broaden its international scope as well as the impact of its scientific production. In a "tropicalized mimetic" process (i.e., a decontextualized copy), the Brazilian field of Administration has the practices from the countries of the North (particularly the United States and the United Kingdom) as the references of scientific excellence (Faria, 2011). The principal practice of scientific measurement adopted in these countries is the number of articles published in high impact journals. To publish articles in notable journals is the primary means of defining superior quality in knowledge production.

This situation has led to a significant increase in the number of journals in Brazil, as well as in Brazilian researchers seeking to publish articles. Consequently, there has been an expansion in the demand for people capable of reviewing all that scientific production. The article review process seeks to ensure the quality of published content through rigorous editorial processes (Chrisman, Sharma, & Chua, 2017). However, when there is a scarcity of reviewers due to their lack of availability or lack of knowledge in conducting a quality review, the editorial process is compromised in terms

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of the time it takes to revert to authors and regarding the quality of the published content.

The process of reviewing scientific articles is rather complex as it involves both behavioral and technical elements. In the Brazilian context, the method and technical aspects of evaluative reviewing need to be discussed and incorporated into the curricula of graduate programs in Administration with the same consideration currently provided to the production of scientific articles. The desire to "publish" is turning master's and doctoral programs into laboratories for article production, instead of educating superior master's and doctoral candidates. Thus, the objective or goal of a graduate course has become to generate final papers that can be transformed into "articles" (Bispo & Costa, 2016).

BEHAVIORAL ASPECTS OF THE ARTICLE REVIEW

It is common to conceptualize the review of scientific articles solely from a technical perspective on how to perform this task (Shigaki & Patrus, 2016). However, the basis for high-level reviews depends on the behavior of the reviewer. The principal components of appropriate behavior for a review are: a) an awareness of the importance of the evaluation process, and b) a constructive, developmental approach by the evaluator in relation to the authors of the evaluated text. Although it may seem obvious or banal, it is common for researchers not to realize that being available to review articles – in proportion to the number of articles that are produced – is of equal importance to writing and publishing articles.

In order to ensure equilibrium in the review system, a fundamental requirement is an awareness to be as willing to evaluate the writing of colleagues, as researchers are to write their own articles. It is important to remember that every submitted article requires at least two other individuals (not including the editors) to review it. Therefore, it is essential that each author who submits an article should be available to review at least two manuscripts by colleagues. The lack of willingness to review the necessary proportion of articles leads to an overloaded evaluation system. In times of "academic productivism" (Alcadipani, 2011; Faria, 2011; Rigo, 2017), it is common to find researchers with numerous published works who have few or even no reviews listed on their résumés. This attitude signals a level of egotism and lack of engagement with the field and with peers.

Another important aspect regarding awareness of the importance of the review process is compliance with the deadlines to complete reviews. In general, many researchers consider review activity to be secondary in their agendas. Hence, it is common for articles to take months to be evaluated, and authors do not receive the first response to their article until one or two years have elapsed. Deprioritizing the completion of reviews contributes to the tardiness of the editorial process. Reviews need to be given the same priority as article writing.

Regarding the importance of a constructive stance, it is necessary to emphasize that reviewing is a process wherein there should be no hierarchy between the person who evaluates and the person whose work is being evaluated. It is customary for someone who is reviewing an article one day to be authoring an article the next. Thus, evaluating articles that are assigned to us for review should be accorded the same cordiality and respect that we would expect from the reviewers of our own articles. It is not uncommon to get feedback that demonstrates arrogance or even disdain for the work under review as well as for its authors (Clair, 2015; Gondim, 2004; Rigo, 2017). A good reviewer and a good review always employ a cordial and constructive attitude. Reviewers who adopt this perspective, seek to help authors improve their work rather than only criticize them.

A constructive stance is always appropriate, regardless of the quality of the work under review. Even if a reviewer has been designated to review "the worst article in the world", the reviewer must remain respectful and seek to assist the author in developing his or her ideas. It is important to note that in the Brazilian publishing system, there are numerous people in training (students) who are pressured (in my view, erroneously) to publish. They are compelled to publish in order to obtain their diplomas (which is absurd). Student production of articles is included in assessments by the Brazilian government as a criterion of the "quality" of master's and doctoral courses (which is also illogical), leading professors to force their students to publish articles. In these cases, in addition to being cordial, the review process should be didactic and educational; in other words, it should not be traumatic for young authors. It is common to find senior researchers engaging in angry debates and harshly criticizing students' work in a tone that they would not use when debating with peers. Essentially, a good reviewer must recognize the author's level of maturity when reading the manuscript.

Another important point is that the reviewer must not outsource the task, especially to his or her students. Many reviewers, on the pretext of initiating their students into the world of article reviewing, delegate evaluation responsibility to their mentees who are still discovering the academic world. These reviewers argue that conducting an actual review is an excellent method to learn evaluating. They also claim that after a

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student reviews the text, the reviewer will "revise" the completed review. Any experienced editor can identify a review conducted by someone who does not understand the process well. This form of outsourcing to students compromises the quality of the review and demonstrates a lack of ethics on the part of the reviewer. A simple method to initiate students into reviewing is to first instruct them on how the process works and then ask them to revise texts that senior reviewers have already reviewed and submitted to journals.

TECHNICAL ASPECTS OF THE REVIEW OF ARTICLES

Most graduate programs on Administration in Brazil do not include the topic of reviewing articles in the curriculum. In general, it is a heuristic learning process wherein people are invited to review articles without any prior preparation. This causes reviewers to evaluate the text according to what they think is appropriate, which is undesirable as it results in fluctuating evaluation standards without any assurance that reviews will actually assist the authors in improving their work.

Despite the lack of a single model for conducting reviews of scientific articles, there are certain guidelines that should be adhered to in a good review (Clair, 2015; Gondim, 2004; Shigaki & Patrus, 2016). In my opinion, the most important aspects of a review are: a) to evaluate what the author has accomplished, not what the reviewer would have done; b) to focus on the text's contribution; c) to adopt a critical stance while offering constructive suggestions; d) to list actions in sequence; e) to refer the author to relevant sources in the literature; and f) to ask questions when unclear or doubtful about anything in the article.

The first key point in a review is to conduct the process while respecting the author's choices. That means reviewing the article by examining what the author has accomplished, not how the reviewer would have done the work. This point relates primarily to epistemological, theoretical, and methodological choices, as well as the author's style. Although the author's choices are not the reviewer's, it is the reviewer's duty to respect them and conduct the evaluation following the author's line of thought. This includes respecting the author's choices regarding the text's structure and its use of language (for example, the adoption of the first person singular tense to compose the manuscript). Thus, besides providing the opportunity to learn about new approaches, the reviewer maintains the author's autonomy and originality in the production of the text.

The second point is to focus on the contribution of the manuscript to the body of knowledge in that field. There are many reviewers who, rather than focu sing on the article's content, pay more attention to indicating grammatical and formatting inconsistencies. Although this should be done at some point in the review process, the most important aspect is to evaluate the actual contribution of the work to the field and whether, in that sense, the content is credible. Notice that I use the word "contribution" instead of "innovation." This word choice is to indicate that a scientific text can be relevant even without presenting an "innovation." A text can make an excellent "contribution" by focusing on practical or didactic issues or offering new interpretations about a particular subject, theory, or method.

The third point, about the importance of a critical-constructive stance, establishes the entire foundation of any review. The reviewer must articulate criticisms that he or she considers necessary, but they should always be accompanied by suggestions that guide the author to overcome weaknesses encountered in the text (Clair, 2015; Gondim, 2004). This attitude ensures that the author not only understands the criticism of the work but also which path to follow in order to improve the manuscript. It also facilitates the revision of the article by the authors as well as the editors, and indicates distinct ways to develop the work being evaluated.

The fourth aspect is to list actions in sequence by organizing the evaluative assessment into topics and a sequence of actions. Thus, the reviewer clarifies the weaknesses to the author, point by point. Simultaneously, the reviewer offers sequential suggestions for improving the text. This technique facilitates the author's understanding of exactly what is required, and makes it easier for the author to prepare a response letter to the editor during the review process.

The fifth point concerns referring the author to pertinent studies in the literature. Although it is not mandatory for a review, suggesting complementary reading to the author that relates to a particular point of criticism provides depth to the discussion and improves the author's understanding of the criticism that has been made. However, many evaluators take advantage of the opportunity to refer their own texts to the author, thus increasing the number of citations to their own work. While referring an author to the reviewer's own work is not prohibited, it should be undertaken only when the cited article significantly improves the author's work.

Finally, asking the author questions when the reviewer lacks knowledge or is in doubt is an excellent means of establishing a cordial dialogue and provides the author opportunities to explain certain topics more clearly. Even if the reviewer is an expert in

the field, such a position does not imply that he or she "owns the truth" or even possesses all knowledge on a certain topic. Asking questions significantly contributes to the author's ability to improve the explanations of concepts and ideas that may still be unclear in the current version of the text.

WHAT SHOULD TO BE DONE TO IMPROVE REVIEWS?

Appending the behavioral aspects of an article's development to the technical aspects, make the review of a scientific article a process of mutual learning for both reviewers and authors, thereby significantly facilitating the advancement of scientific knowledge. Rather than being merely a "publication," a scientific article should be instrumental in promoting new knowledge. In this final section of the text, I will present some suggestions on training new reviewers in doctoral programs in Administration. In addition, I will comment on the way researchers race to publish that directly impacts the article review system and other academic texts such as research projects.

Regarding the training of new reviewers, I argue that it is essential to include this topic in doctoral programs in Administration. This is not to suggest that a specific course should be created on reviewing articles, but rather that it should be included as a topic in courses that involve the subject. Creating workshops that address the review process through discussions and hands-on activities is an excellent method of introducing doctoral students to the world of article review.

One relevant observation is that good evaluators inevitably significantly improve their own skills as authors. This occurs through the exercise of seeking to understand the nuances of a good scientific article, as well as identifying means to improve an article. Moreover, understanding the behind-the-scenes editorial processes of journals broadens an individual's comprehension regarding the requirements for publishing an article successfully, especially in reputed journals. In addition, those who frequently evaluate articles, especially for renowned journals, obtain access to studies that are at the vanguard of research. The process also provides reviewers with opportunities for self-assessment of their own research and work.

In conclusion, I would like to discuss a final point that I believe is extremely important. Further dialogue is required on the degree to which the grading and evaluation systems in Brazilian graduate programs—under the responsibility of the Office for the Improvement of Higher Education Personnel (CAPES - *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*)—as well as the process for determining scholarships and research grants by the National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*), culminate in being complicit in questionable practices that lead to academic productivism.

This is evident when CAPES, in the evaluation processes of graduate programs, and CNPq, in its procedures to grant financial aid to researchers, adopt the number of published articles as a principal criterion for assessment. Such practices also discount the value of researchers' contributions through other activities to the teaching and research system as a whole. By exclusively focusing on the publication of articles, there are currently some researchers with more than one publication per month (I wonder how it is possible to write that much given all the daily activities that are demanded of researchers). The fundamental point in this discussion is the fact that individuals with questionable academic practices are being rewarded. The excessive number of articles published, as well as the number of authors in each article, and the position of authorship listed in texts raises questions. The exclusive focus on publications means some researchers do not contribute to article evaluation, or coordinate research projects, or other even other responsibilities at the expected degree of quantity and quality.

For instance, all the recent minutes of the Consulting Committee in the field of Administration and Accounting of the CNPq regarding the evaluation of researchers who received research grants, mentioned that there is always a designated contingent of projects that are not evaluated by researchers. In the minutes, the Committee repeatedly requested that the CNPq leadership decisively act on the matter. This example highlights the necessity of improving the rules for evaluating graduate programs and for awarding research grants in order to value the review process, especially regarding scientific article reviews.

Adopting a criterion that strikes a balance between the number of submissions and the number of publications by researchers in the field of Administration in Brazil is urgently necessary. Such action is essential for two reasons. First, to ensure the sustainability of the system in terms of submissions and evaluations by providing appropriate timeframes for authors to receive responses and quality feedback. Second, to ensure that resources invested in graduate programs as well as in journals and research aid, are transformed efficiently and effectively into productive knowledge. This should be knowledge that improves the quality of life of society as a whole, rather than merely becoming a videogame where the player with the most points wins.

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BOOK REVIEWS

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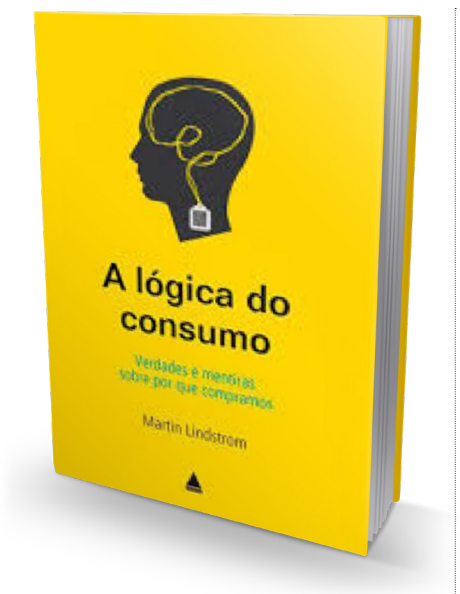
NEUROMARKETING: THE NEW CONSUMER SCIENCE

A LÓGICA DO CONSUMO: Verdades e mentiras sobre por que compramos (BUYOLOGY: Truth and lies about why we buy)

Martin Lindstrom. New York, USA: Doubleday, 2008. 241 p.



By

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Ubiquitous advertising in the postmodern society is beginning to be questioned in the corporate environment, since organizations are still using traditional marketing strategies to understand new consumption habits, and continue to advertise without innovation or creativity. Understanding such ideas, as well as the reasons for, and implications of consumer decisions, requires a thorough scientific analysis. Based on these traits, branding guru Martin Lindstrom conducted a worldwide study on the neuromarketing phenomenon, which he skillfully describes in "Buyology: Truths and Lies About Why We Buy."

In the first chapter, the author says that despite the investments made by governments in anti-smoking advertisements, the number of smokers and the statistics on tobacco-related diseases continue to grow, world over. Hence, the question is: "Why do people continue to smoke?" To find answers to this, Lindstrom conducted a worldwide survey with 32 smokers from several parts of the world. They answered questionnaires and interviews, and underwent functional Magnetic Resonance Imaging (fMRI). The study concluded that the warning signs on cigarettes did not discourage smoking, but activated the *nucleus accumbens* (the area of the brain called "the pleasure center"), encouraging smokers to consume more cigarettes. In other words, the cigarette pack warning pictures became excellent marketing tools for the tobacco industry.

The second chapter presents a striking feature in contemporary consumer behavior, that is, people's forgetfulness when it comes to TV commercials. According to Lindstrom, such a lack of attention is a result of the lack of creativity on part of advertisers. Consequently, another question is posed, which is, "How effective is merchandising?" To answer this question, the author recruited 400 people and presented them with a sequence of brands (e.g., Coca-Cola) that were advertised on a TV show and random brands that were not advertised on the show. Finally, it was found that the subjects remembered the famous brands more vividly, than they remembered the random ones. Thus, merchandising works when the brand has a "meaning" and/or role in the plot of a show.

In the third chapter, the author discusses mirror neurons, which are activated when an action is being carried out by one person and observed by another. To prove this concept, the author describes a study carried out with individuals who

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read descriptions of actions, such as "biting into a peach" and "picking up a pen." Subsequently, when they watched videos of people carrying out such actions, the cortical regions of the brain of the respondents were activated.

In the fourth chapter, the author examines the role of subliminal advertising, which, since the 1950s, was popular as an "ambiguous and complex" technique, present in drawings, songs, films, etc. To prove the efficacy of subliminal advertising, the author recruited smokers to view subliminal images of the old American West (cowboys, deserts). After that, the smokers viewed explicit images of cigarette advertising (Marlboro and Camel logos). Finally, it was found that, by comparing brain reactions, *the nucleus accumbens* was more activated when smokers saw the subliminal images than when they saw the explicit brand images. This means that subliminal advertising works.

The fifth chapter addresses the "transcendent and liquid" aspect of postmodernity, in which the uncertainties and changes that permeate society are constant. According to Lindstrom, people use rituals, superstitions and beliefs to guide their lives. The author argues that the cultural aspect is inherent in popular superstition. For example, the number of car and aircraft accidents increases in some countries due to the fear brought about by the hype around Friday the 13th. This scenario emphasizes the "strength" of popular beliefs. In conclusion, the author emphasizes that the food rituals performed by brands and products "stick" much more (e.g., dipping the Oreo cookie in milk before eating it).

The sixth chapter explains the presence of religious elements in brands and products. Initially, it presents the marketing of land and water bottles, which, in addition to being profitable, adds values of sacredness, purity, and blessing by companies and consumers. In this chapter, Lindstrom performs an experiment with 65 men who were exposed to images of strong brands and religious images (e.g., Coca-Cola bottles and the Pope) in sequence. The study concluded that people's emotions and/or reactions to strong brands are like emotions in the face of religious symbols, that is, people unconsciously create connections (respect, obedience, and order).

In the seventh chapter, Lindstrom conceptualizes the so-called somatic markers, which are brain shortcuts that people form through experiments, emotions, and reflections, to generate "sensible" decisions. According to the author, the markers create associations for their entire lives in people's brains. As a result, advertisers use fear and memory to sell their products.

In the eighth chapter, the author criticizes visual advertising. In his opinion, it is mostly an ineffective method. Nevertheless, if it is used together with other senses, it may bring greater profits for companies. In a survey on brands and senses, Lindstrom exposed 20 individuals to images (including those of brands) and known fragrances, presenting them separately, first, and at the same time, later. After that, the study identified that images and fragrances become attractive when combined.

In the penultimate chapter, the author determines that modern organizations are unable to predict and identify how consumers will react to their products, such as video games, soft drinks, motorcycles, etc. This phenomenon is due to uncertainties in consumer behavior, as well as imprecise market research. As for the future, the author predicts that neuromarketing will be the main organizational tool, while traditional research methods will play secondary roles. Owing to its popularity, it will become affordable.

In the last chapter, on the centennial ubiquity of sex in advertising, Lindstrom questions its effectiveness, presenting research attesting that the sexual content "steals" the attention of the ad's message. Thus, the answer to the permanence of sex in advertising is in the presence of the mirror neurons, in which both, women and men project onto the image of a female lingerie model and a male underwear model.

In conclusion, the author suggests that a shift in the organizational paradigm is necessary, since consumer behavior is unconscious. The work developed by Lindstrom is reflective and controversial. In Brazil, there is a modest increase in theoretical research on neuromarketing, while empirical research is scarce. As for the Brazilian market, for example, companies such as Airsense, specialized in olfactory marketing, have used flavorings for bakeries, movie theaters, and stores to encourage sales or the customers' permanence at the point of sale (Azevedo, 2015).

Theoretically, it may be inferred that neuromarketing will assist organizations in developing their products, while it will also provide knowledge on consumer behavior through the human brain. From this perspective, this technology may generate ethical, cultural, and social consequences in the long term. Thus, more studies on its use must be carried out by Brazilian researchers, in their various areas of expertise.

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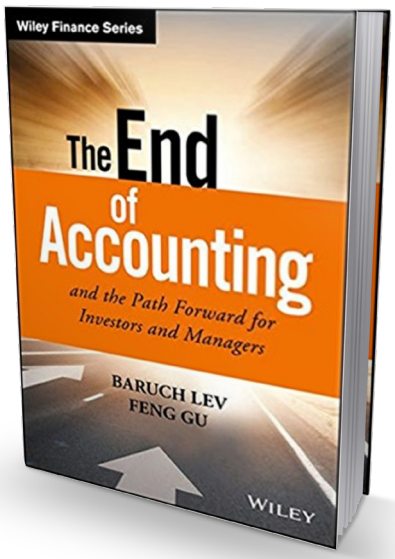
BOOK REVIEWS

Original version

MISMATCH BETWEEN ACCOUNTING REPORTS AND INVESTORS' DEMAND FOR INFORMATION



THE END OF ACCOUNTING and the path forward for investors and managers.
Baruch Lev & Feng Gu. Hoboken: John Wiley & Sons, 2016, 288p.

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In most valuation courses, accounting and business students have been taught that financial statements, provided in compliance with a myriad of accounting principles and rules, are the best overview of companies' performance over a period of time. According to Baruch Lev and Feng Gu (BL&FG, hereafter), authors of "The end of accounting and the path forward for investors and managers," this was true during in the 1950s and 1960s, when tangible assets were the most important of firms' assets and the valuation models for the economy, which was not as dynamic then as it is today, were suitable; further, the accounting rules earlier were not as complicated.

However, this may no longer be the case given that we have been living for three decades in the Information Era, wherein intangible assets became the most important of firms' assets. In their book's abstract, BL&FG argue that tangible assets are seen as commodities, whereas intangible assets are strategic assets that enhance sustainable value creation for companies by means of patents, know-how, brands, trademarks, licenses, copyrights, and other research and development investments. They claim that such assets matter to investors, and further, that managers should disclose more comprehensive information about them, even though current accounting rules usually do not require them to do so fully in financial statements.

The purpose of this book is to: i) convince readers that accounting is not providing the comprehensive information that investors need to perform investment valuation of strategic assets and ii) advocate for a change in reporting patterns by proposing a new report called Strategic Resources & Consequences Report (SR&CR, hereafter) to address the lack of information.

By targeting investors, managers, and market regulators, this well-written book is organized into four parts that combine a business approach with academic methodologies. The first part describes and empirically verifies (using US market data) the declining relevance of accounting information over the last 50 years. The second part summarizes the three most important reasons why this has happened. The third part proposes a framework to implement the SR&CR, an information disclosure that

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emphasizes what investors want to know. The fourth part presents the incentives for SR&CR implementation.

The chapters 1-2 constitute the book's prologue. In chapter 1, BL&FG build their argument by comparing two different financial statements of US Steel over a 110-year period and conclude that there were no substantial changes in the reports between 1902 and 2012. In chapter 2, the Wall Street's standard assumption about earnings efficiency is contested by an empirical analysis demonstrating that the cash flow strategy yielded better investment returns at the turn of the twenty-first century. The empirical evidence discussed in these chapters present two main accounting flaws: i) not capturing a company's entire value; and ii) not providing sufficient information to investors.

As the provocative title suggests, this book provides insights about the gradual end of the usefulness of old accounting information and introduces a new report: SR&CR. BL&FG, both of whom have had distinguished academic and professional careers, provide an alternative perspective concerning the decreasing relevance of accounting information and how investors can overcome this.

Part one comprises chapters 3-7. Chapter 3 shows an inverse causal relationship between important accounting indicators and stock prices. In chapter 4, accounting information is shown to have no impact when released in the market. Chapter 5 analyzes the decreasing ability of reported earnings to predict future earnings. Chapter 6 discusses the growing disagreements among financial analysts in their forecasts in using key accounting indicators. In chapter 7, BL&FG indicate why the accounting limitations earlier described should be a matter of concern for investors, because a better source of information about companies' performance is unavailable.

Part two, comprising chapters 8-10, discusses the three main reasons for the issues mentioned above. First, accounting rules restrict the disclosure of value-driving intangible assets in financial statements: accounting regulators worldwide consider a major part of the investments in them as expenses; further, internally generated intangibles are rarely reported as assets. Second, the high number of subjective estimates and projections in accounting reports lead to disclosure of incomplete and biased pieces of information. Third, the absence of timely recording of important business transactions, or even a lack of such records.

In part three, the proposed solution in the form of the SR&CR is presented. By combining the Resource-Based View (RBV) with what investors want to know about companies' value creation, SR&CR discloses strategic assets as the most important of firms' resources. By definition, BL&FG argue that strategic assets' attractive value, along with characteristics that are unique and hard to replicate, can provide a sustainable competitive advantage and economic benefits in the long term.

Chapter 11 describes five characteristics of SR&CR disclosure concerning strategic assets: (1) identification; (2) verification of companies' investments to create and/or develop such assets; (3) description of the significant risks related to strategic assets management, such as disruption risks; (4) description of how firms can manage their use; and (5) presentation of the value creation.

Chapters 12-15 present four different real world business cases. The data was collected from non-accounting reports and footnotes from financial statements to demonstrate the SR&CR implementation. In doing so, BL&FG show that SR&CR consists of the disclosure about companies useful information that can be applied to different industries.

Part four lists the incentives associated with the SR&CR. In chapter 16, the authors argue that three main forces must be in place to increase the quality of information disclosure: (i) investors' mobilization to demand better information; (ii) endorsement from regulation associations; and (iii) managers' willingness to disclose the requested information. Chapter 17 presents the imperative advances for intangible assets disclosure to investors.

The concluding chapter 18 reminds readers of the importance of accounting information while highlighting the current disclosure limitations. Following BL&FG's argument, the SR&CR could complement accounting information in an accurate, timely, and practical way for investors.

In short, BL&FG's work fosters debate on possible alternatives to fill the current gap concerning intangible assets disclosure. Their main contribution is to put forward potential solutions to improve financial reporting. In the international context, the role of intangible assets in firms' value and the accounting limitations preventing their full disclosure in financial statements are taken for granted, which contributes to the existing research by practitioners and researchers for better disclosure practices. Enhacing this debate in the Brazilian context is likely to highlight local intangible assets reporting, and could also produce new mechanisms to narrow information asymmetries.

ACKNOWLEDGMENTS

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BOOK RECOMMENDATIONS

Translated version

Science, technology, and innovation management

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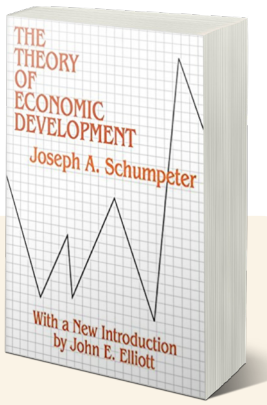
Capability creation in science, technology, and innovation management is one of the central vectors for generating current and sustainable competitiveness in the long term. This holds true from the point of view of the company and sectors of the economy, regions and countries as well. Therefore, an in-depth understanding of the relevance of this theme is central to business administration practice and research. Some special interest subjects in these approaches include the role of the entrepreneur, the evolutionary dynamics of firms and technologies, the role of the state as a central entity for innovative systems, and the respective processes of knowledge dissemination in the scope of productive structures. The books presented here offer contributions to this debate. The books presented here by **Bruno Brandão Fischer**, professor of Unicamp, offer contributions to this debate.



THE THEORY OF ECONOMIC DEVELOPMENT: An inquiry into profits, capital, credit, interest, and the business cycle

Joseph A. Schumpeter. New Brunswick, New Jersey, USA: Transaction Publishers, 2012. 255 p.

Probably the most influential work of its genre, in a seminal piece of extraordinary conceptual and theoretical inspiration, Schumpeter places the entrepreneur as a paramount agent in the processes of change for productive structures, taking risks and promoting new combinations that allow qualitative advances in economic systems. In turn, such evolutionary processes alter the patterns intrinsic to the circular flows of the economy, especially those with strict quantitative characteristics.



UMA TEORIA EVOLUCIONÁRIA DA MUDANÇA ECONÔMICA (AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE)

Richard R. Nelson and Sidney G. Winter. Campinas, São Paulo, Brazil: Unicamp Publishing House, 2005. 631 p.

This book introduces the genesis of evolutionary economic thought, and is part of a systematic critique of neoclassical economic models. It addresses—with striking detail—the distinguishing behaviors of companies, in terms of innovation development, and their respective impacts, in terms of competitive standards, search and selection of technological alternatives, existence of productive routines, and effect of organizational hysteresis in the face of changes in the competitive environment.



GESTÃO DA INOVAÇÃO: A economia da tecnologia no Brasil (INNOVATION MANAGEMENT: The technology economy of Brazil)

Pablo Bastos Tiger. Rio de Janeiro, Rio De Janeiro, Brazil: Elsevier, 2014. 296 p.

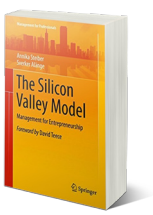
In its first part, this book offers a historical retrospect of facts and events critically relevant to the understanding of the evolutionary process of productive systems based on industrial revolutions. In its second part, it presents the relationship between innovation and competitiveness in the dynamics of economic systems. It concludes, in its third part, with classic and emergent themes on innovation management in companies.



O ESTADO EMPREENDEDOR: Desmascarando o mito do setor público *vs.* setor privado (THE ENTREPRENEURIAL STATE: Debunking public vs. private sector myths)

Mariana Mazzucato. São Paulo, São Paulo, Brazil: Portfolio-Penguin, 2014. 314 p.

In this provocative work, Mariana Mazzucato discusses the role of government initiatives in structuring science, technology, and innovation systems, and engaging in stages of development that would hardly be satisfied by private initiative. In turn, such activities feed the corporate environment with new technology and applications, modifying the competitive landscape. The book has abundant examples, and especially highlights Apple's case as an emblematic illustration of Mazzucato's proposal.



THE SILICON VALLEY MODEL: Management for entrepreneurship

Annika Steiber and Sverker Alänge. New York, New York, USA: Springer, 2016. 171 p.

This book reports the authors' research experiences in large Silicon Valley corporate environments, such as Google, LinkedIn, Facebook, and Tesla. Based on observations and interviews, the authors identify aspects of the organizations' flexible management and encouragement of an enterprising spirit as sources of competitiveness. Critiques of traditional organizational and bureaucratic models are voiced, with implications for companies beyond the intensive technological sectors.

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University-industry collaboration

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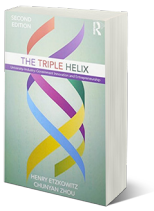
University-industry collaboration is a topic of increasing importance in the field of Technology and Innovation Management. In recent decades, the increasing complexity of knowledge for innovation has led firms to search for external sources of knowledge to support their innovative activities. The university is an important source of new knowledge for companies, and there is an increasing use of academic research to transfer this knowledge. Debates on the patterns, formats, and characteristics of university-industry collaboration become a frequent topic in the literature. However, there is a concern regarding the management of processes involving multiple agents, such as the university. Furthermore, the literature shows consequences and implications for public policies. **Renato Garcia** is professor at the Institute of Economics at UNICAMP and **Wilson Suzigan** is professor at the Institute of Geosciences at UNICAMP.



IVORY TOWER AND INDUSTRIAL INNOVATION: University-industry technology transfer before and after the Bayh-Dole Act

David Mowery, Richard Nelson, Bhaven Sampat & Arvids Ziedonis. Stanford, USA: Stanford University Press, 2004. 241 p.

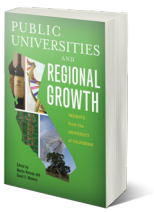
The Bayh-Dole Act of 1980 represented a milestone in the institutional framework supporting the technology transfer from universities for companies in the United States. The huge expansion of university patenting and licensing since the 1990s is inserted in this context. In Brazil, the Bayh-Dole Act inspired the Innovation Act of 2004. This book discusses the main consequences and effects of the Bayh-Dole Act in the United States through both quantitative analysis and detailed case studies, investigating the major channels of university-industry technology transfer.



THE TRIPLE HELIX: University-industry-government innovation in action

Henry Etzkowitz. New York, USA, and London, UK: Routledge, 2008. 176 p.

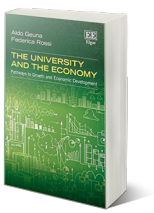
This book represents a landmark for one of the most important and recognized approaches that analyses university-industry collaboration: the "Triple Helix" approach. Based on this approach, the author advocates a prominent role of the university and the importance of integration among the three spheres: university, industry, and government, for the production, transfer, and application of new scientific and technological knowledge.



PUBLIC UNIVERSITIES AND REGIONAL GROWTH: Insights from the University of California

Martin Kenney & David C. Mowery, Stanford, USA: Stanford Business Books, Stanford University Press, 2014. 247 p.

This book presents a collection of studies on technology transfer experiences from the University of California and local firms in several industries. Two major topics of interest guide the studies presented in the book. The first is the importance of public universities in the United States, responsible for about 70% of academic research in the country and about 60% of government-funded research. The second is the effect of the collaboration on regional growth, emphasizing the role of innovation as the main driver of local economic development.



THE UNIVERSITY AND THE ECONOMY: Pathways to growth and economic development

Aldo Geuna & Federica Rossi. Cheltenham, USA: Edward Elgar, 2015. 281 p.

This book gives the reader a broad and in-depth understanding of the university's contribution to economic development. The book shows the major causal interactions between university activities and economic outcomes using theoretical tools and empirical evidence. Moreover, it provides a comprehensive analysis of why some university systems from different countries contribute to the promotion of scientific and technological development and others do not, with managerial implications and consequences for public policies.



DEVELOPING NATIONAL SYSTEMS OF INNOVATION: University-industry interactions in the Global South

Eduardo Albuquerque, Wilson Suzigan, Glenda Kruss & Keun Lee. Cheltenham, USA: Edward Elgar, 2015. 320 p.

This book represents a rare contribution to the understanding of university-industry collaboration in developing countries. Based on extensive empirical material developed by teams from 12 different countries, the book provides a broad and dynamic view of this interaction. Thus, it explores the dimensions and characteristics of this interaction that cannot be found in developed countries, where much of the analysis on the subject has been conducted.

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