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EDITORIAL

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Maria José Tonelli
Editora-chefe



Felipe Zambaldi
Editor-adjunto

RESEARCH INTEGRATION IN LATIN AMERICA

The Red Pilares Congress (2018), held in September this year in Chile, impressed us by demonstrating that several Latin American countries are engaged in projects and research in the field of organizational studies. The articulation between countries of the same regional block such as the European Union has contributed to strengthening research through cross-fertilization originating from these research networks. Moreover, it has allowed these countries to benefit from scientific knowledge in terms of development of public policies. Chaimovich (2008), of the InterAmerican Network of Academies of Sciences (IANAS), emphasizes that network strengthening is fundamental for reducing poverty and unemployment in Latin America. Chaimovich (2008) states that without science, governments would have nothing to rely on for sustainable development and transfer of technology to society (Schwartzaman, 2008). Although Latin America has suffered delays in its internationalization, science in the region must translate into benefits for society (Balán, 2008). Several graduate programs in various areas have been exchanging knowledge for decades, but there is still a long way to go before achieving the full benefit that further integration could generate. In 2016, Brazil held the IANAS congress in Rio de Janeiro, but we did not identify the participation of works of the Applied Social Sciences. Although IANAS focuses on the fields of Medical and Natural Sciences, it "aims to strengthen science and technology in order to advance research, development, and equity in the Americas" (IV Congress, 2018), a goal that makes sense for all fields of knowledge, including Business Administration, Accounting, and Tourism.

Fields of Business Administration, including Organizational Studies, Marketing, and Strategy, have played their part. The Red Pilares in 2018, the Latin American and European Meeting on Organization Studies (LAEMOS, 2018), the Association for Consumer Research (ACR) Latin American Conference and Strategic Management in Latin America (SMLA) in 2017 contributed to the approximation of the countries. The Business Association of Latin American Studies (BALAS), the Consejo Latinoamericano de Escuelas de Administración (CLADEA) and the Ibero American Academy of Management have also made efforts to promote this integration. We also note the importance of a Forum addressing this subject organized by *RAE*, "Estudios organizacionales en América Latina: Desafíos y possibilidades." Given that countries in America Latina face similar problems, they could benefit even more from knowledge generated in joint research projects between graduate programs, exchanges of researchers, and students, in both basic and applied research. In this spirit, RAE publishes papers in Spanish, so that we can strengthen ties between us.

The latest edition of 2018 is composed of the following papers: "Blindness to sponsor: Application to sports event posters" by Manuel Alonso dos Santos, Ferran Calabuig Moreno, and Manuel Jesús Sánchez-Franco; "New trends in corporate reporting: Information on carbon footprint in Spain" by Carmen Raquel Córdova, Ana Zorio-Grima, and María García-Benau; "Diversity of the board

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and capital structure" by Edelcio Koitiro Nisiyama and Wilson Toshiro Nakamura; and "The importance of brand attachment for adherence to causes of corporate social responsibility" by Annaysa Salvador Muniz Kamiya, José Mauro da Costa Hernandez, Agnne Karoline S. Xavier, and Débora Beserra Ramos.

This issue concludes with the essay "Corporate group decisions: A behavioral approach" by Lucas Ayres Barreira de Campos Barros; reviews of the books *"O ardil da flexibilidade: Os trabalhadores e a teoria do valor"* by Sadi Dal Rosso, written by Maiara Marinho; and *"Coaching: O exercício da liderança"*, by Marshall Goldsmith, Laurence Lyons, and Sara McArthur, written by Danielle Marques dos Ramos Monteiro; the book recommendations "Sociological analysis of discourse and discussion group: Practices in the Spanish tradition of qualitative research" by Christiane Kleinübing Godoi; and "Narcissism and firm performance" by Karen Kristina Ayala de Carvalho.

Happy holidays!

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BLINDNESS TO SPONSOR: APPLICATION TO SPORTS EVENT POSTERS

Ceguera al patrocinador: Aplicación a carteles de eventos deportivos

Cegueira ao patrocinador: Utilização de banners em eventos esportivos

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ABSTRACT

Advertising posters in sports sponsorship are versatile marketing tools with significant media impact and high visibility. The purpose of this research is to measure the spontaneous recall of and attention toward business brands sponsoring sports events while assessing their location and congruence level. The sample was segmented according to gender. The experiment involved 12 stimuli related to three sporting disciplines corroborating the issue of media blindness with respect to advertising posters. Consistent with the placement theory, we found that the position of the sponsoring brand affected attention and recall with no remarkable differences between genders. Furthermore, we found no significant differences in the congruence levels, reinforcing the image transfer theory. A general guideline would be placing the sponsoring brand within the effective range of the poster while leveraging the effects of articulation and the remaining mediating variables in the literature.

KEYWORDS | Sponsorship, sports poster, site, eye tracking, memory.

RESUMO

O banner esportivo é um meio de comunicação versátil, com grande alcance e visibilidade, mas com escassa repercussão na literatura acadêmica. O objetivo desta investigação é medir a atenção e a lembrança espontânea dos patrocinadores dos banners de eventos esportivos em função de sua congruência e localização. A amostra foi segmentada por sexo. O experimento com 12 estímulos de três modalidades esportivas revela que, sim, existe cegueira ao patrocinador. Como previa a teoria da localização, a posição da marca do patrocinador gerou um efeito significativo sobre a atenção e a lembrança, não havendo diferenças significativas por sexo, embora não tenhamos encontrado diferenças por nível de congruência como sugere a teoria da transmissão de imagem. A recomendação geral é situar a marca do patrocinador na zona de ação do cartaz, e aproveitar fatores moderadores encontrados na literatura como a articulação.

PALAVRAS-CHAVE | *Patrocínio, banner esportivo, localização, rastreamento ocular, memória.*

RESUMEN

El cartel deportivo es un medio de comunicación versátil, con gran repercusión y visibilidad, pero con escasa repercusión en la literatura académica. El objetivo de esta investigación es medir la atención y el recuerdo espontáneo de los patrocinadores de los carteles de eventos deportivos en función de su congruencia y emplazamiento. La muestra se segmentó de acuerdo con el sexo. El experimento con 12 estímulos de tres disciplinas deportivas revela que sí existe ceguera al patrocinador. Como predijo la teoría del emplazamiento, la posición de la marca del patrocinador generó un efecto significativo sobre la atención y el recuerdo, no habiendo diferencias significativas por sexo. Sin embargo, no encontramos diferencias por nivel de congruencia como sugiere la teoría de la transmisión de imagen. La recomendación general es situar la marca del patrocinador en la zona de acción del cartel, y aprovechar factores moderadores encontrados en la literatura como la articulación.

PALABRAS CLAVE | *Patrocinio, cartel deportivo, emplazamiento, seguimiento ocular, recuerdo*

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INTRODUCTION

Sponsorship, and in particular sports sponsorship, is one of the unconventional marketing techniques that has aroused considerable interest among companies and academics in recent years (Papadimitriou, Kaplanidou, & Papacharalampous, 2016). In the last decade, it has enjoyed greater economic investment and scientific research (Meenaghan, 2013; Prendergast, Paliwal, & Mazodier, 2016). This growing interest is due to the growing ineffectiveness of conventional media on one hand, and internationalization and dissemination of sports and leisure in social media on the other hand (Alonso Dos Santos, 2014). The economic importance of sponsorship is undeniable. However, while worldwide sponsorship expenditure increased from $53,100 million in 2013 to $62,800 million in 2017 (International Events Group, 2017), academics still have no agreed means to measure the return on investment (Meenaghan, 2013). Furthermore, net appearances on media or on social networks, attitudes towards the brand, or number of attendees at events, which are inefficient indices because of their low capacity for real predictions, are still used as indicators in the professional field (Breuer & Rumpf, 2015). Consequently, the literature recommends offering reliable and valid knowledge, methodologies, and measures to analyze, evaluate, and compare the effectiveness of the sponsorship activity (Grohs, 2015).

In relation to the effectiveness of the sponsorship, research about the attention that a sponsor effectively receives is scarce (Breuer & Rumpf, 2015), and specifically in non-television media (Rumpf & Breuer, 2014). A number of published studies employ factorial experiments of printed/digital images to test the effectiveness of sponsorship without initially testing if the sponsor has really received attention (e.g., Cornwell, Lipp, & Purkis, 2016; Gross & Wiedmann, 2015; Uhrich, Koenigstorfer, & Groeppel-Klein, 2014). Additionally, other studies conduct surveys in the same sporting event without considering the attention or the number of stimuli received by the subject (Close, Lacey, & Cornwell, 2015; Papadimitriou et al., 2016). Consequently, the research methodology used so far assumes that the subjects pay equal attention to the sponsors, receive the same impact, and dedicate the same time to process the information for all the subjects. However, assuming that all the subjects in the study process information about the sponsor is problematic. Similarly, one cannot expect all communication channels to be equally effective in transmitting the image of the sponsor in a sporting event (Meenaghan & Shipley, 1999).

Print sports media has received limited attention in sports literature (Conradie, 2011; Kelly, Coote, Cornwell, & McAlister, 2017), and sports posters as a medium has been little explored (Dudzik & Gröppel-Klein, 2005). However, its study is important for several reasons: its low cost, its versatility, its repercussion and visibility, and its investment and popularity (Nysveen & Breivik, 2005). First, it is crucial to not assume that the generalized results of television advertising, where there is in-depth research, are applicable to print advertising (Tipps, Berger, & Weinberg, 2006). Dedicated research on print sports advertising is scarce. Second, the importance of posters is highlighted as a key part of communication, especially at sporting events (Bennett, 1999). Not only are they on the streets and in sports facilities, they have also gone beyond the traditional media and have become popular across social networks. Third, communication through printed posters is not only suitable for large sporting events, as it happens with television. Small and medium-sized sporting events also use this type of advertising. After considering these aspects, the research question is: What attention does the sponsor's brand receive on a sporting event poster and what is the subsequent degree of brand recall? The aim is to verify whether sponsor blindness occurs, its influence on the recall, and whether the attention received by the sponsor depends on the gender of the subject. Following sections show the research questions, the experimental method used, and the results. Finally, we present the conclusion along with management recommendations.

SPONSOR BLINDNESS

Advertising blindness or banner blindness is a concept that can be applied to the field of sponsorship to investigate the attention of the subjects to sponsorship. Banner blindness implies that the subjects do not receive the stimuli coming from the advertiser and ignore their presence, while they process the main content of the stimuli (the Web; Resnick & Albert, 2016).

The study of this subject is not new, and the literature contains several examples (e.g., Ortiz-Chaves, Martínez-de-Pisón, Cancela-López-Carrión, Gonçalves-de-Vasconcellos, & Marcos, 2014; Resnick & Albert, 2016; Zouharová, Zouhar, & Smutný, 2016). The applications have been diverse, with studies focusing on e-commerce (Resnick & Albert, 2014), Google AdWords (Ortiz-Chaves et al., 2014), tourism-oriented Web 2.0 (Hernández-Méndez & Muñoz-Leiva, 2015), and even social networks (Simola, Kivikangas, Kuisma, & Krause, 2013). Several solutions have been proposed to improve the visibility of banners (Porta, Ravarelli, & Spaghi, 2013), such as those based on the components of the message (Barreto, 2013), structure and type of information

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(Hsieh & Chen, 2011), aesthetics (Resnick & Albert, 2016), or thematic congruence (Porta et al., 2013).

Despite all the solutions, a standard method of measurement has not yet been developed or accepted for advertising blindness (Resnick & Albert, 2016). Some studies perform an exploratory analysis (Muñoz-Leiva, Hernández-Méndez, Liébana-Cabanillas, & Marchitto, 2016; Resnick & Albert, 2014), but most limit themselves to comparing advertisements according to their congruence, aesthetics, or structure (Barreto, 2013; Porta et al., 2013; Resnick & Albert, 2016; Rieger, Bartz, & Bente, 2015). The first research question examines the occurrence of sponsor blindness, which implies that users do not pay attention to the sponsors of the sports posters.

According to d'Astous & Séguin (1999), implicit location refers to the preferential location that the brand occupies within the advertisement without mentioning its characteristics or benefits. According to the emotional transference mode (Liu, Hu, & Grimm, 2010) that is based on the location theory (Russell, 1980), brands located in the main action scene receive more attention than others. These results are corroborated by subsequent studies (Valenzuela, Martínez, & Yáñez, 2015; Redker, Gibson, & Zimmerman, 2013). This implies that the brands of sponsors that are located in the field of action, will receive more attention.

RECALL

According to Keller (1993), brand awareness is related to brand recall and recognition. It represents the cognitive stage, and comprises the first step in the hierarchical models of sponsorship. Moreover, it represents a key objective of sponsorship by the sponsoring organizations. Brand recognition studies often adopt recall and recognition measures to assess consumer awareness levels (Cianfrone, 2007). Based on the theory of memory, Rath & Mohapatra (2013) suggest that brand recognition is very important for consumers to build brand associations. According to the image transfer theory, these associations in sports sponsorship are essential so that the attitudes inherent in the sponsor are associated with the sponsored (Alonso Dos Santos, 2014).

A number of studies measure the effects of sponsorship, including the recognition of the brand as a dimension to measure consumer's brand awareness levels (Choi & Yoh, 2011). Following the aforementioned authors, three main approaches have been followed in order to measure this dimension: (1) identifying the factors that influence sponsor recall; (2) analyzing the internal processes related to the recall that takes place in the minds of the spectators; and (3) measuring the recall of the sponsors.

Two modes are used to measure recall: assessing the consumer's ability to name a sponsor without any hints and identifying the correct sponsor within a group of potential sponsors or through a set of signals. According to Wells (2000), recognition measures show interest in the promotion, while recall measures determine the recall of the brand. Both methods are used in the field of sports sponsorship (Cornwell, Humphreys, Maguire, Weeks, & Tellegen, 2006; Lardinoit & Derbaix, 2001).

All forms of the consumer's brand recognition and recall, directly and indirectly through sponsorship activities, can influence purchase decisions by creating brand awareness and interest. This can eventually lead to perceived differences between the advertised brand and other brands in the same product category (Pitts & Slattery, 2004). Therefore, sports marketing scholars have widely adopted the aforementioned forms of measurement to evaluate the effectiveness of sports sponsorship.

Brand awareness plays an important role in the formation of consumer behavior and attitudes (Keller, 1993). This can be applied to a consumer of sporting events, mainly for three reasons (Lee, 2010): (1) consumers can evaluate the brand only after knowing it; (2) brand knowledge influences the brand choice, particularly in low-involvement choices; and (3) brand recall and brand knowledge condition the consumer to form a brand image.

Considering these reasons, the effects of repeated exposure of the sponsors' message have been examined as a mechanism to increase brand awareness or to increase positive predisposition towards the brand (Madrigal, 2001, Meenaghan, 2001, Pitts & Slattery, 2004). The frequency of such exposure is the most important variable in the theory of mere exposure (Tom, Nelson, Srzentic, & King, 2007); repeated exposure will positively affect consumers, influencing knowledge and attitude towards the brand sponsoring the event (Maxwell & Lough, 2009). This has been applied previously to the image transfer theory (Dardis, 2009). Sports sponsors hope that the image of a sporting event will be transferred to their own brand, thus increasing the purchase intention or brand awareness. Nevertheless, this image transfer can only take place if the consumer recognizes or remembers the brand that sponsors the sporting event. Therefore, repeated exposure to the sponsor's advertised message can achieve an increase in recognition and recall of sponsorship.

Along with the frequency of exposure, congruence-adjustment between the sponsor and sponsored brand can

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influence sponsor recall (Papadimitriou et al., 2016; Alonso Dos Santos, Calabuig, Rejón Guardia, & Pérez Campos, 2016; Alonso Dos Santos & Calabuig, 2018). According to Amorim & Almeida (2015), the theory of schemes and the theory of associative networks facilitate sponsor recall (both theories related to the functioning of human memory).

Marketing literature contains several studies that mention the background and benefits of brand recall. For example, Barros, Barros, Santos & Chadwick (2007) found that prior knowledge of the sponsoring brand reinforces the recall of the said brand. They also postulated that the sponsor's preference for products increases the likelihood of remembering the name of the sponsoring brand. Pitts & Slattery (2004) examined the relationship between the frequency of attendance at a football tournament and the sponsor's brand recognition. Lee (2010) conducted an experiment that involved exposure to sponsorship of a NASCAR (National Association for Stock Car Auto Racing) sporting event, and found a positive and direct relationship between the frequency of exposure to the sponsorship and the attitude toward the sponsoring brand, which is consistent with the theory of mere exposure. Finally, Lee (2008) found a positive relationship between brand recall and attitude towards the sponsor. Sponsorship recall is often used as an explanatory variable for the effects of sponsorship (Pope & Voges, 1999; Speed & Thompson, 2000). Consequently, it can be assumed that exposure to sponsorship comes from greater attention to the sponsor's brand. Thus, a greater fixation in time and frequency provides more brand recall.

GENDER

Previous studies have explored the relationship between consumer's gender and sports marketing. A number of studies have shown that the ability of the gender variable to influence identification to a sports team (Menefee & Casper, 2011), the purchase of sponsored products (Kwon & Armstrong, 2002), motivation to attend sporting events (Funk, Toohey, & Bruun, 2008), and participation in sports activities (Muñiz, Rodríguez, & Suárez, 2014). It is a demographic segmentation variable that has been previously used in sports marketing. Earlier, Kinney, McDaniel, & DeGaris (2008) recognized the ability of gender segmentation in influencing the sponsor's brand recall. According to McDaniel & Kinney (1999) and Stipp & Nicholas (1996), males showed a greater recall capacity than females. The interpretation of the selectivity hypothesis (Meyers-Levy, 1988) suggests that gender differences are due to differences in cognitive processing, i.e., men selectively process available information based on a subset of highlighted factors instead of processing all information that is available, which is the case with women. Similarly, it is observed that the involvement of the subjects with the sponsored event and with sports influences the attention to the sponsors (Cornwell et al., 2006; Boronczyk, Rumpf, & Breuer, 2018); and that men have greater involvement (Wann, Melnick, Russell, & Pease, 2001), affection, (Wann, Waddill, & Dunham, 2004), and identification with sports (Menefee & Casper, 2011). Men tend to process information with which they are more involved.

If the gender variable is able to segment the degree of interaction and advertising effectiveness (McMahan, Hovland, & McMillan, 2009), the emotional level (Alonso Dos Santos & Pérez-Campos, 2015), and the quality and satisfaction of the sports events (Ko, Kim, Kim, Lee, & Cattani, 2010), it would be reasonable to think that it can influence the attention of print sports communications. Nevertheless, these investigations have been controversial. Some researchers state that men pay more attention to banners than women (Goodrich, 2014), while other researchers state that there are no significant differences (Barreto, 2013, Drèze & Hussherr, 2003, Muñoz-Leiva et al., 2016). Nevertheless, men are expected to show higher levels of attention to sponsors than women.

METHOD

Validation of stimuli

The process of construction of the stimuli consists of several stages. In the first stage, four sports categories are selected for convenience: tennis, sailing, rowing, and Formula 1 (racing). A sample of 100 university subjects provides four possible congruent and incongruent sponsorships for each of the sports categories through a questionnaire with open questions.

The result was processed after including the most frequently selected associations. The rowing discipline was eliminated due to the low number of associated sponsors. The next step consisted of a survey using the 1–7 Likert scale, in which the subjects were required to indicate the degree of coherence and incoherence of the associations generated in the first stage. Subsequently, commercial communications were created by modifying real posters of sporting events with no real or known characters in order to avoid possible involvement of the subject with the character. In the absence of an established script, the usual international practice in the design of sports posters is dividing the communication into two parts with a

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vertical format. Two thirds of the poster from the top contain the information of the event and the area of conceptualization of the event. The latter may consist of the brand of the event, popular players competing or sports scenes typical to the sport discipline of the event. Sponsors are usually located in the lower area.

Finally, a focus group is allowed to assess the build quality of the manipulated posters and images. The results of this qualitative test allow us to discard certain communications where the sponsor or the event is not well represented or has an insufficient image quality. All the generated images are available for download in the links shown in Table 1. The nomenclature of the observation sequence of the images contains three parts with the following explanation: sport category (Formula 1 = F1, Sailing = S, Tennis = T), congruence (C = congruent, I = incongruent), and position (W = within the action zone and O = outside).

The experiment

The experimental design is based on previous designs and mixes banners with eye tracking (Hernández-Méndez & Muñoz-Leiva, 2015; Muñoz-Leiva et al., 2016). It has an inter-subject design with the gender and discipline variables and an intra-subject design with position and congruence variables. It consists of a 2×2 factorial design with a total of 12 stimuli that is divided into three sports disciplines. Four groups are formed with three sequences each. Each group is composed of ten subjects. The group is randomized and balanced according to the age and gender of the subject (see Table 1) but the random assignment of the test units to the groups and the groups to the congruent or incongruent experimental set remains. In total, 120 subjects participated. Table 1 shows the observation sequence, group name, and link of the stimulus image.

Table 1. **Sequence of observation of the stimuli, assignment to the group, and download link of the image used.**

Group	Observation sequence			Stimulus name	Link
1	F1_C_F	S_C_F	T_C_F	B	https://goo.gl/qDYoWi
2	T_C_F	F1_C_F	S_C_F		https://goo.gl/CxKFjb
3	S_C_F	T_C_F	F1_C_F		https://goo.gl/wZhfKE
4	F1_I_F	S_I_F	T_I_F	D	https://goo.gl/M4zfO7
5	T_I_F	F1_I_F	S_I_F		https://goo.gl/HAUEjq
6	S_I_F	T_I_F	F1_I_F		https://goo.gl/umQM8w
7	F1_C_D	S_C_D	T_C_D	A	https://goo.gl/JDEpzX
8	T_C_D	F1_C_D	S_C_D		https://goo.gl/wu4VFY
9	S_C_D	T_C_D	F1_C_D		https://goo.gl/CbsLBW
10	F1_I_D	S_I_D	T_I_D	C	https://goo.gl/Lu8KAj
11	T_I_D	F1_I_D	S_I_D		https://goo.gl/kcdyis
12	S_I_D	T_I_D	F1_I_D		https://goo.gl/W1E20q

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The field work was carried out during the first week of September 2016 in a room equipped for neurophysiological experimentation (International Telecommunication Union, 2002). The sample consisted of 60 men and 60 women with a mean age of 23.4 years (3.5 deviation). For convenience. this sample was captured at the university campus.

The system used is an EyeTribe device with a 60 Hz sampling rate, mean precision of 0.5 degrees of visual angle, and a spatial resolution of 0.1 degrees. This device has a latency of 20 milliseconds and admits 16 points for the calibration process. It is suitable for commercial research, allowing subjects to move up to 75 centimeters in horizontal and vertical angles. OGAMA (Open Gaze and Mouse Analyzer) software was used for this experiment. It is a free-to-use, open-source program, with previous use validated by scientific records (Popelka, Stachoň, Šašinka, & Doležalová, 2016; Voßkühler, Nordmeier, Kuchinke, & Jacobs, 2008).

The experimental sequence was as follows: First, the subjects were informed about the experiment and their consent was collected. Following that, they were accommodated and the calibration process began by fixing and displacing the gaze on 16 points. In accordance with the procedure of previous studies (Gülçay & Cangöz, 2016), each stimulus was shown for eight seconds, followed by an one-second interval in which a black image was shown. Subsequently, the sociodemographic and recall data of the subjects were collected from a survey.

RESULTS

Sponsor blindness was analyzed using descriptive attention analysis with respect to the complete fixation time (CFT), time until the first fixation (TFF), and number of fixations (NF). The data on brand recall completed the analysis. A variance analysis was carried out to determine gender-based differences.

Table 2 shows in detail the fixation indicators for the area of interest (AOI) set on the sponsoring brand on the poster. For stimulus B and D, when the sponsoring brand is outside the action area, the mean number of fixations ≤0.5. This indicates that half of the subjects never looked at the sponsor, as the mean does not reach the unit value. Furthermore, the mean value is greater than the unit value for stimuli A and C. The following results are obtained after calculating NF for the total of stimuli and disciplines: 18% of subjects saw the brand in any of the posters, 52% of subjects did not see the brand in some of the posters, and finally, 6.1% of subjects did not see the brand in any of the posters. Additionally, out of 8000 ms (the total duration of the exhibition), the sponsors received an average attention of 332.6 milliseconds (4.16%).

Table 2. **Mean scores (M), standard deviation (SD), and normality (N) for the indicators of attention to the brand**

Tipo	CFT			TFF			NF		
	M	SD	N	M	SD	N	M	SD	N
B	129	151.4	.8*	2022.1	1828.2	.8*	.5	.5	.8*
D	142.8	224.3	.6*	1341.1	1395.8	.8*	.4	.6	.7*
A	526.9	321.3	.96	1845.1	1144.9	.94	1.3	.8	.91
C	531.7	373.4	.9	1895.1	1237	.91	1.2	.7	.92

* p <0.05

Figure 1 represents the analysis of the fixation map with a rainbow color palette. The heat map is indicated by a more intense color (red), and the normal distribution of all fixations based on their length is calculated according to the mathematical algorithm. An exploratory analysis reveals that the points with the greatest fixation were the player's face, date, and name of the event for the tennis poster, and the communications tower, event name, date, and place of celebration for the sailing event.

The scan path is examined in Figure 2 and shows the poster fixation history using infrared light reflection from the pupil. The numbers inside the circles represent a place in the fixation history, while the size of the circle represents its duration. The video replay can be seen at the following address: https://goo.gl/j6usRo.

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Figure 1. **Heat map for the two sample posters of stimulus B.**

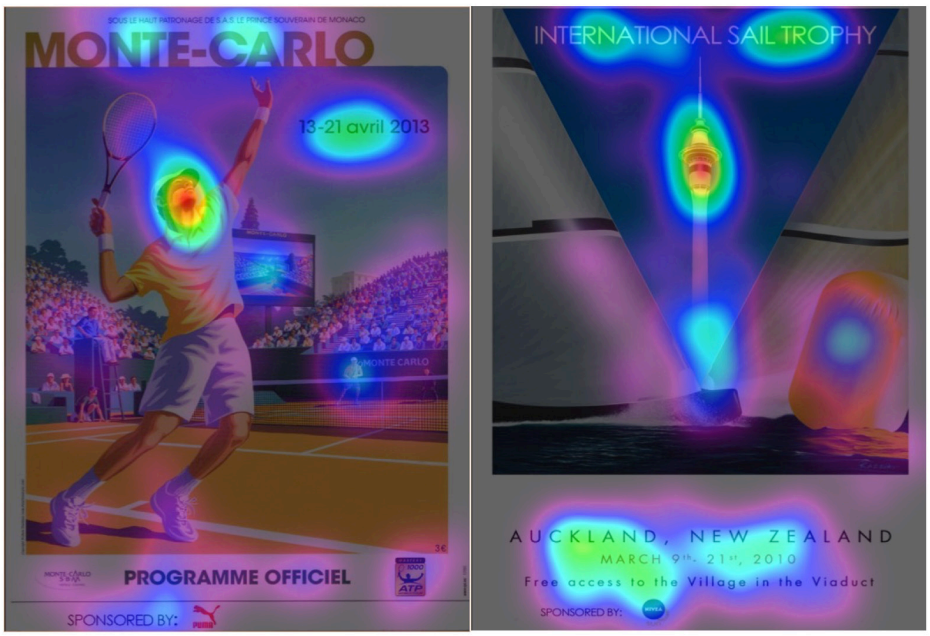


Figure 2. **Scan path for the two sample posters of stimulus B.**



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A comparative analysis with respect to the site shows that a message receives more attention when it is located within the action zone than when it is located outside for the CFT (F (1,118) = 50.68, p ‹000; NF F (1,118) = 28.43, p ‹000). There were no differences in TFF.

Table 3 shows the subject's spontaneous recall rate. The stimuli with the highest recall rate are A and C. These stimuli represent a congruent and incongruent sponsor respectively, but both within the action zone. This seems to indicate that the sponsors located inside the action zone have higher recall rates. This agrees with the previous fixation analysis of the CFT and NF.

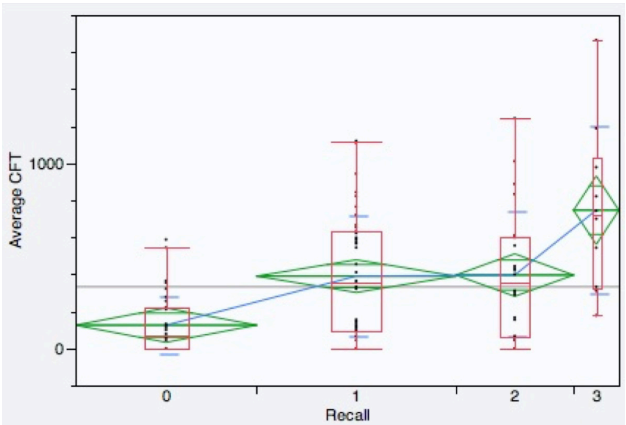
Table 3. **Sponsor recall rate N (%)**

Stimulus	0 hits	1 hit	2 hits	3 hits
A	7(23)	15(50)	5(17)	3(10)
B	14(47)	7(23)	7(23)	2(7)
C	7(23)	14(47)	6(20)	3(10)
D	12(40)	8(27)	8(27)	2(7)

Note: (n=30) by stimulus. Each stimulus has three sports categories and each category has a sponsor.

Figure 3 shows the differences in the recall rate as a function of CFT which is significant with F (3.119) = 14.05 and p‹0.001. There are also significant differences for the other indicators: TFF with F (3,118) = 8.05 and p‹0.001; and NF with F (3.119) = 13.96 and p‹0.001. These results indicate that higher recall rates are related to higher fixation frequencies, total fixation time, and time of the first fixation, time to first fixation being inversely related. The Tukey-Kramer HSD method is used to compare the recall rates and significant differences are obtained between all the pairs, except for pair 2-1. This confirms the three levels of recall with certainty: 0 (brands), 1 and 2 (brands), and 3 (brands).

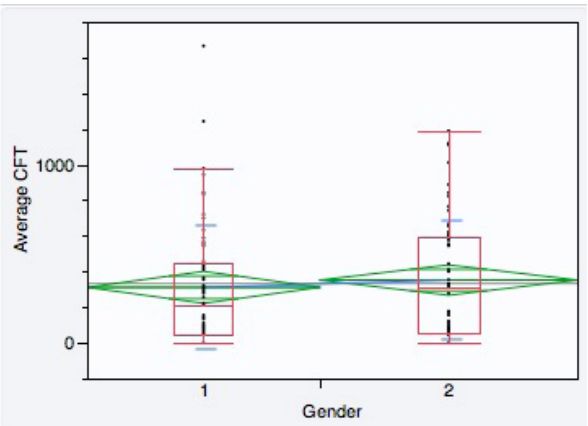
Figure 3. **Recall analysis and CFT fixation indicator.**



Note: The red lines describe the box diagram, the blue line connects the mean values, horizontal blue lines represent the standard deviation, and the green diamonds represent the mean values and confidence intervals.

Regarding the recall analysis and fixations based on the subject's gender, the results indicate that there is or association between the CFT (Figure 4), NF, and TFF and gender; as well as between the recall rate and gender. Similar results for banner attention were observed by Hernández-Méndez and Muñoz-Leiva (2015), Drèze & Hussherr (2003), and Barreto (2013).

Figure 4. **Analysis of the gender of the subject and the CFT fixation indicator.**



Note: The red lines describe the box diagram, the blue line connects the mean values, the horizontal blue lines represent the standard deviation, and the green diamonds represent the mean values and confidence intervals.

CONCLUSIONS AND RECOMMENDATIONS

In the academic world, sports sponsorship is a field of study with significant repercussions (Meenaghan, 2013; Prendergast et al., 2016). However, some means of sponsorship communication have not been sufficiently addressed. Consequently, sports posters have received little attention in the academic literature despite their low cost, versatility, and rapid response advantages (Nysveen & Breivik, 2005).

The purpose of this research was to measure the degree of effectiveness of sports signage and sponsorship from the standard application of the banner blindness concept. Therefore, we measured the attention given to sponsors using indicators of eye attention and recall, in addition to segmenting the sample to test for gender-based differences. The experimental design consisted of 12 stimuli from three sports disciplines (sailing, F1, and tennis) and four groups of ten subjects each, randomized and balanced according to the age and gender of the subject. To give greater validity to the experiment, these were divided

into congruent and noncongruent stimuli, with two types of placement (inside and outside the action zone).

The results indicate the occurrence of sponsor blindness. The term sponsor blindness refers to the tendency of subjects to avoid processing and paying attention to the sponsors that are exposed in a sports poster. To the best of our knowledge, there is no literature available on this concept. Sponsor blindness occurs because the fixation indicators reveal that only 4.16% of the total time of the poster is dedicated to the sponsor. This is a slightly shorter than the attention time given to the sponsor in the study by Breuer & Rumpf (2012), after including conceptual and methodological differences due to lack of comparable studies in this field. More than half of the subjects in the experiment paid no attention to any of the sponsors of the three posters. These results are further supported by an analysis of the heat maps and the scan path, in which we observe that the subjects dedicate short periods of time to the processing of the sponsor. This lack of attention could be due to the overload of information present in the poster (Tangmanee, 2016). These results can be seen by the placement of the sponsor in the lower part of the poster as well. According to Breuer & Rumpf (2012) and the overload theory, attention can be predicted depending on the placement of the sponsor's brand in the advertising medium and other exposure variables. The time taken up by the event information can be subtracted from the sponsor's brand processing time. Therefore, it is necessary that future investigations alternate not only the area of action but also the position of the sponsors. Similarly, it is necessary to apply these investigations to the professional field. The sponsor is supposed to know how much attention is received by its brand, as opposed to merely the number of times it appears on the screens or monitors. Algorithms capable of predicting and evaluating the exposure of sponsorships in social networks are among the latest developments (e.g., www.blinkfire.com). However, these algorithms do not assess whether the sponsor's brand is indeed observed and how much attention it has received.

We demonstrated that the sponsors located in the action area receive more attention than the others. However, we could not demonstrate that variation in attention depends on congruence. The literature claims that greater the congruence, better the information processing (Cornwell et al., 2006), although several studies point in the opposite direction (Alonso Dos Santos & Calabuig, 2018; Tribou, 2011). However, our results could not make the argument lean in either direction.

Academic literature shows that the effectiveness of the site can vary depending on its congruence (DeLorme & Reid, 1999), although we could not prove it. Moreover, sponsor blindness can influence the last result. The subject may not have enough time to process the congruence or incongruence of the message. This suggests that the location in the action area should be planned only for the main sponsor to improve its performance in terms of its brand attention.

Conversely, recall data were obtained using a post-stimulus question, without the assistance of the brand. Only 8-10% of the subjects were able to remember two of the three brands shown in the experiment and this is a relatively low percentage (Tangmanee, 2016), but in agreement with previous studies in online environments (Hamborg, Bruns, Ollermann, & Kaspar, 2012). This comparison should be made with caution, as the methods, environments, and areas are different. Recall rates are hardly comparable in the sports field. According to Carrillat, d'Astous, Bellavance, & Eid (2015), research is very heterogeneous in terms of exhibitions, events, sponsors, and methodologies. Carrillat et al. (2015) show the disparity in recall success between different studies, with the recall rates ranging from 9.25% (Nicholls, Roslow, & Dublish, 1999) to 68% (Quester, 1997). This gap is too broad to allow a timely comparison or to define a recommended limit, but lower than the usual recall rates shown in previous research. Some of them are around 63% (Barros et al., 2007), over 40% (Cornwell, Humphreys, Maguire, Weeks, & Tellegen, 2006), or 20% (Breuer & Rumpf, 2012). It is important to keep the relationship between recall and the strategic result of the sponsorship investment in mind, since it is one of the most valued indicators of effective investments (DeGaris, Kwak, & McDaniel, 2017).

These results include several recommendations for the sports sponsors. First, it is better to position oneself within the area of action for attentive communication, although we have not been able to verify the economic profitability that could be derived from a possible contract by a main sponsor with this right. Second, the possible occurrence of sponsor blindness can be mitigated with changes in the situation (Resnick & Albert, 2014), animation of digital posters (Hernández-Méndez & Muñoz-Leiva, 2015), or congruence with the environment or sponsored event (Rieger et al. al., 2015). In any case, gender does not appear to have an effect on attention, which indicates that segmentation strategies based on gender do not seem to have an effect on the sponsor. Finally, it is advisable to use a reliable method to test the effectiveness of sponsorships with greater economic investment. As demonstrated in this work, the use of eye tracking can be a reliable method for testing the effectiveness of communication in sponsorship. According to Breuer & Rumpf (2012), this type of research shows the cognitive process of input and output of information in the consumer, to an extent

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that we are able to analyze and specify how much information is processed by the subject and how much information is recalled. However, the processing system, unconscious processing of the brand, and its association with other concepts have not been observed (Cornwell et al., 2006). This line of research needs to be investigated further.

It is important to note that the sample used in this research is not representative of the population, particularly because of the use of university students. Similarly, sports categories are chosen for convenience. After considering the laboratory limitations in future research, it would be interesting to replicate this experiment in real situations. Other variables can be included to measure the moderating factors that could alter the effectiveness of sponsorship communication. Involvement with the sport, the team, or the athlete can be considered as a variable for such a study. Advances in means of exposure and repetition of message could significantly help in understanding the effectiveness of sponsorship.

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NEW TRENDS IN CORPORATE REPORTING: INFORMATION ON THE CARBON FOOTPRINT IN SPAIN

Novas formas de relatório corporativo: Informação sobre a pegada de carbono na Espanha

Nuevas formas de reporting corporativo: Información sobre la huella de carbono en España

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ABSTRACT

In accordance with the Kyoto Protocol, Spain has created a National Carbon Footprint Registry by Royal Decree 163/2014. This constitutes a pioneering initiative to help Spanish companies give visibility to their efforts in reducing their emissions of greenhouse gases (GHGs). Hence, this paper explores the motivation of Spanish companies to register their carbon footprints with a higher degree of scope. We identify the characteristics of the first Spanish companies that registered their carbon footprint through a logistic regression model (logit). The study concludes that organizations are more likely to register a higher scope if they do not belong to the manufacturing sector, if they are relatively new, and have a culture of environmental transparency.

KEYWORDS | Environmental performance, financial performance, environmental disclosure, carbon footprint, environmental accounting.

RESUMO

Em concordância com o Protocolo de Quioto, Espanha cria o "Registro Nacional de pegada de carbono, remuneração e projetos de absorção" por meio do Decreto Real 163/2014. Esta é uma iniciativa pioneira para incentivar as empresas espanholas a dar visibilidade ao seu compromisso de reduzir suas emissões de gases de efeito estufa (GEE). Neste contexto, a pesquisa atual explora os determinantes da adesão ao registro nacional espanhol de pegada de carbono. Um estudo exploratório das características das primeiras empresas espanholas que decidiram inscrever sua pegada de carbono foi realizado, através de um modelo de regressão logística (logit). O estudo conclui que as organizações que são mais propensas a registrar um maior alcance de sua pegada de carbono, caracterizam-se por fazer parte de um setor diferente da indústria de transformação, recém-criado e ter uma cultura ambiental transparente.

PALAVRAS-CHAVE */ Desempenho ambiental, desempenho financeiro, divulgação ambiental, pegada de carbono, contabilidade ambiental.*

RESUMEN

A raíz del Protocolo de Kioto, España crea el Registro Nacional de Huella de Carbono, Compensación y Proyectos de Absorción de Dióxido de Carbono mediante el Real Decreto 163/2014. Ello se constituye en una iniciativa pionera para potenciar que las empresas españolas den visibilidad a su compromiso en la reducción de sus emisiones de Gases de Efecto Invernadero (GEI). Bajo este contexto, la presente investigación explora los determinantes de la adhesión al Registro Nacional de Huella de Carbono español. Se realiza un estudio exploratorio de las características de las primeras empresas españolas que decidieron inscribir su huella de carbono, a través de un modelo de regresión logística (logit). El estudio concluye que las organizaciones que tienen mayor probabilidad de registrar un mayor alcance de su huella de carbono se caracterizan por pertenecer a un sector no manufacturero, ser de reciente creación y poseer una cultura ambiental transparente.

PALABRAS CLAVE */ Desempeño ambiental, desempeño financiero, divulgación ambiental, huella de carbono, contabilidad ambiental.*

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INTRODUCTION

In an environment of international concern about the adverse effects of climate change, many institutions and organizations have multiplied their conservation efforts and adopted measures that provide in-depth knowledge of the dynamics and impacts of greenhouse gases (GHGs). In this context, the carbon footprint is one of the most widely recognized indicators in the international sphere (Schneider & Samaniego, 2009). According to the Spanish Office for Climate Change (2015), carbon footprint (CF) is defined as "the totality of greenhouse gases emitted by direct or indirect effect by an individual, organization, event, or product." The carbon footprint quantifies the GHGs (carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6)), which are expelled into the atmosphere, directly or indirectly, as a product of the various activities carried out by a company or a person or in the lifecycle of a product.

GHG emissions by a company can be measured at three levels (scope 1: direct emissions, scope 2: indirect emissions, and scope 3: related activity emissions). A company's carbon footprint is recorded in the Registry by registering either "1 and 2" or "1, 2 and 3" scopes. For the purposes of this research, "1, 2 and 3" represents a carbon footprint measure with a greater scope. Therefore, this paper explores the probability that the decision of Spanish companies that have recorded their 2013 carbon footprint using this greater scope (1, 2 and 3) can be attributed to factors of a financial and environmental nature (Segura, Ferruz, Gargallo, & Salvador, 2013).

In this regard, to facilitate monitoring of compliance with the Kyoto Protocol, Spain has established the National Registry for Carbon Footprint, Offsetting, and Carbon Dioxide Absorption Projects under the Ministry of Agriculture, Food, and Environment, through Royal Decree 163/2014 (Ministry of the Presidency, 2014). It is a pioneering initiative in Spain and should provide the necessary measures for companies to reduce their emissions (Club Asturiano de Calidad, 2013).

Therefore, the purpose of this study is to analyze the characteristics of the first Spanish companies that used the National Carbon Footprint Registry to disseminate information. Additionally, through the study and analysis of the various pronouncements on climate change, this paper is intended to contribute, from an academic perspective, to the identification of opportunities to mitigate the adverse effects of GHG, focusing especially on the Spanish business sector. Consequently, this study sheds light on the transparency and sustainable behavior of companies through the identification of the characteristics that allow organizations to be more transparent. Spain is an interesting setting for this study given that the literature has shown that its business fabric is very sensitive to issues of corporate social responsibility (Garrido-Miralles, Zorio-Grima, & García-Benau, 2016), and, therefore, it is expected that companies would also be inclined to adopt new corporate reporting policies, including disclosing their information through the National Carbon Footprint Registry. For countries in Latin America, with many natural resources and where a tendency already exists in some countries to disclose the carbon footprint of listed companies (Cordova et al., 2018), the creation of national registers such as the Spanish one could assist in extending this trend of respect for the environment among small- and medium-sized enterprises.

Based on the results, our study concludes that the companies that are more likely to register a calculation that measures the greater scope of their carbon footprint (scopes 1, 2 and 3) are characterized by not belonging to the manufacturing industrial sector, having existed only a relatively short time, and, mainly, having a culture of environmental transparency that is made explicit through the practice of annually disclosing a sustainability or corporate social responsibility report.

The rest of this paper is organized as follows. The following section describes the seriousness of the situation with respect to climate change and the emission of greenhouse gases as well as business strategies aimed at sustainable development. Next, we pay special attention to the market for GHG emission rights and the creation of the National Carbon Footprint Registry. The following sections describe the hypotheses, sample, and methodology of our empirical study. Following that, we present the results of the exploratory analysis and its interpretation. Finally, the main conclusions of this study, its limitations, and possible future lines of research are discussed.

CLIMATE CHANGE, GREENHOUSE GAS EMISSIONS, AND SUSTAINABLE BUSINESS STRATEGY

From a sustainability standpoint, humanity faces significant challenges that must be addressed, one of which is adaptation to climate change (IPPC, 2014; Córdova, Zorio-Grima, & Merello, 2018). Thus, of the nine planetary boundaries, climate change is considered to be the most important one, according to a report by the Intergovernmental Panel on Climate Change (IPCC) in November 2014. This document states, with a certainty of 95%,

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that human beings have been responsible for the warming of the earth in recent decades and that temperatures will continue to rise if concrete measures are not taken to stop the current levels of pollution (Prieto, 2014).

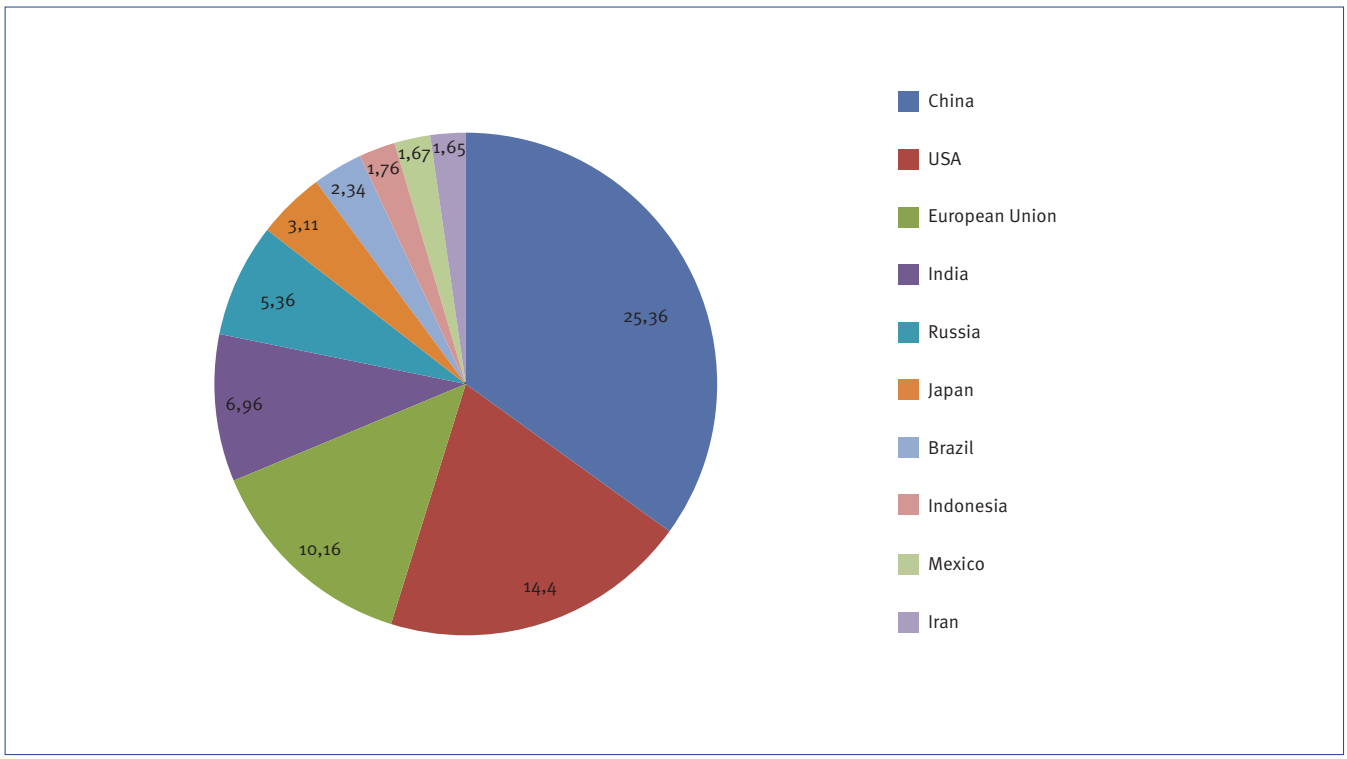
The United Nations Framework Convention on Climate Change, (hereinafter, UNFCCC), an institution created in 1992, defines climate change in its Article 1 as "change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to the natural climate variability observed during comparable time periods."

The purpose of this Convention is to ensure a balance of GHG concentrations in the atmosphere, so that dangerous human actions that harm the climate system can be avoided (UNFCCC, 1992). In this context, in December 1997, the Kyoto Protocol (which was enacted in 2004) was established, constituting an important first step in the fight against GHG emissions.

Currently, China, the United States, and the European Union are the worst offenders in terms of GHG emissions, accounting for 50% of global emissions. In Spain, more than 80% of the annual GHG emissions are CO_2, mainly from the direct combustion of fuels to obtain energy and heat (PricewaterhouseCoopers, 2015). The main sources of GHG emissions are concentrated in the sectors of electricity, manufacturing, construction, transportation, and the combustion of other fuels (71%), followed by the agricultural sector (13%), and emissions due to changes in the use of soil (afforestation, deforestation, and reforestation, 6%), according to Frohmann and Olmos (2013).

The following graph shows the main GHG emitters and their emissions (Graph 1).

Graph 1. **Main GHG emitters**

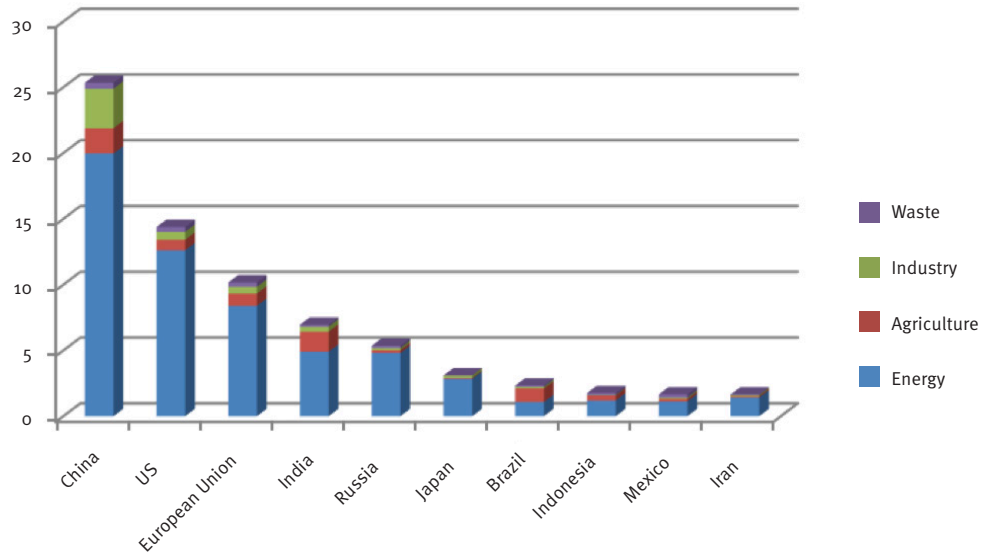


Source: Based on Friedrich, Ge, and Damassa (2015)Similarly, the following are the emissions by sector from the main GHG emitters (Graph 2):

Similarly, the following are the emissions by sector from the main GHG emitters (Graph 2):

When analyzing GHG emissions from a business management perspective, it can be argued that investors are concerned about the carbon disclosure of organizations. Thus, in the last decade, interest in the risks caused by climate change has grown on a large scale among both internal and external investors (PricewaterhouseCoopers, 2012). The study by Tauringana and Chithambo (2014) reveals that GHG measurement and reporting procedures have had a positive effect on the disclosure of GHG emissions, and the results suggest that governance mechanisms, such as size and property concentration, as well as other variables, such as financial and industrial clearance, have had a significant effect on GHG disclosure.

Graph 2. **Main GHG emitters by sector**



Source: Based on Friedrich et al. (2015)

In fact, we are currently seeing growing pressure from investors and other interest groups, who demand complete information from companies that respond to climate change. This information is useful to investors in the decision-making process. Thus, companies have found new channels to transmit not only information related to economic operations, but also non-financial aspects related to carbon. In this sense, two well-known institutions, the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP), propose initiatives to organize and better guide approaches to the information requested from companies at the economic, social, and environmental levels (Matsumura, Prakash, & Vera-Muñoz, 2014).

The GRI has become one of the major protocols for the preparation of sustainability reports, and there are numerous studies that use company social responsibility reports that apply the GRI as a reference. Therefore, the preparation of these reports has clearly enabled organizations to demonstrate their social and environmental commitments to the community (Zorio, García-Benau, & Sierra-García, 2013; Sierra-García, García-Benau, & Zorio, 2014; Sierra-García, Zorio-Grima, & García-Benau, 2015). Dhaliwal, Li, Tsang, and Yang (2011) emphasize the importance of preparing sustainability reports as a way to reduce the differences between managers and investors as well as maximize the value of companies and reduce capital costs. Zuraida, Houque, and Zijl (2016) indicate that, in line with the theory of disclosure, companies that reveal more social and environmental information are valued more. The theory of disclosure refers to the expectation that the market values companies that provide better non-financial information (Healy & Palepu, 2001), i.e., those that are more transparent.

In turn, the CDP (founded in London in the year 2000) has been a pioneer in the creation of a global information system based on a questionnaire open to economic agents. Kolk, Levy, and Pinkse (2008) describe the CDP as one of the most relevant initiatives for investors to learn the implications of climate change. Their study shows that CDP responses have been used successfully by investors to persuade companies to disclose information about their activities related to climate change. Stanny (2013) emphasizes that the CDP's major efforts in 2000 focused on two objectives: informing managers of investor concerns about climate change and alerting investors to the risks associated with it.

EMISSION RIGHTS MARKET

The trading of emission rights, considered to be one of the flexible reduction mechanisms proposed in Kyoto, was introduced in Spain as a result of the creation of the European Emission Rights Market in 2005, under the EU Emissions Trading Scheme (EU ETS) (Ministry of the Presidency, 2012). This scheme is the first and most important international initiative for the trading of GHG

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emission rights. Its launch attracted global attention to climate change and translated into a policy that could and should be recognized within the context of financial accounting (Lovell, Bebbington, Larrinaga, & Sales de Aguiar, 2013).

The EU ETS System was established in three phases, currently placing Spain in the third phase, which covers the period 2013-2020. After a major revision in 2009, as of 2013, a community approach, along with other aspects, was adopted, both in the amount and in the methodology for assigning GHG emission rights, setting out two forms of allocation: auction and assignment free of charge (Ministry of the Presidency, 2012). The new allocation approach proposes that organizations will have to buy their rights in an auction. This is because the European Union has announced that it is planning to phase out free allocation by 2027, considering that auctions would be the most transparent allocation procedure, according to the "polluter pays" principle (European Commission, 2013).

CARBON FOOTPRINT REGISTRY

The Carbon Disclosure Project 2009 report (Ecodes, 2015) acknowledges that the three mechanisms of the Kyoto Protocol, the clean development mechanism (CDM), joint implementation, and emissions trading, have been established in a framework to combat climate change. However, it underlines that the CDM has attracted criticism for leaving aside the so-called diffuse sectors (households, services, waste, agriculture, and transportation). In the European Union, almost 60% of GHG emissions emanate from these sectors, which is why Decision 406/2009/EC of the European Parliament and Council suggests that member states establish policies and strategies to reduce the diffuse sectors by 10% in the year 2020 in relation to 2005 (Ministry of the Presidency, 2014).

In this context, governments are considering the need to create other national registers that facilitate the collection of information related to carbon emissions. In this sense, as part of monitoring compliance with the reduction mechanisms of the Kyoto Protocol, and based on decision 406/2009/EC of the European Parliament and the Council, specifically in Spain, the National Registry of Carbon Footprint, Offsetting, and Carbon Dioxide Absorption Projects, under the Ministry of Agriculture, Food, and Environment, was set up through Royal Decree 163/2014 (Ministry of the Presidency, 2014). It is a pioneering initiative in Spain, which will provide the necessary measures for companies to reduce their emissions (Club Asturiano de Calidad, 2013).

The aim of the Spanish Registry, in line with the commitments made, and with the collaboration of public and private entities, is to raise awareness in the community in general of the fight against climate change. Participation in the Registry is voluntary, allowing participation of natural persons or legal entities, public or private, as well as self-employed workers. Additionally, considering their low resources and the important role they play, small-and medium-sized enterprises (SMEs) have also been allowed to join the Registry (Ministry of the Presidency, 2014). In fact, this Registry is mainly aimed at SMEs. Participation is currently voluntary, but it seems that in the near future, companies that wish to establish contracts with the government will be required to be part of this Registry and will need to have a plan to reduce their carbon footprint, as indicated in Article 10 of Royal Decree 163/2014.

In the Carbon Footprint Registry, GHGs emitted into the atmosphere are reported according to scopes 1, 2, and 3. Scope 1 emissions are direct GHG emissions that come from combustion in boilers, furnaces, and vehicles owned or controlled by the company. Scope 2 comprises indirect GHG emissions associated with the generation of electricity purchased and consumed by the company. Finally, scope 3 corresponds to other indirect emissions that arise from the extraction and production of materials required by the organization, work trips, and the transportation of raw materials, the latter being the most difficult to measure due to the volume of products and services used by organizations and the impossibility of knowing the emissions of these products or services if they are not provided by their producer (Spanish Office for Climate Change, 2015).

An increasing number of governments are developing corporate disclosure schemes, both mandatory and voluntary. In fact, in countries of the European Union, policies for reducing and mitigating emissions have been promoted, including initiatives and action plans related to the use of the carbon footprint, both for products and organizations. For example, Germany promoted the PCF Project (Product Carbon Footprint Project) in 2007, with the aim of developing a standard for calculating the carbon footprint of a product based on PAS2050; the United Kingdom established the Carbon Reduction Commitment (CRC) Energy Efficiency Scheme, a mandatory program since April 2010, with the aim of mitigating the emissions of large private and public companies not subject to existing regulatory systems; Switzerland is preparing a regulation that introduces a multi-criteria evaluation of the life cycle of products and a way to communicate it to consumers; and Japan, South Korea, Australia, and Canada are using Life Cycle Analysis (LCA) approaches in policy formulation. Similarly,

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in the United States, the Environmental Protection Agency has proposed the Sustainability Consortium, as one of the largest private initiatives related to the communication of the environmental footprint of products, followed by the creation of the Sustainability Accounting Standards Board (Club Asturiano de Calidad, 2013).

Given the above, we deemed it appropriate to take advantage of the opportunity provided by the recent disclosure of the scope of the carbon footprint reported by Spanish companies registered in the new Spanish Registry to explore whether, as indicated in the literature and explained below, there are explanatory variables for this transparent behavior.

METHODOLOGY

This is an empirical survey, based on the exploration of the characteristics of Spanish companies that published their carbon footprint in the Spanish National Carbon Footprint Registry. This disclosure is considered one of the most relevant indicators of the fight against climate change, whose calculation is reflected in the recording of a "1 and 2" or "1, 2 and 3" scope.

This study used the database of the Spanish National Carbon Footprint Registry, which, as of May 2015, reported a list of 150 carbon footprints from 125 organizations, each of which report their respective sector, "1 and 2" or "1, 2 and 3" scope, year, and type of footprint. This information is summarized in Table 1. It should be noted that some organizations have registered their carbon footprint for several years, so the number of registered organizations does not match the number of registered carbon footprints. For the purposes of this analysis, the information for the 2013 period was extracted, as it is the most reported period. Subsequently, organizations that did not report their financial information were omitted, which left a sample of 55% of registered companies remaining, equivalent to 69 organizations in the manufacturing, construction, energy transportation, and other sectors.

Based on this sample, the carbon footprint scope record (dependent variable) was identified. The information related to the environmental behavior of these firms (independent variables of the econometric model for the determination of the environmental information disclosure index) was obtained directly from the reports published on their websites and was supplemented with the financial information published in the SABI database, i.e., the other independent variables of the study. The variables associated with each of these companies are summarized in the descriptive statistics of Table 2.

Table 1. **Description of the Spanish Carbon Footprint Registry (1st quarter of 2015)**

Registered Organizations	125
Registered carbon footprints	150
Carbon Footprint Scope "1 and 2"	117
Carbon Footprint Scope "1, 2 and 3"	33

Hypotheses

This study collects evidence from similar studies in order to establish the *a priori* relationship between the "scope" of the carbon footprint report and certain variables that characterize the companies registered in the Spanish Carbon Footprint Registry, into which registration is voluntary. The independent variables used were the industry to which the companies belong, their profitability, the degree of leverage, an index of disclosure of their environmental behavior, and the age and size of the firm, measured according to their volume of assets. Although there is evidence of the type of relationship between the mentioned variables, as described below, these were only taken as a reference, as the hypotheses of this study have a more descriptive than confirmatory purpose.

In related studies (Amran, Periasamy, & Zulkafli, 2014; Rosa, Lunkes, Hein, Vogt, & Degenhart, 2014), evidence has been found that companies in potentially polluting sectors tend to declare more details of their environmental behavior. The causes that underlie this behavior can be associated with the existence of more demanding regulatory frameworks in these industrial branches, the public scrutiny to which companies are exposed for the same event, and the purpose of demonstrating responsible behavior as a strategy for competitiveness and legitimacy in the community (Burgwal & Vieira, 2014).

In our study, 66.7% of Spanish companies are identified as being in the manufacturing sector, so the first hypothesis of the study is:

> H1: Companies that belong to the manufacturing industry are more likely to report a greater scope (1, 2 and 3) of their carbon footprint.

Based on the scientific literature, it is considered important to explore the theoretical relationship between the profitability of firms and their disclosure of environmental information. The results are inconclusive (Hahn & Kühnen, 2013). The investigations by Neu, Warsame, and Pedwellet (1998) and Cormier and Magnan (2003) show a positive relationship between profitability and the level of

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environmental disclosure; Gray, Owen, and Maunders (1987) point out that organizations with greater profitability tend to disclose higher levels of social and environmental information voluntarily. Ahmadi and Bouri (2017) obtained empirical evidence of a positive relationship between the level of environmental disclosure, environmental performance indicators, and financial attributes. Montabon, Sroufe, and Narasimhan (2007) show a significant relationship between the financial performance of companies and their environmental management practices, suggesting that there are probably commercial advantages derived from more transparent environmental behavior. Nevertheless, other studies show the absence of a positive association between a company's level of environmental disclosure and profitability (Cormier & Magnan, 1999; Al-Tuwaijri, Christensen, & Hughes, 2004; Pahuja, 2009; Saha & Akter, 2013; Andrikopoulos & Kriklani, 2013; Burgwal & Vieira, 2014). Thus, in this study, we expect the relationship between the profitability of the firms and their level of reporting will be direct and significant. This hypothesis is expressed as follows:

> H2: Companies with a higher Return On Equity (ROE) have a propensity to report a greater scope (1, 2 and 3) of their carbon footprint.

The relationship between leverage and the degree of carbon footprint reporting is presumed to be a determining factor in greater environmental reporting because, as companies require more financing, investors demand that they be kept more informed of operations, including performance and environmental information (Andrikopoulos & Kriklani, 2013). In addition, it has been suggested that companies with higher leverage are more likely to increase disclosure volume to lower their agency costs (Ho & Taylor, 2007). Although no conclusive evidence has been found indicating any consensus regarding the relationship between both variables (Akbas, 2014), there are specific cases such as those of Hibbit (2003) and Orij (2007), which find a positive relationship between the disclosure of social-environmental responsibility and leverage. Following the empirical evidence, the hypothesis of the relationship mentioned above, for this study, is expressed as follows:

> H3: More leveraged companies are more likely to report a greater scope (1, 2 and 3) of their carbon footprint.

Intuitively, it can be expected that companies that have a tradition of disclosing some variables of their environmental behavior (i.e., they have a transparent environmental culture) when calculating their carbon footprint are likely to report a greater scope compared to companies that normally do not disseminate indicators of their environmental behavior. In fact, as can be seen in Table 1, companies that publish reports on sustainability or Corporate Social Responsibility are rated as the most transparent in the dissemination of environmental issues. Rankin, Windsor, and Wahyuni (2010) reveal that the voluntary disclosure of GHG emissions by companies is attributed to the presence of an environmental management system and the reporting of social and environmental issues in the GRI and CDP reports. On the other hand, the evidence indicates that one of the main determinants of corporate reporting in a given year is prior reporting (Stanny, 2013). The determinants of the quality of the information have also been studied (something similar to what was tested in this study with the disclosure indicator). These studies observed that high quality reporting is primarily associated with the largest companies and their membership as well as industries related to publicly known environmental impacts (Brammer & Pavelin, 2008). In this sense, the following hypothesis is raised:

> H4: Companies are more likely to report a greater carbon footprint (1, 2 and 3) if they have disclosed it in other types of media.

Gómez and Aleixandre (2014) considered the calculation and disclosure of the carbon footprint to be a behavior of contemporary companies as well as the result of process and management innovations. They considered age to be a factor of business innovation and hypothesized that younger companies are more likely to internalize such innovations. More specific studies have been carried out on this subject, regarding the age of companies and their degree of disclosure (Bhattacharyya, 2014; Akbas, 2014), but their conclusions have not been significant. In this paper, the relationship between these variables is again tested for the case of Spain, proposing the hypothesis described below:

> H5: Younger companies tend to report a greater reach (1, 2 and 3) of their carbon footprint.

Numerous studies have related the size of a firm and the degree of carbon footprint reporting, finding similar results (Udayasankar, 2008; Tagesson, Blank, Broberg, & Collin, 2009; Zeng, Xu, Yin, & Tam, 2012; Andrikopoulos & Kriklani, 2013; Amran et al., 2014; Akbas, 2014; Juhmani, 2014; Burgwal & Vieira, 2014). A direct and statistically significant relationship has been found in most cases. The rationale underlying this type of relationship suggests the largest companies attract more attention and, therefore, suffer greater pressure to be consistent with what is expected be of them (Amran et al., 2014). With this evidence, the hypothesis presented is as follows:

> H6: Larger companies are more likely to report a greater reach (1, 2 and 3) of their carbon footprint.

A logistic regression model (logit) was applied to contrast the hypotheses. Equation 1 summarizes the approach of the model as a function of the hypotheses:

prob. huella de alcance completo (1 + 2 y 3) = f (+indústria, + reantabilidad, + sapalacamiento, divulgaciones previa – edad + tamño) ↑ apalancamiento ↑ previas	(1)

Given the dichotomous nature of the model-dependent variable, a logit econometric specification was used, which allows the relationship between this type of variable to be analyzed (Gujarati & Porter, 2009). The econometric specification was raised as described in equation 2:

$logit(Y) = In\left(\frac{\pi}{1-\pi}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6$	(2)

Therefore,

$\pi = prob.\ (Y = ALCANCE \backslash X_1 = SECTOR,\ X_2 = ROE,\ X_3 = RPFP,\ X_4 = DIVULG,\ X_5 = EDAD,\ X_6 = LNACTIVOS =$

$\frac{e^{\alpha+\beta_1 SECTOR+\beta_2 ROE+\beta_3 RPFP+\beta_4 DIVULG+\beta_5 EDAD+\beta_4 LN\ ACTIVOS}}{1+e^{\alpha+\beta_1 SECTOR+\beta_2 ROE+\beta_3 RPFP+\beta_4 DIVULG+\beta_5 EDAD+\beta_4 LN\ ACTIVOS}}$ ↑ ln Activos	(3)

where π is the probability that companies will calculate their carbon footprint in a larger range (1, 2 and 3), α is the Y-intercept, β are the coefficients of the regression, and X are the predictors, represented by the independent variables.

In the first-instance analysis of the descriptive statistics (Table 2), the dependent variable of the model is the scope of the carbon footprint registry, according to which, the majority of companies (78.30%) have a lower reach (1 and 2), while a minority (21.70%) have registered a greater reach of their carbon footprint (1, 2 and 3), even though the registration is voluntary. This behavior was represented as a dichotomous variable, as shown in Table 2. One of the explanatory variables proposed for this carbon footprint report was the industry in which a company operates. It should be noted that 66.7% of these companies are associated with the manufacturing and processing of raw materials. Conversely, the variables are also described individually, showing the mean values and standard deviation, maximum and minimum values for the continuous variables, and the frequency of the dichotomous variables.

As an independent variable for the economic model, an index of environmental performance was created (Exhibition 1), which also represents the previous disclosures of the organizations. The collection of the different levels of diffusion and visibility in terms of the environmental behavior of the companies was based on a search for related information on their websites. The index gives the highest score in the scale to companies that have reported their environmental behavior in an annual sustainability report, which represents the greater disclosure effort it implies with respect to less complex dissemination channels (articles, news, infographics, etc.).

Exhibition 1. **Scale of the disclosure index (transparent environmental culture proxy)**

Score	Qualitative scale
1	Does not disclose anything.
2	Discloses the behavior in one parameter: consumption of water, energy, paper, waste, or CO2
3	Discloses the behavior in 2 parameters
4	Discloses the behavior in 3 or more parameters
5	Discloses a sustainability report or CSR

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Table 2. **Descriptive statistics of the variables**

Variables		Categories	Descriptive statistics	
Dependent	*Y: Carbon footprint FOOTPRINT C*	*Scope 1 and 2 (0)*	Frequency	78.30 %
		Scope 1, 2 and 3 (1)	Frequency	21.70 %
Independent	*X_1: Industry SECTOR*	*Manufacturing (1)*	Frequency	66.7 %
		Other sectors (0)	Frequency	33.3 %
	X_2: ROE		Mean	5.71 %
			Typical Dev.	9.48 %
			Maximum	37.74
			Minimum	-19.13 %
	X_3: RPFP Liabilities/Equity		Media	177.79 %
			Typical Dev.	214.31 %
			Maximum	930.09 %
			Minimum	-521.88 %
	X_4: Disclosure index (1-5 scale) DISCL.		Media	1.51
			Typical Dev.	1.29
			Maximum	5
			Minimum	1
	X_5: Company age AGE		Media	27.83
			Typical Dev.	23.66
			Maximum	127
			Minimum	3
	X_6: Company size (assets, millions of euro).		Media	358.31
			Typical Dev.	1711.17
			Maximum	13595.96
			Minimum	0.6

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RESULTS

The results of the estimation (Table 3) mainly associate the scope of the carbon footprint calculation of the companies (dependent variable) with the degree of financial leverage (RPFP), the index of disclosure of their environmental behavior (DISCL.), and the age of the companies (AGE).

Table 3. **Results of the estimate**

Logistic regression		Number of obs. = 69 Wald chi2 (6) = 21.80 Prob › chi2 = 0.0013 Pseudo R2 = 0.3049				
Log pseudo-likelihood = -25.113255						
FOOTPRINT C	Coef.	Robust Std. Err.	z	P›|z|	[95 % Conf. Interval]	
SECTOR	-0.4254522	0.8154179	-0.52	0.602	-2.023642	1.172738
ROE	0.0357085	0.030067	1.19	0.235	-0.0232217	0.0946386
RPFP	0.0047489	0.0015281	3.11	0.002	0.0017538	0.0077439
DISCL.	0.5882607	0.3377239	1.74	0.082	-0.073666	1.250187
AGE	-0.0353117	0.0205056	-1.72	0.085	-0.075502	0.0048786
IN ASSETS	3.41e–07	7.95e–07	0.43	0.668	-1.22e–06	1.90e–06
_cons	-3.056155	1.184995	-2.58	0.010	-5.378703	-0.733608

The only variable with 5% statistical significance is the ratio of indebtedness, i.e., liabilities/equity, while with greater flexibility (at 10% significance), the disclosure index and age of the companies could be accepted as determining variables of the carbon footprint record. The other variables, which were expected *a priori* (hypotheses H1, H2, and H6) and which explain the probability of companies registering a calculation with a greater scope of their carbon footprint, were not significant.

The adjustment indicators of the pseudo-R2 model (30.49%) and chi square (p = 0.0013) suggest that the set of variables are statistically different from zero and are useful in explaining approximately 30.49% of the probabilities that companies will register a greater scope calculation of their carbon footprint. The calculated R2 count statistic also indicates that 86% of the predictions of the model are correct; therefore, the model is useful to describe the relationship between the variables.

From the analysis of the signs of the significant correlation coefficients, it is also deduced that the probability that Spanish companies will register a calculation with a greater scope of their carbon footprint (1, 2 and 3) in the National Registry of Carbon Footprint is favorably affected by its level of leverage (RPFP) and by its transparency with the community, expressed in the disclosure index of environmental behavior; this probability is negatively affected by age, that is, it is the youngest companies that register the greatest scope of their carbon footprint.

DISCUSSION

The hypotheses proposed were partially accepted. There was not enough evidence to accept the H1, H2, and H6. Only H3 (leverage) was accepted with a 5% significance, while H4 and H5 were accepted with a 10% significance.

The inability to accept the first hypothesis implies that in the Spanish Carbon Footprint Registry, the empirical relationship found by other authors is not met (Bhattacharyya, 2014; Akbas, 2014; Tagesson et al., 2009; Burgwal & Vieira, 2014). These authors find that there is a greater propensity by companies in sensitive sectors (highly polluting) to deploy greater efforts to publicize their environmental behavior, especially because their interest groups include institutional funders.

On the other hand, despite having a direct relationship with the dependent variable as established in H2, financial profitability (measured by the ROE) was not statistically significant. This confirms, for the Spanish case, the findings

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of similar studies for other countries (Andrikopoulos & Kriklani, 2013; Burgwal & Vieira, 2014), in which the evidence for accepting the hypothesis of the relationship between the profitability of firms and their degree of environmental disclosure was also not demonstrated.

H3, which shows the relationship between the degree of disclosure of the carbon footprint and the leverage index, was accepted with a 5% significance, according to the results of the estimation. Hibbit (2003) and Orij (2007) found similar results when relating the disclosure of social-environmental responsibility and the degree of leverage of the firms. In this case, there is no additional information to attribute with certainty the causes of this correlation; however, in accordance with the related literature, it could be associated with the practice of certain highly leveraged companies of preparing reports on operations and social responsibility in order to keep their creditors informed and reduce agency costs. Hahn, Reimsbach, and Schiemann (2015), however, report that most of the studies reviewed in their research did not obtain evidence of the impact of leverage.

In relation to H4, which associates the degree of prior disclosure of the environmental behavior of companies with their efforts to calculate the carbon footprint, a direct relationship was found, although to be considered significant, its level of significance should be lowered to 10%. Following this reasoning, the tradition of companies with greater transparency in their environmental behavior would explain their inclination to record a calculation of carbon footprint with a greater scope.

H5 of the study (accepted with a 10% significance) suggests that younger companies are prone to report a greater scope of carbon footprint, compared to the oldest companies. This relationship could be explained by the recent validity of the environmental concern, which has not yet been echoed by the most traditional companies due the voluntary nature of the carbon footprint record. This logic would imply that, in order to achieve a greater commitment by more traditional companies to the official carbon footprint registration, the induction of motivations additional to those currently in existence is required.

Finally, H6, which posited a direct correlation between the carbon footprint record and the size of the firm, could not be accepted as the degree of association of the variables was not statistically significant. Although the evidence suggests that larger companies attract more attention and, therefore, are more pressured to be consistent with what is expected of them at the environmental level (Amran et al., 2014; Hahn et al., 2015), for the Spanish case, this relationship is not fulfilled according to our data sample.

CONCLUSIONS

As stated in Decision 406/2009/EC of the European Parliament and Council, despite the efforts to reduce GHG emissions in the sectors affected by the EU Emissions Trading Scheme, a substantial reduction of emissions in other sectors of the economy is still essential. To this end, the awareness-raising role that can be played in this field by voluntary registration of companies in the National Carbon Footprint Registry and dissemination of the different scopes of the footprint is crucial. This information can be taken into consideration by a large group of stakeholders, thus affecting their decision-making processes.

Focusing on this aspect, this survey pioneers in exploring the factors that motivate Spanish companies to register a greater scope (1, 2 and 3) of carbon emissions in the Carbon Footprint Registry. This Registry has been recently created by Royal Decree 163/2014, which highlights the originality and timeliness of this investigation.

The logit estimation allowed the identification of a positive correlation among the degree of carbon footprint registration with profitability, leverage, previous disclosures, and size of the firms, while a negative relationship was identified with the manufacturing sector and the age of the companies. Nevertheless, based on these relationships, only the relationships of the scope of the footprint with the leverage, index of disclosure, and age were significant.

The results are consistent with previous studies (Ho & Taylor, 2007; Andrikopoulos & Kriklani, 2013; Akbas, 2014), which found a positive association (although in different proportions) between leverage and the degree of disclosure of the companies. On the other hand, the hypothetical relationship suggested by Gómez and Aleixandre (2014), in which younger companies are more prone to adopt process innovations (in reporting, in this case), is confirmed. The strongest and most evident relationship was found between the disclosure index and the scope of the registry, which is surely associated with the theoretical propensity of companies to maintain a culture of disclosure over time (Stanny, 2013).

In all, our study is a relevant contribution for different stakeholders. On the one hand, legislators from other countries, taking the Spanish case as a reference, may consider the convenience of carrying out similar initiatives. Moreover, this type of research can assist in raising the degree of knowledge about this tool in the fight against climate change, so that more and more companies adhere to the Registry. On the other hand, the scientific community could explore whether similar initiatives that are carried out in other countries or regions (e.g., in autonomous

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communities of Spain such as Andalusia, Murcia, Catalonia, and the Basque Country) have a greater or lesser impact.

One limitation of our study lies in the limited sample size that, while sufficient for the application of the applied methodological technique, discourages the generalization of results. Note, however, that the purpose of this study was only exploratory. Future researchers will no longer have problems of this type as the number of companies registered in the National Registry has grown almost tenfold in its first four years (CincoDías, 2018).

Registration in the Spanish National Carbon Footprint Registry implies a commitment by companies to reduce their emissions. The reduction objectives that Spanish organizations have proposed in their plans are highly variable. They have a mean reduction goal of 6.7%, but they fall within a range between 0.01% to 40%. This last striking figure can be explained by the intention to acquire certificates that guarantee the origin of renewable energy in the purchase of electricity and by the forecast that there will be a change in technology that will create significant energy savings and a consequent decrease in emissions (MAGRAMA—Ministry of Agriculture, Food, and Environment, 2015).

For the registration of their accounting entries related to GHG emission rights, Spanish companies rely on the normative reference proposed by the Instituto de Contabilidad y Auditoría de Cuentas (ICAC). Nevertheless, the analysis by Haupt and Ismer (2013) regarding accounting under the EU ETS, in light of the current regulatory gap in the International Financial Reporting Standards (IFRS), calls for an urgent harmonization of accounting policies in order to reflect the financial situation of companies.

We hope that, in the near future, governments and regulatory agencies committed to the environment will define standards and policies that encourage and ensure the presentation of information to facilitate the adoption of measures that guarantee increased sustainable behavior. This will favor the possibility of carrying out more in-depth investigations on this subject, which is currently of great relevance and is the focus of global attention.

Our study on the initial registration of companies in this initiative opens up interesting avenues for future research. New research that includes more years of information from the Registry, will be able to study whether there is a learning effect, i.e., mimetic isomorphism, and whether the types of emissions reported vary. This new research will also be able to assess the evolution in contamination by these companies.

It is very important, in this sense, to appeal to the ethics of organizations in order to avoid fraud, such as the recent case of Volkswagen, and to encourage mechanisms for external verification or assurance of achievements in sustainability (Zorio et al., 2013; Sierra-García et al., 2014, 2015). Similarly, an approach based on the decision-making process from within organizations (as suggested by Correa & Larrinaga, 2015) should help future research complement the vision obtained in their studies.

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DIVERSITY OF THE BOARD AND CAPITAL STRUCTURE

Diversidade do conselho de administração e a estrutura de capital

Diversidad del consejo de administración y la estructura de capital

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ABSTRACT

Board diversity has been a recurring theme for discussions in both the academic and corporate environments. The concept of diversity is broad and encompasses not only gender and ethnic variety but also cultural, social, and professional diversity. This research aims to contribute to the understanding of the influence of company boards on corporate policies, by analyzing the effects of board diversity on firms' financial policy decisions. The results suggest that board diversity improves monitoring effectiveness and is positively related to firm leverage, in line with the effects of reducing managerial entrenchment by means of stronger monitoring.

KEYWORDS | Board diversity, board of directors, capital structure, leverage, managerial entrenchment

RESUMO

A diversidade dos conselhos de administração tem sido tema recorrente de discussões tanto no meio acadêmico quanto no meio empresarial. O conceito de diversidade é entendido de maneira ampla, incluindo não apenas a variedade de gênero e etnia, mas também a diversidade em relação aos aspectos culturais, sociais e profissionais. O objetivo desta pesquisa é contribuir para o entendimento da influência do conselho de administração nas políticas corporativas a partir da análise dos impactos da diversidade do conselho nas decisões de política financeira das empresas. Os resultados desta pesquisa sugerem que essa diversidade propicia melhor monitoramento por parte do conselho em relação aos administradores e está relacionada positivamente com o endividamento da empresa, em linha com os efeitos da redução do entrincheiramento gerencial por meio de maior monitoramento.

PALAVRAS-CHAVE */ Diversidade do conselho, conselho de administração, estrutura de capital, endividamento, entrincheiramento gerencial.*

RESUMEN

La diversidad de los consejos de administración ha sido un tema frecuente de discusiones tanto en el medio académico como en el empresarial. El concepto de diversidad es entendido con bastante amplitud, incluyendo no solamente la variedad de género y etnia, sino también la diversidad en relación a los aspectos culturales, sociales y profesionales. Esta investigación tiene por objetivo contribuir a la comprensión de la influencia que tiene la diversidad del consejo de administración en las políticas corporativas, a partir del análisis de los impactos producidos por dicha diversidad, en las decisiones de la política financiera de las empresas. Los resultados de esta investigación sugieren que esa diversidad propicia un mejor control de los administradores por parte del consejo y está relacionada positivamente con el endeudamiento de la empresa, en línea con los efectos de la reducción del llamado atrincheramiento gerencial, por medio del mayor monitoreo.

PALABRAS CLAVE */ Diversidad del consejo, consejo de administración, estructura de capital, endeudamiento, atrincheramiento gerencial.*

INTRODUCTION

Corporate governance has been a recurring issue within economic and financial discussions for some time now, especially after the spate of scandals that took place at the start of this century. Sometimes, the effects of the global economic crisis are discussed; sometimes, the specific crises that have befallen a certain country; and other times, specific aspects of the corporate world. In Brazil, corruption in corporations, fraud, and poor conduct on the part of companies, together with questionable decisions taken by boards of directors, for example, are issues that have been repeatedly raised by the media.

The board of directors is a core instrument of governance. It is the main source of monitoring of management, with greater flexibility than external controls, for adjusting the behavior of management. The board of a company is also assigned the responsibility of improving corporate governance (Stiles & Taylor, 2001), particularly in markets with poor external monitoring (Ararat, Aksu, & Cetin, 2015; Dahya, Dimitrov, & McConnell, 2008).

Consequently, there are increased expectations regarding the activities of board members and their influence on corporate decisions. Thus, the board members' profiles are specified on the agenda of discussions. Should the board member be a professional counselor or someone with political connections? How much experience is desirable? Would it be better to have a board member who has already presided over a company in the same business segment or a board member with experience in the financial sector? Is the age of the board member important? Does diversity of gender have a bearing on decisions? The characteristics of the board, from both the occupational and the social points of view, are aspects that could have a significant influence on its activities, both with regard to the monitoring of the Executive Board and its strategic guidance on company operations. This means that understanding the impact caused by diversity, in its widest sense, considering not only gender diversity but also the structural diversity of the board, social diversity, and the functional diversity of the board, becomes a relevant factor within studies of corporate decisions.

Among corporate policies, the policies of financing of companies have their importance stressed in times of crisis or appraisal of risks. According to the finance ministers and presidents of the central banks of the largest economies in the world, who constitute the G-20 (Group of Twenty), the excessive external debt of companies is one of the new financial risks (Moreira, 2015) that need to be mitigated. Apart from these macroeconomic aspects, naturally there are also specific aspects of business risks. The board is at the center of this process, as decisions about the policies governing the financing of companies normally have areas of approval that reach the board of the companies.

According to agency theory, debt is a disciplinary element for company executives. As Jensen (1986) explains, debt reduces agency conflicts through the reduction of cash available for discretionary use by executives. This means that the decisions taken by the board with regard to financing policies could affect the monitoring of the executive board of the company. In contrast, Güner, Malmendier, and Tate (2008) argue that the composition and the expertise of the board could also influence the investment and financing policies of the company. Conversely, Anderson, Reeb, Upadhyay, and Zhao (2011) doubt whether the heterogeneity of the board makes it more efficient. However, many researchers who have studied diversified groups have shown that "the decision-making process improves with diversity" (Hillman, 2015, p. 104).

With the crises and poor performance experienced by large companies, the board is playing a more significant role, increasingly influencing investors' analyses. In this regard, "understanding the board is vital, both for understanding corporate behavior and the definition of policies that govern corporate activities" (Adams, Hermalin, & Weisbach, 2010).

The characteristics of the boards and their influence on corporate decisions have been researched, with unclear and inconclusive results, thereby motivating further study, especially with regard to the influence of board diversity on corporate policies. As Hillman (2015) points out, there are many more unanswered questions than answers regarding the benefits of diversity within the board. From the corporate standpoint, research on the effect of diversity on the board could help organizations in their decisions to improve corporate governance processes, especially within an environment of an emerging country with a concentration of shares, and corporate governance undergoing development.

In the light of the points mentioned, we sense that this would be the time to empirically address the following research problem: Considering the effects of greater monitoring and counseling, would a greater diversity, considering different criteria, have a relevant influence on how companies set up their capital structure?

Thus, the main purpose of this study was to determine the influence of diversity within the board on decisions affecting companies' capital structure, and the basic hypothesis tested was: "There is a positive relationship between general diversity of the board and the company's level of debt."

Regression analysis results suggest that there is a positive and significant relationship between the General Diversity Index

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and Debt Indices. These results suggest that the pressure of monitoring has an influence on the relationship between the board diversity and company debt. Berger, Ofek, and Yermack (1997) explain that closer monitoring of company executives by the board reduces entrenchment, thus positively affecting leverage.

Along the theoretical lines of resource dependence, Hillman and Dalziel (2003) suggest that diversity through expertise, experience, relationships, and legitimation leads to improved monitoring by the board. Thus, both from the standpoint of Agency Theory and Resource Dependence, it is possible to interpret the results of this study as being an evidence that diversity positively influences company debt through improvements to the monitoring process.

This article presents a brief overview of the theoretical references in the next section, followed by the methodological procedures, results, and final considerations.

THEORETICAL REFERENCES

The board of directors is crucial in the structure of an organization. It is the link between the shareholders who provide capital and executives who use this capital to create added value (Monks & Minow, 2011). This means that the board members are representatives appointed by the shareholders to supervise the management, manage company assets, and promote sustainable growth. According to Fama and Jensen (1983), it is the board that "ratifies and monitors important decisions, and also chooses, dismisses and rewards important decisions taken by the managers" (p. 323).

The activities of the board are split into monitoring and advising (Adams & Ferreira, 2007; Coles, Daniel, & Naveen, 2008; Hillman, Nicholson, & Shropshire, 2008; Lehn, Patro, & Zhao, 2009; Linck, Netter, & Yang, 2008; Raheja, 2005). According to agency theory, monitoring assumes control activities, on behalf of the shareholders, for the control of shares and of results obtained by the executive board led by the CEO. Advisory role involves, mainly, the strategic decisions regarding company operations, including the policies of investments and financing. From the perspective of resource dependence, this activity is associated with the provision of resources through committees, statements, or relationships (Adam & Ferreira, 2007).

Agency Theory and Resource Dependence Theory

Agency theory is still the main paradigm in financial literature when analyzing the process of decision making by management and the relationships between executives and the company (Baker & Anderson, 2010). The agency theory model focuses on the relationship between the principal (shareholders) and the agent (managers), and their priorities of interests.

From the agency perspective, the purpose of a corporation is to generate wealth for its owners, and the sharing of this wealth with managers would only be justified if managers create substantially more wealth than they receive (Nordberg, 2010). In this context, corporations need strong boards, which act as controllers to control the executive board. The boards should carry out the critical role of monitoring, and paying compensation to, top executives to ensure maximization of the shareholders' wealth. In a nutshell, the board is considered an essential mechanism for corporate control (Zahra & Pearce, 1989).

According to Resource Dependence theory, the board plays an essential role as a provider of resources. Hillman and Dalziel (2003) make it clear that these resources could come in the form of legitimacy, guidance and opinion statements, and relationships with other organizations. They refer to the capital of the board, which consists both of human capital (experience, specific knowledge, reputation) and relational capital (a relationship network, with connections to other companies, and external contingencies). The researchers of the theory of Resource Dependence stress the contribution of external board members as a link between the organization and its environment, thereby providing access to resources that are necessary for the company (Daily, Dalton, & Cannella, 2003; Zahra & Pearce, 1989).

Thus, in short, from the agency perspective, the boards should carry out the critical function of monitoring the executive board; in contrast, from the point of view of Resource Dependence, the boards should provide resources through their human and relational capital. The board diversity, in its widest scope, including not only racial and gender diversity but also structural, demographic and occupational diversity, may contribute to a more complete decision-making process. Bear, Rahman, and Post (2010) stress that this diversity can provide experience and knowledge for efficient monitoring of company management by boards. Hillman and Dalziel (2003) also suggest that diversity through expertise, experience, relationship, and legitimation produce improvements in the monitoring carried out by the board.

Corporate governance, committees, and capital structure

Morellec, Nikolov, and Schürhoff (2012) show that agency costs vary significantly between companies and are related to the proxies

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commonly used for Corporate Governance (CG). The variables associated with stronger monitoring, like board independence, have a negative effect on the estimates of agency conflicts.

In Brazil, the results obtained by Silveira, Perobelli, and Barros (2008) do not support these findings. The authors study the relationship between the quality of CG and the companies' capital structures, using simultaneous equations, supporting a possible bidirectional causality. The quality of the CG would be a factor in determining the capital structure and, at the same time, the capital structure would be one of the factors that would establish the quality of CG. The results related to the influence of the capital structure on CG are not conclusive, but results suggest that CG practices significantly influence the leveraging of the companies. The authors explain that this positive relationship between CG quality and the extent of debt, different from what is shown by international studies, could be induced by the market with a low degree of protection for minority shareholders. It is important to stress that the results of econometric analyses show that the Governance Index, with regard to the property and committee structure, seems to have a positive influence on companies' debt level (Silveira et al., 2008).

Starting from the assumption that capital structure is one of the mechanisms for the mitigation of agency costs, as defended by Jensen (1986), the results of the study by Harford, Li, and Zhao (2008) show that strong boards are closely related to leverage, and negatively correlated to the use of long-term debt. Here, we point out that the greatest power of a board lies in the non-duality of the function of the CEO and in the presence of blockholders (shareholders with share participation of more than 5%) on the board.

Using a panel of over 2,400 companies in 33 countries, Alves, Couto, and Francisco (2015) present evidence that companies with more independent boards use more external financing than internal financing (accumulated profits), more long-term debt than short-term debt, and more financing through capital rather than through debt.

According to Berger, Kick, and Schaeck (2014), the reduction of the average age of the committee (board) also increases the risk of banks' portfolios. The increased participation of women also leads to increased risk, but this effect is only marginal, both economically and statistically. Thus, the authors conclude that although the presence of board members with PhD qualifications is associated with a reduction of risk – albeit small, this reduction is statistically significant.

In Brazil, the results of the study conducted by Mendes-da-Silva, Famá, and Martelanc (2007) were not conclusive regarding the composition of the board and its possible influence on debt levels. However, in cases without any duality of CEO (when the president of the board is from outside the company), the companies show a lower level of debt in the short term. One possible explanation, in this specific case, is that the CEO prefers to avoid the risk of debt as a result of stronger participation by the board. Alternatively, this study shows that possible encouragement of executives through profit participation could increase company debt. This result is in line with the findings of Berger et al. (1997), which showed a lower element of debt when the CEO has a poor incentive plan within the company's compensation plan.

Silva, Santos, and Almeida (2011) show that companies with better governance practices with regard to the board tend to use more short-term and less long-term debt. The authors offer two possible interpretations for this fact: a) short-term debt is a disciplinary mechanism for managers, and b) controlling shareholders are risk averse, as there is a high concentration of property in Brazil.

Diversity of the board and capital structure

Racial and gender diversity have been widely studied in the literature and remain important subjects for discussion also within the corporate world. In particular, the participation of women in top management and boards has been a point for discussion and questioning.

The board diversity or heterogeneity, however, is not limited to the presence of women. As Hillman (2015) explains, the benefits of diversity could come from issues such as ethnicity, nationality, occupation, and other types of diversity. Regarding the composition of the board, the Brazilian Institute for Corporate Governance, in its Code for Best Practices, recommends that "the board of directors shall be formed based on a diversity of knowledge, experience, behavior, age group, and gender" (IBGC, 2015, p.42).

Considered within a wider scope, diversity can be classified into demographic diversity, including social and occupational diversity, and statutory or structural diversity (Adams, Haan, Terjesen & Ees, 2015; Anderson et al., 2011; Ben-Amar, Francoeur, Hafsi, & Labelle, 2013). Structural diversity is closely associated with board independence and non-duality of the CEO; in contrast, social diversity considers differences in gender, age, ethnicity, or nationality; and functional diversity refers to academic qualifications and background and to professional experience.

The general understanding is that independent board members, or those without any family ties, business

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associations, or any other relationship with controlling shareholders or executives, represent diversity in the structure of the board. In the same way, when there is non-duality of the CEO, i.e., the President of the board and the CEO are different people, this could also represent diversity in the board composition.

Intuitively, it is believed that diversity in terms of demographic and social characteristics may facilitate a more complete decision-making process, as different experiences may allow a more detailed analysis. Gender diversity is still a relevant issue within discussions on company governance, both in academic research as also in the corporate area. Gupta, Lam, Sami, and Zhou (2014), for example, find evidence that racial and gender board diversity improves the social, environmental, and governance performance of the company. In a study conducted in Denmark, Rose (2005) explains that the younger boards are more innovative and more efficient at monitoring when compared to older boards. The functional board diversity, with board members with different backgrounds and experience, could bring different perspectives and skills, complementary to each other, that add value to the board discussions and the deliberations (Anderson et al., 2011).

Studies involving relations of statutory diversity (considering the board independence and CEO duality, in isolation) with capital structure are scarce and diffuse. With regard to demographic diversity (social and occupational diversity), despite the presence of several work projects dealing with specific characteristics of diversity, the study does not show any evidence of the direct effects on decisions related to capital structure. Aside from indirect effects, such as those mentioned in the studies by Berger et al. (2014), many studies involving demographic diversity emphasize the relevance and the impact of the board monitoring function, as did the studies conducted by Ararat et al. (2010), Rose (2005), and Adams and Ferreira (2009).

The intensity of board monitoring is directly associated with the effects of managerial entrenchment. Indeed, Berger et al. (1997) define entrenchment as a situation in which "executives are not subjected to the control mechanisms of CG, including monitoring from the board, the threat of acquisition or dismissal, and performance incentives based on remuneration or shares" (p. 1436). In agreement with the theories raised by Jensen (1986), these researchers present evidence that the entrenched executives, which are those who do not face active monitoring, seek to avoid getting into debt. This represents a positive association between monitoring and debt. As Jensen (1986) explains, executives tend to issue less debt, without the pressure of a disciplinary force. Berger et al. (1997) state that executives use leverage as an instrument of defense, seeking to boost the value of the company through a more favorable capital structure. They stress that executives who feel there could be any threat to their security increase the level of debt as an action toward the improvement of value. Monitoring actions are indeed threats that could reduce the level of entrenchment of executives. In this context, executives increase their level of debt in response to actions that reduce their entrenchment.

Based on the theory of Resource Dependence, one can argue that the provision of resources in the form of board capital, considering guidance and consultancy through expertise, experience, relationships, and legitimation, also helps to improve monitoring (Hillman & Dalziel, 2003). This adds weight to the hypothesis that diversity is positively associated with debt.

RESEARCH METHODOLOGY

Based on the publicly-listed companies in B3 (the Brazilian Stock Exchange), the sample covers a period of five years, from 2010 to 2014. It focused on the 100 companies with highest trading volumes in 2013 and 2014, excluding companies in the financial sector. The accounting information was extracted from the Economática database.

The information about the boards was obtained by checking the reference forms (FRE) available in the database of the Brazilian Securities and Exchange Committee (*Comissão de Valores Mobiliários* - CVM). In this study, we have based ourselves on the last FRE for each year, meaning that the data as extracted correspond to the position as at the end of each business year.

The information on the composition, characteristics, and experience of the board and the statutory board of the company is shown in Chapter 12 of the FRE. Despite a certain degree of standardization, the detailing of the information made available by the companies is highly variable. Due to the specificities for this study, the data have been collected manually, meaning that, in some cases, the reported information needed to be identified and interpreted. Missing data were obtained by accessing other sources of information, including the databases of Bloomberg, 4-Traders, Reuters, and companies themselves. In this process, data from multiple sources were compared, to maximize consistency and accuracy.

Our study is explanatory and quantitative in nature, as it seeks to obtain evidence that could be generalized, with the application of econometric methods and use of secondary data.

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Regression models with panel data

In general, the three most common approaches for regression models with panel data (Fávero, Belfiore, Silva, & Chan, 2009) are a) Pooled OLS; b) Panel with Fixed Effects, and c) Panel with Random Effects. The Pooled OLS Model uses panel data without considering the nature of the transversal cross-section and time series – all data are essentially piled up. In the Panel with Fixed Effects model, one considers the heterogeneity between individual people, allowing each one to have his or her intercept. Finally, in the Random Effects model, different from the Fixed Effects Model, it is assumed that the variation between individuals is a random variable. According to Wooldridge (2013), "the estimator based on random effects is appropriate when it is believed that the non-observed effect is not related to all the explanatory variables" (p. 465).

Adams et al. (2010) recognize that empirical studies about boards are difficult, as almost all the variables of interest are endogenous. The simultaneity (simultaneous establishment of different variables) and/or the feedback effect (feeding-back of the response variable, to the regressors), very common in research in the area of Corporate Finance, weaken the assumption of strict homogeneity. The use of instrumental variables is the solution recommended for this type of endogeneity.

Barros, Castro, Silveira, and Bergmann (2010) affirm that the methods described above allow the use of instruments only when they are sequentially exogenous, based, for example, on dephasing of the original regressors themselves.

Fama and French (2002) and Silveira at al. (2008) are examples of studies that used lagged and independent variables, to mitigate possible endogeneity problems arising from certain simultaneous determination, with dependent variables. Recently, other studies used lagged independent variables, including those of Jiraporn, Kim, Kim, and Kitsabunnarat (2012), and Minton, Taillard, and Williamson (2014).

Econometric model

The general model starts from the assumption that there is a connection between debt and the board diversity; in other words, Debt = f (Board diversity, Control Variables).

Considering the panel data, the tested econometric model considers equation [1], below:

$$Debt_{it} = \alpha + \beta_1 DivG_{i,t-1} + \beta_2 VC_{it} + a_i + w_{it} \quad (1)$$

where:

- i and t represent the company and the year, respectively.
- $Debt_{it}$: the rate of debt.
- CV_{it}: control variables. Despite the presence of subscripts i and t, they do not need to vary between companies and between time moments. The control variables may also include the *dummies* (binary variables).
- a_i: unobserved heterogeneity, a specific component for companies that does not vary over time and could affect company debt
- w_{it}: a non-systematic error component of the i-th company in the t-th year.

Here, we must also stress that the econometric model considers the main value of interest as an lagged regressor ($DivG_{i,t-1}$), with the aim of mitigating problems of endogeneity that can arise from the simultaneity of variables. On the other hand, the control variables were taken as contemporary regressors, according to the main studies on capital structure determinants (Silveira et al, 2008; Fama & French, 2002).

Operationalization of variables

The focus of this study lies in the associations between the board diversity with the decisions taken regarding the company's capital structure. To investigate the extent of this relationship, we used different categories, including structural diversity, social diversity, and functional diversity.

Most studies on diversity issues use proxies with different characteristics and specific dimensions of the board – for example, gender diversity is observed through the percentage participation of women in the board. Some studies, wider in scope, use diversity indices constructed based on different attributes. Anderson et al. (2011), for example, have created an index to measure board heterogeneity based on six categories of board members: age, gender, ethnicity, education, professional experience, and board experience. The sample was ranked to measure the heterogeneity of each attribute. Ararat et al. (2010) operationalized their diversity index by calculating the Blau index for the following measurements: percentage of foreigners; percentage of women; percentage of independent board members; standard deviation of dispersions of age within each board, and the standard deviation

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of the number of years of schooling. Kim (2014) also used the Blau index to characterize educational heterogeneity and functional heterogeneity. However, we must stress that the conclusions reached by this study are associated with the choices and definitions of the indices used.

Exhibition 1 presents a summary of these categories of diversity, showing the respective indicators, as also the references used for the definition thereof. The index of general board diversity (DivG), in each year, is an aggregated index of the point scores obtained by the board in each of the categories. For each category, the indicators of all boards of directors were distributed in quartiles, and the boards were then given a point score on a scale from 1 to 4.

Exhibition 1. **Index of diversity – Categories and indicators**

Diversity	Category	Indicator	References
Structural	Independence of BD	Percentage of independent board members	Ararat et al. (2010)[1], Ben-Amar et al. (2013), Fraga and Silva (2012),[6] Mendes-da-Silva et al. (2007)
Structural	Duality of CEO	*Dummy*, 0 if the CEO of the company is also the Board President	Ben-Amar et al. (2013), Harford et al. (2008), Mendes-da-Silva et al. (2007)
Social	Age	Coefficient of variation of ages of board members	Ali, Ng, & Kulik (2014), Anderson et al. (2011), Ararat et al. (2010)[1], Fraga and Silva (2012)[7]
Social	Gender	Percentage of women on the BD	Ali et al. (2014)[1], Anderson et al. (2011), Ben-Amar et al. (2013), Ararat et al. (2010),[1] Fraga and Silva (2012),
Social	Nationality	Percentage of foreigners on the BD	Anderson et al. (2011)[4], Ararat et al. (2010)[1], Ben-Amar et al. (2013),
Occupational	Education: area of qualification	Blau Index considering area of undergraduate classification	Anderson et al. (2011), Kim (2014), Fraga and Silva (2012)[8]
Occupational	Education: level of schooling	Blau Index considering area of undergraduate classification (up to doctoral level)	Anderson et al. (2011),[2] Ararat et al. (2010)
Occupational	Professional: CEO	Percentage of members who hold, or have held, the role of CEO	Anderson et al. (2011)[3]
Occupational	Professional: experience on the job	Number of different areas of expertise represented among the BD members	Anderson et al. (2011),[4] Kim (2014)[5]
Occupational	Experience on BDs	Coefficient of variation of the number of seats on BDs apart from that of the company considered	Anderson et al. (2011)

(1) uses the Blau index

(2) uses the Herfindahl index

(3) considers only those who simultaneously hold the position of CEO

(4) here, expertise is defined as experience in law, consultancy, accounting and investment banks (or venture capital)

(5) uses the Blau index, considering functional experience based on exit (marketing and sales), functions of production (operations, R&D and engineering) and peripheral functions (law, finance, and accounting)

(6) considered as a dichotomic variable

(7) considers diversity to be the number of categories, based on five age intervals

(8) considers diversity as the number of different areas of formal education (maximum = number of board members)

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Debt

Among the different methods for measuring the extent of company debt, the indicators used in this study are summarized in Exhibition 2.

Exhibition 2. **Debt variable**

Variable	Code	Operational definition
Total accounting debt	Debt1	100* (Current liabilities + fixed liabilities) / total assets
Financial debt at accounting values	Debt2	100*Financial Debt / (financial debt + net equity)
Financial debt at market values	Debt3	100*Financial Debt / (financial debt + market value)
Net Debt / EBITDA index	Debt4	(Net financial debts) / EBITDA

For the Net Debt/EBITDA index, the following criteria were used: 1) the index is excluded from the database if the EBITDA is negative; and 2) the index is zero, if net debt is negative (cash available is higher than debts), meaning that there is no debt.

Control variables

Based on the main factors that determine the capital structure of companies, the control variables and the proxies used in this study are as follows:

a. Growth opportunities (MTB = Market-to-Book, the Market value of net equity/accounting value of the net equity).

b. Tangibility (fixed assets / total assets).

c. Profitability (EBITDA/ total assets).

d. Size of the company (ln (total assets)).

e. Tax savings ((depreciation + amortization)/total assets).

f. Current liquidity (current assets / current liabilities).

g. Growth in sales ((sales in period 1 – sales in period 0) / sales in period 0)

Apart from the explanatory variables as above, in some models analyzed, some dummy variables were used for each year of the sample, with the aim of isolating any macroeconomic effects that may have affected the companies in the periods analyzed. The Contr variable is a dummy variable reflecting whether the company has majority control and/or a shareholders' agreement instead of minority or dispersed control.

RESULTS

Based on the information collected with the study sample, we see that the boards have, on average, the following characteristics:

- 8.2 board members in each board, with a mean age of 56.8 years;
- In 84.1% of the boards, the Chairman is not the CEO of the company;
- Among the board members, 31.1% are considered independent;
- Also, 9.7% are internal board members, 5.7% are women, and 9.1% are foreigners.

Table 1 shows a summary of the descriptive statistics for the variables analyzed in this study. We notice that the data contained in this table agrees with the standards as expected for the variables concerned.

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Table 1. **Descriptive statistics of the variable involved**

Variables	Obs.	Mean	Standard Deviation	Median	Min.	Max.
Debt1	495	54.885	17.465	54.610	8.470	103.340
Debt2	495	40.749	21.752	41.250	0.000	109.070
Debt3	493	31.059	21.928	28.220	0.000	93.890
Debt4	463	2.244	4.681	1.540	0.000	74.370
DivG	495	22.689	3.290	23.000	12.000	31.000
DivE	495	3.196	1.266	3.000	1.000	5.000
DivS	495	7.594	1.629	8.000	5.000	12.000
DivO	495	11.899	2.545	12.000	5.000	18.000
MTB	493	1.712	1.172	1.280	0.340	8.740
Tang	495	0.236	0.216	0.201	0.000	0.899
Profitability	495	0.118	0.119	0.114	-1.429	0.554
Tam	495	15.870	1.323	15.790	12.499	20.492
Depr	495	0.029	0.021	0.028	0.000	0.166
Lcor	495	1.919	1.194	1.677	0.251	12.252
Growth	492	0.448	4.960	0.130	-0.729	109.771

Regression Analysis

The basic procedure was that of identifying the best approach, between Pooled OLS, Panel with Fixed Effects, and Panel with Random Effects, through the three tests currently available in Stata, namely, the Chow Test, the Breusch-Pagan LM Test, and the Hausman Specification Test. In the Chow test, the rejection of the null hypothesis means that the model based on fixed effects is the most appropriate. In the Breusch-Pagan LM test, the choice is between Pooled OLS and Random Effects, and the rejection of the null hypothesis (H_0) means that the model based on Random Effects is the most appropriate. Finally, the rejection of H_0 in the Hausman Specification Test makes the Fixed Effects model the most appropriate choice. In regressions with robust standard errors, the models chosen were confirmed using the Schaffer-Stillman test with the Sargan-Hansen x^2 statistic.

The tests for heteroskedasticity proposed by Breusch-Pagan/Cook-Weisberg, applied to the models as evaluated here, show problems with heteroskedasticity in some of the Regression models, as does the Wald test for Fixed Effects regression. For this reason, we have adopted the robust standard errors as a base in all our analyses.

Table 2 shows the results of the model of Equation 1. Except in the case of debt represented by the net debt index, (Net debt)/EBITDA, the Panel of Fixed Effects was the appropriate model. Table 2 presents a summary with the model including the Contr variable, and without the dummies of the sector and year, for each of the debt indices. We see that the effect of the general diversity index upon the four debt indices is positive and statistically significant, showing that an increase in board diversity is associated with increased company debt.

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Table 2. **Results for the Model of Equation 1**

Variable	Total accounting debt	Financial debt at accounting value	Financial debt at market value	Net Debt / EBITDA index
DivG	0.3821**	0.4216**	0.9070***	0.1372**
MTB	-0.0735	-1.3236	-6.0516***	0.4946
Tang	5.7381	5.1198	1.0918	0.9067
Rentb	-8.5379*	-15.2878**	-25.6667***	-29.8215***
Tam	5.3645*	8.9167**	8.0525**	0.2342
Depr	13.4244	56.8101	163.7272	-20.3321*
Lcor	-1.1587***	-0.5756	-1.1258*	-0.2692***
Cresc	0.2569***	0.0912	0.0901	-0.9391
Contr	0.8244	1.5006	7.1416	0.3192
_cons	-37.8494	-108.9287*	-111.5693*	-0.4176
Dummy – Sector	No	No	No	No
Dummy - Year	No	No	No	No
Effects	Fixed	Fixed	Fixed	Random
N	395	395	395	367
r2	0.1705	0.1640	0.3016	
r2_b	0.1020	0.1368	0.3715	0.2283
r2_w	0.1705	0.1640	0.3016	0.0730
F	149.2808	18.1963	342.7256	
chi^2				37.5403

Note: The asterisks refer to the level of significance of the coefficients: *** for 1%, ** for 5% and * for 10%.

Static panel with fixed or random effects, according to the results produced by the Hausman test and the Scheffer-Stillman test (x2 statistics of Sargan-Hansen). Regressions consider robust standard errors with groupings by company.

The inclusion of the control dummy (separating companies with majority control and/or shareholders' agreement, from those with minority or dispersed control) and/or the dummy for time (year) has not changed the relationship between diversity and debt, except in the case of the Debt/EBITDA index. In this case, the relationship is still positive but is no longer statistically significant.

With regard to the control variables, we see that, in most cases, the signs of an association with debt indices are consistent. The MTB (Market-to-Book) variables, namely profitability and current liquidity, have negative coefficients, while tangibility, size, depreciation, and growth have a positive association with the indices of accounting and financial debt. However, it should be mentioned that the MTB, Depr, and Cresc variables have opposite signs to the Debt/EBITDA index. The only index to have a statistically significant influence on all four debt indices is the profitability index.

Seeking to confirm the robustness of the results, we have tested the association between each component of the diversity index and the debt indices. In isolation, few components show statistical significance, but there is a prevalence of the positive relationship between the components of the diversity indices and the debt indices. Moreover, the control variables were replaced by other parameters related to the models of the capital structure used in specialized literature. The general diversity index maintains its positive correlation with the debt indices, even when the control variables are changed.

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Analysis of results

The results of the regression analysis show that there is a positive and statistically significant relationship between the general diversity index and the debt indices. Therefore, in general, there is acceptance of the basic hypothesis of this study, with the positive association between diversity and debt.

These results seem to show that the pressure of monitoring has an impact on the relationship between board diversity and debt. Jensen (1986) shows that, without the pressure of a disciplinary force, the executives do not issue the optimum level of debt, as debt reduces discretionary actions with regard to cash flow. Along these lines, Berger et al. (1997) concluded that stronger monitoring from the board should reduce the entrenchment of executives, with a positive influence on the level of leverage.

This study suggests that the improvement of the monitoring function through board diversity, as suggested by Ararat et al. (2010), Adams et al. (2015) and Anderson et al. (2011), has a positive effect on the debt index. This means we can infer that board diversity complements the control of agency costs.

Following the theoretical lines of resource dependence, Hillman and Dalziel (2003) suggest that diversity through expertise, experience, relationship, and legitimation improves monitoring by the board. This means that both perspectives, that of Agency Theory and that of Resource Dependence, could interpret the results of this study as being evidence that diversity does indeed positively affect debt, through improvements to the monitoring process.

These results also agree with the findings of Harford et al. (2008), who showed that stronger company boards, with greater monitoring, also bring about higher debt. Silveira et al. (2008) confirmed a positive correlation between the IGOV20 Governance Index (the dimensions and structure of the property and board) and financial leverage in Brazil.

Greater adherence to best practices by the board (that of stronger boards) means a higher level of debt. However, these conclusions do not agree with the results obtained by Silva et al. (2011), whose study shows a negative relationship between the proxy of the board and debt, both long-term and total. The authors interpret their results as a sign that companies with best Governance practices tend to use more short-term debts than long-term, and that short-term debt has the potential to discipline the managers. However, it must be pointed out that the proxy used refers to general characteristics of boards rather than specific diversity characteristics of a board.

CONCLUSIONS

Diversity or heterogeneity of the board of directors has been encouraged, in both corporate research and academic research, and is growing in prominence. As such, it is increasingly important to understand the associations between diversity and corporate decisions. In this context, the goal of this work was that of establishing the influence of board diversity upon decisions related to capital structure. The first contribution of this study lies in the definition and calculation of the diversity index. Evidently, defining a proxy for diversity is a highly complex task. The diversity index adopted considers differences in the structure of the board, the social diversity of the board members, and functional diversity, including educational and professional aspects.

In line with many studies on the issue, the second contribution of this study is the confirmation that board diversity is positively related to company debt. One possible interpretation from the practical standpoint is that a diversified board allows a more aggressive investment and financing policy. The board diversity can mean not only better monitoring but also decisions taken with greater confidence, considering the experience and expertise of the board.

The empirical studies involving boards are subject to econometric problems due to endogeneity, as the "governance structures arise endogenously because economic actors chose them in response to the governance issues they face" (Adams et al., 2010, page 59). In this way, despite the mitigation processes adopted, one cannot assure the elimination of all the effects resulting from endogeneity. Roberts and Whited (2012) teach us that, except for controlled experiments, "there is no way of making sure that the endogeneity problems can be eliminated, or sufficiently mitigated, to ensure appropriate inferences" (p. 86).

Another possible limitation arises from possible errors in measuring the variables. The accurate mensuration depends on the quality of data made available by the companies. For example, if a company fills incorrect information about its board members in the FRE of the CVM, it can distort the diversity variables. Despite all the care taken for data collection, including a double-check for consistency, the possibility of errors in mensuration must not be ruled out.

Diversity in the board of directors is somewhat unexploited. Its possible benefits within the corporate world should be further discussed, and academic research may bring new information that will contribute to the development of corporate processes. Future studies may involve econometric aspects, especially because of the endogeneity of the CG variables. The techniques based on a dynamic panel or simultaneous equations may be addressed in

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the studies on the effects of board diversity. Furthermore, it is also possible to explore the contingency aspects that also have a bearing on the relationships of diversity, such as policies and corporate performance.

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ARTICLES

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THE IMPORTANCE OF BRAND ATTACHMENT FOR ADHERENCE TO CAUSES OF CORPORATE SOCIAL RESPONSIBILITY

A importância do apego à marca para o engajamento em causas de responsabilidade social corporativa

La importancia del apego de marca para la adhesión a causas de responsabilidad social corporativa

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ABSTRACT

This study examines the joint effects of brand-cause congruence, brand attachment, and attitude toward a cause of corporate social responsibility (CSR) on consumers' intention to adhere to causes sponsored by a brand. The results of two experiments indicate that when consumers' attitude toward such causes is less positive and brand attachment is low, the intention to adhere to a CSR cause is greater when the brand is congruent to the cause than when it is incongruent. If consumer brand attachment is high, the intention to adhere to the cause is also high, regardless of brand-cause congruence. However, if consumer attitude toward the cause is more positive, brand attachment does not moderate the effect of brand-cause congruence on the intention to adhere to the cause. The perception of persuasive intent mediates the influence of brand-cause congruence on the intention to adhere for consumers with low brand attachment, but not for those with high brand attachment.

KEYWORDS | Corporate social responsibility, brand attachment, attitude toward the cause, brand-cause congruence, experiment.

RESUMO

Este estudo examina o efeito conjunto da congruência marca-causa, do apego à marca e da atitude em relação à causa de Responsabilidade Social Corporativa (RSC) sobre a intenção dos consumidores de se engajarem em causas de RSC patrocinadas por uma marca. Os resultados de dois experimentos sugerem que, quando a atitude do consumidor em relação à causa é menos positiva e o apego do consumidor à marca é baixo, a intenção de aderir à causa de RSC é maior quando a causa é congruente com a marca do que quando a causa é incongruente com a marca; se o apego do consumidor é alto, a intenção de aderir à causa não depende da congruência marca-causa. Por outro lado, se a atitude do consumidor em relação à causa é mais positiva, o apego à marca não modera o efeito da congruência sobre a intenção de aderir à causa. A percepção de intenção persuasiva mediou a influência da congruência marca-causa sobre a intenção de aderir para pessoas de baixo apego à marca, mas não para pessoas de alto apego à marca.

PALAVRAS-CHAVE */ Responsabilidade social corporativa, apego à marca, atitude em relação à causa, congruência marca-causa, experimento.*

RESUMEN

Este estudio analiza el efecto combinado de la congruencia marca-causa, del apego a la marca y de la actitud hacia la causa de Responsabilidad Social Corporativa (RSC) sobre la intención de los consumidores de adherir a causas de RSC patrocinadas por una marca. Dos experimentos sugieren que cuando la actitud del consumidor hacia la causa es menos positiva y el apego es bajo, la intención de adherir a la causa es más alta cuando esta es congruente con la marca que cuando es incongruente. Si el apego es alto, la intención de adherir no depende de la congruencia marca-causa. Por otro lado, si la actitud del consumidor hacia la causa es más positiva, el apego no modera el efecto de la congruencia marca-causa sobre la intención de adherir. En el caso de las personas con bajo apego, la percepción del intento persuasivo medió la influencia de la congruencia marca-causa sobre la intención de adherir. Esto no se observó entre las personas con alto apego.

PALABRAS CLAVE */ Responsabilidad social corporativa, apego a la marca, actitud en relación a la causa, congruencia marca-causa, experimento.*

INTRODUCTION

Issues such as social inequality, urban violence, environmental disasters, and educational deficits have been appearing increasingly in national debates, stimulating companies to assume more relevant roles to solve these problems. Social responsibility actions contribute to both companies (Mohr, Webb, & Harris, 2001) and to the social issue at the core of such efforts. Sponsoring corporate social responsibility (CSR) actions positively affects intentions to purchase (Andrews, Luo, Fang, & Aspara, 2014; Sen & Bhattacharya, 2001) and invest in the company (Sen, Bhattacharya, & Korschun, 2006), attitude toward the company (Zdravkovic, Magnusson, & Stanley, 2010), and positive word-of-mouth (Skarmeas & Leonidou, 2013).

Although companies' benefits from CSR actions are well documented, the same cannot be said about consumers' intention to contribute to the cause. Identifying consumers with company's CSR actions may increase their will to engage, triggering positive effects for both the brand and the beneficiaries of the cause.

Despite their positive aspects, CSR actions can negatively affect the brand and consumer adherence (Becker-Olsen, Cudmore, & Hill, 2006). According to Vlachos, Tsamakos, Vrechopoulos and Avramidis (2009), consumers may not perceive the reciprocity of CSR actions. They may consider companies' adherence to such practices as having opportunistic motivations and perceive these practices as deliberate attempts to mislead them about the companies' ethical capacity (Skarmeas & Leonidou, 2013).

Congruence between brand and CSR action—degree to which a brand and social cause share the same values or consumer base (Sen & Bhattarcharya, 2001)—is essential for a brand to achieve positive results in response to cause marketing campaigns (Roy, 2010; Zdravkovic et al., 2010). However, other studies (Nan & Heo, 2007; Sheikh & Beise-Zee, 2011) suggest that the negative effects of low brand-cause congruence can be mitigated. One question has not been adequately answered: whether a strong affective relationship between the consumer and brands associated with a social cause or a very positive consumer attitude toward such sponsored initiative, can reduce negative impacts of low brand-cause congruence.

He, Zhu, Gouran and Kolo (2016) showed that attachment, which reflects consumers' emotional bond with a brand, positively influences intention to purchase from brands sponsoring social causes. Brand attachment is an important indicator of brand identification, promoting consumer loyalty and commitment (Hazan & Shaver, 1994). However, brand attachment's effect under low brand-cause congruence has not been examined empirically yet.

Conversely, Barone, Norman, and Miyazaki (2007) suggested that a more positive attitude toward the social cause can mitigate the negative effect of low brand-cause congruence. However, it is unclear whether a positive attitude toward the cause can mitigate the effect of low brand attachment in conditions of low brand-cause congruence.

Several studies suggested that low brand-cause congruence leads consumers to suspect brand motivation, but few studies examined the mechanisms through which brand-cause congruence influences responses to social issue at the core of the CSR efforts (however, see exceptions such as Romani & Grappi, 2014; Romani, Grappi, & Bagozzi, 2014). In this study, we propose that the perception of manipulative intent—the degree to which consumers perceive that an advertising campaign is attempting to unfairly persuade them (Campbell, 1995)—mitigates the positive effects of sponsoring a social cause. This proposal is consistent with the persuasion knowledge model (Friestad & Wright, 1994), which states that consumers develop knowledge of the persuasive tactics that companies use. The consumer's knowledge of persuasive intent increases consumers' skepticism about advertisements (Obermiller & Spangenberg, 1998) and negatively influences their behavioral responses.

This study contributes to CSR literature by examining three variables that determine the results of sponsoring a CSR action—brand-cause congruence, brand attachment, and attitude toward the CSR cause. Although previous studies have examined these variables separately, joint analysis of important variables increases the knowledge about certain phenomena of interest, such as sponsorship of CSR actions. The study also contributes to the literature by examining the effect of sponsoring CSR actions on a variable of social interest—intention to adhere to a cause. Finally, the study contributes to the CSR theory by examining the mechanism through which brand-cause congruence influences the results of sponsoring CSR actions.

From a managerial perspective, this study suggests to companies the conditions under which brand-cause congruence is more or less important, serving as a guide to select causes that brands should support, and the results that they could expect.

In the following sections, we discuss the concepts involved in hypothesis formulation and present two studies that tested these hypotheses. We conclude with theoretical and managerial implications, present the study's limitations, and give suggestions for future studies.

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CORPORATE SOCIAL RESPONSIBILITY

Mohr et al. (2001) defined CSR as "a company's commitment to minimizing or eliminating any harmful effects and maximizing its long-run beneficial impact on society" (p. 47). A company's adherence to these initiatives is attractive, since it appears positively related to its financial performance (Stanwick & Stanwick, 1998) and to consumers' attitudes and intentions to purchase from (Andrews et al., 2014; Mohr et al., 2001) and invest in the company (Sen et al., 2006).

Sen and Bhattacharya (2001) suggested that individuals tend to identify with brands engaging in CSR because of their need to maintain a consistent and positive self-image. However, they also stated that the relationship between promoting CSR actions and individuals' behavioral responses vary according to personal support for CSR issues, beliefs, and perceived congruence between individuals' and the brand's characteristics. Moreover, when the CSR cause has high brand congruence, consumers' attitudes toward the brand are more favorable (Nan & Heo, 2007; Roy, 2010). A brand may have greater congruence with a cause if both serve a similar consumer base or have similar values.

Most studies on CSR, however, focused more on the financial returns that these initiatives can bring to the company's business and much less on their potential social returns (Bhattacharya & Sen, 2004). For example, Romani and Grappi (2014) reported that seeing the promotion of good company actions can increase individuals' probability to engage in similar sustainable behavior.

Maignan and Ferrell (2004) proposed a framework for integrating CSR actions into organizations' marketing activities. They suggested that many studies did not adequately consider how marketing practices and thinking contribute to the development of socially responsible practices in organizations. They also criticized marketing studies examining consumer responses to CSR actions using limited dimensions and response measurements related exclusively to marketing performance. In this study, along with considering consumers' responses to different CSR dimensions, we examined a variable that has not received much attention in the current literature—consumers' intention to adhere to a brand-supported cause.

BRAND ATTACHMENT

The recognition of the importance of building strong relationships between consumers and brands raised the interest in studying brand attachment. Brand attachment influences the building of strong brand relationships, increasing consumers' loyalty, and decreasing price sensitivity (Park, MacInnis, & Priester, 2008). Brand attachment can be defined as "the strength of the cognitive and emotional bond connecting the brand with the self," and it "denotes a psychological state of mind in which [...] the brand is viewed as an extension of the self" (Park et al., 2008, p. 4).

Brand attachment is an important moderator of consumers' responses to CSR actions because high attachment makes consumers more sensitive and less critical to brands' activities (Park, MacInnis, Priester, Eisingerich, & Iacobucci, 2010). According to He et al. (2016), the emotional brand attachment is positively related to individuals' intention to purchase products from brands sponsoring CSR campaigns, due to brands' socially responsible image and the need to strengthen individuals' moral identity. As discussed in the next section, brand attachment can make consumers respond positively to CSR actions regardless of low brand-cause congruence.

BRAND ATTACHMENT EFFECT ON CSR BRAND-CAUSE CONGRUENCE

Roy (2010) observed that low congruence between CSR actions and brands is perceived negatively, and, when congruence is high, the perception of sincerity and attitude toward the brand are more positive. Similarly, Becker-Olsen et al. (2006) reported that low brand-cause congruence can negatively influence consumers' beliefs, attitudes, and intentions, regardless of the sponsoring company's motivation.

Despite these studies' results, there are still questions about what could be expected in low congruence and high attachment contexts. There is theoretical evidence that consumers' awareness of the cause, company's credibility, attitude toward the cause, and communication content can mitigate the effects of low congruence (Barone et al., 2007; Nan & Heo, 2007).

Regarding "secondary" effects of CSR actions, Kwak and Kwon (2016) suggested that consumers' identification with a company enhances their self-perception of being involved in the donation process, evoking feelings of gratitude and encouraging them to collaborate with such initiatives. The greater the consumer-company identification, the greater the feeling of gratitude and intention to support the actions. Sen, Johnson, Bhattacharya and Wang (2015) also provided evidence that high brand attachment is positively related to individuals' intention to adhere to CSR actions, regardless of brand-cause congruence.

Consumers with high brand attachment may demonstrate a biased assimilation process and tendency to view events that

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agree with their own perspective as being more reliable (Lord, Ross, & Lepper, 1979). In practice, such assimilative bias would lead consumers to forget brands' "mistakes" (McCullough et al., 1998) and engage in biased and defensive processing of brand-related negative information (Schmalz & Orth, 2012).

We propose that high brand attachment may moderate the effect of brand-cause congruence on consumers' responses. Specifically, it may make individuals to decrease low brand-cause congruence relevance, inhibiting their suspicion of brand motivation even if companies decide to sponsor low-congruence causes. Conversely, individuals with low brand attachment only respond positively when the brand is congruent with the cause. That is, we propose that high brand attachment can mitigate the negative effect of brand-cause incongruity, leading to the following hypotheses:

> H_{1a}: For consumers with low brand attachment, the intention to adhere to a CSR action is greater (lower) when the cause is congruent (incongruent) with the brand.

> H_{1b}: For consumers with high brand attachment, the intention to adhere to a CSR action does not depend on brand-cause congruence.

THE MEDIATING ROLE OF PERSUASIVE INTENT

People are constantly exposed to situations wherein they must deal with marketing messages and actions that use different appeals to convince them to purchase or use products and services. Exposure to these appeals yields knowledge of persuasion attempts (Friestad & Wright, 1994), which individuals use to interpret and evaluate such messages.

Obermiller and Spangenberg (1998) suggested that knowledge of persuasion tactics increases skepticism about advertisements, which reduces the likelihood of positive responses to company-related causes (Lawler & Thye, 2006). Romani et al. (2014) suggested that persuading consumers to believe CSR actions are impartial and unselfish is essential to produce positive responses, since perception of opportunistic motivations may lead consumers to doubt the brand's efforts. Skarmeas and Leonidou (2013) observed that consumers become more resistant to positive information and prone to negative word-of-mouth when they doubt the brand's reasons for adhering to CSR actions.

Mohr et al. (2001) found that people believe part of the company's motivation to act in a socially responsible manner is the interest in helping, but they can notice that companies also have their own interests. Chiou, Hsu, and Hsieh (2013) investigated the relationship between brand attachment and persuasive intent perception. They found that, for high attachment levels, there is a tendency to deny negative brand information, as individuals are less likely to be influenced negatively by suspicions or accusations not aligning with their beliefs about the brand.

Thus, we propose that people with high brand attachment are less sensitive to noticing persuasive intent in CSR actions, regardless of brand-cause congruence. In turn, people with low brand attachment are more sensitive to brands' persuasive intent and can notice manipulative intent in low congruence actions. Formally, we propose the following hypothesis:

> H_2: For consumers with low brand attachment, the perception of persuasive intent mediates the effect of brand-cause congruence on the intention to adhere to a cause. This does not occur for people with high brand attachment.

EXPERIMENT 1

In this experiment, we investigate the moderating effect of brand attachment on the relationship between brand-cause congruence and individuals' intention to adhere to a CSR action (H_{1a} and H_{1b}). We also investigate the mediating effect of persuasive intent for people with low brand attachment, but not for people with high brand attachment (H_2).

Method

Sample and design

Undergraduate students (n = 131, 59% males, M_{age} = 21 years) were invited to participate in a between-subjects (brand-cause congruence: congruent *vs.* incongruent) laboratory experiment in which brand attachment was measured. Participants were approached during class breaks and invited to respond to a survey in a laboratory. Upon accessing the questionnaire, the computer program randomly allocated experimental conditions to the participants.

Pretesting

A pretest was conducted to select one brand and two CSR actions, one congruent and one incongruent with the brand. Pretest participants (n = 31) were drawn from the same population of the main study. Initially, each individual was exposed to 11 CSR

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actions and asked to indicate two with which they identified the most; then, they were asked to indicate the brand they considered more appropriate to perform the 11 CSR actions. The 37 brands presented were selected based on the researchers' judgment about the congruence between the brands and investigated causes.

Collective recycling was mentioned the most (15 mentions; 48% of respondents) and was chosen as the experiment stimulus. Coca-Cola was the brand most associated with collective recycling, mentioned by 21 respondents, and was also chosen as a stimulus. Based on our judgment, we selected a CSR action incongruent with the Coca-Cola brand (skin cancer prevention).

Procedures

At the experiment's outset, participants were informed that Coca-Cola was testing a new advertisement for a CSR action before a broad national launch. After exposure to one of the advertisements, participants indicated their intention to adhere to the campaign (α = .78, M = 4.57, SD = 1.20), agreeing or disagreeing (1 = totally disagree; 7 = totally agree) with three affirmations adapted from Romani et al. (2014) ("This advertisement positively influenced my opinion about collective recycling"; "My willingness to cooperate with or adhere to collective recycling increased after seeing this advertisement"; and "This advertisement encouraged me to seek information about collective recycling").

The perception of persuasive intent was measured using the inferences of manipulative intent scale (α = .82, M = 2.23, SD = 1.00) proposed by Campbell (1995). To measure brand-cause congruence, we adapted the scale used by Keller and Aaker (1992) and Smith and Park (1992) (α = .90, M = 4.44, SD = 1.77) into seven-point Likert-type scales.

Finally, participants indicated the extent to which the brand elicited a set of 10 feelings (joyful, happy, satisfied, relaxed, inspired, motivated, interested, active, enthusiastic, and calm) using a seven-point scale (1 = nothing; 7 = very much). These items were adapted from Thomson, MacInnis, and Park (2005) and grouped into an index (α = .93, M = 4.03, SD = 1.47) to represent brand attachment. After completing these measurements, participants answered demographic questions and were thanked for their participation.

Results

Manipulation check

As expected, the perceived congruence between Coca-Cola's brand and the CSR action "collective recycling" (M = 5.6) was greater than the perceived congruence between Coca-Cola and the CSR action "skin cancer prevention" (M = 3.2, t (129) = 10.7, p < 0.01), which means that manipulation of brand-cause congruence worked as expected.

Intention to adhere to the campaign

The effect of brand-cause congruence on the intention to adhere to the CSR action moderated by brand attachment (H_{1a} and H_{1b}) was analyzed using the PROCESS macro (Hayes, 2013; Model 1) with 10,000 bootstraps resamples. The procedure used intention to adhere as dependent, brand attachment as moderator, and brand-cause congruence as independent (0 = incongruent, 1 = congruent) variables.

The results showed that the regression is significant (F (3.127) = 13.53, p < 0.01, R^2 = 0.24). For the sample of 131 respondents, *post-hoc* calculation of the power of the *t*-test regression interaction coefficient using G-Power software (Faul, Erdfelder, Lang, & Buchner, 2007) exceeded 99.9%. The interaction term's coefficient was significant (b = -0.38, t (127) = -2.98, p < 0.01), which confirms the hypothesis of moderation. To decompose this interaction, we used the Johnson-Neyman technique to identify the range of brand attachment to which the effect of campaign congruence was significant (Spiller, Fitzsimons, Lynch, & McClelland, 2013). When brand attachment assumed values below 4.21, corresponding to 49% of the sample, there was a significant and positive effect (b = 0.37, SD = 0.19, p = 0.05) of congruence on intention to adhere to the CSR action. Confirming H_{1a} and H_{1b}, for low attachment level (bellow 4.21), intention to adhere to the CSR campaign was greater for the congruent campaign than for the incongruent campaign. For high brand attachment (above 4.21), we did not find a significant difference in the intention to adhere according to brand-cause congruence (Graph 1).

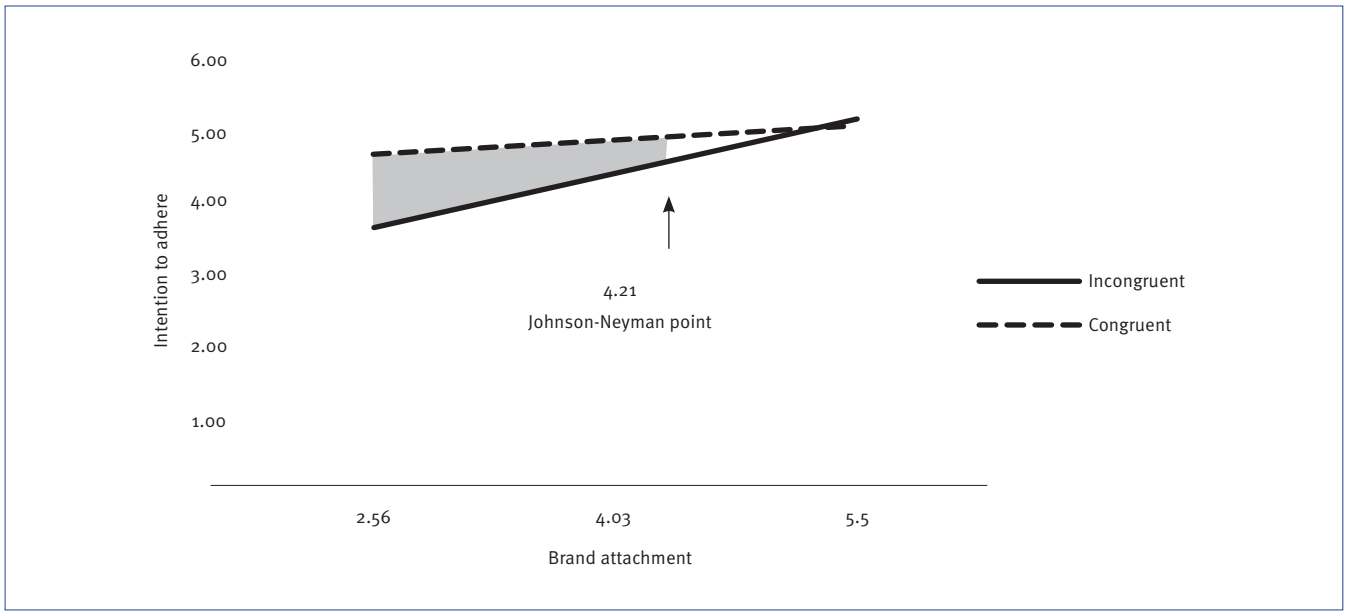
Mediating effect of persuasive intent

Subsequently, we analyzed the moderated mediation to test H_2. We used the PROCESS macro (Hayes, 2013; Model 8), considering 95% confidence intervals generated with 10,000 resamples. As predicted, we found a significant and positive indirect conditional effect of persuasive intent (b = 2.56 [.03; .51]) for low but not for high brand attachment (b = -.02 [-.18; .10]). These results show that, for people with low brand attachment, lower intention to adhere to the incongruent CSR action than the congruent one is triggered by the greater perception of persuasive intent. However, people with high brand attachment are immune to the campaign's persuasive intent, resulting in no difference between intentions to adhere to the two campaigns, confirming H_2.

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Graph 1. **Intention to adhere to the cause by congruence and level of brand attachment**



Discussion

Results of the first experiment suggest that the negative effect of brand-cause incongruence on intention to adhere to the CSR action was only significant for people with low brand attachment. Kwak and Kwon (2016) had reported that CSR actions encourage consumers who identify with the organization to support the cause, inspiring feelings of gratitude that motivate the intention to donate/support the action. If we extend the results obtained for brand attachment in the first experiment to identification with the organization, our results suggest that only individuals with high identification with the CSR action promoting company will likely contribute to the cause.

Studies on brand attachment reported that people seem to perceive fewer negative motivations associated with CSR actions promoted by brands to which they are more attached (Chiou et al., 2013; Schmalz & Orth, 2012). Results of the first experiment are consistent with these studies and suggest that individuals with low brand attachment perceived higher persuasive intent in CSR actions that were incongruent with the brand, reducing their intention to adhere. People with high brand attachment, however, did not report differences in the perception of persuasive intent and demonstrated the same intention to adhere to the cause, regardless of brand-cause congruence.

Although brand attachment is idiosyncratic and not under direct control of brand managers, it is based on feelings of security built up during the relationship between the individual and the brand (Sen et al., 2015). This security is the result of the history between the individual and brand and seems to make consumers immune to the perception of opportunistic motivations and, therefore, more willing to support actions promoted by the brand.

EXPERIMENT 2

According to Drumwright (1996), consumer-cause congruence is as important as, or even more important than, brand-cause congruence. When consumer-cause congruence is low, individuals are less interested in adhering to the cause. Grau and Folse (2007) showed that more involved individuals demonstrated more favorable attitudes toward CSR actions. The attitudes of less involved individuals were improved only when the action sponsored local rather than national causes. Similarly, Lichtenstein, Drumwright, and Braig (2004) observed that the cause's relevance to individuals influences their decision to buy branded products associated with CSR. Zdravkovic et al. (2010) reported that consumers' familiarity with the cause significantly influences their attitude toward the brand when there is brand-cause congruence, but not when they are incongruent.

Extending such conclusions, Barone et al. (2007) showed that the attitude toward the cause may also influence the effect of congruence between the cause and brand in determining consumer responses. When individuals have positive attitudes toward the cause, congruence becomes less relevant because there is an interaction between the consumer's affinity with the cause and perception of the company's motivations to promote the action. Sheikh and Beise-Zee (2011, p. 27) also investigated

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the relationship between brand-cause congruence and affinity with the cause and attitude toward the promoting company. They observed that brand-cause congruence significantly affects individuals' attitude when affinity is low, but the effect is insignificant when affinity is high.

However, the abovementioned studies investigated only the effects of individuals' attitude toward the cause on the returns of CSR actions to the company, but not specifically toward the cause. Kwak and Kwon (2016) observed that, in addition to the identification between consumer and company, the attitude toward the cause also positively influences the intention to donate. The more positive the attitude toward the cause, the stronger the gratitude-donation relationship, and, consequently, the greater the individuals' intention to donate.

Results from previous studies suggest that more positive attitudes toward the CSR cause lead to more positive consumer responses toward the brand, even when brand-cause congruence is low. However, attitude toward the cause may influence individuals' intention to adhere (Kwak & Kwon, 2016). We propose that more favorable attitudes toward the cause may mitigate the effect of low brand attachment and low brand-cause congruence. This means that, regardless of brand attachment and brand-cause congruence, when the attitude toward the CSR cause is high, intention to adhere to the CSR cause will be high. However, when attitudes toward the cause are not so positive, the results observed in the first experiment should be maintained. That is, brand attachment will moderate the effect of brand-cause congruence on the intention to adhere to the cause. This debate leads to the following hypotheses:

> H_{3a}: The predicted effect on H_{1a} and H_{1b} is maintained when the consumer has a low attitude toward the promoted CSR cause.
>
> H_{3b}: The intention to adhere to the CSR action does not depend on brand-cause congruence or brand attachment when the attitude toward the promoted CSR cause is high.

Method

Sample and design

Undegraduate students (n = 280, 61% males, M_{age} = 21.5 years) were invited to participate in a 2 (brand-cause congruence: congruent *vs.* incongruent) x 2 (Coca-Cola *vs.* Dove) between-subjects laboratory experiment in which brand attachment and attitude toward the CSR cause were measured. To increase the generalizability of the study, we made two replications with two different brands (Dove and Coca-Cola) and maintained CSR actions in such a way that a CSR action was congruent with one of the brands and incongruent with the other one. Therefore, we expected the same results for each brand. In contrast with previous studies, wherein replications were made by asking participants to evaluate several CSR actions (e.g., Zdravkovic et al., 2010), we chose to expose each individual to a single brand-cause stimulus to reduce the cognitive load of performing many evaluations. Instead of varying each brand's actions, we preferred to keep them constant to show that the results observed in the first experiment are not specific to an appropriate brand-cause choice and are replicable regardless the brand or the cause.

Procedures

We maintained the Coca-Cola brand and the collective recycling cause to represent the congruent brand-cause (stimuli used in the first experiment). Moreover, for greater generalization, we replaced the "skin cancer prevention" cause of the first experiment by "breast cancer prevention" to represent an action incongruent with the Coca-Cola brand. Based on pretest results from the first experiment, we chose the Dove brand because it was the most mentioned as more appropriate to support the "breast cancer prevention" action (16 mentions; 52% of respondents) among the five brands available. When we made these choices, we expected the Coca-Cola (Dove) brand to be congruent (incongruent) with the collective recycling action and incongruent (congruent) with the breast cancer prevention action.

The stimuli—advertisements to be supposedly published in magazines—were created using the same layout, design, colors, background, and font, and similar sentences.

Participants responded to the same scales used in the first experiment adapted to this experiment, except for the brand attachment scale. We used the Park et al. (2010) brand attachment scale, answered through a seven-point Likert scale (1 = totally disagree; 7 = totally agree). Moreover, participants were asked to evaluate their attitude toward the CSR cause using five items of the scale proposed by Webb, Green, and Brashear (2000). After completing these measurements, participants answered demographic questions and were thanked for their participation.

Results

Manipulation check

After grouping questions related to brand-cause congruence (M = 4.74, SD = 1.66, α = .89), we verified that the perceived

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congruence between the Coca-Cola brand and the collective recycling campaign (M = 5.6) was greater than the congruence between the Coca-Cola brand and the breast cancer cause (M = 3.5, t (138) = -8.82, p ‹ 0.01). Similarly, the perceived congruence between the Dove brand and the breast cancer cause (M = 5.5) was greater than the congruence between the Dove brand and the collective recycling cause (M = 4.4; t (138) = -8.66, p ‹ 0.01). Therefore, manipulation of the congruence between actions and brands worked as expected.

Intention to adhere to the campaign

To verify whether the results were the same for each of the two replications, we performed a regression analysis using the intention to adhere to the cause as a dependent variable, and the dummy variable corresponding to the brands and CSR causes, brand attachment, attitude toward the cause, and all interactions among the four variables as independent variables. The regression was significant (F(15,264) = 6.81 (p ‹ 0.01); R^2 = 0.24), but neither the coefficient associated with the dummy variable corresponding to the brands nor any of the interactions with this dummy variable were significant (p › 0.30 in all cases). This means that, as expected, the brand did not interact with any of the variables. Therefore, we could pool the data of the two brands to test the hypotheses.

To test hypotheses H_{3a} and H_{3b}, we used the PROCESS macro (Hayes, 2013; Model 3). The procedure used the intention to adhere as dependent, brand attachment and attitude toward the cause as moderator, and campaign congruence (0 = incongruent, 1 = congruent) as independent variables. As expected, the results showed that the coefficient of the term associated with the interaction among the three variables was significant (b = 0.21, t (272) = 2.16, p ‹ 0.05).

For the sample of 280 respondents, *post-hoc* calculation of the power of the *t*-test interaction coefficient using the G-Power software (Faul et al., 2007) exceeded 99.9%.

To decompose the interaction among the three variables and facilitate the interpretation according to the hypotheses, two separate analyses were done, one for low and another for high attitude toward the CSR cause (H_{3a} and H_{3b}, respectively). Once the variable attitude toward the cause was measured, the two groups were divided by the median (Med = 5.8). We analyzed all values in the attitude toward the cause scale using the same procedure used in Experiment 1 and the results were the same as those obtained by dichotomizing attitude toward the cause. However, in benefit to the readability of the manuscript, we decided to present only the results obtained by dichotomization of the variable attitude toward the cause.

For individuals with low levels of attitude toward the cause, an analysis similar to the one used in the first experiment (PROCESS, Model 1) revealed a significant interaction between brand attachment and brand-cause congruence (b = -0.34, t (139) = -2.26, p ‹ 0.05). The Johnson-Neyman technique revealed a positive and significant congruence effect (b = 0.40, p = 0.05) for brand attachment below 2.60, representing 66% of the sample. That is, for low attachment (below 2.60), when attitude toward the cause is low, the congruent cause generates greater intention to adhere than the incongruent cause, but not for high attachment levels, confirming H_{3a} (Graph 2, Panel A)

The same analysis was conducted for individuals with high levels of attitude toward the cause. The results showed that the coefficient associated with the interaction between brand-cause congruence and brand attachment was not significant (b = -0.11, t (133) = -0.85, p = 0.40). The coefficient associated with brand attachment (b = 0.19, t (133) = 1.98, p ‹ 0.05) was significant, and the coefficient associated with the CSR action was close to significance (b = .66, t (133) = 1.65, p = 0.10). Therefore, the results suggest that, for high attitude toward the cause, the brand attachment does not moderate the effect of brand-cause congruence on the intention to adhere to the cause, confirming H_{3b} (Graph 2, Panel B). However, the results also suggest that intention to adhere to the cause increases with brand attachment and, in a directional way, is greater for the cause congruent with the brand compared with the incongruent cause.

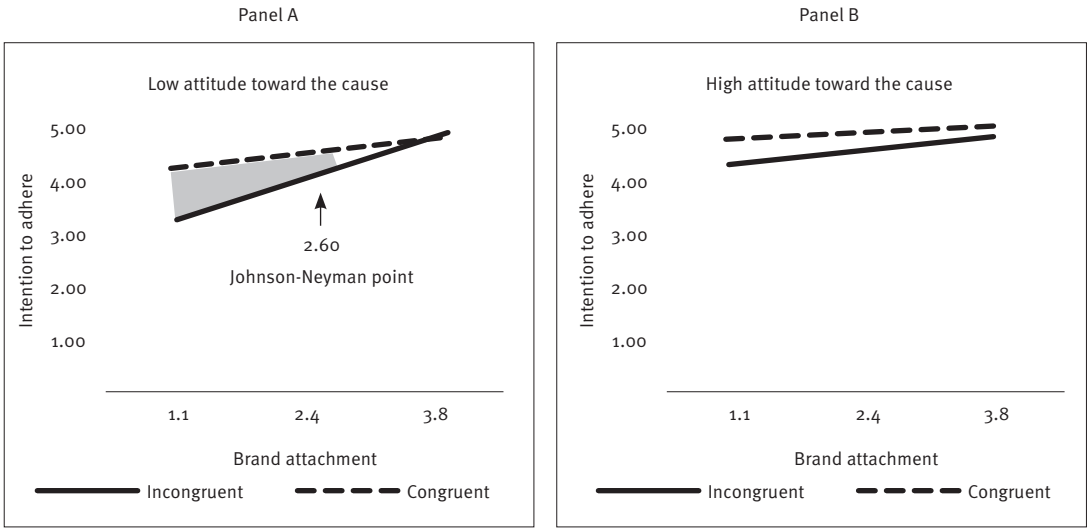
Discussion

The second experiment supports hypotheses H_{3a} and H_{3b}. This result is consistent with the results by Barone et al. (2007) and Kwak and Kwon (2016). For contexts of strong attitude toward the cause, brand-cause congruence did not influence individuals' responses to support the cause, even though the intention to adhere to the cause is related to brand attachment. However, if the attitude is low, the brand attachment is an important stimulus to support these actions. If attachment and attitude are low, brand-cause congruence becomes the defining element of the intention to adhere to the cause. In addition, for less positive attitude toward the cause, results of the second experiment replicate those of the first experiment, but with two different brands and causes, thus increasing the results' generalization capacity.

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Graph 2. **Intention to adhere to the cause by congruence, attitude toward the cause and level of brand attachment.**



GENERAL DISCUSSION

Results of the two experiments showed that a brand's sponsorship of CSR actions positively influences consumers' intention to support such actions. However, as predicted, a consumer's higher or lower intention to adhere to causes that brands support is contingent on brand-cause congruence, brand attachment, and attitude toward the cause.

Using different brands and causes as stimuli, we showed that when consumers' attitude toward the cause is low, intention to adhere to the cause is higher when there is brand-cause congruence, but only when the brand attachment is low. When the brand attachment is high, brand-cause congruence becomes irrelevant for consumers' adherence. Conversely, when consumers' attitude toward the cause is high, intention to adhere to the cause increases as brand attachment increases. Moreover, we found that for consumers with low brand attachment, the perception of persuasive intent decreases the intention to adhere to the cause when congruence is low.

This study's results make important theoretical and managerial contributions. First, we proposed a theoretical framework to investigate the effect of three variables that had not been examined previously: brand-cause congruence, brand attachment, and attitude toward the cause. Integration of the relevant variables analyzed individually, in a single theoretical model, increases the capacity to both predict and explain phenomena of interest, such as sponsorship of CSR actions. Integration of these three variables made it possible to identify that attitude toward the cause inhibits the negative effects of low brand attachment and low brand-cause congruence.

Second, this study shows that incongruent brand-cause CSR actions can be perceived as incoherent or inappropriate by consumers with low brand attachment, increasing the perception of persuasive intent and reducing the intention to adhere to the cause. Although previous studies (Romani & Grappi, 2014; Skarmeas & Leonidou, 2013; Vlachos et al., 2009) theoretically suggested this relationship, no study had tested this mediator effect empirically. Moreover, our results confirm that brand attachment functions as a protective barrier for brand reputation (Chiou et al., 2013; Fedorikhin, Park, & Thomson, 2008; Schmalz & Orth, 2012), since consumers with high brand attachment did not notice the persuasive intent of CSR actions incongruent with the brand.

Third, this study investigates consumers' intention to adhere to a cause promoted by a brand. While the benefits of sponsoring CSR actions are well documented (Becker-Olsen et al., 2006; Mohr et al., 2001), these actions' social results have received much less attention by previous studies (for exceptions, see Lichtenstein et al., 2004; Romani & Grappi, 2014; Romani et al., 2014). As social problems become more complex, the participation of more people in brand-led CSR actions becomes more relevant. For example, Stella Artois and its partner Water.Org

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have already sold more than 225,000 glass chalices and donated the total amount of this campaign (more than USD 3 million) to the cause (Stella Artois, 2017). Likewise, the McHappy Day campaign, which has been promoted by McDonald's for more than 29 years, raised more than BRL 25 million in 2017, an amount destined for the treatment of children with cancer (McDia Feliz, 2017). These results were only possible because consumers adhered to social brand-led campaigns.

Similarly, this study makes important managerial contributions by giving strategic directions to brand managers who intend to increase their consumers' adherence to CSR actions. The present results show that attitude toward the cause is an important predictor of consumer adherence to CSR actions promoted by brands and can reduce the negative effect of low brand-cause congruence. Even so, brand managers should be careful in choosing CSR actions to be sponsored. The present results show that consumer adherence in incongruent actions tends to be lower, especially for people with low brand attachment.

However, promotion of CSR actions can also strengthen the relationship between consumers and brands, and positively affect the building of brand attachment (Bhattacharya & Sen, 2004; Stanaland, Lwin, & Murphy, 2011). When consumers adhere to CSR actions, people realize that the brand's effort is fair and feel involved with the brand in solving social problems. This joint action has positive results not only for the beneficiaries of the social action but also for the brand.

Park et al. (2010) suggested that the stronger the brand attachment, the greater the will to engage in behaviors requiring reputation, time, money, or energy investments to strengthen or maintain the attachment with the target brand. Attachment enhances consumers' empathy and identification with the company and motivates commitment behaviors (Hazan & Shaver, 1994). Therefore, sponsorship of socially responsible actions seems to have inspired this study's respondents to demonstrate exemplary and prosocial behaviors.

Finally, the results also indicate that adherence to CSR actions is greater among people with high brand attachment and higher attitude toward the cause. Therefore, brands can achieve better and faster results by aiming CSR action efforts at consumer segments with these characteristics.

Limitations and future studies

The experiments reported here measured and not manipulated both brand attachment and attitude toward the cause. Manipulation of attachment is difficult to perform under experimental conditions since the attachment is built and strengthened over time (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996). Manipulation of attachment would give greater assurance that this construct is not confused with similar variables, such as attitude toward the brand. However, since attitude does not have the same degree of intensity as attachment, we would probably not see the same effects. However, attitude toward the cause can be manipulated more easily and can be studied in the future.

The present results were obtained through experiments with undergraduate students; future studies can investigate these effects with broader populations. Moreover, only two brands were investigated; future studies may address a larger number of brands and causes. Likewise, it is worth investigating whether the effects obtained for intention to adhere to the cause would remain with variables of brand interest, such as the intention to increase brand consumption or attitude toward the brand.

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ESSAY

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CORPORATE GROUP DECISIONS: A BEHAVIORAL APPROACH

Important organizational decisions are commonly made within groups. Within financial institutions, it is not rare for credit concessions to be decided by committees. In the government sphere, fundamental decisions, such as defining the economy's primary interest rate, are also made in collegiate. In large private companies, the board of directors is at the top of the organizational hierarchy and has the final word on investment strategies, financing, and mergers and acquisitions. However, the peculiarities of the group decision process are widely ignored in finance literature, which usually considers the group as if it were an individual. For example, studies in the field of behavioral corporate finance emphasize the cognitive processes and biases of the individual decision maker, but pay little attention to how these processes interact to make a group decision (for a literature review, see Baker & Wurgler, 2013). In this essay, I present, in a concise, selective manner, the current state of the emerging multidisciplinary discussion on the decision process in small groups and emphasize its behavioral aspects. First, I cover the advantages and difficulties of the group decision compared with the individual decision. Then, I present recent contributions indicating that the quality of group decisions depends on the context and on how small changes in the decision environment can have important consequences.

THE GROUP AND THE INDIVIDUAL

In a recent review of the literature on experimental psychology and related areas, Tindale and Kluwe (2015) show that, in many contexts, group decisions yield better results than decisions made by individuals alone. Groups have an easier time finding correct solutions for problems. They generate more precise forecasts and more creative ideas. They have better results in negotiations and academic tests. The contracting decisions made are superior, and information is recovered more precisely (i.e., they have a "collective memory" superior to individual memory).

One of the oldest and most consolidated research lines in this field investigates the phenomena of "wisdom of crowds," concluding that groups are efficient mechanisms for aggregating individual estimates and opinions when the members do not interact with each other. For example, Ariely et al. (2000) show that, under certain statistic conditions, the mean estimate from a group will always be better than the individual estimate of any of its members. This argument is supported by many empirical studies conducted in realistic conditions.

The social nature of the decision is probably an adaptive response to the conditions that shaped the evolution of life in society. The group decision process may have contributed to reducing individual cognitive limitations, and thus increased the availability of resources to everyone. Following this line, Hastie and Kameda (2005) simulated the choice of appropriate hunting sites by hunter–gatherer groups. Comparing different alternative decisions, the authors reported that simple majority/plurality rules (e.g., choosing the hunting site with the most votes among the group's members)

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result in great performance and require fewer cognitive resources, in addition to consistently overcoming the performance of rules based on the best decision maker. Some studies suggest that similar processes may also benefit other species. For example, Kameda, Wisdom, Toyokawa, and Inukai (2012) reported that bees apparently choose places to build their beehives based on majority/plurality rules.

Unfortunately, good performance of group decisions in real life is not guaranteed. There is consistent documentation of anomalies and dysfunctions in collective decisions, in both experimental contexts and case studies of highly important real decisions (e.g., the committee decision prior to the Challenger space shuttle explosion). For example, in many experimental contexts, groups tend to make decisions that are more ethically questionable than those of individuals (Nikolova, Lamberton, & Coleman, 2017). Other experiments show a polarization effect that leads groups to make more extreme decisions (more conservative or riskier) than their members would make individually (Bainbridge, 2002).

The causes of failures in collegial decisions reported in the literature are varied and controversial. Tindale, Smith, Dykema-Engblade, and Kluwe (2012) argued that the same group decision processes may lead to decisions that are better or worse than those made individually. The authors focus on the effects of two types of social sharing: preference sharing and task representations sharing. The first refers to the degree of alignment of group members regarding preferences for decision alternatives, while the second refers to the degree of sharing of any concepts, norms, perspectives, or cognitive processes relevant to a given task or situation (e.g., procedures used to find the "optimal" alternative among those considered). Tindale et al. (2012) investigated experimentally whether group decisions are worse than the average individual decision when the representations of tasks shared by group members are biased—for example, when the shared model used to process the information and rank alternatives is inappropriate for the problem in question. In such contexts, group discussions tend to exacerbate, rather than mitigate, individual biases and cognitive limits. For example, Tindale and Kluwe (2015) reviewed studies in which the distortions of decisions associated with some of the individual biases discussed in Kahneman, Slovic, and Tversky (1982) have been found to be greater in groups than in individuals.

Dysfunctions in group decision-making processes have also been associated with (excessive) compliance with the group. Raafat, Chater, and Frith (2009) distinguished two forms of thought transmission between members of a group: automatic contagion and rational deliberation. An example of the latter approach is the informational cascades theory, in which agents with imperfect information can rationally ignore their own information (Bikhchandani, Hirshleifer, & Welch, 1992). As an illustration, suppose that, by deliberating on a major strategic investment over which there is considerable uncertainty, the first three board members to come forward, one after another, approve the project. In this case, the theory predicts that the fourth board member will be inclined to approve the project, partially ignoring his own information. Although in this model the updating of judgment is rational, using Bayes' rule to incorporate the opinion of the colleagues who manifested themselves first, the informational cascade can cause inefficiency. This happens because the members of the group influenced by the opinion revealed by their colleagues partly ignore their own information, which could be potentially relevant to the collective decision.

Automatic contagion approaches look at the same phenomenon through the perspective of nonconscious processes. For example, Aydogan, Jobst, D'Ardenne, Müller, and Kocher (2017) induced compliance in group members by making experimental subjects inhale oxytocin in order to study ethical behavior in different environments. The authors show that inhaling oxytocin, a hormone associated with prosocial behavior, increases intragroup compliance. An increase in compliance, in turn, causes a reduction in group honesty in competitive environments. This evidence agrees with the results reported by Nikolova et al. (2017): groups tend to behave more dishonestly when the need for bonding among their members is greater.

A negative manifestation of excessive group compliance is the phenomenon known as groupthink, proposed by Janis (1972). It is associated with disastrous decisions made by councils and committees (e.g., the attempted invasion of Cuba supported by the US government in the 1960s). Distortions in decision making associated with groupthink include insufficient information collection or sharing, self-criticism failures, and biased estimates of risks, costs, benefits, and ethical implications of decisions. Although its original formulation is theoretically questioned and the empirical evidence of the phenomenon is controversial, groupthink remains one of the most influential ideas in the academic and practical debate on the difficulties of collegial decision (Baron, 2005).

DECISION ARCHITECTURE AND DEBIASING

One lesson from the preceding discussion is that the quality of group decisions, whether in absolute terms or when comparing with individual decisions, depends on the context in which they

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are made. Recent multidisciplinary literature in the behavioral field addresses this issue, focusing on elements comprising what is generally termed "decision architecture."

The current state of part of this literature is presented by Soll, Milkman, and Payne (2015). These authors focus on different "debiasing" procedures applicable to individual and/or group decision making. Soll et al. (2015) organize the various contributions into two approaches. The first proposes mechanisms to modify the decision maker, for example, through training (e.g., financial education); and the second focuses on modifying the decision-making environment. The second approach is more important to the discussion herein. It closely relates to the concept of nudging, which is understood as an intervention in the context of decision making using principles of psychology to influence behavior as desired, but without significantly restricting choices or changing incentives (Thaler & Sunstein, 2008).

Available evidence suggests that a critical mediator of the quality of group decision-making is the degree of information sharing. Following this line, Tindale and Kluwe (2015) suggested several mechanisms to increase the likelihood that all relevant information is shared during group discussions. These mechanisms include the establishment of formal rules and procedures for sharing information, which may involve encouraging the group leader (e.g., chairman of the Board) to exchange information with the meeting participants. It may also be important to instruct group members not to share their initial impressions or preferences early in the discussions, and thus avoid informational cascades. The main message of this line of investigation is that the focus should be on the information than the preferences of the group members, at least at the beginning of the meeting; further, the emphasis should be on the accuracy and correctness of the decision, not on seeking consensus. In this context, distributing the informational burden by delegating responsibility for specific types of information to different members of the group may also help.

Other mechanisms that contribute to improving the quality of the decision and reducing the scope for distortions, such as groupthink, involve expanding the decision-making framework to consider more alternatives and contrary evidence (Larrick, 2009). One such strategy is called premortem, a procedure that begins with the assumption that the group approved a proposal on the agenda, but its implementation was unsuccessful. Then, each member contributes by describing the precise causes of the hypothetical failure. Finally, the insights resulting from the exercise are used to refine the proposal and give feedback to the discussion. Premortem is included in a class of strategies known as "prospective hindsight," which shows increasing practical and academic acceptance (Soll et al., 2015). In the same vein, interruptions in discussions can be scheduled to elicit more thoughts about the object in question and reduce the likelihood of rash judgments. Such a strategy is especially useful in making important and infrequent decisions.

It is also possible to mitigate the deleterious effects of group bias by encouraging the integration of the opinion of all members, and perhaps outsiders, to take advantage of the "wisdom of the crowds," especially when the decision involves quantitative estimates (e.g., to rank strategic investment alternatives in order of priority). A refinement of this idea involves the aggregation (e.g., mean or median) of estimates produced by the same individuals at different times to mitigate biases associated with the temporal context of the decision. Such biases are more likely when estimates are produced under conditions of low decision-making readiness—for example, under the influence of intense emotional states, fatigue, or time pressure (Soll et al., 2015).

Ordóñez, Benson, and Pittarello's (2015) review of the literature on the effects of time pressure on decision-making processes states that some time pressure can have beneficial effects, helping to avoid procrastination and paralysis due to excessive options. This, in turn, increases the decision-makers' productivity. Conversely, scientific evidence clearly associates severe time pressure with reduced creativity, increased salience of negative information, reduced analytical processing, consideration of fewer options/attributes, reduced cognitive processes related to consequences, and increased automatic affective decision processes, which can lead to increased intragroup compliance and groupthink. Moreover, there is evidence to show that time pressure is positively associated with the use of stereotypes in trading contexts and unethical behavior of groups, especially when such behavior is easily justifiable (Ordóñez et al., 2015). Therefore, if the decision requires empathy with people outside the group or has important ethical implications, it may be crucial to design the process to prevent it from being made under severe time pressure.

Finally, the most widespread antidote against social bias and poor performance of groups is increasing diversity—that is, including members capable of contributing to the decision-making process from different points of view associated with differences in training and prior knowledge, gender, or ethnicity, for example. Theoretical arguments and experimental evidence in this area suggest that diverse groups make more accurate decisions (Davis-Stober, Budescu, Dana, & Broomell, 2014; Tindale & Kluwe, 2015). In the organizational and corporate governance literature, increasing diversity has been recommended as a mechanism capable of producing better decisions in highly complex

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environments. For example, Torchia, Calabrò, and Morner (2015) show that "deep diversity" (i.e., background and personality differences) is associated with greater creativity and "cognitive conflict" (i.e., contributions from several perspectives and mental models) on the boards of Norwegian companies. Similarly, the results of the experiment reported by Mok and Morris (2010) suggest that individuals with conflicting cultural identities (e.g., subgroups of immigrants or individuals with relevant experiences in distinct cultures) are more resistant to consensus when they are incorrect, reducing the risk of groupthink.

Available evidence suggests that compliance biases can be mitigated by gender diversity. For example, Nikolova and Lamberton (2016) show that, under different experimental conditions, pairs of males tend to make more extreme decisions than individuals and pairs of females or mixed pairs. Gender diversity, in this context, may reduce over-compliance to male norms that prioritize extremes, which may help explain why groups often make more extreme decisions than individuals (Bainbridge, 2002).

Conversely, similarly to other solutions for group decision problems, increasing diversity is not a panacea; its effectiveness depends on the context and how it is implemented. For example, Harvey, Currall, and Hammer (2017) describe, in a thorough qualitative study, the internal dynamics of a board whose meetings they monitored in loco for five years. The authors report that a change in the composition of the group in order to increase the diversity of perspectives and interests apparently led to a dysfunctional process called "decision diversion." In this negative dynamic, the objectives related to the group's effective performance were replaced by the negotiation of interests of its subgroups, resulting in the deterioration of the quality of the decisions. Such dysfunctions may be responsible for the ambiguous evidence on the performance of heterogeneous groups. Therefore, increasing diversity may benefit or undermine group performance, depending on a delicate balance between forces that promote creative divergence and forces that promote dysfunctional conflicts. Following this line, Homan, Knippenberg, Kleef, and Dreu (2007) show that, under different experimental conditions, heterogeneous groups perform better when their components are trained and convinced about the positive value of diversity when making group decisions.

CONCLUDING REMARKS

This essay is based on multidisciplinary literature that investigates patterns of systematic interaction in small groups resulting from rational and non-rational cognitive processes. Scientific evidence shows that these patterns of interaction influence the quality of group decisions and are influenced by the decision-making environment.

The discussion above suggests that interventions on "decision architecture" can help prevent dysfunctions and optimize collegial decision-making processes—among them, strategies that induce greater information sharing and use of the contribution of each group member, and strategies focused on the accuracy of the decision, production of more alternatives, and consideration of contrary evidence. However, what works in one case may be counterproductive in another, as suggested by the debate on the pros and cons of intragroup diversity. Further studies may refine knowledge about the conditioning factors of the effectiveness of different strategies, as well as explore new possibilities. For example, little is known about the potential effects of new communication technologies on the quality of the collegial decision (for a discussion of the potential impacts of technology, see Tindale & Kluwe, 2015).

In descriptive or prescriptive corporate finance and governance studies, there is room to investigate how group dynamics influence strategic decisions and firm performance, whether by adopting a descriptive or prescriptive perspective. It seems important to go beyond the superficial consideration of decision-making structures (e.g., basic composition of the Board of Directors or CEO characteristics) and truly open the "black box" of the senior management collegiate bodies.

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BOOK REVIEWS

Translated version

THE CONTRADICTIONS AND AMBIGUITIES OF WORK FLEXIBILITY

O ARDIL DA FLEXIBILIDADE: Os trabalhadores e a teoria do valor

Sadi Dal Rosso. São Paulo, SP, Brazil: Boitempo, 2017. 286 p.



By

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O ardil da flexibilidade is the third publication in a trilogy that include the titles: *A jornada de trabalho na sociedade: O castigo de Prometeu* (Ed. LTR, 1996) and *Mais trabalho!: A intensificação do labor na sociedade contemporânea* (Ed. Boitempo, 2008). In this book, the sociologist Sadi Dal Rosso evolves from analyzing the working day and the intensification of work to investigating flexibility, which is consistent with the complex process of giving a word positive connotations, and the widespread belief that flexibility is the future of labor.

The book has three parts. Part I encourages a theoretical discussion of the main elements related to workplace flexibility, including the genesis of flexible practices and the labor theory of value. The analysis in part II is based on the flexible practices in core countries, that is, developed countries with late industrialization. Part III discusses labor flexibility in Brazil, analyzing the influence of social factors such as age, gender, and race on several economic sectors.

The first part of the book examines the movement for streamlining procedures, the central economic role of flexibility, strategy applied to business, and the Brazilian context. It also reveals one of the primary points of debate in the book: the search for a common direction to what has become flexible work. Its use as a corporate strategy appears to be a motive for the disputes between employees and employers. The author creates a typology for flexibility, differentiating it in quantitative and qualitative terms. The variation in the workforce due to downsizing can be understood as external quantitative flexibility, while polyvalence can be understood as internal qualitative flexibility.

To understand working hours and non-working hours in their rigid and flexible variants, Dal Rosso organizes his work according to three principles: (1) duration of the working day, (2) intensity, and (3) distribution of working hours. In distinct contexts, the work denounces the hidden social contradictions within flexible practices. The author delineates the boundaries between the different times based on the principle that working hours are not the time for living life and denounces the evils of flexible distribution of labor hours, for example, the merging of working hours with non-working hours to other forms of alienation.

For the sociologist, the attempt to give a positive meaning to the movement for workplace flexibility comes at the cost of a loss of rights. These rights, such as an 8-hour working day, full-time pay, overtime pay, and job security, are replaced by

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flexible hours, part-time jobs, intermittent work, job cuts, lack of social security, and lower wages and benefits.

The book moves on to question whether flexibility could completely replace the full-time job. Using the theory of value, the author criticizes working on weekends, holidays, and hours that were previously considered as non-working hours. The author also recognizes that flexible work incorporates unproductive time frames, rationalizing it as producing value for the continuous accumulation of capital.

In part II, after exposing some tendencies, Dal Rosso recognizes that the flexible standard does not apply the same way in countries with recent capitalism, which he calls periphery countries, as it does with primitive industrialization, that is, the central countries. The author demonstrates that flexiblization with pre-regulated mechanisms such as temporary work, daily payment, and different types of contracts, has already affected countries with late industrialization, although they have not yet transitioned to a regulated working system with rights. Brazil, a peripheral country with late industrialization, still needs to transition to a regulated full-time work day and has a trend of precarious employment, characterized by the excessive use of overtime among wage earners, forms of self-employment (*pejotização* – when the employees of a company have their own micro-businesses), part-time jobs, and a proliferation of the informal sector jobs.

The author examines trends in the central countries to understand how flexible practices manifest themselves in these contexts. Analyzing the United States, Canada, and the European Union, Dal Rosso reveals that the "new" work arrangements are reinforced within environments in crisis with low economic growth and recession, but not all modalities of flexibility show a tendency toward growth. On the contrary, functionality problems, worker resistance, and contradictory policies on the accumulation of capital cannot ensure business gains, which assign uncertainty to flexible practices.

In part III, Dal Rosso reinforces the need to analyze census data consolidated by activity, organizing them by age, color/race, and gender/sex. According to the author, flexible practices for farming, industry, construction, commerce, finance, transport, education, health, public administration, and domestic service are distributed into three groups according to the distribution of working hours. His thesis culminates in the creation of a "Convergence Theory," that is, the inclination of practically all sectors and branches of economic activity towards a full-time working day (between 40 and 44 hours a week), including the working day of the employers.

This book's contribution to this area becomes evident when considering that Brazilian companies are already implementing different forms of flexible work, for example, hourly payment for professors from private universities, payment by delivery for drivers, or for domestic servants known as day laborers. Excessive work hours are also an expression of flexibility, particularly among agricultural, fishing, and extraction workers. Owing to the practice of unpaid overtime and disregard of labor rights, the primary economic sector is continuously monitored for reports of work analogous to slavery. In the health sector, professionals are subjected to a form of flexibilization only found in Brazil: the shift system comprising of 12 hours of work and 36 hours of rest.

Among the possible advances, it can be assumed that flexibility is used as a strategy of confirmation, reinforcement, and creation of inequalities, further reducing access to worker rights, expanding the accumulation of capital, incorporating non-working hours into the production of value, and rupturing the separation between work and leisure time. Similarly, there is much more room to discuss this subject, as it carries a huge ideological load and is often the motive for disputes between employees and companies, generally for opposing reasons.

However, readers of the book may question whether the theories that explain the flexible practices observed in Brazil and countries with primitive capitalism can be applied to nations with unique profiles, such as China, India, Russia, South Korea, or Australia. The concept of flexibility applied to business was also not sufficiently developed given the complexity of the relationships between organizations and their subjects. Therefore, sometimes the author neglects the willingness of workers, which can weaken his arguments about the generated inequalities.

This book offers readers a good opportunity to expand their knowledge on flexibility, work hour distribution, and the new labor morphologies. It contributes significantly to society in these dark times of precarious employment in Brazil.

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BOOK REVIEWS

Translated version

EXECUTIVE COACHING: RELATIONSHIP AND DIALOGUE AS THE FOUNDATION FOR SUCCESS

COACHING: O EXERCÍCIO DA LIDERANÇA.

Marshall Goldsmith, Laurence Lyons & Sara McArthur (Orgs.). 3a ed. Rio de Janeiro, RJ: Editora Elsevier, 2012. 352 p.



Por

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This book brings together the practical experiences in executive coaching processes conducted by internationally renowned professionals. The work is composed of 31 chapters organized into seven thematic parts. Part I (Foundations of Coaching) establishes the conceptual basis of coaching and makes it accessible to a wide audience. The five chapters in this part are written by renowned experts in the fields of coaching, management, and business. Part II (Portrait of a Leader) discusses current leadership practices and consists of six chapters. Part III (Challenges and Forces of Change) comprises five chapters that explore coaching practices in a changing world; of these, Sally Helgersen's "Awareness coaching for men and women" is the most noteworthy. Part IV (Recognizing and Developing High-performance Leaders) brings together, in six chapters, several studies on key topics of leadership and coaching. Part V (In Action), consists of five chapters that focus on the development of high-performance leaders for the future. Part VI (Coaching Models and Tools), comprising four chapters, evaluates the effectiveness of the well-researched and proven coaching practices. The discussion by Barbara Mintzer-McMahon on the issue of gender differences and its influence on coaching actions stands out. Part VII (Coaching: The Leadership Exercise—Premium Content Available on the Internet), which brings together articles in English available online, is especially recommended for beginners in leadership coaching.

Marshall Goldsmith, recognized worldwide as one of the most influential thinkers in the field of leadership, is the author of best-selling books on business and management. Laurence S. Lyons is a pioneer in the field of executive coaching, organizational development, and change management. Sarah McArthur is the founder of a company providing writing and editing services and has more than 20 years of experience.

The authors identify the aspects that they consider fundamental to a successful coaching process. The coaching process should be understood as a relationship. Relating to others implies a mutual exchange between two or more individuals with common goals. Thus, grounding the coaching process in a relationship of trust and mutual respect is essential for success. The authors of this book stress that the coach does not need to become a "friend" of the client because being "loved" by the client does not improve the results of the coaching process. Although friendship may exist,

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it is not something that increases the chances of coaching success.

The work presents three coaching attitudes essential for success: (1) remaining focused on the client and reaching his or her goals, rather than those of the coach; (2) avoiding self-satisfaction: the coach cooperates for the client's success, not for the achievement of the goals considered useful for the former; and (3) respecting the client by using approaches that are aligned to his or her personal beliefs and values.

In the coaching process, one must consider that the client is a part of several social spheres; thus, the coach's understanding of the client as an open system that is connected to other systems is crucial in defining goals. Disregarding these distinct and interrelated social spheres may undermine the desired results. The coach needs to have a holistic understanding of the client, and develop the ability to listen—a quality that is necessary to build empathy. These three competencies—holistic understanding, listening, and empathy—are closely interrelated; there is no empathy if we do not hear what the client is talking about and understand him or her holistically. Communication is a fundamental tool in the coaching process: it is by listening that we can create genuine dialogue with each other. Further, the dialogue in the coaching process is important in fostering self-awareness and promoting behavioral change in the client.

Executive coaches need to have some understanding of the client's business as this will not only promote empathy, but also stimulate more complex and deeper dialogues. In this coaching niche, dialogue will always lead to the development of an action plan for the executive client. Executive coaching comprises four steps: (1) preparation (understanding the environment); (2) evaluation (what are the various aspects of this environment?); (3) diagnosis (what needs to be changed in this environment?); and (4) intervention (what should be done for the desired change to happen?). The choice of interventions is based on these four stages. In the case of intermediate-level leaders, the emphasis is on behavioral change; for senior-level executive leaders, coaching covers strategy building and policy understanding.

Some specific points must be considered while conducting executive coaching, which aims to: (1) change behavior and (2) provide strategic understanding. Executive coaching addresses the development of organizational leadership, whose goals help in achieving the company's goals and strategies. That is, executive coaching focuses on changing leadership behavior in the workplace.

The fact that the coach is not in the client's organizational environment represents a challenge. One way to overcome this difficulty is to switch from individual sessions with the client to meetings with the human resources department of the company. In this regard, it is necessary to reflect on issues, such as confidentiality and ethics. To what extent can the content of individual sessions be shared with the company representatives, given that the coaching process is an investment by the company in the development of professionals that will help it to achieve strategic institutional goals.

Although this is a book written by foreign authors, the coaching concepts and practices are widely applicable to the Brazilian context. The elements of executive coaching in Brazil are closer to those practiced in the United States than the ones in Europe. The influence of American culture on Brazilian business thinking makes the concepts, methods, and tools addressed in this book suitable for the Brazilian context.

However, some aspects of Brazil's historical and cultural context, such as the primacy of the personal relationships in social interactions, must be considered by executive coaching professionals; thus, the relationship between coach and client should be more professional than it currently is. The challenge for the Brazilian coach is to measure the level of personal involvement; he or she must understand that the customer remains the principal agent of his success; he or she should act as facilitator for the client's success, but not assume responsibility for it because the coaching process' outcome is dependent far more on the client's motivation to succeed than the coach's competencies.

One of the shortcomings of the executive coaching processes in Brazil is the lack of tested and trusted practices; the great variety of coaching techniques of questionable quality leads to a bias against the process among the executives. This book provides coaching professionals with valuable tools that suit the Brazilian business context. The wide-ranging content as well as the technical competence and experience of its authors make this book required reading for every executive coach.

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BOOK RECOMMENDATION

Translated version

SOCIOLOGICAL ANALYSIS OF DISCOURSE AND DISCUSSION GROUP: PRACTICES IN THE SPANISH TRADITION OF QUALITATIVE RESEARCH

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In the field of Brazilian research on administration, a growing profusion of discursive practices have been witnessed. The last fifteen years have seen the emergence of the Brazilian School of Sociological Discourse Analysis (SDA) and its principal collective practice—Discussion Group (GD). The Brazilian School of SDA has developed by adapting methods that originated in the Spanish tradition of qualitative social research. Driven by phenomenology, ethnology, and critical theory of society, SDA is searching for a model to represent and understand concrete text in its social and historical context by reconstructing the conscious and unconscious interests of the actors involved in the discourse. In Spain, SDA and GD are synonymous with the history of qualitative research, consisting essentially of three major generations of authors, with whose main representatives I had the opportunity to work during my post-doctoral studies. Here I present them with the following sequence: the first generation created a way of thinking; the second systematized the practices; and the third innovated by expanding SDA to images.



MÁS ALLÁ DE LA SOCIOLOGÍA: El Grupo de Discusión: Técnica y crítica

Jusús Ibáñez. Madrid, España: Siglo Veintiuno Editores (5ª ed.), 1979. 428 p.

Ibáñez, a former professor at the Madrid Complutense University, was the principal representative of SDA's first generation. In this masterly, dense work that requires the reader to be familiar with this tradition, Ibáñez constructs the design, structure, and process of GD as dialectical practice, starting from two founding elements of GD: rupture with other neopositivist epistemological practices and insertion into the production and consumption processes of the subjects.



LA MIRADA CUALITATIVA EM SOCIOLOGÍA

Luís Enrique Alonso. Madrid, España: Editorial Fundamentos, 1998. 268 p.

Alonso is the principal theoretical author of the second generation of SDA. In this manual, he develops a section on GD as a practice of communicative action and criticizes all informational-quantitative modalities as well as structural-textual analyses, establishing SDA as a social and hermeneutical practice. The work is also tangentially more oriented toward the field of social consumption, and can be used as a methodological foundation in other administration themes.



ANÁLISIS SOCIOLÓGICO DEL SISTEMA DE DISCURSO

Fernando Conde Gutiérrez del Álamo. Madrid, España: Centro de Investigaciones Sociológicas (CIS), 2009. 268 p.

Only through this work by Fernando Conde was the systematization of SDA definitively inaugurated, although the author did not intend to establish strict protocols but merely offered guidelines for its execution. The work—permeated by examples in the areas of social and business consumption—is seen as fundamental to the practice of SDA and is subdivided into four major moments: initial practical work; interpretation procedures; analysis procedures; and procedures complementary to SDA (the complementary procedures have their origin in psychoanalytic theory and are called association, condensation, and displacement).



ESTRATEGIAS Y PRÁCTICAS CUALITATIVAS DE INVESTIGACIÓN SOCIAL

Angel J. Gordo López y Araceli Serrano Pascual (Coords.). Madrid, España: Pearson Educación, 2008. 313 p.

Serrano and Gordo are the principal representatives of the third generation of SDA. This collection provides the historicity, epistemology, protocols, and examples of each qualitative method. The authors develop the section on GD by focusing on the theme of young people and citizenship, and the most innovative section—an analysis of visual materials using advertising as a case study—understands "images as discourses."



DINÁMICA DEL GRUPO DE DISCUSIÓN

Jesús Gutiérrez Brito. Madrid, España: Centro de Investigaciones Sociológicas (CIS), 2009. p. 142.

This work also describes itself as a didactic manual for graduates. GD can be applied to most administration themes. From the outset, Gutierrez differentiates the dialectical practice from the construction of the group discourse that characterizes the GD of Merton's neopositivist Focus Group technique. He analyzes the following central aspects: intervention of the moderator; the training and dynamics driving the group; and evaluation and analysis of the group discourse.

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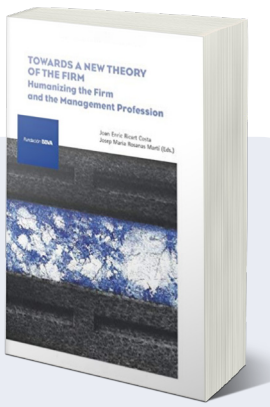
BOOK RECOMMENDATION

Translated version

NARCISSISM AND FIRM PERFORMANCE

Karen Kristina Ayala de Carvalho | karenkac@gmail.com | ORCID: 0000-0003-2477-8354

Behavioral research in the area of finance has advanced in recent decades, contrasting long-established financial theories with normative course models. The field of behavioral finances has gained robustness as it has grown, exemplified by the development of empirical research from tests on behavioral bias in business environments to specific performance analyses. It has since been proven that managers' characteristics can affect the performance of a firm. Researchers have begun undertaking studies on narcissism in the field of management and finances in order to understand the impacts that narcissism can have on companies, as well as different measurement metrics to analyze these factors in business environments. PhD student **Karen Kristina Ayala de Carvalho (**FGV EAESP), a researcher on the topic, presents five reading suggestions.



TOWARDS A NEW THEORY OF THE FIRM: Humanizing the firm and the management profession

Joan Enric Ricart Costa e Josep Maria Rosanas Martí (Eds.). Bilbao, España: Fundación BBVA, 2012. 440 p.

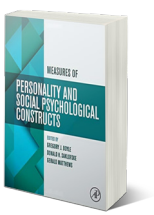
The book is divided in three parts: leadership and future; new theory of the firm; and micro-foundations. It outlines the increasing narcissism of CEOs by examining bureaucratic changes factors such as selection and compensation as evidence. It then posits foundational concepts towards a new theory of the firm, complementing them in the last part with new elements. It proposes reflections on business management in the context of constant changes and research advances.



THE DARK SIDE OF TRANSFORMATIONAL LEADERSHIP: A critical perspective

Tourish Dennis. London, UK: Routledge, 2013. 264 p.

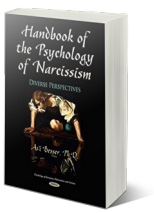
As the title suggests, the work both characterizes and criticizes the different levels and aspects of narcissism, in both public and professional manifestations. The author promotes a literary course which provocatively proposes an alternative approach to the dominant model of transformational leadership. The book presents case studies as examples of the consequences of dangerous transformational leaderships, including cases in business.



MEASURES OF PERSONALITY AND SOCIAL PSYCHOLOGICAL CONSTRUCTS

Gregory Boyle, Donald Saklofskee Gerald Matthews. Cambridge, USA: Academic Press, 2015. 824 p.

According to the authors of this book, obscure personality types and characteristics—including narcissism—can be verified and measured through validated measurement scales. This work outlines studies covering 25 areas of psychology research and covers several topics, psychological aspects, examples of applications, and discussions on the constructs involved. In its six parts, the book examines topics such as social psychology and personality, organizational psychology, and sociology.



HANDBOOK OF THE PSYCHOLOGY OF NARCISSISM: Diverse perspectives

Avi Besser. New York, USA: Nova Publishers,2014. 475 p.

Going through intrapersonal, interpersonal, and clinical aspects of narcissism in three parts, the book incorporates discussions and analyses of different perspectives on narcissism, such as behavioral, physiological, cognitive, social, and clinical. It provides a general understanding on the subject; by approaching the personal and professional domains of narcissism, this work integrates their relationships with different applications of studies in its 24 chapters. The authors characterize, disrupt, specify, and attribute narcissism throughout each approach.



THE FINANCIAL CONSEQUENCES OF BEHAVIOURAL BIASES: An analysis of bias in corporate finance and financial planning

Imad A. Moosa e Vikash Ramiah. Cham, Switzerland: Palgrave Macmillan, 2017. 174 p.

This book, written specifically for the area of finance, addresses the implications of behavioral biases for the firm. It outlines the particularities of the rise and fall of neoclassical finance theory, the rise of behavioral finance, discussions ranging from conspiracy theories to environmental, social finance, and neurofinance. The book also demonstrates the impact of narcissistic behavior on the financial industry and consequent impactson global financial crises.

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