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Online dating apps as a marketing channel: a generational approach

Online dating
apps as a
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channel

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Abstract

Purpose – This study aims to understand if an online dating app is considered an acceptable channel to conduct advertising activities and understand the differences between Generations X, Y and Z for such acceptance.

Design/methodology/approach – A total of 411 Tinder users' reactions were obtained and analyzed using text mining to compute the sentiment score of each response, and a Kruskal–Wallis H test to verify if there are statistical differences between each generation.

Findings – The results showed positive acceptability toward the marketing campaign on Tinder, especially Z Generation. Nevertheless, the statistical analysis revealed that the differences between each generation are not statistically significant.

Research limitations/implications – The main limitation relates to the fact that the participants, during the data collection, revealed their identification, perhaps leading to acquiescence bias. In addition, the study mainly covered the male population. A balanced sample would be positive to examine any possible differences between gender.

Practical implications – Results provide an essential indication for companies regarding their marketing activities conducted on Tinder to fully exploit the possibility of using Tinder as an alternative and valuable channel to conduct marketing activities.

Originality/value – Up until now, no studies tried to understand the effect of a marketing activity online on an online dating app.

Keywords Social media, Marketing communication channel, Online dating apps, Tinder, Text mining, Sentiment analysis

Paper type Research paper

1. Introduction

In a world driven by electronic word-of-mouth based on Social Media (SM) platforms, marketers have taken it into an advantage to procure new relationships between brands, potential customers and developing existing ones (Litterio *et al.*, 2017). On this less tangible and sophisticated era, individuals have changed their roles as consumers, since they take an



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autonomous part in seeking information about products/services of their interest, making it possible to acquire nearly everything with a simple “click” (Ramos *et al.*, 2019). On a global scale, there are 2.25 billion users of SM daily (Statista, 2017). The average adult (18+) spent about 2 h and 25 min a day in navigating on SM in 2017, with Generation Y taking the most significant portion of that daily usage, with around 3 h and 72 min (Statista, 2017). This shift in user behavior entails companies to reconsider their marketing strategies inside the digital world, by turning their head to relationship-based interactions with their target market, to improve marketing engagement (Stojanovic *et al.*, 2018). As a result, marketers have transformed their roles. In this paradigm, there are two leading SM platforms marketers tend to focus on when they decide to invest in digital marketing: Facebook and Instagram (Voorveld *et al.*, 2018).

Nevertheless, the increasing number of media channels turned the media effectiveness challenging. Time and attention have turned into a rare asset for users, and the number of alternative ways of communication influence the quantity and type of communication (Hartemo, 2016). Although advertising has a positive effect and visibility on brand equity (Abril and Rodríguez-Cánovas, 2016), it has become less efficient. In a situation of high quantity, there are too many ads concentrated in one channel claiming for the users’ attention, putting in jeopardy the effects in memory, behaviors toward the ad, attitude, advertised product and even the channel itself where the communication occurs (Rejón-Guardia and Martínez-López, 2014).

The main reason to download a dating app is due to its mass marketing popularity and peer influence (LeFebvre, 2017). The game-like swiping characteristic of these apps makes its navigation almost addictive, resulting in placing them into the entertaining app category (Sumter *et al.*, 2017). The age group of 25–34 holds a substantial share of online dating activity with a value of 42.2%, with a total of 279.2 million worldwide users in 2017, and a forecast to reach 331.3 users by 2022 (Statista, 2018).

Although a few marketing campaigns have been executed on dating apps, academia has not developed efforts to understand the receptivity of a dating app as a marketing tool. Therefore, the purpose of this investigation is to explore the willingness to receive intrusive marketing communications through a dating app, and if there are statistical differences between generations for its acceptance. To achieve this objective, 411 user reactions were collected from Tinder after the launch of a marketing campaign, providing the corpus for analysis. Sentiment analysis was adopted to rank the responses, thus enabling us to understand the types of user feedback toward marketing communication and a Kruskal–Wallis H test to comprehend if there are statistical differences between each generation. Although the creative aspect of marketing communication is not considered, from a marketer’s perspective, it is crucial to understand how dating apps users react facing marketing communication, considering that the channel influences its effect.

Using generational cohorts permit an additional understanding of the users’ response toward a marketing campaign, as each group is perfectly delimited by a particular period and involves people who were born within a specific period, with similar values, experiences and priorities (Bento *et al.*, 2018). The period when the audience was born can provide indicators of target groups and interests and particular insights of each generational microculture.

By uncovering the users’ reactions, this paper intends to bring valuable insights for scientific literature and marketers by understanding if an online dating app is an appropriate channel to conduct marketing activities since there is a positive correlation between channel acceptance and ad attitude (Bakr *et al.*, 2019), and if audience generation is a determinant for its acceptance.

2. Literature review

2.1 Social media advertising

The reason marketers have begun to consider SM as one of the most valuable marketing channels is their inexpensive characteristic to engage and communicate with a worldwide

audience (Ashley and Tuten, 2015; Jaakonmaki *et al.*, 2017). Firms who take advantage and invest in SM marketing consider SM an ongoing corporate communication channel more effective than company-sponsored messages (Clark *et al.*, 2017). SM aims to generate content engaging enough to lure social network users into interacting with them to create digital exposure (Ramos *et al.*, 2020). Hence, the opportunity to connect, create and bring customer value became higher and much easier to obtain (Vrontis *et al.*, 2017).

SM networks have become indispensable, bringing up a revolution in how SM affects peoples' views and participation in political and civil life, in terms of marketing campaigns surrounding political and social causes (Boulianne, 2015). Promotion via SM channels has become a technique pursued by marketers, by a single share of a picture or by creating a contest to win a prize or a reward (Királová and Pavličeka, 2015).

Due to humans' relationship toward their own unconscious emotions, marketing campaigns whose backbone is to reach consumers' vulnerability and their emotional side, turn almost immediately into success, since such feelings related to advertising get effortlessly retained on the audience's mind (Hudson *et al.*, 2015; Schivinski and Dabrowski, 2016). Such content influences consumers' willingness to recommend and comment on experiences with the advertising to their peers (Hudson *et al.*, 2015).

Consumers' emotions respecting SM advertising can differ, as seen in Knoll's (2016) review of several studies regarding users' attitudes toward SM advertising, which emphasized some of the most valuable conclusions obtained. In essence, advertising can be bothersome, especially when disrupting an activity that was being executed on a SM platform. The participants noted that advertising, which features nothing more than a simple link, is often not engaging; thus, these authors recommended that advertising on SM should be mostly concerned about interaction, enjoyment and cocreation between companies and the SM users (Sashittal *et al.*, 2012; Soares and Pinho, 2014). Moreover, studies such as Yang's (2014) and McCoy *et al.*'s (2017) regarding contrary acceptance toward advertising on social platforms, concluded that ads invasive and distractive play a negative influence regarding users' attitudes toward them. However, such a consequence takes a much smaller impact compared to the positive influence resulted from advertising's entertainment aspect. Expanding with time, SM users tend to be more accepting of the vast amount of advertising, coupled with the need to create credible, entertaining, interactive, trust-worthy and personalized marketing activities (Alalwan *et al.*, 2017; Knoll, 2016).

Furthermore, several studies determined the highly positive value of entertainment's influence on positive attitudes toward SM advertising: when comparing to information, entertainment took up four times more influence (Knoll and Matthes, 2017; Saxena and Khanna, 2013). Set on Killian *et al.* (2015) research, several senior managers responsible for the digital planning of their respective companies were asked to recognize the four key customer engagement strategies regarding SM networks' purposes. Once more, entertainment was claimed to be the most critical factor, as entertaining SM activity quickly enhances users' engagement and curiosity.

Marketers must invest their time in being attentive to feedback and emotions are given by users on their SM platforms, since marketing and advertising should be a result of a constant co-creation process and firms must be conscious of their audiences' deliberation toward their marketing activities (Bernabé-Moreno *et al.*, 2015; Hartmann *et al.*, 2018).

2.2 Online marketing campaign effect on different generations

For understanding the effectiveness of online advertising, it is relevant to understand the users' responses toward them. In this context, consumer motivation plays an essential role in the online environment since it affects how advertising is perceived on social media (Lin and Kim, 2016). Need, drive and desire are psychological states that reveal the way a user processes information, makes decisions and is involved. User response toward advertising is

associated with the motivation that drives a user to find information or good deals on the internet and make a purchase (Zhang and Mao, 2016). For instance, the perceived usefulness of a Facebook ad revealed to be a significant predictor of attitude toward advertising and product purchase intention (Lin and Kim, 2016).

Similarly, the effectiveness of an ad depends on the possibility of engagement before the action is taken. An entertaining ad will have a positive reaction toward an online ad (Zhang and Mao, 2016). For that, it is essential that ads are interactive, appealing and permit a direct virtual experience. The ad personalization also plays a vital role in response to an ad. Moderated personalized ads have increased the click-through intention and click-through rate on online ads when compared to a nonpersonalized ad. Click-through rates also increase when an ad meets user interests (Boerman *et al.*, 2017). Brand consciousness also has a relevant impact on an online ad, influencing users' attitudes toward it, affecting their behavioral response (Boateng and Okoe, 2015). Clearly, there is a positive relationship between users' attitudes toward an online ad and their behavioral responses.

Generation X includes those who were born between 1965 and 1980 (Kitchen and Proctor, 2015) with specific characteristics that have an impact on the perception of online marketing campaigns. Although this generation is not acquainted with the new technologies, they tend to be more responsible when using SM platforms, but, on the other hand, are more effectively targeted by marketers through advertisements. This generation is not susceptible to many factors within marketing and tends to ignore online advertising due to the lack of interest, they are not significantly influenced, and their purchasing behavior is not determined by them (Slootweg and Rowson, 2018). Nevertheless, this generation frequently uses the internet as a source of information and tend in general to be participative in online activities. A significant majority uses online social media on a daily basis (Kitchen and Proctor, 2015).

Generation Y (born between 1981 and 1995) (Kitchen and Proctor, 2015), also known as millennials, have a particular way to respond to online advertisements. Since they are digital natives, their interaction with SM is more natural and intuitive, and they share and consume content actively on SM. They are both consumers and producers of information and are more likely to spread marketing messages than Generation X (Bento *et al.*, 2018). This cohort is exceptionally tolerant, give especially attention to social responsibility campaigns and promotion campaigns. This generation spends a considerable amount of time on SM platforms and considers the online environment more trustworthy and safer, making them easy to target using online marketing strategies. However, they are suspicious regarding marketing tactics (Lissitsa and Kol, 2016). Nevertheless, there are few ways in which this generation is consistently affected by marketing since they highly value opinions from others online. Their preference for online advertising is spots and clips broadcast on YouTube, game advertising and pop-up ads from websites (Smith, 2011).

Generation Z is concerned with a target group of people born after 1995 (Kitchen and Proctor, 2015). This generation is more SM savvy and with high levels of swapping online information and conversation. They do not know the world without the internet and are the most educated and connected users among all generations (Chaney *et al.*, 2017). As Generation Y, they are highly tolerant, have a positive attitude toward SM advertising, and prefer online advertising formats that offer control. For these reasons, this generation finds SM advertisements more informative than other generations (Southgate, 2017). By facing these assumptions, it is expected that the reaction toward the marketing campaign on Tinder will differ.

2.3 Users' reaction to ads

The theory of psychological reactance refers to intrusiveness as a threat that exposes the lack of freedom and autonomy (Quick *et al.*, 2015). A reaction occurs when an individual's freedom

of choice happens, usually creating a motivation to regain the lost freedom (Wottrich *et al.*, 2018). Contextualizing this concept to the SM advertising, when a user is confronted with a highly intrusive ad, a reactance occurs, leading the user to advertising evasion. Intrusiveness is considered a critical factor in explaining the avoidance of a consumer toward and advertising (Riedel *et al.*, 2018).

Perceived intrusion measures the user's distraction during the conduction of a task. Ads that appear without the user's permission can be perceived as an invasion into an individual's private subjects (Rejón-Guardia and Martínez-López, 2014). Users consider ads intrusive if they are not expecting them or, if not, find them familiar. The intrusion or nondesired ads could cause the user to perceive them as adverse. In a situation where the user sees self in a case of ad intrusion or without permission, the reaction can be annoyance and negative, leading to a possible ad evasion to complete their planned tasks. Therefore, users can develop negative feelings toward the ad, the advertised brand and the channel itself (Varnali, 2014). The perception and attitude toward the channel can be damaged by the perceived intrusion or absence of permission.

One other emotional reaction related to intrusiveness is irritation. Irritation occurs when a user is unable to close the unwanted ad, being forced to view it, requiring a tremendous cognitive effort, triggering an adverse emotional reaction toward the ad, leading to avoidance behavior (Heinonen and Strandvik, 2007).

Channel acceptance/disturbance refers to the extent to which users accept/reject a particular channel as an advertising channel. It portrays the communication context, meaning that includes how, when and where the user accesses the information (Heinonen and Strandvik, 2007).

The channel can be perceived as acceptable or disturbing, influencing user responsiveness (Boateng and Okoe, 2015). If a channel is perceived as convenient, it will intensify the acceptance of marketing communication. However, if considered as disturbing, it will influence the attention of the user toward the message, revealing a feeling of irritation and avoidance behavior, compromising the efficacy of the communication (Bakr *et al.*, 2019; Boerman *et al.*, 2017). This means that the acceptance of a specific channel is a prerequisite for a positive ad attitude and that when a user understands the channel as disturbing, the negative emotions will not accept the ad regardless of its relevance or usefulness.

3. Methodology

For this empirical research, the reactions toward a marketing campaign promoting a hypothetical clothing website on the dating app Tinder were collected.

The choice for collecting data from Tinder is due to its great success among the digital dating world: users swipe right and left about 1.5 billion times per day (March *et al.*, 2017). An average Tinder user logs onto the app 9 to 11 times per day (LeFebvre, 2017). Males make up 62% of users, females 38% and 85% of the total number of users are aged between 18 and 34, with an average user age of 27 years (Smith and Anderson, 2018).

For the campaign, we adopted a familiar clothing website to give the research a digital backbone and credibility. Adopting an intrusive marketing communication, and with the adoption of an unstructured questionnaire to understand the reaction of users toward the marketing campaign, a total of 411 users' reactions were collected at the end of the campaign execution.

For setting up the campaign, two Tinder profiles were created, a woman and a man, who were the faces of the campaign. These two individuals were fictional characters, whose Tinder profile pictures were taken from a free stock photograph website, for commercial purposes. Carlos and Maria, respectively the male and female accounts, had their location setting set to its maximum (160 km), the age gap for potential matches from 18 to 55+ years

old, and their sexual preference as heterosexual. The type of communication used toward the dating app users was formal, along with some nuances of classic Portuguese, for it is highly uncommon and entertaining for the users in a scenery that is usually quite ordinary. For it to be possible, a script was drawn (Table 1).

The developed script was implemented for both accounts, and the dialog was kept considering the users' answers, never allowing the conversation slide away from the friendly and more professional side (Wang *et al.*, 2017). The creation of the script was based on the need for it to be entertaining, credible, interactive and personalized (Alalwan *et al.*, 2017; Knoll, 2016) to capture the users' attention since the first interaction, as throughout the entire conversation. Since the objective of this unstructured survey was to acquire the reactions of users after letting them know the conversation was part of a marketing campaign (step 6 of Table 1), it was requested their permission to be part of it. After their acceptance, the capture of responses was proceeded, along with retaining the age and gender of each user. In Table 2, it is possible to find the gender characterization of the sample.

Ages of respondents ranged from 18 to 58 years old ($M = 30.00$ years; 23.3% were from 18 to 24 years old, 64.5% from 25 to 39 years old and 12.2% from 40 to 58 years old). From a total of 411 respondents, 91.5% were male, and 8.5% were female. Such discrepancy of genders exists since Tinder users are generally males (Ward, 2017), and therefore, most reactions obtained were from the female account used, for heterosexual men have no hesitation in engaging and initiating conversations on the app.

Step	Script
1st	<i>[If the user is smiling in any of their profile pictures]</i> It was pointed out to me your striking and endless smile, and therefore, I succumbed to the urge to contact you. How have you been? <i>[If the user is not smiling]</i> Greetings, dear gentleman/madam. How have you been? or <i>[If a user starts a conversation first without a "how are you?"]</i> Greetings, dear gentleman/madam. How have you been? <i>[If a user starts a conversation with a "how are you?"]</i> Greetings, dear gentleman/madam. I am afraid to declare that my heart has lived better days. How have you been?
2nd	<i>[When the user answers to how are they]</i> I'm quite glad to hear so <i>[When the user asks "how are you?"]</i> I am afraid to declare that my heart has lived better days <i>[Reason:]</i> This untiring struggle to find love with fashion sense has been leaving me breathless and unhopeful
3rd	<i>[When the user comments and says reassuring things]</i> Thank you for your words <i>[If the user asks to meet, we skip to the 4th question.]</i> <i>[If the user asks to contact via Instagram or WhatsApp]</i> I'd prefer it if we talked via this platform for now. <i>[Then proceeding to the 4th question.]</i>
4th	May I ask what brings you to this quite modern application?
5th	<i>[The user answers the question and then we tell them our reason:]</i> The pursuit of such human being of exquisite tastes and special fashion sense
6th	<i>[The user will say something and regardless, we reply:]</i> What would you tell me if right now you were being part of a marketing campaign? I'm currently studying Tinder's users' receptivity toward a marketing campaign

Table 1.
Script used on
Tinder's users

Generation	Age	Male	Female	Total
Z	18-24	82	14	96
Y	25-39	245	20	265
X	+40	49	1	50
	Total	376	35	411

Table 2.
Sample
characterization

The collected dataset was analyzed using the *R* statistical software, with the developed script for the text mining being implemented through the RStudio interactive environment. The *R* tool is a free and open software for data analysis benefitting from a large online community, including packages such as the “sentiments”, which computes a sentence’s sentiment score (Cortez, 2014).

Text mining is a multidisciplinary field to extract information from a significant portion of nonstructured textual data, eliminating irrelevant text to find pertinent details and to uncover patterns of relevant knowledge (Brochado *et al.*, 2019; Moro *et al.*, 2015). Text mining tools are well suited to automate, refine and transform business intelligence activities that are traditionally conducted employing intensive work of manual literature revision in the search for patterns among the data. Text mining has been used in competitive intelligence, customer management, research, among others.

Sentiment analysis enables us to understand how the users express themselves in text, revealing a positive or negative reaction (Calheiros *et al.*, 2017; Guerreiro and Rita, 2019). A large amount of studies has used sentiment analysis. For instance, Calheiros *et al.* (2017) applied sentiment analysis to characterize a given hospitality issue. Lee *et al.* (2017) used text mining techniques specifically to sentiment classification analysis to understand the relationship between the entropy of review text sentiment and the online word of mouth effects. Pathak and Pathak-Shelat (2017) used sentiment analysis to explain the negative sentiments expressed by virtual tribes. Therefore, the use of sentiment analysis to conduct unstructured text data has been used in different contexts revealing fascinating results. The reactions obtained from the users function perfectly as feedback/reviews, therefore the adequate way to analyze the collected data.

The sentiment analysis developed script was run to score the 411 user responses via a scale of sentiments: sentiments can be negative, neutral, or positive. In the present research, values above zero count as positive, values below zero are negative, and the values equal to zero are neutral.

To understand if the reaction toward the marketing campaign on each generation is different, we have used generational cohorts as Generation X (born between 1965 and 1980), Generation Y (born between 1981 and 1995), and Generation Z (born after 1995), following the approach of Kitchen and Proctor (2015). A normality Shapiro–Wilk test was conducted first to test the assumptions for a One-way ANOVA analysis. As those assumptions failed, we then did a Kruskal–Wallis H test considering a significance level at $p < 0.05$. All inferential statistical calculations were performed using SPSS (26.0).

4. Results and discussion

First, it was proceeded to examine the frequency of words from all user responses to be able to get more insights and scrutinize the vast information that was obtained in text format. As it can be found in Table 3, the ten most frequently used objectives are displayed. From the ones that are considered negative, there were only two found – “bother”, with a frequency of 0.79% and “bad” with 0.28%. Also, we can see “good”, “well”, “interesting”, “luck”, “interest”, “funny”, “great” and “nice” as positive words, the most relevant ones with the frequencies of 2.31% (“good”) and 1.15% (“well”). Positive influence is a crucial driver to SM users/consumer’s reactions by commenting their opinion on the subject, in opposition to negative feelings, giving the audience a lack of motivation to comment and merely leading them to ignore such experience (Berger, 2014; Boateng and Okoe, 2015). Remarkably, these results acknowledge a generally positive reaction toward the possibility of receiving marketing information through Tinder.

For understanding the sentiment of users behind their responses, data were analyzed through text mining and the sentiment scale. For the analyzed dataset of reactions, the most

negative one scored -0.76 of sentiment, while the most positive scored 1.34. For an exhaustive analysis, a sentiment scale was created using SentiWordNet (Ahmed and Danti, 2016) (Table 4).

A descriptive analysis of the overall results is presented in Table 5.

From the 411 user's perspective, 34.31% declare a fragile positive sentiment toward the perspective of receiving marketing communications through Tinder. On the negative side, 25.30% report a fragile negative sentiment. These results indicate that Tinder users have a generally positive attitude toward advertising through this platform and less irritated when approached. A positive feeling affects the users' response and attitude toward advertising positively and legitimates Tinder as a communication channel to conduct marketing activities (Rejón-Guardia and Martínez-López, 2014).

Table 3.
Top 10 more
frequent words

Word	Frequency	Percentage
good	100	2.31
well	50	1.15
interesting	39	0.9
bother	34	0.79
luck	31	0.72
interest	22	0.51
funny	17	0.39
great	16	0.37
bad	12	0.28
nice	11	0.25
Total	4,330	100.00

Table 4.
Sentiment scale

Sentiment	Scale
Solid positive	≥ 0.60
Regular positive	[0.30, 0.59]
Fragile positive	[0.01, 0.29]
Neutral	0
Fragile negative	[-0.29, -0.01]
Regular negative	[-0.59, -0.30]
Solid negative	≤ -0.60

Table 5.
Descriptive analysis
(Absolute, relative,
mean and standard
deviation)

	Absolute values	Relative values	Mean	Std. deviation
Solid Positive	34	8.3%	0.77	0.16
Regular Positive	89	21.7%	0.43	0.08
Fragile Positive	144	35.0%	0.16	0.08
Neutral	23	5.6%	0	0
Fragile Negative	104	25.3%	-0.12	0.08
Regular Negative	13	3.2%	-0.36	0.06
Solid Negative	4	1.0%	-0.69	0.05
Total Positive	267	65.0%	0.33	0.23
Total Negative	121	29.4%	-0.17	0.14
Total	411	100%	0.16	0.30

It is significant to reference the variance between both positive and negative means: the mean of positive value corresponds to a regular positive in the sentiment scale, while the mean of negative values fits on the fragile negative scale. The absolute mean shows a general fragile positive reaction toward the possibility of users to receive marketing information through Tinder, confirming the results obtained in Table 3. The relevance of these results is the recognition of Tinder as a potential marketing channel, ready to be explored. Companies need to understand the potential of a channel before invest in it with marketing campaigns (Verbraken *et al.*, 2014).

Neutral sentiments toward the campaign (values equal to zero on the scale) were 5.60%, and they can be considered quite optimistic, as only very few people felt “nothing” toward the marketing campaign. The percentage of positive reactions and negative reactions were of 64.96 % and 29.44%, respectively. More than half of Tinder users’ emotions toward the campaign were positive.

Results were transformed into a scatter plot for a visual interpretation and analysis of the dispersion of the results.

On the scatter plot from Figure 1, it can be noticed that it is considerably more condensed above zero value, the positive scale of sentiments’ area, as expected, since 65.9% of the values obtained were above zero.

Most of the negative emotions’ values stand between 0.01 and -0.29 in the scale of sentiments, which is meaningfully low. Many Tinder users are receptive while coming across a marketing campaign, widening the range of opportunities that can be taken when creating advertising.

For a detailed examination of the results, data were segmented by generation (Table 6).

The only generation that revealed a solid negative result was Generation Y (1.5%), showing high resistance to receive marketing communications through Tinder. This information is validated by a user, 27 years old, stated, “*I would say it would be annoying*” after being asked for his opinion. Generation Z (4.2%), followed by Generation X (4.0%), revealed the highest results within the regular negative effects. In the fragile negative sentiment scale, Generation Y declared the highest results (28.3%). A user, 19 years old, expressed his opinion by saying: “*Seriously? Very strange*”, while a user, 29 years old revealed that: “*I would say that everything is enough to get the desired message to the consumer, it is unheard of on this platform, but it does not surprise me*”.

Users with the best results within the fragile positive sentiment scale were those from Generation X (46.0%) and Generation Z (40.6%), while on the regular positive results, those who showed more receptivity was Generation Y (25.7%). A user, 47 years old stated, “*it does*

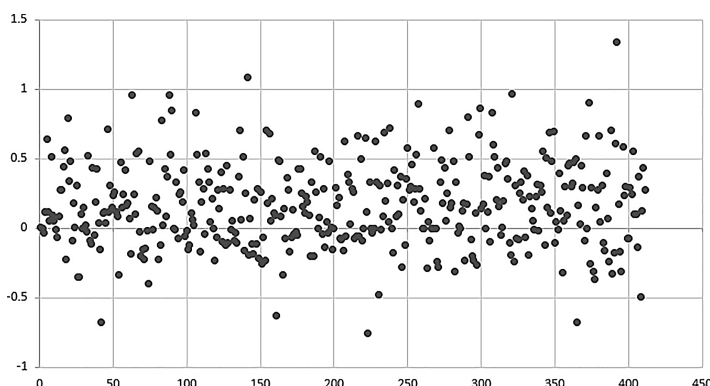


Figure 1. Scatter plot, including all 411 users’ reactions

Table 6.
Descriptive sentiment
distribution by
generation (%)

	Solid negative	Regular negative	Fragile negative	Neutral	Fragile positive	Regular positive	Solid positive	Total negative	Total positive
Gen Z (<i>n</i> = 82)	0	4.2	18.8	6.3	40.6	17.7	12.5	22.9	70.8
Gen Y (<i>n</i> = 265)	1.5	2.6	28.3	5.3	29.8	25.7	6.8	32.5	62.3
Gen X (<i>n</i> = 50)	0	4.0	22.0	6.0	46.0	14.0	8.0	26.0	68.0

not bother me at all, but I do not think it is a big hit either”, showing a fragile positive sentiment. A user, 20 years old, revealed his regular positive reaction by saying, “I already know the store! It is funny”.

Among all generations, Generation Z revealed to be one with the highest acceptability to receive marketing information through Tinder (12.5%).

By observing general results, the age gap with the most favorable results were those from Generation Z (70.8%), followed by users from Generation X (68.0%). A user, 24 years old, revealed his opinion by saying, “I would give sincere congratulations for the creativity”, confirming this result.

On the other hand, Generation Y, revealed more resistance to receive marketing communications through Tinder (32.5%), confirming previous studies that highlight that this generation is considered to be skeptical and distrustful toward marketing campaigns (Lissitsa and Kol, 2016; Valentine and Powers, 2013). Negative results will reveal negative emotions, such as irritation and annoyance (Varnali, 2014).

To understand if the reaction toward the marketing campaign on each generation is different, parametric and nonparametric analyses were undertaken, considering the descriptive statistics of sentiment scores grouped by generation (Table 7).

The result obtained by the parametric test (one-way ANOVA) was unfeasible due to the nonnormal distribution of outcomes ($W_Z(96) = 0.97, p = 0.020$; $W_Y(265) = 0.99, p = 0.017$; $W_X(50) = 0.97, p = 0.184$).

Sentiment scores of Generation Z (Mdn = 0.17) were higher than those of Generation Y (Mdn = 0.12), and Generation X (Mdn = 0.12). A Kruskal–Wallis test showed that the differences were not statistically significant ($H(2) = 1.099, p = 0.577$).

Kruskal–Wallis test showed that generation does not significantly affect the sentiment of Tinder users. Nevertheless, the descriptive statistics revealed that the generation with more willingness to receive marketing campaigns on Tinder could be Generation Z. Every age group has a positive mean, although the results are considered fragile positive. Generation Z (0.20) is the one showing the most positive reaction to receiving marketing communications through Tinder, confirming that this generation has a great willingness and positive attitude toward SM advertising (Southgate, 2017). On the other hand, Generations Y and Z showed less propensity (0.15) to receive marketing communications through Tinder, although the results are considered positive (fragile).

5. Conclusions, limitations and future research

This study aimed to analyze online dating apps users’ responsiveness toward a marketing campaign promoting a clothing website, making use of a text mining analysis using a sentiment scale, and a Kruskal–Wallis test to understand the statistical differences between each generation. In general, results showed that online dating apps users have positive feelings toward the marketing campaign, revealing to be an acceptable channel to conduct intrusive marketing activities. First, not only the percentage of positive reactions was of

Generation	Frequency	Sentiment		Mean rank	Statistics		
		Mean (SD)	Mdn (IQR)		df	Kruskal–Wallis H	<i>p</i>
Z	96	0.20 (0.31)	0.17 (0.0;0.39)	217.11	2	1.099	0.577
Y	265	0.15 (0.31)	0.12 (−0.07;0.36)	202.46			
X	50	0.15 (0.24)	0.12 (−0.01;0.29)	203.42			

Note(s): SD = Standard Deviation; Mdn = Median; IQR = Interquartile Range; df = Degrees of freedom; *p* = *p* value

Table 7. Descriptive statistics of sentiment score grouped by generation

65.94% and the negative ones of 30.17%, but the difference of the range of values of both poles was significant: the mean of the positive reactions was 0.32, much higher than the negative reactions mean of -0.16 , which lead us to conclude the general positive feeling of users to accept a marketing campaign through an online dating app. The conduction of an intrusive marketing campaign through an online dating app will have a positive influence on user's responsiveness and intensify the acceptance of marketing communication (Bakr *et al.*, 2019).

Generation Z were the ones who revealed more receptivity toward the campaign, highlighting that this is the generation that shows a propensity to engage with an online dating app campaign. Companies with an audience according to these criteria should bet in an online dating app to conduct marketing campaigns. Nevertheless, the statistical analysis revealed that the differences between each generation are not statistically significant.

For academia, this research contributes to the literature by revealing the acceptance of an online dating app as a marketing channel and particularly those who are more receptive to a marketing campaign on this type of SM platform. From a managerial standpoint, companies can benefit from the exposure obtained by the number of active users present on Tinder and its possible segmentations. Firms can engage with Tinder users, as they are open to communicate with everyone and seek. Additionally, this research reinforced the need to be interactive with users so that their acceptance turns positive, and develop and create a relationship to become a long-term continuous relationship (Gummeson, 2017), especially with consumers' age gap that makes the most use of SM.

The present research contains various limitations that can be imperative for future research, as well as for a deeper understanding of this study. A limitation is the fact that the participants, during the data collection, revealed their identification, perhaps leading to acquiescence bias. This usually happens when the respondents tend to agree to agree-disagree questions (Kam and Zhou, 2015). For future research, it would be relevant to collect data from users that do not reveal their name or face, to prevent bias.

The difference between the number of answers of both genders must do with the different behaviors they pursue while navigating on dating applications. For example, male users have minimal criteria when it comes to "swiping right", while female users are very particular and demanding while doing so (Ward, 2017). Nevertheless, for future research, a more balanced sample in terms of gender would be positive to examine any possible differences of emotions toward the campaign. A balanced generation sample would be relevant since the Generation Z and Generation X were smaller compared to Generation Y. Another limitation is the generalization of the obtained results since the marketing campaign was applied only for the clothing business.

Additionally, the data analysis process, while using the text mining analysis and respective sentiment classification to analyze the reactions has the limitations of not being able to detect sarcasm, which was sometimes present in a few users' responses. However, these possible limitations do not inflict the results of the present study regarding the potential found on Tinder for future successful marketing campaigns.

Furthermore, it is critical to have in consideration the type of product/service that is going to be advertised on Tinder, to verify if it somehow connects with the concept of the app, trying to avoid incongruency. It would be interesting to apply a similar marketing campaign to not only fashion related but also to other areas of business such as cosmetics. Hence, the acceptance toward the marketing campaign on the dating app might be affected by different cultural perspectives, revealing the pertinence to be validated in a future study.

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Online dating
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Antecedents and consequences of brand hate: empirical evidence from the telecommunication industry

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Abstract

Purpose – The purpose of this study is to place the antecedents and consequences of brand hate in the context of negative consumer–brand relationship in the telecommunication industry. It provides a response to the existing gap in the research on brand hate in consumer behavior in service brands.

Design/methodology/approach – A survey-based data was modeled after theory that aims to apply concepts to the telecommunications industry. With a solid model grounded and context-adapted, a mediation analysis of the role of brand hate in negative antecedents and consequences toward brands was performed.

Findings – Brand hate was found to mediate all the negative relationships proposed, while showing to be especially significant in mediating negative word of mouth. This model appropriately fits the services' marketing brand and revealed new insights into the function of brand hate in negative relationships that are specific to service marketing consumer brands.

Research limitations/implications – Branding theory may benefit from deeper insights into the negative side of consumer–brand relationships. A broader illustration of its constituents in different industries and the recovery of the management approach to these circumstances bring innovation and a richer understanding, specially to the role of brand hate in the mediation context as seen in the literature (Hegner *et al.*, 2017; Zarantonello *et al.*, 2016)

Practical implications – Managerial implications include assessing brands in analyzing and relating to different emotions and concepts from customers, allowing to prioritize and mapping the customer relationship touchpoints.

Originality/value – The present study presents a first insight of brand hate in the context of the service industry of telecommunications in southern Europe while testing brand hate as a mediator involving negative predictors leading to negative outcomes in consumer–brand relationships.

Keywords Brand hate, Brand avoidance, Negative word of mouth, Negative experience, Relationship marketing, Behavioral insight

Paper type Research paper

Introduction

In the context of brand management, consumer negativity and the emergence of brand hate consumer relationships (Bryson *et al.*, 2013; Fetscherin, 2019; Hegner *et al.*, 2017; Hu *et al.*, 2018; Kucuk, 2019; Zarantonello *et al.*, 2018) are increasingly under research and oblige companies to better understand these phenomena. This motivation is additionally justified by the growing power of consumers to positively or negatively influence others (Hegner *et al.*, 2017; Johnson *et al.*, 2011; Kucuk, 2015; Romani *et al.*, 2012a; Veloutsou and Guzmán, 2017; Zarantonello *et al.*, 2016).



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However, the literature is still scarce regarding the negative consumer–brand relationships and prioritizes investigations into positive rather than negative characteristics (Fetscherin, 2019; Romani *et al.*, 2012a; Veloutsou and Guzmán, 2017). The research on negative consumer–brand relationships has been tested to luxury brands (Bryson *et al.*, 2013) and food chains (Islam *et al.*, 2018).

Regarding brand hate, the most recent studies deal mainly with the antecedents and consequences of the phenomenon (Bryson *et al.*, 2013; Hegner *et al.*, 2017; Zarantonello *et al.*, 2016) in order to understand this most extreme negative brand feeling. Brand hate is triggered by three antecedents (negative experience, symbolic incongruity and ideological incompatibility), which leads to three behavioral consequences (brand avoidance, negative word of mouth and brand retaliation) (Hegner *et al.*, 2017).

Many of the studies on brand hate focus on consumers selecting the brand for which they nurture negative feelings or attitudes. In those previous researches, in which the consumer can choose the hated brand, telecommunication brands figure as one of the top industries cited (Fetscherin, 2019; Johnson *et al.*, 2011). Moreover, previous research on brand hate describe this phenomenon at a specific period of time, which calls for need of adopting a longitudinal perspective to understand how brand hate develops over time and which is its relationship to previous positive feelings (Zarantonello *et al.*, 2016).

In this context, one theoretical question that remains without empirical answer is: how does brand hate impact on active retaliation toward a service brand? Thus, the aim of this paper is to place the antecedents and consequences of brand hate in the context of negative consumer–brand relationship in the telecommunication industry. It goes beyond the previous research as it advances the knowledge on the key antecedents and consequences of brand hate, in a new context, that is telecommunication industry.

The theoretical importance of this paper lies in the attempt to answer the recent literature requests to further examine the increased negativity toward brands (Osuna Ramírez *et al.*, 2019; Veloutsou and Guzmán, 2017) and to service marketing (Zarantonello *et al.*, 2016). Moreover, this paper answers the call for new brand hate research and its application to different industries, locations and universes (Fetscherin, 2019; Kucuk, 2019).

From a practical standpoint, this study provides insights for companies to evaluate brand hate and, in turn, create effective defense mechanisms in light of the detriment consumer hostility causes to companies and their brands (Fournier and Alvarez, 2013; Krishnamurthy and Kucuk, 2009; Kucuk, 2019).

The structure of the paper is as follows. First, the relevant literature on negative consumer–brand relationship and brand hate which is followed by an explanation of the antecedents and consequences of brand hate under investigation. Further, the methodology section and findings. Lastly, the discussion of the findings and the conclusion on academic and managerial implications, directions for future research and limitations.

Negative consumer–brand relationships

Relationship marketing has now completely replaced the transactional views of marketing (Fournier, 1998), becoming a popular research area in the past years, creating and establishing concepts as to how consumers relate to brands and consumer products or services (Fetscherin and Heinrich, 2015).

Concepts and constructs of negative brand relationships have been studied, as desire for retaliation (Grégoire and Fisher, 2006), brand avoidance (Lee *et al.*, 2009), brand divorce (Sussan *et al.*, 2012) and attachment–avoidance (Park *et al.*, 2013). Recent literature focuses on the study of the concept of brand hate (Hegner *et al.*, 2017; Zarantonello *et al.*, 2016). Currently, more deep conceptualizations of hate within brand relationships (Fetscherin, 2019) have been presented, demonstrating its multidimensionality (Kucuk, 2019) as with other negative consequences like brand avoidance (Odoom *et al.*, 2019). Moreover, there are increasingly new

insights around negative relationships and its origins, whether its rooted in the brand as a receptor of different emotions from consumers (Hu *et al.*, 2018) or try to go deeply and contextualizes the consumer as an individual with emotions toward a brand (Fetscherin, 2019; Kucuk, 2019). Of great contribution to consumer–brand relationship are the approaches to brand love and brand loyalty concepts (Batra *et al.*, 2012; Carroll and Ahuvia, 2006). However, a bad experience may have more impact in further actions and memories of a consumer than the good ones (Hegner *et al.*, 2017) highlighting their interest in managerial application.

Brands are perceived as an entity with multiple attributes given by the consumers or their publics. Positive relations are seen as more of utilitarian value tending to be “strong and long lasting” (Johnson *et al.*, 2011, p. 110) drawing from interpersonal relationship research that proved to be appropriate in brand–consumer relationships contexts (Fetscherin, 2019). The tendencies that are observed in human relationships can be useful in predicting consumer behavior (Thomson *et al.*, 2012) as the combination of emotions found in psychology can be linked to some behavioral responses toward brands.

Also note that emotions in regard to products in its utilitarian sense do not suffice and do not fully correspond to those related to brands as they are built by a visual, marketing activities and corporate image (Alba and Lutz, 2013; Romani *et al.*, 2012a). Additionally, what constitutes a brand is generated through sources controlled and not controlled by the company (Romani *et al.*, 2012a), although the commoditization and tangibility of a product or service can blur this distinction, relevant in the affective but maybe tendentially indistinguishable in terms of cognition.

The state of the art of negative relationships with brands studies spreads itself through many concepts and branches that should be considered, as anti-brand communities, the determinants and managerial implications of anti-branding (Krishnamurthy and Kucuk, 2009), negative word of mouth, trash-talk (Marticotte *et al.*, 2016) and boycott (Ettenson and Klein, 2005; Thelen and Shapiro, 2012), the discourse used in negative content produced by the consumers (Marticotte *et al.*, 2016) or producing more broaden descriptions of the phenomena as either the attachment–aversion relationship (Alba and Lutz, 2013) or the approach–avoidance (Zarantonello *et al.*, 2016).

Although some streams of research have studied the negative emotions throughout the years, it is often called as a priority in future research as it is a *hot topic* nowadays (Fetscherin and Heinrich, 2015; Zarantonello *et al.*, 2016). The main studies are not distant in methodologies and approaches from the conceptualization of emotions and constructs, with its own exploratory research, aiming to strengthen the psychology established definition of concepts, used interchangeably with brands and interpersonal relationships, found in positive relationship studies (Batra *et al.*, 2012), and in the field of negative emotions (Zarantonello *et al.*, 2016).

Most of the literature relates to the brand and managerial expectations of the relationship with the brand, not focusing in the “consumer self-transformation” (Sussan *et al.*, 2012, p. 521) or the activity relationship frame (Mickelsson, 2017). This surpasses the frame of the person as a consumer, where multiple exogenous influences take place. Examples of this are the concepts of the self (Sussan *et al.*, 2012) and the relationship between a user and its activities (Mickelsson, 2017) that may shed new lights in the relationship approach in which brand may not play a main role.

The greater the brand value or company success, the more likely the negative responses from consumers, either active or passive, which could be related to dissatisfaction in the same way as avoidance, negative word of mouth or even boycotting (Krishnamurthy and Kucuk, 2009; Lee *et al.*, 2009). Positive relationships and the service provided to the customers are rapidly spread and determine not only its customer success but also implies the whole of the organization (Payne and Frow, 2017).

Brand hate

Brand hate is presented as the mediator of a set of triggers that predicts negative word of mouth, brand avoidance or brand retaliation, a set of consequences that are widely studied and harmful to brands.

Although the research built on the consumer–brand relationship concept has been engaged by many authors, the negative pole of the relationship seems to have been less studied in favor of the positive concepts of the relationship (Park *et al.*, 2013). The relationship that consumers establish with brands is one that is based on the psychology and human behavior research, and, as such, concepts of brand love (Carroll and Ahuvia, 2006), brand divorce (Sussan *et al.*, 2012) and brand hate draw parallels to a human dimension (Aaker *et al.*, 2004; Fetscherin and Heinrich, 2015; Johnson *et al.*, 2011; Sussan *et al.*, 2012; Thomson *et al.*, 2012). A set of predictors is known to lead to hateful emotions and attitudes in consumers, their context or marketing experience (Hegner *et al.*, 2017).

Two potential antecedents of brand hate established in the literature are negative experience and symbolic incongruity. The former is referred to as one of the strongest predictors according to some authors (Hegner *et al.*, 2017), and the latter pertains to a significant difference between the brand symbolic meaning and the consumer self-image.

In the same way, the literature identifies brand avoidance, brand retaliation and negative word of mouth as possible consequences of brand hate. Being the first two opposite manifestations of hate, one predominantly *passive* and the second predominantly *active*, (Grégoire *et al.*, 2009; Hegner *et al.*, 2017; Romani *et al.*, 2012a) and the last one more prone to *attack* manifestations (Fournier and Alvarez, 2013).

Brand avoidance

Brand avoidance is defined as switching or ceasing to use a brand or to interact with it (Hegner *et al.*, 2017) and is associated with *flight* strategies (Grégoire *et al.*, 2009) being a more passive action toward a brand. It is considered as a strategy to cope with levels of hate for the brand, defined as avoidance strategies in psychology (Zarantonello *et al.*, 2016), that do not reveal themselves in other ways than by stopping using the brand and being related to it.

Negative word of mouth

Grounded in the behavioral literature, brand hate predicts complaining, negative word of mouth and switching (Romani *et al.*, 2012b) complaining, protest, patronage reduction or cessation (Zarantonello *et al.*, 2016); brand switching, private and public complaining, brand retaliation and revenge (Fetscherin, 2019). Negative word of mouth has been found to be highly correlated with brand avoidance or even with action similar to boycotting (Thelen and Shapiro, 2012). The present construct lays on questions that try to assess the extensively researched negative word of mouth and includes acts like referencing negative things about the brand, either to friends or strangers (Johnson *et al.*, 2011).

Brand retaliation

Brand retaliation measures a construct that has different degrees within itself. It can be simultaneous or complemented by negative word of mouth and the spread of these complaints online (Abney *et al.*, 2017). Since it can include many types of actions and attitudes that seek to cause damage or hurt a brand (Hegner *et al.*, 2017), this construct can range from the most damaging to the brand, to a simple complaining. Recently, the literature has identified it as “willingness to make financial sacrifices to hurt the brand” (Fetscherin, 2019, p. 3; Kucuk, 2019), the last one providing a new and more complex artifact to quantify the evilness of the customer. Third-party complaining was also included as some authors

consider complaining either to the brand or to regulatory institutions or others, aside from other hatred activities that seek to damage or break the brand or even actions like stealing (Johnson *et al.*, 2011).

Besides, brand hate has been identified as a strong predictor of negative emotions and a mediator for them, as well as a predictor of negative outcomes that stem from this relationship. It was driven by the conceptualization of its determinants, with negative experience and symbolic incongruity being the constructs adapted from Hegner *et al.* (2017).

Negative experience

Negative experience is represented by the product or service-related failures (Grégoire and Fisher, 2006; Johnson *et al.*, 2011), but also the marketing environment (Hogg *et al.*, 2009), packaging or information, its quality (Krishnamurthy and Kucuk, 2009) or even a reaction to the country of origin (Bryson *et al.*, 2013; Bryson and Atwal, 2018). A vast spectrum of these items, adapted to the service-oriented brands, has been included. In fact, when an expectation toward a service is not met, in the brand touchpoints, it is known to be associated with “complaining, negative WOM and protest” (Zarantonello *et al.*, 2016, p. 21) that fall in the used characterization as negative experience. Since it is product-oriented and occurs when negative consumption experiences take place (Zarantonello *et al.*, 2016), we propose that:

H1. Negative experience influences the proposed outcomes.

H1a. Negative experience influences brand avoidance;

H1b. Negative experience influences negative word of mouth;

H1c. Negative experience influences brand retaliation.

Brand hate is a known factor in the three proposed outcomes (Lee *et al.*, 2009). The analysis is complete with brand hate performing mediation on negative experience, stating that:

H2. Brand hate mediates the relation between negative experience and the outcomes;

H2a. Brand hate mediates the relation between negative experience and brand avoidance;

H2b. Brand hate mediates the relation between negative experience and negative word of mouth;

H2c. Brand hate mediates the relation between negative experience and brand retaliation.

Symbolic incongruity

Symbolic incongruity happens when the consumer does not want to be associated with a brand and is linked to brand avoidance (Hegner *et al.*, 2017; Lee *et al.*, 2009; Zarantonello *et al.*, 2016). It is a personal form of communicating and using the brand to define one’s own identity by avoiding or opposing to the concepts of the brand (Bryson *et al.*, 2013; Khan and Lee, 2014; Lee *et al.*, 2009; Sussan *et al.*, 2012). Since it is known to predict negative outcomes, it’s stated that:

H3. Symbolic incongruity influences the proposed outcomes.

H3a. Symbolic incongruity influences brand avoidance;

H3b. Symbolic incongruity influences negative word of mouth;

H3c. Symbolic incongruity influences brand retaliation.

Symbolic incongruity is a trigger of brand hate (Hegner *et al.*, 2017), which can increase the occurrence of negative outcomes; thus, it is stated that:

- H4.* Brand hate mediates the relation between symbolic incongruity and the outcomes;
- H4a.* Brand hate mediates the relation between symbolic incongruity and brand avoidance;
- H4b.* Brand hate mediates the relation between symbolic incongruity and negative word of mouth;
- H4c.* Brand hate mediates the relation between symbolic incongruity and brand retaliation.

A series of EFA tests was run as a way to assess high correlation (>0.9) between factors in order to obtain a valid and reliable model.

Brand hate plays a role of mediator between the causes here presented, (Romani *et al.*, 2012b; Zarantonello *et al.*, 2016) which are vastly studied in the literature, and has many outcomes that can be troublesome to brands.

Methodology

Data collection

The survey was published online through relevant web forums where themes like technology, telecommunication, home care and finance are discussed. It was also shared along via the university's e-mail. It was available from December 2018 to February 2019 in Portugal. With 636 responses, 51% were female and 48% aged between 18 and 25, 29% between 25 and 35 and 21% between 35 and 65. 18.4% of the respondents never changed telecommunications operator, and 46% switched two or more times.

Validation

A multivariate-procedure exploratory factor analysis (EFA) was carried out to describe the elements found in the literature. Although previous information guided the relations between the latent and the observed variables, they were revalidated through existing models in the literature and, at the same time, proposing different specifications of the relationships (Byrne, 2013). An assessment of the normality and of multivariate outliers was performed, through analyzing extreme outliers in the Mahalanobis distance and re-specifying the model to address covariance errors spotting high scores of modification indices (M.I.) (Byrne, 2013).

After modifying and re-estimating, the model has reached what is considered an adequate goodness-of-fit and confirmed the plausibility of the relations between variables, obtaining validity by empirical and theoretical evidence as is required to an effective confirmatory factor analysis (CFA) which can be seen in annex 1 (Brown, 2015).

To achieve the best model possible, an EFA was performed, conducting a principal component analysis (PCA) with varimax with Kaiser normalization as the rotation method, allowing to provide evidence of the interrelation inside factors. The components were all highly correlated, with brand hate (>0.817), negative experience (>0.696) and symbolic incongruity (>0.647). Multiple tests were run for the model, in order to achieve a solid representation. To obtain a model with statistical significance, the constructs were analyzed with PCA, having obtained a high correlation between uncorrelated constructs, with the items found in previous studies (Hegner *et al.*, 2017; Zarantonello *et al.*, 2016).

In terms of validity and reliability of the model, the composite reliability, convergent validity and discriminant validity were calculated, within the recommended values found in the literature (Brown, 2015; Field, 2000). All the constructs present a CR > 0.64. For the brand

hate and every other antecedent construct, all the CR > 0.90 and the Cronbach's α > 0.90. The average variance extracted (AVE) was always greater than 0.7, meeting the required convergent and discriminant validity between all constructs.

AVE was high on the outcomes and around 0.50 on brand avoidance and brand retaliation (Table 1). Cronbach α is reported to be in the low end, with brand avoidance going as low as 0.63, within acceptable threshold. There is discriminant validity since all the constructs are not intercorrelated outside their factor. These items were obtained after a EFA that allowed to test for the relationships present and were based on a valid model grounded in the literature (Grégoire and Fisher, 2006; Johnson *et al.*, 2011; Johnson, 2006; Romani *et al.*, 2012a; Zarantonello *et al.*, 2016). Worth to mention that the dichotomous application of the outcomes' questions implies that the respondent performed the requested action.

The mediation analysis was performed with PROCESS model 4, an add-on for SPSS that aids the mediation analysis. This analysis resulted in testing the hypothesis regarding the mediating role of brand hate and further analysis on the effect of the antecedents in the outcomes.

We obtained VIF of 2.4 in the analysis between brand hate and the antecedents and 2.1 and 2.9 between the outcomes and all the independent variables (those being brand hate, negative experience and symbolic incongruity). These values are within range to not represent a problem of multicollinearity (Field, 2000).

The model showed an excellent fit: $\chi^2(156) = 459.313$, p -value < 0.001; CFI = 0.972; NNFI = 0.959; RMSEA = 0.056. These values (Table 4) assess the statistical adequacy of our model (Figure 1), as based on our theoretical and practical account of the variables analyzed (Byrne, 2013). All the constructs presented, as well as the behavioral outcomes, are significantly related to their own components, with ps < 0.001.

Findings

After defining the model, in which brand hate acts as the mediating factor in this process (Romani *et al.*, 2012a; Zarantonello *et al.*, 2016) all the conditions of mediation in the paths were verified between every proposed antecedent and outcome (Field, 2000; Marôco, 2014).

In order for brand hate to be a mediator in the proposed model, it achieved the following steps: (1) the three antecedents (X variables), significantly predict the outcomes (Y variables); (2) the three antecedents (X) significantly predict brand hate (M mediator); (3) the mediator brand hate (M) significantly predicts each one of the outcomes (Y); and (4) all the antecedents (X) variables, are annulated or lessened predicting the (Y) variables, the brand hate outcomes. All of these steps are necessary to consider the mediation complete (Field, 2000).

OLS regression for negative experience

In the first step (path c) of the mediation model, the regression of negative experience with brand avoidance, ignoring the mediator brand hate, was significant, $\beta = 0.108$, $t(631) = 14.34$,

	Cronbach's α (>0.7)	CR (>0.6)	AVE (>0.5)
BH	0.97	0.97	0.8
NE	0.90	0.91	0.7
SI	0.90	0.90	0.7
BA	0.63	0.64	0.5
NWM	0.72	0.73	0.5
BR	0.65	0.65	0.5

Table 1.
Reliability and
validity tests

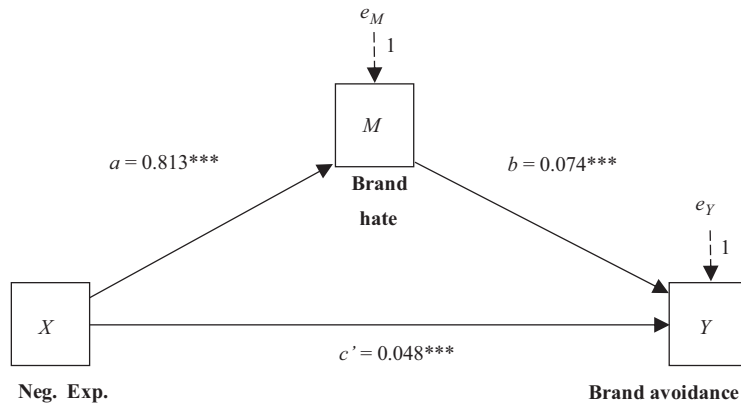


Figure 1. Model results with brand hate as a mediator
Note(s): *indicates p -value < 0.05, **indicates p -value < 0.01, ***indicates p -value < 0.001

$p < 0.001$. It was also significant with negative word of mouth $\beta = 0.072$, $t(631) = 9.37$, $p < 0.001$ and with brand retaliation $\beta = 0.082$, $t(631) = 8.68$, $p < 0.001$. Path c is also known as total model effect, representing the total effect as $c = c' + ab$.

The regression of symbolic incongruity with brand avoidance, ignoring the mediator brand hate, was significant, $\beta = 0.112$, $t(631) = 13.83$, $p < 0.001$. It was also significant with negative word of mouth $\beta = 0.075$, $t(631) = 9.06$, $p < 0.001$ and with brand retaliation $\beta = 0.083$, $t(631) = 8.10$, $p < 0.001$.

Secondly, (path a) showed that the regression of the negative experience on the mediator, brand hate, was also significant, $\beta = 0.817$, $t(631) = 25.23$, $p < 0.001$ (see Figure 2).

Third step (path b), the mediator brand hate, controlling for negative experience, was significant, $\beta = 0.074$, $t(630) = 8.36$, $p < 0.001$ in the mediation toward brand avoidance. the mediator controlling for negative experience was also significant toward negative word of

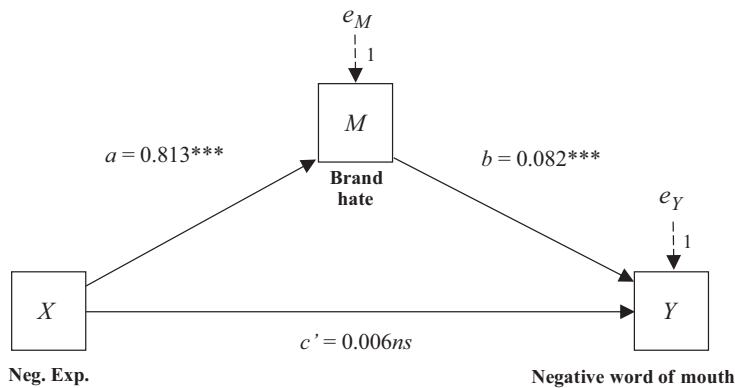


Figure 2. Model results with brand hate as a mediator
Note(s): *indicates p -value < 0.05, **indicates p -value < 0.01, ***indicates p -value < 0.001

mouth $\beta = 0.082$, $t(631) = 9.15$, $p < 0.001$ and toward brand retaliation $\beta = 0.042$, $t(630) = 3.59$, $p < 0.001$ (see Figure 3).

Fourth, path c' , the analyses revealed that, controlling for the mediator brand hate, the negative experience is a significant predictor of brand avoidance, $\beta = 0.048$, $t(630) = 4.73$, $p < 0.001$. When controlling for the mediator, negative experience is also a significant predictor of brand retaliation, $\beta = 0.048$, $t(630) = 3.64$, $p < 0.001$. These analyses revealed that, controlling for the mediator brand hate, negative experience is not a significant predictor of negative word of mouth, $\beta = 0.006$, $t(630) = 0.55$, $p = 0.58$.

From bootstrap method, with completely standardized values, the indirect effect of negative experience is significant for brand avoidance $\beta = 0.276$, 95% CI [0.200, 0.357], $\beta = 0.322$, 95% CI [0.244, 0.403] for negative word of mouth and $\beta = 0.134$, 95% CI [0.057, 0.211] for brand retaliation since the confidence intervals do not include 0.

Brand hate was found to partially mediate the relationship between negative experience and brand avoidance. It also partially mediates the relationship between negative experience and brand retaliation.

It was found that brand hate fully mediated the relationship between negative experience and negative word of mouth (see Table 2).

OLS regression for symbolic incongruity

In the first step (path c) of the mediation model, the regression of symbolic incongruity with brand avoidance, ignoring the mediator brand hate, was significant, $\beta = 0.112$, $t(631) = 13.83$, $p < 0.001$. It was also significant with negative word of mouth $\beta = 0.075$, $t(631) = 9.06$, $p < 0.001$ and with brand retaliation $\beta = 0.083$, $t(631) = 8.10$, $p < 0.001$.

It also shows the regression of symbolic incongruity on brand hate is significant $\beta = 0.831$, $t(631) = 22.94$, $p < 0.001$ (see Figure 4).

In the third step (path b), the mediation shows that the mediator brand hate, controlling for symbolic incongruity was significant, $\beta = 0.076$, $t(630) = 9.07$, $p < 0.001$ in the mediation toward brand avoidance. Besides, the mediator controlling for symbolic incongruity was also significant toward negative word of mouth $\beta = 0.081$, $t(630) = 9.48$, $p < 0.001$ and toward brand retaliation $\beta = 0.048$, $t(630) = 4.31$, $p < 0.001$ (see Figure 5).

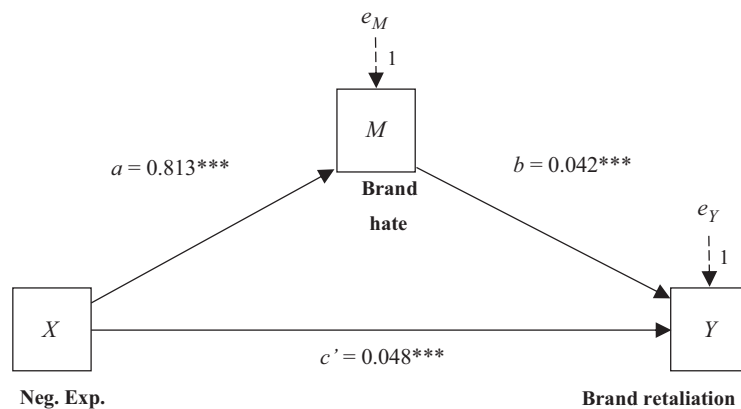


Figure 3.
Model results with
brand hate as a
mediator

Note(s): *indicates p -value < 0.05 , **indicates p -value < 0.01 , ***indicates p -value < 0.001

Antecedent	Coeff.	Consequence			Coeff.	Y (brand avoidance)		
		M (brand hate)	SE	p		SE	p	
X (neg. exp.)	<i>a</i>	0.813	0.032	<0.001	<i>c'</i>	0.048	0.010	<0.001
M (brand H.)	–	–	–	–	<i>b</i>	0.074	0.009	<0.001
Constant	<i>i_M</i>	–0.421	0.152	0.0057	<i>i_Y</i>	–0.186	0.034	<0.001
		$R^2 = 0.502$				$R^2 = 0.321$		
		$F(1, 631) = 636.46, p < 0.001$				$F(2, 630) = 148.98, p < 0.001$		
		Y (neg. word of mouth)				Y (brand retaliation)		
X (neg. exp.)	<i>c'</i>	0.006	0.010	0.582	<i>c'</i>	0.048	0.013	<0.001
M (brand H.)	<i>b</i>	0.082	0.009	<0.001	<i>b</i>	0.042	0.012	<0.001
Constant	<i>i_Y</i>	–0.084	0.034	0.015	<i>i_Y</i>	0.094	0.044	0.034
		$R^2 = 0.225$				$R^2 = 0.125$		
		$F(2, 630) = 91.54, p < 0.001$				$F(2, 630) = 44.81, p < 0.001$		

Table 2. Model Coefficients for the brand hate study with negative experience

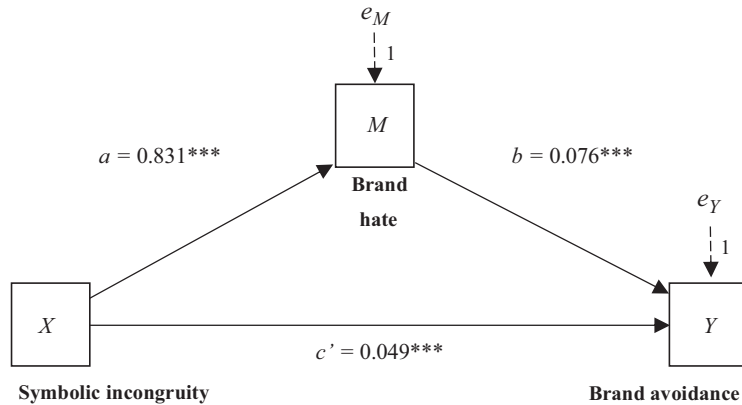


Figure 4. Model results with brand hate as a mediator

Note(s): *indicates p -value < 0.05, **indicates p -value < 0.01, ***indicates p -value < 0.001

Fourth, path c' , the analyses revealed that, controlling for the mediator brand hate, the symbolic incongruity is a significant predictor of brand avoidance, $\beta = 0.049, t(630) = 4.73, p < 0.001$. When controlling for the mediator, symbolic incongruity is also a significant predictor of brand retaliation, $\beta = 0.043, t(630) = 3.16, p < 0.01$. The analyses demonstrated that, similarly to what happened with negative experience, controlling for the mediator brand hate, symbolic incongruity is not a significant predictor of negative word of mouth, $\beta = 0.008, t(630) = 0.755, p = 0.450$ (see Figure 6).

From the bootstrap method tests, with completely standardized values, the indirect effect of symbolic incongruity is significant for brand avoidance $\beta = 0.272, 95\% \text{ CI } [0.205, 0.342]$, for negative word of mouth $\beta = 0.304, 95\% \text{ CI } [0.236, 0.373]$ and for brand retaliation $\beta = 0.147, 95\% \text{ CI } [0.078, 0.221]$ since it does not include 0 in any of the tests (see Table 3).

Data/mediation analysis

The paths from the present model can infer mediation in each of the two antecedents, negative experience and symbolic incongruity (X) significantly predicting each of the three of the

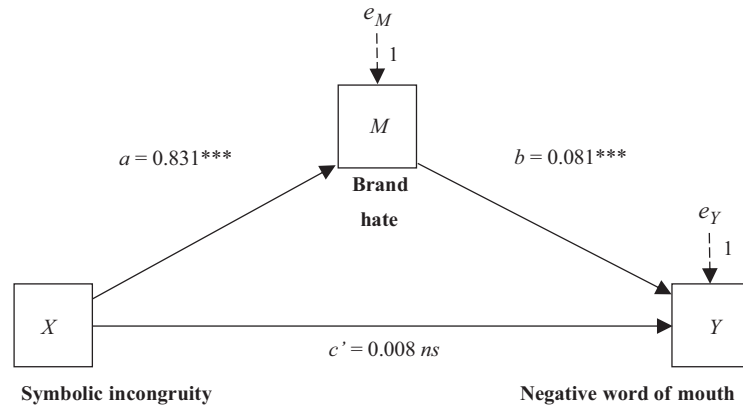


Figure 5.
Model results with
brand hate as a
mediator

Note(s): *indicates p -value < 0.05, **indicates p -value < 0.01, ***indicates p -value < 0.001

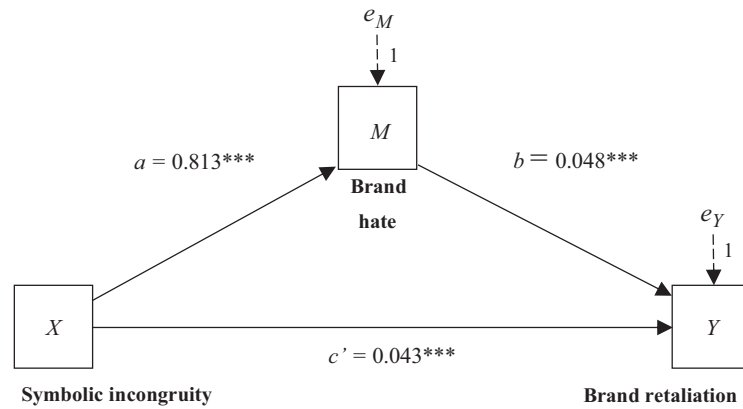


Figure 6.
Model results with
brand hate as a
mediator

Note(s): *indicates p -value < 0.05, **indicates p -value < 0.01, ***indicates p -value < 0.001

proposed outcomes (Y), brand avoidance, negative word of mouth and brand retaliation, with $ps < 0.001$. Brand hate (M) is significantly predicted by the two antecedents (X) negative experience and symbolic incongruity. This is known as a path. In its turn, brand hate (M) significantly predicts three of the proposed outcomes (Y), with $ps < 0.01$. This is known as b path.

Completing the mediation inference, two X variables are lessened predicting two of three X variables, brand avoidance and brand retaliation, in what is known as path c' . Negative word of mouth is not statistically different from zero, which proves that it is completely mediated by brand hate to all the three antecedents (X) negative experience and symbolic incongruity. The effect size was similar around all antecedents for the same outcome, meaning that for brand avoidance, the R^2 measure around 0.24 for the total effect to 0.32 of the indirect effect. For negative word of mouth, it went from around 0.12 for the direct effect to 0.22 accounting

Antecedent		M (brand hate)			Consequence			
		Coeff.	SE	<i>p</i>		Y (brand avoidance)		
					Coeff.	SE	<i>p</i>	
<i>X</i> (simb. Inc.)	<i>A</i>	0.831	0.036	<0.001	<i>c'</i>	0.049	0.010	<0.001
<i>M</i> (brand <i>H</i>)		–	–	–	<i>b</i>	0.076	0.008	<0.001
Constant	<i>i_M</i>	–1.03	0.191	<0.001	<i>i_Y</i>	–0.231	0.041	<0.001
		<i>R</i> ² = 0.455			<i>R</i> ² = 0.321			
		<i>F</i> (1, 631) = 526.20, <i>p</i> < 0.001			<i>F</i> (2,630) = 149.00, <i>p</i> < 0.001			
		Y (neg. word of mouth)			Y (brand retaliation)			
<i>X</i> (simb. Inc.)	<i>c'</i>	0.008	0.011	0.450	<i>c'</i>	0.043	0.014	0.002
<i>M</i> (brand <i>H</i>)	<i>b</i>	0.081	0.009	<0.001	<i>b</i>	0.048	0.011	<0.001
Constant	<i>i_Y</i>	–0.096	0.042	0.022	<i>i_Y</i>	0.070	0.054	0.202
		<i>R</i> ² = 0.225			<i>R</i> ² = 0.120			
		<i>F</i> (2, 630) = 91.71, <i>p</i> < 0.001			<i>F</i> (2,630) = 43.00, <i>p</i> < 0.001			

Table 3.
Model coefficients for
the brand hate study
with symbolic
incongruity

Hypothesized relationship	Path coefficient	Test result
H1a - Negative experience influences brand avoidance;	0.048***	Supported
H1b - Negative experience influences negative word of mouth	0.006ns	Not Supported
H1c - Negative experience influences brand retaliation	0.048***	Supported
H2a - Brand hate mediates the relation between negative experience and brand avoidance	0.074***	Supported
H2b - Brand hate mediates the relation between negative experience and negative word of mouth	0.082***	Supported
H2c - Brand hate mediates the relation between negative experience and brand retaliation	0.042***	Supported
H3a - Symbolic incongruity influences brand avoidance	0.049***	Supported
H3b - Symbolic incongruity influences negative word of mouth	0.008ns	Not Supported
H3c - Symbolic incongruity influences brand retaliation	0.043**	Supported
H4a - Brand hate mediates the relation between symbolic incongruity and brand avoidance	0.076***	Supported
H4b - Brand hate mediates the relation between symbolic incongruity and negative word of mouth	0.081***	Supported
H4c - Brand hate mediates the relation between symbolic incongruity and brand retaliation	0.048***	Supported

Note(s): ***indicates *p*-value < 0.001, **indicates *p*-value < 0.01

Table 4.
The tested results of
hypotheses

for the mediator. For brand retaliation showed a total variance explained of 0.10–0.12 in the *Y* variable.

Brand hate significantly and positively predicts the proposed outcomes, with brand avoidance and negative word of mouth being the most influential with similar values presented, with a value as high as $\beta = 0.082$ and $ps < 0.001$. Brand retaliation presented a lower $\beta = 0.012$ with a $p < 0.01$ when accounting for negative experience.

Thus, it is proved that brand hate influences brand avoidance, brand retaliation and negative word of mouth. This is also a conclusion for brand retaliation, either controlling for negative experience or controlling for symbolic incongruity, with small differences. Brand retaliation is a form of actively showing dislike to the brand, having an associated cost for the consumer to perform that retaliation (Fetscherin, 2019) presenting a very low effect, when compared with negative word of mouth or brand avoidance.

Brand hate has proved to be at the center between a set of antecedents and negative outcomes for the brand (Zarantonello *et al.*, 2016), and in the study this has been analyzed through a grounded theory model tested and specified for service brand telecommunications industry. Hate is a strong emotion, with great impact on a consumer approach to a brand. This interpersonal emotion or attitude has been studied when applied to brands and has been recently studied with multiple gradients, leading to different outcomes (Fetscherin, 2019). The mediation analysis allowed us to support or reject our hypothesis, as stated on Table 4, and a full analysis of the whole relationships data can be consulted in annex 1: PROCESS model 4 outputs.

H1 and H3 are both partially proved since negative experience and symbolic incongruity have influenced brand avoidance (H1a, H3a) and brand retaliation (H1c and H3c). However, it cannot support H1b – negative experience influences negative word of mouth – nor H3b – symbolic incongruity influences negative word of mouth – present in the *c' path* $p > 0.5$. Brand hate proved to be a complete mediator between negative word of mouth, negative experience and symbolic incongruity, fully supporting H2b and H4b. This means that negative word of mouth only occurs when a feeling of brand hate is true for the consumer. Although H1 and H3 are only partially proved, as predicted, all the outcomes will also have a direct effect on negative outcomes when not considering brand hate, the hypotheses theorized in H2 and H4 are still true: all the antecedents have a greater effect on the outcome when mediated by brand hate controlling for each predictor.

Since brand hate completely mediates the relationship between all the antecedents and negative word of mouth, completely proving H2b, with $F(2, 630) = 91.54, p < 0.001, R^2 = 0.225$ brand hate mediates the relationship of past experience and negative word of mouth $\beta = 0.082, t(630) = 9.15, p < 0.001$ and completely proving H4b, $F(2, 630) = 91.71, p < 0.001, R^2 = 0.226$ where brand hate mediates the relation of symbolic incongruity and negative word of mouth $\beta = 0.081, t(630) = 9.48, p < 0.001$.

Brand hate mediates the relationship between both antecedents and brand avoidance, with brand hate mediating the relationship between brand avoidance and symbolic incongruity H4a, ($F(2, 630) = 149, p < 0.001, R^2 = 0.321$), being the one with the highest effect from brand hate with $\beta = 0.076, t(630) = 9.07, p < 0.001$, followed by H2a, brand hate mediating the relationship of negative experience and brand avoidance ($F(2, 630) = 148.98, p < 0.001, R^2 = 0.321$) predicting $\beta = 0.074, t(630) = 8.36, p < 0.001$.

It was also proved that brand hate mediates the effect between all the antecedents and brand retaliation. Thus, H2c is proved since negative experience ($F(2, 630) = 44.81, p < 0.001, R^2 = 0.125$) has brand hate mediating its relationship with brand retaliation $\beta = 0.042, t(630) = 3.59, p < 0.001$, compared to H4c, symbolic incongruity ($F(2, 630) = 43.00, p < 0.001, R^2 = 0.120$) with brand hate mediating the relationship with brand retaliation $\beta = 0.048, t(630) = 4.31, p < 0.001$.

Table 4 presents the hypothesis and whether they were supported.

Discussion

This study has shed light on the major antecedents and consequences of the most negative and consequent construct that had been studied in the past years (Hegner *et al.*, 2017; Zarantonello *et al.*, 2016).

What is new to this study is that brand hate proved to have a role in mediating negative word of mouth completely, either from a negative experience or a symbolic incongruity. These two key antecedents have proved to impact the proposed consequences. But the negative word of mouth has only occurred in the presence of brand hate's mediating role.

Brand retaliation, appears to be explained similarly by negative experience and symbolic incongruity, which corroborates the incongruence with the self-image, also leads to brand avoidance (Hegner *et al.*, 2017; Kavaliauske and Simanavičiute, 2015; Lee *et al.*, 2009)

Brand avoidance is highly mediated by brand hate by either negative experience or symbolic incongruence and is equally explained by the two antecedents.

Theoretical implications

Negative experience proved to be a predictor of brand hate. In fact, when a consumer has a negative experience with a brand, it can deteriorate their relationship and lead to a negative outcome (Zarantonello *et al.*, 2018). It has also been documented as a predictor of experiential brand avoidance (Lee *et al.*, 2009). In relation to brand avoidance, brand hate proves to be a strong mediator, through which an increase in the outcome takes place, also having a direct relationship. Brand hate, especially if it is felt more strongly, as it is suggested by the literature, leads to public complaining, a form of negative word of mouth (Fetscherin, 2019). In this analysis, the negative experience predicts negative word of mouth exclusively when mediated by brand hate emotions, in line with this suggestion. It has been reported that brand retaliation does not need to be motivated by a negative experience (Johnson *et al.*, 2011), and in the present study, regarding brand retaliation, the total effect is smaller, although brand hate plays a mediating role.

Symbolic incongruity is a predictor of brand hate. When accounting for brand hate, it proves to influence brand avoidance, but it also shows that it affects the outcome without mediation. In fact, symbolic incongruity relates the identity of the consumer to the brand, and it has been linked to brand avoidance (Lee *et al.*, 2009). It leads to negative word of mouth only when mediated by brand hate emotions. Negative word of mouth is expected to be an effect of all predictors (Hegner *et al.*, 2017), a suggestion that the emotion is essential in mediating its incidence. Symbolic incongruity suggests effect on brand retaliation, whether it is mediated by brand hate or not.

In this case, it is shown that brand avoidance is especially mediated by brand hate, if the consumer has a negative experience but even more if there is symbolic incongruity. Symbolic incongruity influences brand avoidance through brand hate, but it can lead to it even when not mediated by hate feelings. On the other hand, brand hate proved to be a mediator of negative word of mouth, and this was shown to only occur if there is mediation of hate emotions.

Brand retaliation is less motivated by a negative experience than by a symbolic incongruity, but it proved to be always mediated by brand hate in either case. The brand retaliation was widely defined in the literature as a means by which a consumer damages a brand financially, in many forms such as complaining, attacking or trying to cause an inconvenience to the brand in general (Bryson *et al.*, 2013; Fetscherin, 2019; Grégoire *et al.*, 2009; Grégoire and Fisher, 2006; Hegner *et al.*, 2017; Johnson *et al.*, 2011; Romani *et al.*, 2012b).

This research presented a new approach, compared to the best knowledge of the literature, as well as to other studies that analyze consumer brands in many industries, by focusing on a single industry. It also tested consumers and nonconsumer relations with telecommunication brands and presents new managing insights. It relates consumer–brand relationships to constructs grounded theoretically in interpersonal and psychology research that had been previously established (Fetscherin and Heinrich, 2015; Lee *et al.*, 2009; Romani *et al.*, 2012a).

The method applied in this study presented a good overview of the relationship between brand hate and some outcomes and antecedents. The proposed factors in the literature proved to be valid in specific context within the telecommunications industry and may be applied to other contexts as well as compared with the ones present in this study. In this context, the analysis of a consumer brand relation in the service industries comes as a complement to other studies in the brand hate research, that have been prominently about luxury brands (Bryson *et al.*, 2013) or food service brands (Bryson and Atwal, 2018), but had

not quite provided much insight into some more utilitarian brands. It was hence provided valuable insight into an industry, into service marketing consumers and into service marketing approaches to negativity and brand hate. Doing this in southwest Europe has made it possible to acquire insight to perform cross-cultural analysis in scholar research.

Practical implications

This study contributes and complements existing literature on the negative relationship between consumers and brands in three respects. Firstly, as mentioned, this study responds to the growing demand for research about the dark side of consumer–brand relationships (Veloutsou and Guzmán, 2017) because presently, the emphasis in the literature on the study of the positive brand–consumer relationships is lacking (Fetscherin, 2019). Secondly, this paper tests for the first time the effect on the telecommunication industry. Thirdly, it corroborates the previous studies on the impact of brand hate on brand avoidance.

In terms of practical implications, this research provides companies with insight into how hostility around the brand can lead to brand avoidance.

Companies and brands need to create effective defense mechanisms either to combat the phenomenon of brand hate, or more effectively, to try to reverse or neutralize as much as possible the pejorative results from the negative past experience of current consumers with the brand. Business needs to work with consumers to change practices, thereby improving their relationship with consumers, minimizing negative behaviors and creating control measures (Romani *et al.*, 2013).

However, as noted by Hegner *et al.* (2017), any company can satisfy all current or potential consumers by being able to handle the most severe situations and by minimizing the negative impact of the most brand-hostile consumers.

The considerations made in this study can be used to investigate further dynamics present in the services brand–consumer relationship. Some of the constructs, like brand retaliation, can be analyzed under different scales of intensity, or occupying a wider range of constructs. Managerial implications of these recent studies on antecedents and outcomes are consistent with negative and brand hate research and show similarities with brand love and positive emotions, providing some recipes and strategies to deal with them. In the present study, a complete mediation of negative word of mouth proved by hate emotions was found, managing tense relationship occurrences with every customer can prove to be of utmost importance. Negative word of mouth tends to spread and can prove to be, especially in the digital age, a sensitive point for damaging a brand and affecting valuable customers (Grégoire *et al.*, 2009; Krishnamurthy and Kucuk, 2009; Sreejesh *et al.*, 2017). Brand retaliation, which usually translates into an extra cost in managing a customer, proved to be more motivated by a symbolic incongruity than a past experience (Lee *et al.*, 2009). These customers may have to be targeted with different means of symbolism in order to channel their desire for revenge towards a brand, or even intensify this dichotomy into a marketing strategy after getting a whole view of its symbolic meanings (Hogg *et al.*, 2009, pp. 9–10), being cautious about the practical implications of corporate brand image (Rindell, 2013).

The reason behind these managerial implications follows ethical behavior and also the incorporation of more consumer inspection toward an effective response (Zarantonello *et al.*, 2016) and of past relationship (Hegner *et al.*, 2017) as well as the proactive approach of the consumer. This also calls for an active and continuous evaluation of the relationship's nature with the consumers, as those with a higher "relationship quality" may have more tendency for retaliation (Grégoire and Fisher, 2006, p. 46). In building a relationship with consumers, a brand may face a different set of consequences when hate emotions or feelings are involved, and something, either from the brand or the consumer, changes (Sussan *et al.*, 2012).

Limitations and future research

Further research should fully and more extensively determine the role played by the context of the brand, like industries or types of brands, in explaining the negative relationships. Comparative methodologies across industries and cultures, with multicultural research and regarding customers and noncustomers relationships with consumer brands can also prove to be of great interest, especially in understanding the managerial effects in different settings.

Longitudinal studies, which can test conditions of time like other studies in the field (Grégoire *et al.*, 2009) are other critical points that indicate the relationship in the negative realm (Aaker *et al.*, 2004).

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Is it my fault and how will I react? A phenomenology of perceived causes and consequences of workplace ostracism

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Abstract

Purpose – This exploratory inquiry sheds light on the nature of victim (i.e. provocative and passive) and specific work context in shaping the perceived causes and outcomes of felt workplace ostracism in teaching faculty of Pakistani higher educational institutions (HEIs) based on target-centric victimization framework.

Design/methodology/approach – This phenomenological research is based on data gathered from 30 ostracized teaching faculty members working in Pakistani public and private HEIs through in-depth semi-structured interviews. The interviews were tape-recorded, and transcription was entered in NVivo 12 Plus software to conduct thematic analysis.

Findings – This study found that provocative and submissive victim status, as well as the specific contextual factors in Pakistani HEIs (i.e. negative competition, cronyism, egoism and poor interpersonal relationships), is responsible for fostering workplace ostracism and yielding unique outcomes in each case.

Originality/value – This study has taken the scantily used target-centric victimization framework to distinguish the causes and consequences of workplace ostracism based on the nature of victim and work context in Pakistani HEIs.

Keywords Higher educational institutions, Workplace ostracism, Provocative victims, Submissive victims, Victimization framework

Paper type Research paper

1. Introduction

Workplace ostracism is being excluded, ignored or omitted from the social interactions within organizational settings (Howard *et al.*, 2019). The extant research on workplace ostracism has signaled mixed findings regarding its positive, negative and avoidant outcomes (Robinson *et al.*, 2013). How an ostracized employee reacts is considerably dependent on a multitude of



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factors (Richman and Leary, 2009). From a theoretical perspective, workplace ostracism research usually employed “Temporal Need Threat Model” (Williams, 2009), emphasizing the time- and need-based aspects, or used “The Multimotive Model of Responses to Social Rejection” (Richman and Leary, 2009) that focused on construal factors impacting the outcomes of being socially rejected. Recent directions suggest that the nature of the victim (Aquino and Lamertz, 2004; Howard *et al.*, 2019) and work context (Mao *et al.*, 2018) also play a decisive role in this regard. We build on the target-centric victimization framework presented by Aquino and Lamertz (2004), which is useful to comprehend the causes and outcomes of any form of victimization. Victims are termed as those individuals who perceive themselves as recipients of any harmful behavior by another party. In this realm, two types of victims exist: provocative and submissive; the former relates to individuals who respond aggressively, and the latter signal self-abasement (Aquino and Thau, 2009). Workplace ostracism elicits either prosocial, socially avoidant or antisocial outcomes (Richman and Leary, 2009; Robinson *et al.*, 2013). The past research has examined some of the workplace mistreatments from the target-centric victimization perspective, such as workplace bullying (Matthiesen and Einarsen, 2015) and workplace aggression (Ren *et al.*, 2018). Until now, scant attention is given to victim and context-focused viewpoint in examining the antecedents and outcomes of workplace ostracism that only build on conceptual arguments (Howard *et al.*, 2019).

Workplace ostracism is pervasive in all kinds of business, cultural and national contexts, but some of them are more vulnerable in this regard. Higher educational institutes (HEIs) have organizational dynamics where inclusiveness, interpersonal ties and norms of collaboration are highly valued (Bashir and Khalil, 2017), and their absence yields detrimental outcomes (Nasir *et al.*, 2017). Recent research has highlighted the importance of examining ostracism in specific academic settings and called for further exploration in this regard (Bilal *et al.*, 2019; Nasir *et al.*, 2017; Zimmerman *et al.*, 2016). Most conceptual studies on workplace ostracism recognize the role of work context in explaining the outcomes of ostracism (Robinson *et al.*, 2013; Scott and Duffy, 2015; Williams, 2007), yet this stance is not substantially tested. Workplace ostracism reactions may have different causes and consequences depending on context (Jahanzeb and Fatima, 2018). From this perspective, HEIs in collectivist and developing nations are increasingly witnessing a higher rate of ostracism (Fatima *et al.*, 2017) and a unique tendency toward work behaviors after being ostracized (Bilal *et al.*, 2019; Robinson *et al.*, 2013).

These factors require a rethinking of the over-simplistic conclusions drawn about the causes and consequences of workplace ostracism and generalizing them across all kinds of business settings. Workplace ostracism has unique implications concerning victims' nature and cultural dynamics, so understating this phenomenon through the lived experiences of participants is a convincing approach (Polit and Beck, 2004). Qualitative research provides a plausible imperative in offering valuable insights into workplace ostracism (Waldeck *et al.*, 2015; Waldeck, 2017) to disentangle the understanding of varied responses (Bilal *et al.*, 2019) based on unique work context and nature of victims.

This study explores the unique causes and outcomes of workplace ostracism in HEIs and highlights the differences based on the distinct nature of victims and academic work settings. In this research, we have limited the focus to felt ostracism experienced by the teaching faculty of HEIs in a collectivist and developing nation of Pakistan. Firstly we attempted to answer “*how teaching faculty in HEIs perceives the causes of felt ostracism according to their nature i.e. provocative or submissive, and how this perception shapes their work outcomes?*” Secondly, we probe “*how the work context i.e. culture, working relationships, norms, etc. of HEIs develops a perception of felt ostracism in teaching faculty and influence their work outcomes?*” By answering these questions, this study contributes to the extant literature by opting for an exploratory qualitative stance that takes into account the role of victims' nature

2. Theoretical framing

The target-centric victimization framework proposed by Aquino and Lamertz (2004) suggests that victims' associated characteristics and behaviors constitute one of the factors that can be used to discern the antecedents and outcomes of mistreatment. Howard *et al.* (2019) advocated the usefulness of this theoretical perspective in examining the concept of workplace ostracism. In this regard, the nature of the victim as well as specific factors in the work context shapes how an individual attributes the causes of ostracism and how it impacts his/her outcomes. In this study, we have taken the victim- and context-focused stance to examine the causes and outcomes of workplace ostracism in the specific context of Pakistani HEIs.

2.1 Causes and consequences of workplace ostracism based on nature of victims and work context

Aquino and Lamertz (2004) differentiate the two categories of victims that exhibit dissimilar characteristics: provocative victims and submissive victims. According to Aquino and Lamertz (2004), submissive victims are "extremely passive, insecure, frequently rejected by peers, and unwilling to defend against attack" (p. 1025). These people face insulting and offensive treatment because of their low social profile and support, as suggested by behavioral decision-making theories. Individuals consider cost and benefits attached to their behaviors and perform those activities that are beneficial in terms of cost-benefit analysis, and this cost-benefit analysis helps them to choose from among the available alternatives (Tepper *et al.*, 2006). Submissive victims show minimal retaliation after being mistreated. Therefore, perpetrators find such individuals an easy target of ostracism because they have to face minimal adverse consequences.

On the other hand, provocative victims are very irritating, hostile and aggressive. Their actions compelled others to retaliate against them, which has been explained through norm theories (Aquino and Lamertz, 2004). Social normal is defined as standard behaviors that are desired from the group's members, and these norms should be considered as important by group members for the smooth functioning of a group. Because of this perceived importance, group members will try to reinforce these norms in the group through penalties and rewards. This viewpoint suggests that workplace ostracism is initiated as punishment against group members who violate these norms, and ostracism is an outcome of these violations (Hitlan and Noel, 2009; Robinson *et al.*, 2013). Retaliatory ostracism could be the result of deviant norm violations to "keep people in line," but it may also be a reaction to nondeviant norm violations. The ostracizing behaviors could also be deployed to discourage undesirable behavior, for instance, ostracizing a poorly performing individual. Although it could be possible that individuals may be exhibiting poor performance unintentionally, other group members ostracize these poor performers to enhance overall group performance or perceive that employee performance is intentionally poor for instance social loafing (Wu *et al.*, 2019; Williams and Sommer, 1997).

At one fell swoop, working conditions state the risks and returns of ostracizing others. Similarly, the work environment has inherent features to support (discourage) ostracism due to the attached risks and returns, which could be high or low on either side. Furthermore, environmental factors are recognized as an important trigger to explain the intensity of ostracism. Predominantly, social environmental perceptions and leadership are sources to establish such norms. This way, perception to understand these behaviors as normative is the

result of contained unfavorable workplace conditions (Hitlan and Noel, 2009; Robinson *et al.*, 2013). Further, several arguments explained the instances where ostracism generates normative behaviors, but there are some clues from existing research that it becomes the by-product of the mild environment. In innocuous environments, employees may receive high returns as compared to risks in response to ostracism. Contrary to this, certain work environments permit employees to do ostracism-related activities because of surface-level features (gender, race) that deviated from existing norms. In doing so, such an environment produces high risk as there is a very minute cost of ostracism like lack of punishments (Leung *et al.*, 2011; Ng, 2017). There are different motivations of ostracism when applied conditions are different, like employees use ostracism tools to “get ahead” in competitive work environments as compared to a cooperative work environment where employees prefer to reduce workplace ostracism (Halevy *et al.*, 2014). In the former environment, employees perceived to get returns of “pushing out” others by way of offsetting the risk of social resource, whereas in later workplace conditions, employees pay due attention to social inclusiveness (Robinson *et al.*, 2013). The climates of self-interest and favoritism on the non-merit basis are also linked with increased instances of workplace ostracism (Bilal *et al.*, 2019). Moreover, certain workplaces lack coherent relationships among colleagues and create “chilly” climates that have been linked to workplace ostracism in the past (Zimmerman *et al.*, 2016).

Workplace ostracism is caused due to diverse factors, and it cannot be generalized in all work environments and for all kinds of victims. Building on the victimization framework, we argue that victim characteristics and specific work environments play a key role in explaining the cause of felt ostracism.

- P1. The antecedents of workplace ostracism will be different for provocative and submissive victims.
- P2. The antecedents of workplace ostracism will be different for the unique context of HEIs in Pakistan.

Most of the reported outcomes of workplace ostracism are negative (Robinson *et al.*, 2013), whereas some evidence of positive outcomes has also been traced (Scott and Duffy, 2015; Xu *et al.*, 2017). It has been indicated by extant studies that submissive victims refrain from showing overt reactions as a response to mistreatment, and they mostly avoid confrontation in this matter. The provocative victims engage in a more overt form of reactions that are more negative and hostile (Ng, 2017). Whether victim of ostracism will improve work outcome, withdraw or reduce work outcome is decided by the nature of the victim as well as the environmental context of the workplace (Howard *et al.*, 2019).

- P3. The outcomes of workplace ostracism will be different for provocative and submissive victims.
- P4. The outcomes of workplace ostracism will be different for the unique context of HEIs in Pakistan.

3. Method

3.1 Research design

The perceived causes and personal experiences of victims are the prime factors in deciding the outcomes of workplace ostracism rather than its actual occurrence. That is why a phenomenological inquiry that enables to “understand several individual’s common or shared experiences of a phenomenon” (Creswell, 2007, p. 60) and elicits a deeper understanding of lived experiences of participants was deemed a suitable and recommended approach in this regard (Waldeck, 2017).

3.2 Population and sampling

The population consists of teaching faculty of Pakistani (public and private) universities. We purposefully chose the participants who had experienced a considerable degree of workplace ostracism, as they were well-equipped to answer the research questions. To attain this, the authors developed qualifying criteria based on existing workplace ostracism conceptualization (Ferris *et al.*, 2008) that has been used in ostracism research in a similar context (Bilal *et al.*, 2019), that is, “Do you constantly feel excluded or ignored in formal and informal social interactions in your department?” “Is your opinion seldom/never invited in formal and informal matters?” “Do you see yourself as not being a member of dominant in-group in your department?” “Do you constantly feel out of the loop”? The authors used personal links to forward this information to faculty groups of public sectors and private universities in Lahore along with a short description of the purpose of this research. A total of 47 individuals responded and were found to fulfill the criteria; out of them, 36 participants volunteered to participate in the study. Interviews were carried out in person with each of the participants at a mutually agreed-upon venue; after completion of 27th interview, the researcher felt that repetition of data started occurring that met saturation criteria (Saunders *et al.*, 2018). For further assurance, three more interviews were carried out that indicated sufficient data were obtained regarding research propositions and no new theme emerged (Jassim and Whitford, 2014). The sample size of 30 was deemed sufficient, as participants ranging from 10 to 30 are appropriate in the phenomenological approach (Bilal *et al.*, 2019; Hall *et al.*, 2016; Yang, 2008).

3.3 Data collection

To collect data, a semi-structured interview guide was prepared based on existing research about the causes and consequences of workplace ostracism (Howard *et al.*, 2019; Mao *et al.*, 2018; Robinson *et al.*, 2013). To authenticate the interview guide, a panel of four experts was formed; it had two academicians and two experts of qualitative research who reviewed it and suggested some amendments that were duly incorporated. In the first step, the participants were briefed about the research topic, and, in the second step, they were requested to respond related to workplace ostracism. One of the sample interview questions is: “What do you think initiated ostracism?”; the prompts were (Which cause do you attribute to the occurrence of ostracism? Do you feel it is your fault or that of the perpetrator? Why you were the target?). The interviews spanned from 35–55 min, which is quite acceptable according to the average time of 40.7 min in phenomenological inquiries (Follmer *et al.*, 2018).

3.4 Data analysis

The interviews were recorded with the consent of participants, and transcription was done after that. To analyze the data, thematic analysis was deemed a suitable choice (Braun and Clarke, 2006). The transcribed interviews were imported in NVivo 12 plus, and each participant was treated as a case. It is suitable software for the development of codes and subsequent themes as it aids in efficient qualitative data analysis (Banihani and Syed, 2017). The transcripts were thoroughly read to gain familiarization, and the emerging initial codes were developed. Codes that exhibited similar patterns were categorized under preliminary themes. These themes were reviewed (repetition and extra information were eliminated) and revised to ensure that they represented answers to the research questions. A matrix coding query option was used to determine the frequency of each theme, and their percentages were calculated.

3.5 Reliability and validity

To establish reliability, inter-coder agreement was used (Silverman, 2005). Two independent coders reviewed data and developed codes and themes that were matched with those

developed by authors. Few differences were traced that were adjusted to through discussion to generate a list of agreed-upon themes. Member validation was used during the interview process as well as after the analysis (Silverman, 2005; Sarma, 2015). The transcriptions were sent back to the respective interviewees to make sure that they represented what they intended to state. Moreover, after the completion of themes, development and interpretation, their summary was shared with the participants and their affirmation was sought that the results are the reflection of participants' views, feelings and experiences. The feedback of participants was used in improving the data interpretation and in removing any misleading information.

4. Results

4.1 Demographics

Out of the 30 participants, 17 were male and 13 were female; their age ranged from 26 years to 45 years; from the total sample, 19 were married and 11 were single. The designation showed a mixed profile: 14 were lecturers, 9 were assistant professors and 7 were associate professors. With regard to education, 21 had MPhil degree, while 9 were PhDs. All participants belonged to both public (18) and private (12) sectors. Out of the 30 participants, 18 were from the submissive category and 12 were from the provocative category.

4.2 Thematic analysis

From the analysis of data, two major themes emerged that were related to the perception of faculty's causes and outcomes of ostracism in HEIs. The theme of perceived causes was bifurcated based on provocative victims and submissive victims, and then according to the contextual factors. A similar stance was taken in developing sub-themes of consequences of workplace ostracism. The relative frequencies and percentages of each theme are presented in Tables 1 and 2.

4.3 Perceived causes of workplace ostracism for teaching faculty of HEIs

This theme was further sub-divided in the following sub-themes.

4.3.1 Perceived causes of workplace ostracism for provocative victims. Most of the provocative victims indicated constructive deviance, cronyism and envy as the causes of being ostracized. The first cause of felt ostracism was attributed to the personal actions of victims. It was reported by the provocative victims that they usually go against the status quo to improve work practices in the department, complain against inefficient colleagues, disagreed with colleagues that followed redundant work procedures or bent rules and regulations for the satisfaction of students and improvement in the department. In the view of participants, these actions lead them to be ostracized in general, and sometimes specifically by those whom they disagreed with. It was explained by one faculty member as:

I believe in the improvement of work output, even if it is attained by going against any norm or rule that has been in practice for years. What is wrong should be reported and initiatives should be taken to improve it but sadly what I received is isolation from my colleagues (P#11).

A second important cause of ostracism perceived by provocative victims was the envy of colleagues and department heads. It was highlighted by victims that they have good academic credentials, student feedback and a research profile that spur insecurity and negative emotions among the colleagues that do not possess these qualities. Ostracizing is a subtle outlet for the colleagues' expression of their negative emotions they feel after unfavorable social comparison. It was reported by one faculty member:

I am good at research and I often get funding for foreign conferences . . . I am very passionate about guiding my research students and they show quality work output. This has mainly attracted

Table 1.
Matrix coding query
results of perceived
causes of workplace
ostracism*

Sr. No	1: Perceived causes of workplace ostracism									
	1.1: Submissive victims			1.2: Provocative victims			1.3: Contextual factors			
	1.1.1 Low performance	1.1.2 Non-indulgence in ingratiation	1.1.3 Lack of political skills	1.2.1 Constructive deviance	1.2.2 Injustice	1.2.3 Envy	1.3.1 Negative competition	1.3.2 Egoism	1.3.3 Cronyism	1.3.4 Poor interpersonal relationships
P1	1	2	7	-	-	-	11	7	6	4
P2	-	-	-	4	1	4	12	4	0	1
P3	-	-	-	7	3	5	9	4	5	2
P4	1	2	6	-	-	-	7	6	2	3
P5	-	-	-	10	8	2	6	3	7	4
P6	1	5	4	-	-	-	3	7	3	2
P7	-	-	-	15	II	4	8	6	5	4
P8	3	4	3	-	-	-	9	8	6	4
P9	-	-	-	12	9	3	7	3	2	5
P10	1	2	3	-	-	-	8	2	3	1
P11	-	-	-	5	3	2	11	4	8	3
P12	0	5	7	-	-	-	3	8	3	2
P13	1	3	5	-	-	-	10	4	5	4
P14	4	2	4	-	-	-	9	5	6	3
P15	1	3	5	-	-	-	8	4	3	7
P16	5	7	3	-	-	-	7	6	5	4
P17	-	-	-	11	7	5	12	3	1	5
P18	11	5	6	-	-	-	10	9	6	3
P19	-	-	-	15	7	4	5	3	8	11
P20	6	2	2	-	-	-	6	4	4	2
P21	-	-	-	5	9	8	4	5	8	5
P22	6	3	7	-	-	-	7	3	6	1
P23	9	5	4	14	12	2	8	7	3	2
P24	4	1	5	-	-	-	7	6	5	3
P25	7	4	3	-	-	-	12	11	13	4
P26	-	-	-	3	3	0	3	3	5	7
P27	2	3	1	-	-	-	7	5	4	3

(continued)

Sr. No	1: Perceived causes of workplace ostracism										
	1.1: Submissive victims			1.2: Provocative victims			1.3: Contextual factors				
	1.1.1	1.1.2	1.1.3	1.2.1	1.2.2	1.2.3	1.3.1	1.3.2	1.3.3	1.3.4	
	Low performance	Non-indulgence in ingratiation	Lack of political skills	Constructive deviance	Injustice	Envy	Negative competition	Egoism	Cronyism	Poor interpersonal relationships	
P28	1	2	1	-	-	-	8	4	3	7	
P29	-	-	-	2	4	1	10	4	5	4	
P30	1	1	3	-	-	-	9	3	3	5	
<i>Total</i>	65	59	79	103	77	40	236	151	143	115	
Percentage	32%	29%	39%	47%	35%	18%	37%	23%	22%	18%	

Note(s): *This table depicts the relative frequencies and percentages of all themes

Table 1.

Table 2.
Matrix coding query
results of perceived
consequences of
workplace ostracism*

Sr. No	2: Perceived consequences of workplace ostracism														
	2.1: Submissive victims					2.2: Provocative victims					2.3: Contextual factors				
Increased work performance	2.1.1 Increased interpersonal helping	2.1.2 Displaced aggression	2.1.3 Knowledge hiding	2.1.4 Negative gossip	2.1.5 Silence	2.1.6 Reduced task performance	2.2.1 Deviant behavior	2.2.2 Prohibitive voice	2.2.3 Aggression Against perpetrator	2.3.1 Increased task performance	2.3.2 Increased contextual performance	2.3.3 Spillover performance	2.3.4 Decreased task performance	2.3.5 Decreased contextual performance	
P1	0	2	1	2	8	2	-	4	-	1	1	1	-	3	
P2	-	-	-	-	-	-	1	3	2	-	-	-	1	2	
P3	-	-	-	-	-	-	1	3	2	-	-	-	2	1	
P4	1	2	1	2	1	2	-	3	-	2	3	2	1	3	
P5	-	-	-	-	-	-	8	2	3	3	7	3	1	5	
P6	1	3	1	5	6	1	-	2	-	3	7	3	2	6	
P7	-	-	-	-	-	-	7	1	2	1	2	0	2	4	
8	3	1	3	4	7	0	-	3	1	1	2	0	5	2	
P9	-	-	-	-	-	-	9	3	1	2	1	0	2	1	
P10	1	2	S	7	5	0	-	6	3	2	1	0	5	0	
P11	-	-	-	-	-	-	6	6	3	-	1	0	3	1	
P12	0	2	1	6	2	-	-	-	3	-	2	-	-	2	
P13	1	1	7	3	4	4	-	-	0	0	2	3	2	6	
P14	2	2	4	6	4	1	-	-	1	1	1	1	1	6	
P15	4	2	6	3	6	4	-	-	2	3	3	2	2	3	
P16	5	3	5	7	7	3	-	-	1	2	2	1	2	5	
P17	-	-	-	-	-	-	7	6	4	1	2	1	2	6	
P18	2	4	7	3	9	2	-	4	4	1	1	2	1	7	
P19	-	-	-	-	-	-	8	4	0	1	1	-	1	9	
P20	6	2	-	2	1	1	-	4	0	1	1	0	-	11	
P21	-	-	-	-	-	-	5	9	3	1	2	0	2	3	
P22	6	3	6	2	4	1	-	2	2	1	2	0	2	5	
P23	-	-	-	-	-	-	9	6	2	0	-	-	2	1	
P24	1	1	4	1	2	4	-	2	-	0	2	1	-	1	
P25	2	4	5	4	1	1	-	-	-	1	2	1	-	1	
P26	-	-	-	-	-	-	3	12	1	-	2	1	4	3	
P27	2	1	2	5	3	2	-	3	-	1	3	0	-	S	
P28	1	2	1	2	2	1	-	2	4	2	4	0	-	3	
P29	-	-	-	-	-	-	3	4	3	2	4	0	-	2	
P30	1	1	1	1	5	3	-	8	3	1	1	3	5	2	
Total %	39 12%	36 11%	68 22%	63 20%	77 24%	33 11%	47 24%	67 33%	26 13%	22 10%	41 18%	21 9%	30 13%	109 48%	

Note(s): *This table depicts the relative frequencies and percentages of all themes

negative behavior from my colleagues . . . I feel that they do not like to involve me in their in-formal gatherings and avoid interaction with me (P#17).

Another participant shed light on more formal ostracism:

Outperformers receive a social cost in our department, I often experience that only average performers thrive here . . . I have a foreign Ph.D. degree and I am usually sidelined in many instances, my opinion and suggestions are not asked or even if I give them my colleagues and Head pay a deaf ear to them (P#29).

4.3.2 Perceived causes of workplace ostracism for submissive victims. Submissive victims perceived ostracism because of their low performance, lack of political skills, non-indulgence in ingratiation and high cronyism.

Submissive victims mostly attributed their characteristics to be the cause of ostracism. They believe that they perform lower than other colleagues, and due to their inefficient working, their peers avoid them in work teams, in social interactions and in seeking advice and suggestions regarding important departmental matters. It was revealed by one faculty member:

I think that my performance is not up to mark whereas my colleagues are more punctual, passionate, and efficient in completing their assigned tasks. My head often snubs me because my work is never error-free. Mostly my image of being a work shirker or underdog makes me feel left out in interpersonal situations (P#4).

The second personal characteristic reported by submissive victims was their poor political skills. The ostracized faculty members in this category stated that they had difficulty in developing social relationships and were not clever enough to appropriately behave in diverse social interactions. It was the opinion of participants that they were not very desirable socially given their deficient convincing skills. A faculty member said:

I am only good at teaching and doing my assigned job duties, but I lack the personal ability to deal with the political situations facing in our educational settings. It is very tough for me to develop relationships with colleagues and be a part of certain groups to display socially desirable attitudes. I occupy a comparatively lower social standing in my department and it makes me face cold and non-inclusive behavior from my peers (P#12).

Another similar concept emerged in this context, where victims also indicated that they were unable to spend extra efforts for making their heads and colleagues happy, that is, they do not indulge in flattery, servility and giving extra favors to peers, so they were not liked and included by them. One respondent stated:

Here is a culture of flattery and going the extra mile to keep everyone happy and I do not indulge in such behavior. I think as professionals we only owe the services to organizations and nothing more than that . . . But somehow, it has cost me the social inclusion in my department (P#25).

4.3.3 Perceived causes of workplace ostracism within the specific context of HEIs. Although perceived causes of workplace ostracism are elaborated as per the victim characteristics, some of the contextual factors that impacted both types are linked to the specific work context of HEIs in Pakistan, such as competitive environment, egoism and poor interpersonal relationships based on cronyism.

In general, the respondents agreed to the point that HEIs have now fewer resources, and everyone has to compete for resources and survival of their jobs. This competition is profoundly negative, and everyone wants to win even at the cost of harming colleagues, departments and organizations. This has promoted a competitive and egoistic climate where everyone is out for themselves, and inclusiveness and cooperation are now extinct. Moreover, the relationships between the department head and colleagues as well as among colleagues

are not closely knit, and very few conscious efforts are made to improve this situation. It was stated by one faculty member,

In HEIs, there is a race for survival ...inclusion and exclusion dynamics are based on self-interest (P#4).

In our department, all faculty members have minimum social interaction and there is no mechanism to improve the relationship among colleagues on a departmental or individual level (p#9).

The relationships based on personal associations were deemed as a reason for feeling ostracized, as only favored group members of department heads were included in the majority of department affairs. Particularly, the submissive victims were not a part of any prominent group in the department and felt isolated. It was stated by one faculty member:

I do not belong to any prevalent group in the department, it comprises of departmental head and his favored others ... that is why usually my colleagues have their gatherings and social plans together and I am not a part of them ... Usually, I feel neglected in conversations and my opinion for departmental issues as well as other matters is not sought or taken into account (P#18).

Provocative victims indicated that department head favors certain groups based on his/her associations, and disregard of merit and similar practice is prevalent among colleagues. This promotes grouping in the department where members of one group ostracize others.

We are divided into groups, there is a dominant group that is favored by our department head and another group that has no such affiliation. The interpersonal interaction among the colleagues across groups is almost non-existent ... Even sometimes we ignore each other on purpose (P#5).

4.4 Perceived consequences of workplace ostracism for teaching faculty of HEIs

This theme was further sub-divided in the following sub-themes.

4.4.1 Perceived consequences of workplace ostracism for provocative victims. The outcomes indicated by provocative victims included deviant behaviors (i.e. aggression toward the perpetrator, reduced task performance and interpersonal helping) and increased prohibitive voice.

The outcomes of provocative victims were mainly witnessed in the form of active behaviors such as complaining about the mistreatment and giving suggestions of inclusion, showing aggressive behavior toward the ostracized colleague and engaging in behaviors that are against the well-being of department and its stakeholders, such as leaving early, not completing the assigned tasks with due effort, intentionally showing slow progress and careless use of organizational resources. Some of them indicated that they do not help their colleagues and try to avoid giving favors for better functioning of the department. It was revealed by one of the faculty members:

Once my colleague was absent and the head of the examination asked me to perform duty in his place ... Although, I was free and could have helped in this regard, I refused (P# 17).

Another faculty member stated:

I leave university as soon my classes are over and I do not complete my working hours ... If any extra work is assigned to me I usually refuse and even if I have to do it I just try to get rid of it by putting minimum efforts (P#29).

The aggression of one participant was reflected through the following statement:

In this culture, there is no place for a person who shows compliance, here one has to speak up to survive and in certain cases, being rude is the only choice to retaliate against exclusion. I requested many times to also give me the membership in the departmental research committee as I also fulfill the qualifying criteria ... until I said them harshly my request was not considered (P#5).

While another faculty member showed indication of prohibitive voice as a reaction of being ostracized:

... I suggest my head to develop proper criteria so that everyone has an equal chance to be a part of departmental activities rather than favoring certain employees all the time ... There should be some opportunities for formal and informal collaboration, maybe this helps to break the ice (P #2).

4.4.2 Perceived consequences of workplace ostracism for submissive victims. It was indicated by submissive victims that they react to workplace ostracism through silence, increased work effort, interpersonal helping, negative gossip, knowledge hiding and displaced aggression.

Submissive victims showed some positive reactions as a response to workplace ostracism. These included improving their work performance and helping others. Few faculty members said:

I try to improve my lecture delivery and work for the departmental activities in an improved way, I hope it will improve my image and makes my colleagues and head realize my worth (P#3).

... I help my colleagues more, I offer them to share work if they are overburdened and help them in resolving issues ... Sometimes, I share teaching material and case studies, I think it will improve our relationships (P#12).

It was revealed that some of the submissive victims just chose to be silent and show no reaction:

I keep doing my work and refrain from raising voice against being ignored (P#8).

Some negative outcomes were indicated such as:

I cannot openly confront my colleagues that ignore me, but I talk negatively about them with other faculty members and even sometimes with students ... at times I even exaggerate information about them to harm their reputation (P#13).

In this institution, I feel left out and excluded, if I try to retaliate by aggression or by reducing my performance it generates further negative outcomes. If my colleague asks for some work-related information or something regarding research, I pretend not to possess it or I play dumb (P#12).

Lastly, an indication of the aggressive reaction was also found among the submissive victims, but the difference was that it was not directly targeted toward those who ostracized them.

Being ostracized causes an intense surge of anger in me and I lash out at my friends or family members for no reason (P#25).

4.4.3 Perceived consequences of workplace ostracism within the specific context of HEIs. On average, a mixed response regarding outcomes of workplace ostracism was obtained from both kinds of victim categories. Summing up, there was an overall trend of declining contextual performance in both kinds of victims, but reducing task performance was rarely traced (only in provocative victims). As one participant said,

I would never compromise on my assigned job duties, especially lecture delivery and research supervision ... However, I avoid any extra effort even if it is for the better functioning of the department (P#26).

Some of the submissive victims indicated increasing tasks as well as contextual performance to improve their image and get included. Spillover impacts were also unique to submissive victims (i.e. in the form of displaced aggression).

Based on the findings of the present research, a conceptual model of the causes and consequences of workplace ostracism is proposed that shows the relative theme percentages (see Figure 1) that indicate the percentages in each box represent the relative occurrence of major concepts within each sub-theme.

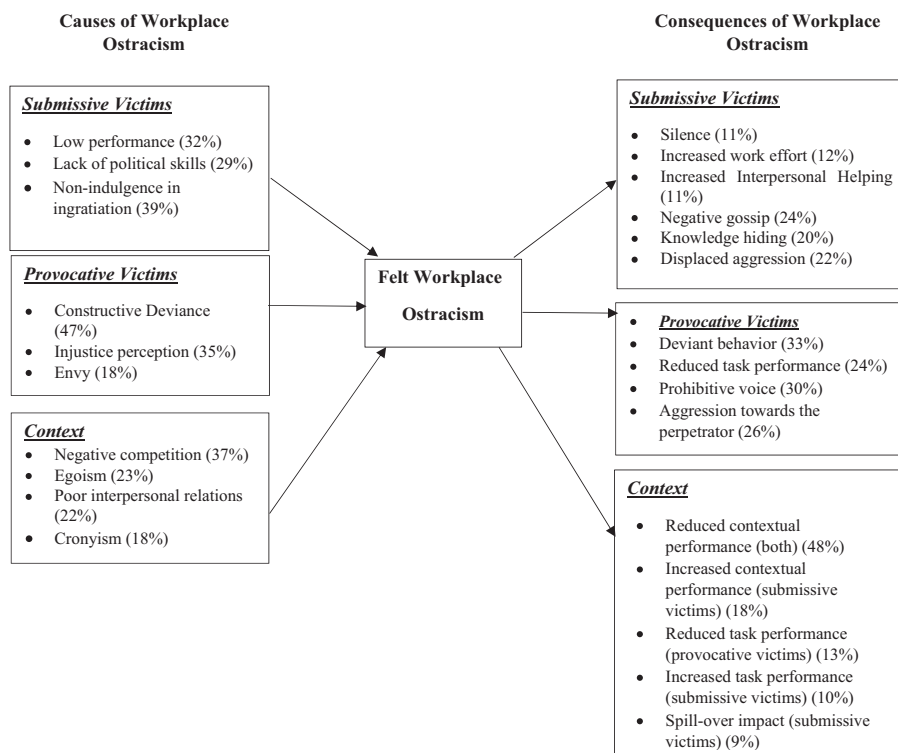


Figure 1. Conceptual framework (the percentages in each box represent the relative occurrence of major concepts within each sub-theme)

5. Discussion

The first theme was related to the perceived causes of workplace ostracism in HEIs. The provocative victims indicated that they felt ostracized because of being constructively deviant, which affirms the conception that personal behaviors of employees attract ostracism (Howard *et al.*, 2019). In traditional work settings, departing from *status quo* is not liked, and an employee engaged in constructive deviance is perceived as disagreeable that increases the chances of being ostracized (Mao *et al.*, 2018). Perceived injustice was deemed to be yet another reason for felt ostracism, and this makes sense because injustice offers a breeding ground for workplace mistreatments (Tepper *et al.*, 2006). Lastly, provocative victims said that they faced ostracism from envied peers. The underlying cause is that excellent performance and possession of unique expertise also invites victimization from colleagues due to negative social comparison (Kim and Glomb, 2010; Mao *et al.*, 2018).

Contrariwise, the submissive victims said their low performance makes them less socially desirable. This shows that low performance is not only an outcome of ostracism, but, in certain cases, it can be the cause of ostracism (Howard *et al.*, 2019). Also, low political skills were found to be a cause of workplace ostracism. Employees who lack political skills are likely to be ostracized because they do not ingratiate, flatter or show compliance to others to become more sought after (Wu *et al.*, 2019). The results affirm that submissive victims attribute the causes of mistreatments mainly to their characteristics and lower self-worth perceptions, whereas the provocative victims possess a better self-image and deem that mistreatment is always not the fault of the target (Cortina *et al.*, 2018).

Despite the nature of victims, contextual factors impacted all ostracized faculty members alike. It was revealed that certain cultural and organizational practices in HEIs promote ostracism. This signals toward the dysfunctional characteristics of HEIs in Pakistan that include negative competition, cronyism, poor interpersonal relations and egoism. Given limited resources and lack of merit-based practices, it is easy to gain personal benefits by ostracizing those employees who pose a threat. Self-interest and favoritism are deemed to be positively liked to workplace ostracism (Bilal *et al.*, 2019). Organizations that do not encourage positive competition for the well-being of employees become home to mistreatment (Li *et al.*, 2019). In case of unhealthy competition, instead of positively improving their work performance, employees try to create hurdles for others and do not refrain from showing hostile behaviors (George *et al.*, 2012). Moreover, poor-quality interpersonal relationships result in negative outcomes such as ostracism (Chung, 2015). The indication of exclusionary climate in HEIs is given by Zimmerman *et al.* (2016), and thus it supports the results that lack of cohesive ties among employees reduces the social interaction and promotes exclusion in the workplace.

The results revealed that the reactions of provocative victims were more assertive and visible (Aquino and Lamertz, 2004). The most evident outcome of being ostracized was a reduction of contextual behaviors. Some victims indulged in prohibitive voice behaviors to raise their concerns about ostracism, while others showed aggression toward the employees who ostracize them. In contrast to prior evidence of negative relationship and voice behavior (Wu *et al.*, 2019), a positive association was found. Employees use prohibitive voice to get protected from workplace threats such as workplace ostracism (Ma, 2016). It has been proved by past research that ostracism is a painful experience; victims can behave aggressively, and some victims have more potential of showing aggressive behavior than others (Ren *et al.*, 2018). It was indicated by a few that they declined task performance following the episodes of ostracism, which is a common outcome of being ostracized (Robinson *et al.*, 2013).

On the contrary, submissive victims had more positive or passive reactions. They engaged in improved work performance and helping behaviors that are a common tactic to becoming a more favorable individual to avoid victimization (Bilal *et al.*, 2019). Besides, some of the victims in this category only remained silent, which is a unique outcome for the employees who have lower self-worth and self-esteem (Fatima *et al.*, 2017). The negative outcomes shown by submissive victims were subtle like knowledge hiding and negative gossip to damage the reputation of the perpetrator. Some traits of employees make them reciprocate by hiding knowledge as a result of mistreatment (Arshad and Ismail, 2018), such as less extroversion exhibited by submissive victims elicits this response (Bosman, 2019; Demirkasimoglu, 2016). Negative gossip is also used as a way to convey undesirable work attitudes and is specifically targeted as a reaction of mistreatment (Ellwardt *et al.*, 2012). Submissive victims lack courage and feared further ostracism; hence, they directed aggression toward others, that is, family and friends. The passive and insecure nature of submissive victims caused more positive, neutral or mildly negative reactions as compared to the confrontation from provocative victims (Aquino and Lamertz, 2004; Howard *et al.*, 2019).

About the consequences of ostracism in the specific context of HEIs, it was affirmed that there was a lower tendency of reduced task performance (Bilal *et al.*, 2019) that was only traced in provocative victims, while contextual performance was significantly reduced in both victim types (Fatima *et al.*, 2019). Increased task and contextual performance were found only in submissive victims, while due to their non-willingness to defend mistreatment, the aggressive reaction is targeted toward others, showing spillover impact (Ren *et al.*, 2018). This added to the emerging debate on mixed reactions of workplace ostracism in academic settings by clarifying which types of victims react in a prosocial manner and which react in an anti-social manner (Bilal *et al.*, 2019).

6. Contributions to theory and practice

This research has extended the work on specific causes and consequences of workplace ostracism in HEIs, building on the victimization framework as suggested by Howard *et al.* (2019). It has moved beyond the prior focus on outcomes of workplace ostracism in academic settings (Bilal *et al.*, 2019; Fatima *et al.*, 2017, 2019; Zimmerman *et al.*, 2016), and has given a holistic view of factors that cause ostracism in HEIs and how they translate into employee outcomes. We have further highlighted how victim's characteristics and industry-specific factors shape unique antecedents and outcomes of ostracism, simplifying its sheer negative or positive outcomes or specific focus on certain personal or organizational predictors (Mao *et al.*, 2018).

From a methodological viewpoint, we reaffirmed that qualitative inquiries yield useful insights in ostracism research because its perceptions and outcomes vary based on multiple personal and contextual factors (O'Reilly *et al.*, 2014). The phenomenological approach is added to the extant empirical and narrowly focused investigations of ostracism in academia (Fatima *et al.*, 2017; Nasir *et al.*, 2017; Zimmerman *et al.*, 2016).

From a practical perspective, HEIs should improve their work contexts to yield positive employee outcomes (Bilal *et al.*, 2019). Efforts should be made for cooperative goal attainments, and unhealthy competition should be discouraged through accountability mechanisms. Formal and informal work gatherings should be initiated, such as meetings, seminars, workshops, trips and dinners, to bring faculty members closer and to discourage ostracism (Fiset *et al.*, 2017). The university management in general, and department heads in specific, should take an active role in promoting merit-based practices to ensure all employees are included and fairly treated. Mentoring of perpetrators and victims could also help to reduce the incidents and outcomes of workplace ostracism. Diversity training and seminars should be carried out to promote their social interaction among faculty members. Faculty members should be positively reinforced for keeping organizational interest ahead of personal interest. The policies and grievance mechanisms should be put in place with specific regard to workplace ostracism so that the victims can report the exclusionary behavior confidentially. The faculty members themselves can take initiatives for collaborative working through positive emotional management, such as by avoiding envy, egoism and negative social comparison and by inculcating positive knowledge sharing and interpersonal helping (Bilal *et al.*, 2017; Williams, 2009; Zhao *et al.*, 2016).

7. Limitations and future research directions

This study has some of the inherent limitations of qualitative research such as small sample size, the possibility of respondent bias, hidden views, omission of information and limited applicability of research results. These shortcomings can be overcome by using triangulation and mixed-method approaches (Bryman and Bell, 2014). This study was limited to the causes and consequences of ostracism in HEIs; in future, more comprehensive understanding can be acquired by exploring the specific types of workplace ostracism in academia. Moreover, we focused on the nature of the victim and context, and in future, the characteristics of the perpetrator can also be used to examine the same phenomenon (Howard *et al.*, 2019). We only explored one kind of workplace mistreatment; in future studies, other types of mistreatments such as incivility, discrimination and micro-aggression can be examined in HEIs (Schneider, *et al.*, 2017). We only considered Pakistani HEIs; the same inquiry may yield contradictory findings in HEIs of other national and cultural contexts.

8. Conclusion

This study found that provocative and submissive victim status elicits different perceptions of causes of workplace ostracism in Pakistani HEIs and yields unique outcomes. The practices of

cronyism, egoism, negative competition and poor interpersonal relations are inherent in Pakistani HEIs, fostering ostracism and causing varied outcomes such as reduced contextual performance (provocative and submissive victims), reduced task performance (provocative victims), spillover, and increased task and contextual performance (submissive victims).

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Further reading

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The impact of divestitures on shareholder wealth – The DACH case

Divestitures
and shareholder
wealth

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Abstract

Purpose – The purpose of this research is to study the impact of divestitures on shareholder wealth. This study covers selloffs of publicly traded companies in Germany, Austria and Switzerland (DACH region) during the period 2002–2018. It aims to understand the overall effect of selloffs on shareholder wealth as well as the impact of important influencing factors.

Design/methodology/approach – This study is part of capital market studies which investigate shareholder wealth effects (abnormal returns) using event study methodology. To determine the significance of abnormal returns, a standardized cross-sectional test as suggested by Boehmer *et al.* (1991) was applied. The sample consists of 393 selloffs of publicly traded companies with a deal value of at least EUR 10m.

Findings – The findings confirm the overall positive impact of selloffs on shareholder wealth. The average abnormal return on the announcement day of the sample companies amounts to 1.33%. The type of buyer, the relative size of the transaction as well as the financial situation of the seller in particular seem to influence abnormal returns positively.

Originality/value – This study investigates shareholder wealth creation through selloffs in the DACH region, a largely neglected region in divestiture research, but now very relevant due to increasing pressure of active foreign investors. Sophisticated statistical methods were used to generate robust findings, which are in line with the results of similar studies for the US and the UK.

Keywords Divestitures, Selloffs, Shareholder wealth, Abnormal return, Event study methodology, DACH region

Paper type Research paper

1. Introduction

In recent years, corporate divestitures, which cover different forms such as selloffs, equity carve-outs or spinoffs, have become increasingly important as a means of corporate strategy. However, compared to mergers and acquisitions (M&A), they receive limited attention from academics and practitioners (Feldman and McGrath, 2016). The reason for this negligence might be the stigma associated with the divestment of a business, as divestitures are seen as signals of weakness or failure (Drankoff *et al.*, 2002). Further arguments against divestitures relate to the fear of decreasing economies of scale, acknowledging sunk costs, disadvantages concerning analyst coverage or damaged employee morale (Huyett and Koller, 2011). The underlying cause of this stigma relates to psychological biases, such as the sunk cost fallacy, which lead to unrealistic expectations about possible future performance improvements. As a consequence,



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managers often decide to divest an asset only if there is strong outside pressure due to heavy losses, high debt burdens, downgraded credit ratings or negative analyst comments (Drankoff *et al.*, 2002; Horn *et al.*, 2006). Hence, divestitures are mostly reactive rather than proactive and occur only rarely and often too late, which may again reinforce the abovementioned stigma.

Although this might be true in some cases, there are good reasons to consider divestitures as a viable strategic option rather than just an opportunistic action. A recent example was the divestment of Delivery Hero's German food delivery service to its Dutch competitor Takeaway for €0.9bn in 2018. Merging the food delivery operations of both companies in Germany should lead to substantial synergies, in which Delivery Hero shareholders participated through an attractive sales price. Another interesting example was the sale of several large German regional newspapers by Axel Springer Verlag to Funke Media Gruppe for €0.9bn in 2013. Axel Springer Verlag shareholders benefited because this allowed the company to strengthen its focus on digital media. When reviewing companies' publicly stated motives for voluntary corporate divestitures, e.g. divestments of noncore assets, underperformance of the divested assets or financing reasons, it appears that most should lead to shareholder wealth creation by improving the remaining businesses, reducing complexity and supporting growth. Involuntary divestitures, which are often triggered by regulatory issues or used as takeover defense, are generally considered as shareholder wealth destroying, but play only a small role. In fact, divestiture research, which so far mainly focused on the US and more recently the UK, shows that corporate divestitures on average create significant shareholder wealth. The average abnormal returns (ARs) of parent firms in selloff transactions are almost always positive and range between 0.20% (Brauer and Wiersema, 2012) and 3.55% (Hearth and Zaima, 1984) based on capital market studies that investigate the immediate announcement effects using event study methodology [1]. Similar results are reported for selloffs of UK companies (cf. Lasfer *et al.*, 1996; Wang, 2000; Alexandrou and Sudarsanam, 2001; Kaiser and Stouraitis, 2001; Gadad and Thomas, 2005; Cao *et al.*, 2008; Hillier *et al.*, 2009). However, divestiture research has been widely neglected in one of the most important economic regions in Europe, i.e. the DACH region, comprising Germany, Austria and Switzerland, which historically share close political and economic ties.

This research is motivated by several reasons: (1) There are only a few studies available for the DACH region, almost all using data from the 1990s and in many cases with relatively small sample sizes making generalizations difficult; (2) corporate divestitures became considerably more important after the German Government enacted in January 2002 a landmark tax reform package containing tax exemptions for capital gains related to the sale of shares in other companies and (3) especially during the past few years foreign financial investors put increasingly pressure on several traditional companies in the DACH region to increase shareholder wealth. A recent example is ThyssenKrupp. Financial investors pressured the company to restructure its operations and sell its elevator business (still in progress).

This study focuses on the most common form of divestitures, i.e. selloffs, defined as the sale of certain assets of a parent firm, such as subsidiaries, divisions, rights, plants, property or product lines, to third parties (cf. Alexander *et al.*, 1984) and is based on a large sample of new data covering the period 2002–2018. It answers the question to what extent divestitures in the DACH region impact shareholder wealth, which is especially important given the pressure from currently active financial investors. Furthermore, it helps managers to identify key value drivers to consider when making divestiture decisions.

2. Expected impact of corporate selloffs on shareholder wealth

2.1 Overall shareholder wealth creation

The basic principle behind the creation of shareholder wealth through divestitures is linked to the idea of the sum of the parts valuation. This concept suggests that the value of the whole

exceeds the aggregated value of the individual parts due to synergies and economies of scale. In the case of divestitures, however, it is argued that the so-called break-up value, i.e. the sum of the parts, exceeds the market value of the assets as a whole. This encourages firms to divest what would be worth more when sold individually than when retained within the company.

Such a situation occurs, for example, if not all business areas fit to the company's core competences, thus consuming resources that could be used more profitably in its core business. Furthermore, there could be a buyer that could utilize these resources more profitably and who is therefore willing to pay a purchase price that exceeds the value of the assets for the seller.

In addition, there are numerous other reasons why divestments can be beneficial for the seller's shareholder wealth such as selling underperforming or loss-making divisions, reducing agency costs, increasing transparency regarding the value of the individual assets or raising funds for investments which would be more expensive to raise via the capital market (cf. Kirchmaier, 2003; Sewing, 2010; Fischer *et al.*, 2013). Also, regulatory restrictions or sanctions for one business area that would negatively impact the entire company can be avoided.

Consequently, the first hypothesis covering the overall impact of divestments on shareholder wealth is formulated as below.

- H1.* Corporate selloffs of publicly traded companies headquartered in the DACH region on average create significant wealth for their shareholders.

In line with comparable studies, shareholder wealth creation is measured via ARs using event study methodology.

2.2 Factors influencing shareholder wealth creation

Aside from the overall effect, this study examines in particular the effect of a reallocation of a firm's resources to better performing business divisions and the participation of the shareholders of the seller in the value creation potential of the buyer. Based on a thorough literature review of empirical research for the US, the UK and the DACH region three hypotheses were formulated.

2.2.1 Increase in the corporate industrial focus. One of the most frequently announced reasons for divestitures is that the divested assets no longer belong to the company's core business and, hence, a divestment increases the corporate industrial focus. According to a study by Deloitte, 80% of the responding firms claimed that the disposal of noncore assets is their primary or secondary reason for a divestiture (Clark *et al.*, 2013).

The main approach to explain a positive effect on shareholder wealth related to the resource-based view. The resource-based view argues that firms with specific resources gain the highest returns when they transfer their excess resources to the markets close to the core business, whereas the average returns decline with an increasing degree of diversification. Hence, unrelated diversification seems to be particularly harmful for shareholder wealth. Diversification into related business fields, however, may create even more shareholder wealth compared to a very focused strategy. In this case firms can utilize the excess resources across several related businesses and earn extra returns (Wan *et al.*, 2011; Montgomery and Wernerfelt, 1988).

Based on this theory, divestitures of noncore assets can help to avoid over- or unrelated diversification and free-up resources for investments in core or related businesses. Furthermore, negative synergies between different divisions as well as the misallocation of capital through internal capital markets decrease and efficiency increases.

The overwhelming majority of previous studies report findings that are in line with the explanations above and attribute a positive effect of selling unrelated assets on

announcement returns (c.f. Afshar *et al.*, 1992; John and Ofek, 1995; Kaiser and Stouraitis, 1995; Datta and Iskandar-Datta, 1996; Daley *et al.*, 1997; Desai and Jain, 1999; Löffler, 2001; Bergh *et al.*, 2008; Coakley *et al.*, 2008; Chen and Feldman, 2018). However, there are also a few researchers who find no evidence for a positive effect, for example Wang (2000); Alexandrou and Sudarsanam (2001); Eichinger (2001); Clayton and Reisel (2013); Hege *et al.* (2018) and Finlay *et al.* (2018). Bartsch (2005) and Bergh *et al.* (2019) even find a negative relationship.

In line with the resource-based view, divesting noncore assets is expected to have a significant positive effect on shareholder wealth creation from corporate selloffs in the DACH region.

H2. The disposal of noncore assets on average has a significantly positive effect on shareholder wealth creation from corporate selloffs.

In order to operationalize the divestiture of noncore assets in terms of an increase in corporate industrial focus, the authors consider selloffs as increasing industrial focus if the sold-off unit's two-digit SIC code differs from the parent's primary two-digit SIC code. Focusing on the two-digit SIC code (instead of the four-digit SIC code) ensures that only selloffs of assets unrelated to the core business are classified as increasing focus. This approach corresponds to previous research (cf. John and Ofek, 1995; Daley *et al.*, 1997; Desai and Jain, 1999; Brauer and Wiersema, 2012; Vollmar, 2014; Finlay *et al.*, 2018; Chen and Feldman, 2018).

2.2.2 Participation in buyer's value creation potential. Beyond the expected positive effects of an increase in the corporate industrial focus, shareholder wealth creation in divestiture transactions can be positively influenced if the parent firm is able to participate in the value creation potential of the buyer. The expected positive effects can be explained with two key factors, which are partially related: (1) a strategic fit between the asset sold and the buyer and (2) the type of buyer.

2.2.2.1 Strategic fit between asset sold and buyer. Positive shareholder wealth effects may, for instance, emerge if the disposed asset was poorly managed by the seller and has a better strategic fit in the organization of the buyer, if the buyer has a "superior organizational form", or if the buyer has a comparative advantage in running the asset due to synergies with the buyer's other assets. In this way, a part of those value gains can be captured by the seller via premiums on the transaction price (John and Ofek, 1995). Hence the seller participates in the value creation potential of the asset sold because it is more valuable to the new owner. Similarly, Clubb and Stouraitis (2002) state that there is a very strong impact on ARs due to the profitability of the sale, which is defined as the difference between transaction price and value-in-use of the asset for the seller. As explained, this difference is mainly the result of a good strategic fit and synergies between the asset sold and the buyer. However, there may be also the possibility of an overpayment by the buyer due to large free cash flows in combination with low growth opportunities (cf. John and Ofek, 1995).

2.2.2.2 Type of buyer. Whereas the argumentation regarding strategic fit is generally accepted, there are contrasting arguments as to whether a financial or a strategic buyer should be preferred in terms of shareholder wealth maximization. On the one hand, John and Ofek (1995) and more recently Hege *et al.* (2018) would expect ARs to be higher if the buyer is a leveraged buyout group, because it can improve the performance of the divested asset due to better corporate governance structures, better managerial and restructuring capabilities that are difficult to replicate for strategic buyers, as well as more aggressive incentives. Similar to the strategic fit, the efficiency gains may be shared with the seller. Ostrowski (2007) would also expect a positive effect in the case of a financial buyer. However, she argues that in general the greater financial resources of financial buyers mean they can often outbid strategic buyers. On the other hand, Stienemann (2003) and Bartsch (2005) argue that only strategic buyers can realize synergies and thereby increase the value of the asset sold, which correlates with the strategic fit argument presented above. Since financial investors tend to

search for undervalued assets on the basis of superior information, which indicates low interest from strategic buyers and consequently weak seller bargaining power, the authors expect a low acquisition price in the case of a financial buyer and consequently lower ARs. Hence, they do not follow the argumentation by John and Ofek (1995) and Hege *et al.* (2018), but, like Stienemann (2003) and Bartsch (2005), expect the positive effect of potential synergies to outweigh the advantage of the financial strength of financial investors.

The discussion above leads to the following assumptions: first, the strategic fit between the asset sold and the buyer's core business should play an important role in explaining ARs. Second, selloffs to strategic investors should lead to higher ARs than selloffs to financial investors as only strategic investors are able to develop substantial synergies based on the cooperation between business divisions.

- H3a.* The industrial relatedness between the buyer and the asset sold has a significantly positive impact on shareholder wealth creation.
- H3b.* Selloffs to strategic investors create significantly more shareholder wealth than selloffs to private equity investors.

The strategic fit between the divested asset and the buyer is determined through the asset's and buyer's four-digit SIC codes. The classification of whether a buyer is strategic or financial is determined manually by the authors based on the announcement information.

2.2.3 Control variables. *2.2.3.1 Relative size.* The relative size of a divestiture, which is measured as the transaction value in relation to the market value of the seller, shows a significant positive impact on ARs in a variety of empirical studies (cf. Hearsh and Zaima, 1984; Afshar *et al.*, 1992; Lasfer *et al.*, 1996; Mulherin and Boone, 2000; Wang, 2000; Alexandrou and Sudarsanam, 2001; Kaiser and Stouraitis, 2001; Mittnacht, 2005; Nguyen, 2016; Finlay *et al.*, 2018; Humphery-Jenner *et al.*, 2019). The reason for the positive influence of the relative size on ARs goes hand in hand with the generally expected positive overall performance. According to Mittnacht (2005), the positive effects of the divestiture purpose, e.g. an increase in corporate focus, should increase in magnitude as the relative size of the transaction increases. Thus, the relative size can also serve as a proxy for the degree of restructuring (Kaiser and Stouraitis, 2001).

The relative size of the divested unit is calculated as proportion of the transaction price in relation to the market capitalization of the seller 10 trading days prior to the divestiture announcement. This approach helps to obtain a relatively accurate estimate of the market capitalization of the seller at the announcement, while avoiding that the market capitalization is influenced by the event itself.

2.2.3.2 Current financial condition and outlook. As comparable studies show, the financial situation of the divesting firm plays a role in explaining ARs as well. However, the results – even when applying the same proxies – vary between the studies (cf. Wang, 2000; Stienemann, 2003; Bartsch, 2005) and range from a significant positive impact to a significant negative impact. There are two contrasting views on the impact of the financial situation on announcement returns. Some authors, such as Hearsh and Zaima (1984), argue that a seller in a good financial situation should earn higher on ARs as the seller has a better negotiating position with no direct pressure to sell the assets. Therefore, higher prices can be negotiated. Sicherman and Pettway (1992), Kaiser and Stouraitis (2001); Wang (2000) and Stienemann (2003) argue in a similar manner. Wang (2000) describes divestitures in a good financial situation as restructuring for strategic reasons, which should provoke a more positive reaction in the capital market compared to reactive divestitures. However, Sicherman and Pettway (1992) add that in the case of a divestiture under financial distress, capital markets may still react positively as it may generate desperately needed cash to reduce the probability of default, which would have been very costly to raise through the capital market. Afshar *et al.* (1992) present a similar view. However, they add

that selloffs due to a weak financial situation could also be seen as a “harbinger of doom”, which could lead to a negative reaction. Also, Nguyen (2016) expects a weak financial situation, measured by a poor stock performance, to positively influence ARs as the divestiture may allow to realize the optimal value of the divested business.

An often applied proxy for the financial condition of the seller is the S&P rating (cf. Hearth and Zaima, 1984; Rosenfeld, 1984). Since the S&P rating in particular is oriented toward the past, the authors refrain from using this proxy. Instead, they apply two different proxies to capture the financial condition of the seller. First, the stock performance of the seller during the estimation period is used to capture the performance prospects of the seller. It is measured via the buy-and-hold return of the seller over the estimation period. Second, the seller’s return on assets accounts for the current profitability of the seller. The return on assets is the favored substitute for profitability because it is less sensitive to the capital structure of the seller compared to other financial ratios (cf. Vollmar, 2014).

3. Research methodology and sample data

3.1 Methodology

3.1.1 Event studies. As in comparable studies, the authors use event study methodology to assess the shareholder wealth effects. Event study methodology assumes efficient capital markets in the semi-strong form, which means that security prices at any time fully reflect all obviously publicly available information (c.f. Fama, 1970). Hence, since all available information in the public domain is reflected in the share prices, investors cannot gain an AR over the market return. When a corporate event is made public, e.g. a selloff, new information becomes available, which is at that point not considered in the share prices. Based on the substance of the new information, investors are expected to change their valuation. As a consequence, prices quickly adjust to the new expectations. Then an AR, which is defined as the difference between the expected return based on the publicly available information before the announcement and the actual return through the adjustment of the prices to the new information, exists until the market reaches equilibrium again. This AR can be considered as the shareholder wealth that is created or destroyed through the divestiture. The AR is defined as:

$$\varepsilon_{i,t} = R_{i,t} - E(R_{i,t}|X_t), \quad (1)$$

where $\varepsilon_{i,t}$ is the AR of security i for the period t , $R_{i,t}$ is the actual return of security i for the period t and $E(R_{i,t}|X_t)$ is the normal return that would have been expected based on the information available before the announcement of the event X_t .

For the purpose of this article, the market model is used for the estimation of the expected normal return, which corresponds to the widely accepted standard in divestiture research [2]. The market model “[. . .] relates the return of any given security to the return of the market portfolio [. . .]” (Campbell *et al.*, 1997, p. 155) and is defined as:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t} \quad (2)$$

with

$$E[\varepsilon_{i,t}] = 0 \text{ and } \text{Var}[\varepsilon_{i,t}] = \sigma_{\varepsilon_i}^2$$

where $R_{i,t}$ is the return of security i in the period t , $R_{m,t}$ is the return of the market portfolio in the period t and $\varepsilon_{i,t}$ is the AR. α_i and β_i as well as the variance of the AR $\sigma_{\varepsilon_i}^2$ are the parameters of the market model.

As in comparable studies, the parameters of the market model are estimated using an ordinary least square (OLS) regression over an estimation period of 200 trading day

immediately preceding the event window (Figure 1). This ensures that estimation errors are reduced to a minimum while still covering recent parameter changes and ensuring that there is no overlap with the event window to prevent the event from affecting the estimated market model parameters themselves. The regressor is given by the market return.

In contrast to many prior studies, the market return is represented by an industry index related to the divesting firm in order to increase the explanatory power of the market model. For this purpose, the STOXX[®] Europe 600 supersector indices are utilized, which use the Industry Classification Benchmark for the classification of companies. Due to their presumed characteristics regarding normal distribution, logarithmized daily returns are applied. Moreover, logarithmized returns can be aggregated more easily than discrete returns and provide some additional benefits, e.g. regarding the homoscedasticity assumption of the residuals.

The market model defines the AR of an individual security on a single day t as:

$$AR_{i,t} = \varepsilon_{i,t} = R_{i,t} - E(R_{i,t}|X_t) = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i R_{m,t}), \quad (3)$$

where X_t (as the conditioning information for the expected return) is the market return and the other parameters are defined as before. To draw conclusions from the observations, the (single) ARs must be aggregated (1) through time and (2) across the cases investigated (Campbell *et al.*, 1997).

3.1.1.1 Aggregation through time. To capture the full effect of the announcement of a divestiture, the trading days before and following the announcement are included in the calculation of the ARs. This corresponds to earlier research studies, which were mostly based on event windows of two $([-1;0], [0;1])$ or three $([-1;1])$ days surrounding the announcement date. The reason for covering the day before the announcement is to include potential ARs through information leakages. The day after the announcement is covered since in many cases it is not clear whether the announcement took place during the day or after the closing of the stock market and to capture a potential overreaction on the announcement day. The cumulative abnormal return (CAR) over the respective event window is defined as:

$$CAR_{i,(T_2, T_3)} = \sum_{t=T_2}^{T_3} AR_{i,t}. \quad (4)$$

3.1.1.2 Aggregation across cases. In order to draw inferences for the whole sample, the ARs must be averaged. This occurs by assuming an equally weighted portfolio of divesting firms on the respective day of interest. Thus, the formula for the average abnormal return (AAR) is:

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{i,t}, \quad (5)$$

where N represents the sample size and the other terms are defined as before. The cumulative average abnormal return (CAAR), which is of primary interest for this research, is defined as:

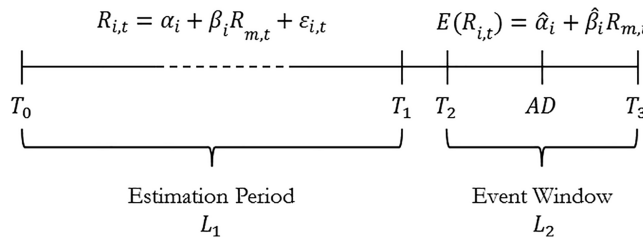


Figure 1.
Estimation period and
event window

$$CAAR_{(T_2, T_3)} = \frac{1}{N} \sum_{i=1}^N CAR_i. \quad (6)$$

3.1.2 Univariate tests. In order to test for the significance of the ARs (H1), the null hypothesis H_0 rejects the existence of ARs within the respective event window. As, for the purpose of this research, the CAAR (cross-sectional) is of interest, the authors tests that the CAAR over the entire sample is significantly positive. This leads to the following hypotheses:

$$H_0 : CAAR_{(T_2, T_3)} = 0$$

$$H_1 : CAAR_{(T_2, T_3)} > 0$$

In order to apply parametric tests on the CAAR, for small samples, the ARs must be independently and identically distributed (iid) as normal. As the distribution of AARs over the entire sample should converge to normality with an increasing sample size (cf. Brown and Warner, 1985), a possible violation of the normality assumption does not pose a problem. Whereas for a sample size of 5, Brown and Warner (1985) observe a distinct deviation from normality, they confirm their statement regarding the normality assumption for a sample size of 50 securities. Hence, they conclude that parametric tests for the significance of the AARs are well specified.

To test for the significance of the ARs, the authors apply the “standardized cross-sectional test” as introduced by Boehmer *et al.* (1991). This test standardizes the ARs by adjusting the standard error by the forecast error. The test statistic under the standardized cross-sectional test is explained in the appendix.

3.1.3 Multivariate tests. After generating the dependent variable for the research, i.e. the CAAR that addresses whether selloffs on average create shareholder wealth, the second step analyses which factors influence this shareholder wealth creation. For this purpose, the authors use a cross-sectional multiple regression, where qualitative variables such as an increase in the corporate industrial focus are included as dummy variables in the model. The advantage of a multiple regression over simple bivariate models is that it allows to control for factors that simultaneously influence the dependent variable, thus providing more reliable results. It also has the advantage that a larger portion of the variation in the ARs can be explained. As in the case of the univariate tests, the standardized ARs are used as the dependent variable to account for event-induced variance increases. The parameters of the regression are estimated using OLS method.

3.2 Sample and data

3.2.1 Sample selection. The sample comprises 393 selloffs announced by German, Austrian and Swiss publicly listed companies between January 2002 and December 2018. The sample was drawn from the SDC Platinum M&A database. The initial sample was reduced from 7,111 to 393 cases after screening, as described below.

- (1) Following Fama and French (1992), financial firms were excluded from the sample because the leverage for these firms may have a different meaning as for nonfinancial firms. This procedure is in line with common research practice and ensures comparability with peer studies.
- (2) The deal value had to be at least EUR 10m.
- (3) Announcement dates obtained from SDC Platinum were cross-checked with press reports, ad-hoc releases and the Bloomberg Corporate Action Calendar to obtain the initial formal announcement. Cases with ambiguous announcement dates were excluded from the sample.

- (4) The Bloomberg Corporate Action Calendar was checked for confounding announcements within the window of five trading days surrounding the initial announcement. Cases with confounding news were excluded.
- (5) Cases with no or insufficient market data (e.g. due to thin-trading) were excluded.

3.2.2 Data collection. The data were collected from several sources. Individual deal characteristics such as the deal value or motive were obtained from the SDC Platinum database and – if necessary – validated or amended by company press releases, ad-hoc messages, news articles or the Bloomberg Corporate Action Calendar. Market data as daily share prices were obtained from Datastream. Further information, such as seller SIC codes, was gathered from the Thomson Financial database. Accounting data like the income statement, profitability ratios, cash-flow statements or the balance sheet were obtained from Worldscope.

3.2.3 Variable description. Table 1 describes the variables used in this research.

The variable I_FOCUS (H2) is a dummy variable that takes the value one if a company sells a noncore asset and thus, increases its corporate industrial focus through the divestiture, and zero otherwise. In the underlying sample, a noncore asset is sold in almost 50% of the cases. The variable FIT (H3a) is also a dummy variable and takes the value one if a noncore asset of the seller is bought by a buyer for whom the asset belongs to the core business based on the two companies' SIC codes. This is the case in 44 of 393 divestiture cases. The variable STRATEGIC (H3b) indicates a strategic buyer, which constitute the majority of the sample. In only 89 of the 393 cases, the respective asset is sold to a financial buyer. Our measure for the relative size of the deal is represented by the dummy variables SMALL (deal value between 0% and 10% of the seller's market capitalization), MEDIUM (10% – 50%) and LARGE (from 50% upward). The distribution of the divestiture cases is clearly skewed toward small divestitures with a share of 66%. A positive stock performance in the estimation window is indicated by the variable STOCK (60% of the cases); variable ROA represents the seller's profitability as its return on assets which averages 6.63%.

4. Empirical results

4.1 Positive overall effect of corporate divestitures on shareholder wealth

The event study results show that, in line with the expectations formulated in H1, corporate selloffs of companies located in the DACH region create significant shareholder wealth. With an AAR of 1.33% on the announcement day, the effect is not particularly large, but still significantly positive. Also, the proportion of divestitures with a positive AR is significantly positive with about 60%, as well as the absolute AAR with nearly EUR 70m. The median is

Variable	N	Mean	Median	Std. Dev	Percentiles	
					25%	75%
I_FOCUS	393	0.50	0	0.50	0	1
FIT	393	0.11	0	0.32	0	0
STRATEGIC	393	0.77	1	0.42	1	1
SMALL	393	0.66	1	0.48	0	1
MEDIUM	393	0.21	0	0.41	0	0
LARGE	393	0.13	0	0.34	0	0
STOCK	393	0.60	1	0.49	0	1
ROA	379	6.63	4.72	14.32	1.83	8.44

Note(s): Return on assets in %

Table 1.
Variable description

about 0.40%. Table 2 summarizes the results for the announcement day and three additional event windows, which include the day before and after the announcement.

Furthermore, an extended event window, containing the 21 trading days surrounding the announcement, reveals that a noticeable AAR can only be observed at the immediate announcement, which supports the assumption of efficient capital markets in the semi-strong form. In addition, it becomes apparent that the announcement effects are sustainable and are not lost in the following days (Figure 2).

4.2 No clear evidence for impact of focus hypothesis

The theoretical reasoning for an expected positive effect for the disposal of noncore assets as formulated in hypothesis two cannot be clearly proven. Even though the results of the multivariate regression (Table 3) show a positive effect for focus-increasing divestitures, the effect is only significant for the [-1;1] event window. This finding is in line with recent US and UK studies, which – in comparison to previous studies – could not prove a positive effect. Similar results were observed for the DACH region.

A possible explanation for this result could be the increasing importance of shareholder value thinking since the mid-1990s when some companies started to rethink their business structure and began to focus on more narrowly defined core businesses. This might cause less pronounced effects for further (minor) increases in focus. In line with the resource-based view,

Event window	CAAR	SCAAR ¹	Absolute CAAR	Proportion positive CARs
[0]	1.33***	0.68***	68.67***	61.83***
[-1;0]	1.36***	0.51***	79.14**	58.02***
[-1;1]	1.59***	0.47***	63.46**	59.03***
[0;1]	1.56***	0.55***	52.99**	60.05***

Note(s): CAAR and proportion of positive CARs in %; Absolute CAAR in EUR 1,000,000
 N = 393; *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively, based on a right-tailed cross-sectional test for CAAR and absolute CAAR, a right-tailed standardized cross-sectional test for SCAAR and a right-tailed Fisher's exact test for the proportion of positive abnormal returns
¹Standardized cumulative average abnormal return as explained in the appendix

Table 2.
Event period average abnormal returns

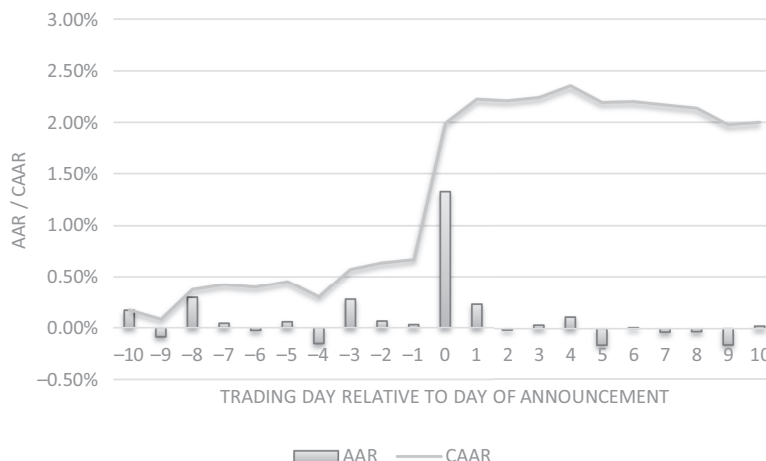


Figure 2.
Event period daily and cumulative average abnormal returns

the key issue, however, presumably relates to the financial resources freed-up through the divestiture and how these resources are used to contribute to wealth creation, regardless of whether a core business or a noncore business was divested.

4.3 Positive impact of strategic buyers

With regard to the theoretical reasoning for a potential participation of the seller in the value creation potential of the buyer, the empirical results (Table 3) do not unambiguously support the earlier considerations formulated in hypotheses 3a and 3b. The effect of the sale of an asset, which is unrelated to the core business of the seller but would fit to the core business of the buyer, is only insignificantly higher compared to other constellations [3]. However, the announcement effects are in all event windows significantly higher for sales to strategic investors compared to financial buyers. Hence, the results indicate that the type of buyer is more important regarding a possible participation in the value creation potential of the buyer than the strategic fit.

The finding of a significant better performance of sales to strategic compared to financial investors is in line with the expectations of the authors, since strategic investors should be able to exploit substantial more synergies than financial investors, which justifies paying a higher price for the assets.

4.4 Relative size of the divestiture as key driver of wealth creation

The relative size of the divestiture has a major impact on ARs, which corresponds to previous research. The regression (Table 3) reports significantly higher ARs for both, medium and large divestitures compared to small divestitures in all event windows. For small divestitures, i.e. divestitures with a transaction value up to 10% of the market capitalization of the seller, the announcement effect averages at just 0.32%. For the event windows including the day before and the day after the announcement, the effect is partly insignificant. By contrast, divestitures of medium size, i.e. with a relative size up to 50% of the market capitalization of the seller, show significantly higher ARs, averaging 1.97%, and large divestitures (>50%) even higher with 5.33%. Figure 3 shows the significant impact of the relative size of the transaction on ARs.

The observed effect of the relative size on announcement effects seems logical, as the sale of some minor assets is presumably only under certain circumstances able to influence the share price of the seller, for example in the case of a sale of a small entity producing heavy

	SAAR [0]	SCAAR [-1;0]	SCAAR [0;1]	SCAAR [-1;1]
I_FOCUS	0.032 (0.183)	0.220 (0.153)	0.157 (0.160)	0.290* (0.148)
STRATEGIC	0.632*** (0.230)	0.469** (0.186)	0.316* (0.184)	0.276* (0.163)
FIT	0.360 (0.411)	0.120 (0.320)	0.259 (0.352)	0.103 (0.317)
MEDIUM	0.698*** (0.246)	0.517** (0.201)	0.604*** (0.201)	0.510*** (0.181)
LARGE	2.238*** (0.553)	1.648*** (0.413)	1.732*** (0.512)	1.464*** (0.427)
ROA	0.034** (0.013)	0.025** (0.010)	0.022*** (0.007)	0.019*** (0.006)
STOCK	-0.673*** (0.202)	-0.566*** (0.165)	-0.416** (0.171)	-0.413*** (0.155)
Cons	-0.055 (0.226)	-0.057 (0.191)	-0.002 (0.210)	-0.413 (0.188)
F-Statistic	6.69***	6.90***	7.33***	7.11***
R ²	0.260	0.227	0.197	0.186
Observations	371	371	371	371

Note(s): SMALL deals omitted

*, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively. Robust standard errors in parentheses

Table 3.
Multiple regression of
abnormal returns on
investigated factors

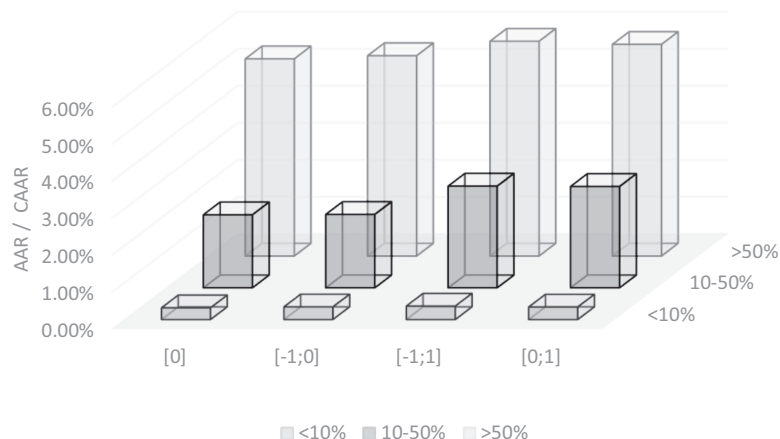


Figure 3.
Average abnormal
returns by relative size
of the deal

losses. In contrast, large divestitures can impact the share price substantially. Consequently, companies should handle divestitures courageously – the larger the transaction, the larger the effect on shareholder wealth.

The results regarding the financial situation of the seller are somewhat ambiguous. On the one hand, as expected, sellers that can act from a strong position capture higher ARs than less profitable sellers. On the other hand, sellers with a negative buy-and-hold return in the estimation window capture higher ARs than sellers with a positive stock performance, which was not expected by the authors. Combining these findings, ARs seem to be highest, if the performance prospects for the seller worsen and corporate action is needed, but the seller can still act from a position of strength and take a strong negotiating position.

5. Conclusions

The findings of this research for the DACH region show that most selloffs increase shareholder wealth. When looking at the origins of the wealth effects, this study indicates that the relative size of the transaction as well as the financial situation of the seller are particularly important factors. Furthermore, the results of the analysis reveal that the sale to strategic investors leads to higher announcement effects than the sale to financial investors, which makes sense in regard to the possibility of creating synergies. The hypotheses regarding the influence of the sale of noncore assets as well as a strategic fit between the asset sold and the buyer can, however, not be clearly substantiated by the quantitative analysis.

In terms of practical recommendations managers considering a divestment should show courage and not be afraid of selling relatively large business units because the ARs are positively related to the deal value in relation to the market value of the seller. Furthermore, managers should not wait too long with divestments and initiate divestments when performance prospects start to worsen, but they can still act from a position of strength. Such an approach would also allow them to search for a suitable strategic buyer. Following these recommendations can influence announcement returns positively as both, courage and a strong negotiating position are rewarded by the market.

Regarding this research several limitations must be considered. First, event study methodology assumes efficient capital markets in the semi-strong form. Since there may be occasional exceptions from capital market efficiency, certain individual cases might be misleading. However, the results regarding the overall sample should be robust. Second, in

order to gain stronger statements about the origins of the shareholder wealth effects, better information would also improve the quality of the results. This would require an ongoing data collection as well as access to additional private information (beyond publicly announced data) instead of relying on often incomplete, ex-post financial database-recorded information. Especially the second point, i.e. improved information, could be very beneficial for future research. Better proxies for the circumstances of the divestiture, e.g. the financial situation of the seller, the use of proceeds, but also economy-wide or industry-related factors, are likely to enhance the explanatory power of the research results.

Notes

1. Using event study methodology, divestiture performance is defined as the net change in shareholder wealth, i.e. the change in share prices during a specific event window surrounding the divestiture announcement that exceeds the expected return without the divestiture announcement (abnormal return). The expected return is estimated using statistical or economic models. Usually, a short-term event window of a few days surrounding the immediate announcement day is applied to isolate the divestiture event from other unrelated events.
2. Following this approach ensures the comparability of our research results with earlier studies in this field, which almost without exception have used the market model.
3. Other constellations include: (1) the asset fits to the core business of seller and buyer, (2) the asset fits to the core business of the seller but not to the core business of the buyer, (3) the asset neither fits to the core business of the seller nor to the core business of the buyer.

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Test statistic under the standardized cross-sectional test

Under the standardized cross-sectional test, the test statistic for $H_0 : AAR_t = 0$ is denoted by z_{BMP} (BMP stands for the authors Boehmer, Musumeci and Poulsen) and is defined as:

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$$z_{BMP_t} = \frac{SAAR_t}{S_{SAAR_t}} \sqrt{N}, \quad (7)$$

with:

$$SAAR_t = \frac{1}{N} \sum_{i=1}^N SAR_{i,t}. \quad (8)$$

The standardized abnormal return of company i at time t ($SAR_{i,t}$) is defined, as in Patell (1976), by:

$$SAR_{i,t} = \frac{AR_{i,t}}{S_{AR_{i,t}}} \quad (9)$$

with forecast error corrected standard error:

$$S_{AR_{i,t}}^2 = S_{AR_i}^2 \left(1 + \frac{1}{L_1} + \frac{(R_{m,t} - \bar{R}_m)^2}{\sum_{t=T_0}^{T_1} (R_{m,t} - \bar{R}_m)^2} \right). \quad (10)$$

The standard deviation S_{SAAR_t} is defined as in Boehmer *et al.* (1991) with:

$$S_{SAAR_t}^2 = \frac{1}{N-1} \sum_{i=1}^N \left(SAR_{i,t} - \frac{1}{N} \sum_{i=1}^N SAR_{i,t} \right)^2. \quad (11)$$

For $H_0 : CAAR = 0$, the test statistic reads as follows:

$$z_{BMP} = \frac{SCAAR}{S_{SCAAR}} \sqrt{N} \quad (12)$$

with:

$$SCAAR = \frac{1}{N} \sum_{i=1}^N SCAR_i. \quad (13)$$

The standardized cumulative abnormal return of company i ($SCAR_i$) is given by:

$$SCAR_i = \frac{CAR_i}{S_{CAR_i}} \quad (14)$$

and forecast error corrected standard deviation S_{CAR_i} , which corrects the abnormal returns of the individual companies for serial correlation, defined as in Mikkelsen and Partch (1988), with:

$$S_{CAR_i}^2 = S_{AR_i}^2 \left(L_2 + \frac{L_2^2}{M_i} + \frac{\left(\sum_{t=T_2}^{T_3} (R_{m,t} - \bar{R}_m) \right)^2}{\sum_{t=T_0}^{T_1} (R_{m,t} - \bar{R}_m)^2} \right). \quad (15)$$

The standard deviation S_{SCAAR} is defined as:

$$S_{SCAAR}^2 = \frac{1}{N-1} \sum_{i=1}^N (SCAR_i - SCAAR)^2. \quad (16)$$

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Discount models in intertemporal choice: an empirical analysis

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Abstract

Purpose – The main purpose of this paper is to determine the discount function which better fits the individuals' preferences through the empirical analysis of the different functions used in the field of intertemporal choice.

Design/methodology/approach – After an in-depth revision of the existing literature and unlike most studies which only focus on exponential and hyperbolic discounting, this manuscript compares the adjustment of data to six different discount functions. To do this, the analysis is based on the usual statistical methods, and the non-linear least squares regression, through the algorithm of Gauss-Newton, in order to estimate the models' parameters; finally, the AICc method is used to compare the significance of the six proposed models.

Findings – This paper shows that the so-called q -exponential function deformed by the amount is the model which better explains the individuals' preferences on both delayed gains and losses. To the extent of the authors' knowledge, this is the first time that a function different from the general hyperbola fits better to the individuals' preferences.

Originality/value – This paper contributes to the search of an alternative model able to explain the individual behavior in a more realistic way.

Keywords Intertemporal choice, Discounted utility model, Discount function, Preferences, Empirical analysis

Paper type Research paper

1. Introduction

Intertemporal choice refers to the process whereby people make their decisions at different moments of time. Traditionally, it has been based on the Discount Utility model (hereinafter, DU model) introduced by Samuelson (1937) as normative model. This model is mainly characterized for discounting the future incomes by using a constant discount rate and is represented in the following way:

$$U_0 = \sum_{t=0}^T \delta^t u_t.$$

where U_0 is the present value of all outcomes, u_t is the utility of the outcome available at time t , and δ is the discount factor, whose value is supposed to be between 0 and 1, which corresponds to a positive time preference, that is to say, a preference for immediate outcomes.

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This model was labeled as “normative” thanks to the strong support received from economists mainly due to its simplicity and similarity to the discount function used in the banking practice. Nevertheless, the success of the DU model was not accompanied by empirical evidence and, moreover, some anomalies or paradoxes describing individuals’ behaviors against the axioms proposed by such model, were appearing. Thaler (1981), awarded the Nobel Prize in Economics 2017, was the first author in showing the existence of the so-called delay, magnitude and sign effects. Later, Loewenstein and Thaler (1989) conducted an empirical study which additionally showed other two anomalies of the DU model: the delay-speedup asymmetry and the sequence effect.

With the aim to explain the aforementioned anomalies, in the last decades, there have arisen a series of researches which present some models alternative to the exponential discounting initially proposed by Samuelson (1937) ($V(x, t) = x\delta^t$, where $0 < \delta < 1$). Firstly, Loewenstein and Prelec (1992) proposed the hyperbolic model ($V(x, t) = x(1 + \alpha t)^{-\beta/\alpha}$, where $\alpha, \beta > 0$) which allows explaining the decreasing discount rate over time and the preference reversals [1], but not the rest of anomalies. Moreover, it has a disadvantage since it diverges for infinite series whilst the exponential model converges. Subsequently and as a generalization of the hyperbolic model, the general hyperbola or the hyperbolic model with exponent s was introduced by Myerson and Green (1995) ($V(x, t) = x/(1 + it)^s$, for $s > 0$), where s is a factor which measures the sensibility towards the delay. Recently, Cajueiro (2006) proposed the q -exponential model which is an extension of the general hyperbola and measures the dynamic inconsistency through the parameter q ($V(x, t) = x/[1 + (1 - q)kt]^{1/(1-q)}$, where $0 < q < 1$ and $k > 0$). Han and Takahashi (2012) demonstrate that the q -exponential discount function can be also obtained by assuming that people’s psychological time follows the Weber-Fechner law. In other words, the deformation of the exponential discount function by the nonlinear time perception, $\tau(t) = \alpha \ln(1 + bt)$, gives rise to the so-called generalized hyperbolic discounting, which is equivalent to the q -exponential discounting. All these discount functions can explain one of the main anomalies of the traditional discount model: the delay effect [2].

In addition to these two types of functions, we can find other models which arise as a generalization of the exponential model. This is the case of the quasi-hyperbolic model which incorporates into the exponential model a parameter which allows to explain the present-bias [3] (Laibson, 1997) ($V(x, t) = x\beta\delta^t$, where $0 < \beta, \delta < 1$, in discrete time) This model is a mixture between the hyperbolic model and the exponential one and, like the first one, explains the present-bias and the dynamic inconsistency, but cannot explain the decrease of the discount rate with respect to time. Moreover, like the exponential discounting, it converges over infinite series. Another case of generalization is the exponential model deformed by a power of the amount, presented by Noor (2011), which explains the magnitude effect [4]. His model is a non-separable version of the exponential discount model, so that the discount rate depends on the amount ($V(x, t) = x\delta^t/x^\alpha$, for $0 < \delta < 1$ and $\alpha > 0$).

On the other hand, we can find other models able to explain both the delay and the magnitude effects. This is the case of the hyperbolic function deformed by the amount, based on Noor (2011) ($V(x, t) = x/(1 + ktx^\alpha)$, being $k > 0$ and $\alpha < 0$) and proposed by Parra Oller (2018). In this group of functions, we can also include the q -exponential model deformed by the amount proposed by Cruz Rambaud *et al.* (2018), which uses the same methodology that in the former works ($V(x, t) = x/[1 + (1 - q)ktx^\alpha]^{1/(1-q)}$ being $q \neq 1, k > 0$ and $\alpha \in (-\infty, +\infty)$).

The main objective of this manuscript is to estimate the parameters of the models presented previously and to compare their significance. In this way, we could know the discount function which better fits the individuals’ behavior. To achieve this objective, we will carry out an experiment from which we will obtain the data necessary for the implementation of the statistical analysis.

The organization of this paper is the following. First, in Section 2, we will review those works which analyze the validity of the discount functions and compare their results. Later, in Section 3, we will analyze the statistical methodology used in previous works for such a purpose. In Section 4, we will describe how the experiment was carried out, showing the type of questionnaires, rewards and samples. Likewise, we will present the discount functions to be tested and the statistical methodology to be used. In Section 5, we will show the results obtained from the statistical analysis, and, in Section 6, we will discuss the results derived from our study with respect to those formerly obtained by other researchers. Finally, Section 7 summarizes and concludes.

2. Literature review

Kirby and Maraković (1995) were some of the first scholars in comparing the efficiency of the exponential and hyperbolic discount functions. Unlike other works, these authors carried out a comparison of the discount rates obtained with several amounts so avoiding the limitation that the discount rate is independent of the reward's amount. They conducted this comparison in scenarios of both real and hypothetical choices, and the results revealed a significant difference between these functions. Specifically, the hyperbolic function explained better the decision process for the majority of individuals and it adjusted better than the exponential one to most of the involved amounts.

Likewise, Myerson and Green (1995) analyzed the discount function which better explained the individuals' decision making. The results revealed that the hyperbolic function contributed a more realistic explanation of individuals' choice than the exponential one. Similarly, when a parameter s was included, the generalized hyperbolic function exhibited a better fit ($V(x, t) = (x - s)e^{-kt} + s$ vs $V(x, t) = x(1 + kt)^s$). In addition, if the discount rate is dependent on the amount in the latter function, the adjustment was even better ($V(x, t) = x/[1 + (k' + \alpha\Delta k)t]^s$). The variation of the parameter s with respect to amount, however, did not improve the explanatory capacity of the hyperbolic function ($V(x, t) = x/[1 + (k' + \alpha\Delta k)t]^{s + \Delta s}$).

On the other hand, Green *et al.* (1997) and Madden *et al.* (2003) demonstrated that the hyperbolic function explained (R^2) a proportion of the variance greater than the exponential one. This is because the exponential function tends to overestimate the subjective value of those rewards delayed for brief time periods whilst it underestimates such value for longer time periods.

The hyperbolic function described properly the discounting of delayed rewards from different groups of people with some type of addiction (alcohol, tobacco or heroine) or not, and in different choice domains (money, alcohol or heroine) (Petry, 2001; Giordano *et al.*, 2002; Johnson *et al.*, 2007). Likewise, this function explained both choices by using real and hypothetical rewards, and fits the data obtained from "matching" questionnaires better than other types of survey (Hardisty *et al.*, 2013).

On the other hand, Smith and Hantula (2008) showed that the hyperbolic function explained the individual preferences better than the exponential one by using different procedures (choice-based and matching) and different formats (paper and computer-based) of questionnaires.

With respect to the hyperbolic discounting with exponent s , this discount function presented a good fit both in intertemporal choice and in choice under uncertainty (Myerson *et al.*, 2003; Ostaszewski and Karzel, 2002), in delay and speed-up scenarios (Grace and McLean, 2005), and for different domains (health and money) (Odum *et al.*, 2006). Moreover, this function explained appropriately the choices by people with different nationalities (Chinese, American and Japanese) (Du *et al.*, 2002) and the magnitude effect (discount rate

decreasing with respect to the amount), both in temporal and probabilistic decisions (Green *et al.*, 1999). Nevertheless, Estle *et al.* (2007) showed that this function provides a better explanation when decisions are made on gains than on losses.

Regarding the value of s , it was demonstrated that this parameter was affected by the amount in probabilistic discounting but not in intertemporal choice (Myerson *et al.*, 2003; McKerchar *et al.*, 2013). In addition, many studies revealed that its value was less than 1.0 (Ostaszewski and Karzel, 2002; Grace and McLean, 2005; Odum *et al.*, 2006; Estle *et al.*, 2007; McKerchar *et al.*, 2013) and, when this restriction was considered, the hyperbolic discount function with exponent s fitted better the individual preferences (Holt *et al.*, 2003).

When comparing the simple hyperbolic function and the hyperbolic function with exponent s , this latter explained better the individuals' preferences at both an individual and group level (Estle *et al.*, 2007; McKerchar *et al.*, 2013).

Some authors focused on comparing different discount functions in order to know which of them fit better real preferences of individuals. This is the case of Green *et al.* (2013) who compared the significance of the hyperbolic function of Myerson and Green (1995), the quasi-hyperbolic (Laibson, 1997) and the double-exponential (van den Bos and McClure, 2013), by obtaining that the hyperbolic function provides a better fit. On the other hand, Takahashi *et al.* (2008) compared the simple exponential discounting, the simple hyperbolic discounting, the general hyperbola and the exponential discounting with Stevens' power perception of time. The results showed the superiority of the general hyperbola on the other models. Similarly, Lu and Zhuang (2014) carried out a comparison among the simple hyperbolic model, the exponential model, the quasi-hyperbolic model and the q -exponential model (Cajueiro, 2006) or general hyperbola, revealing that the latter model fitted better the individuals' preferences.

3. Review of the statistical methods

A wide number of studies in the field of intertemporal choice analyze the suitability of different discount functions to describe the individuals' preferences. When simple functions (as the exponential or the hyperbolic discount function) are considered, some authors prefer the use of linear regressions to estimate the significance of such models (Kirby and Maraković, 1995; Green *et al.*, 1997; Smith and Hantula, 2008) whilst other authors prefer using nonlinear regression models (Kirby and Maraković, 1996; Kirby, 1997; Johnson and Bickel, 2002; McKerchar *et al.*, 2013). However, when the adjustment is made by using more complex discount functions, as the hyperbolic function of Myerson and Green (1995) (Ostaszewski and Karzel, 2002; Du *et al.*, 2002; Odum *et al.*, 2006; Estle *et al.*, 2007; Green *et al.*, 2013; McKerchar *et al.*, 2013), the quasi-hyperbolic function (Green *et al.*, 2013), the double-exponential function (Green *et al.*, 2013) or the q -exponential function (Takahashi *et al.*, 2008, 2009; Lu and Zhuang, 2014; Muñoz Torrecillas *et al.*, 2017), there is a general tendency to use the nonlinear least square estimation, mainly through the Gauss-Newton's algorithm.

With the aim to know the function which offers the best explanation to the individual choices, some researchers have compared the significance of different discount functions. For this purpose, some parametric techniques have been used, as the t -test (Kirby and Maraković, 1995) or the sign test (Kirby and Maraković, 1995; Kirby, 1997), and nonparametric tests, as the Wilcoxon matched-pairs signed-ranks test (Myerson and Green, 1995; Johnson and Bickel, 2002; Madden *et al.*, 2003; McKerchar *et al.*, 2010, 2013; Charlton *et al.*, 2013), or the Kruskal-Wallis' test (Johnson *et al.*, 2007). These comparisons have been made with different amounts, types of reward (real or hypothetical) and choice domains, as well as groups of people with different demographic and behavioral characteristics.

Independently of these statistical tests, certain authors have preferred to use the Akaike's information criterion (AIC) as a selection method among the different models (Odum *et al.*, 2006; Takahashi *et al.*, 2008; Lu and Zhuang, 2014).

On the other hand, given the importance of the hyperbolic function of Myerson and Green (1995), the parameter s has received a special attention. Ostaszewski *et al.* (1998) and Ostaszewski and Karzel (2002), for example, were based on the t -test to analyze if the parameter s deviated from 1.0, in both small and large rewards. Other authors used linear contrasts (McKerchar *et al.*, 2010, 2013; Charlton *et al.*, 2013) whilst Green *et al.* (1999) and Myerson and Green (1995) used nonparametric tests: the binominal test and the Wilcoxon matched-pairs signed-ranks, respectively. Myerson *et al.* (2003), McKerchar *et al.* (2010) and McKerchar *et al.* (2013), for their part, were based on the Wilcoxon matched-pairs signed-ranks to compare the values of the parameter s among different amounts. And, finally, Green *et al.* (2014) analyzed the correlation between the parameter s of the hyperbolic discounting and the amount, by using the Fisher's transformation.

4. Methodology

4.1 Participants

The questionnaire (see Appendix 1) was distributed among 90 students of the University of Almería (Spain), belonging to the Faculty of Economics. Of the total of respondents, 36 were men and 54 women. Moreover, 91% of participants had an age between 18 and 20 years and only less than 9% were older than 30 which can be considered as "young adults". The response to the questionnaire was anonymous and voluntary and it was administered during the class time. Students did not receive any reward for their participation.

4.2 Procedure

For the design of the questionnaire, we were mainly based on three previous experiences: Thaler (1981) who jointly studied the magnitude, delay and sign effects; Chapman and Winkvist (1998) who analyzed the magnitude effect as well as the sign effect; and the Benzion *et al.* (1989) who studied, at the same time, the magnitude, delay and sign effects and the delay-speedup asymmetry. All these authors conducted their studies by using the matching method, that is to say, the participants were asked for the amount (say, X) such that they are indifferent between 10 euros immediately and X euros in one year. The main advantage of this method is that it allows getting a direct and accurate indifference point.

Following the example included in these studies, we prepared two questionnaires (labeled as A and B), one for delayed and the other for anticipated decisions. In each questionnaire, two different situations were proposed: winning a lottery and paying a penalty. For each situation, four different amounts were offered (Green *et al.*, 1997): 100, 2,000, 25,000 and 100,000 euros; and six waiting periods: 3 months, 1 year, 3, 5, 10 and 20 years. Each subject had a 6×4 table at his/her disposal in each situation (loss or gain), to fill in the amounts that they would be willing to receive or pay for according to each waiting period. Furthermore, they were informed that there was no risk of losing the reward or avoiding the penalty during the waiting time.

Likewise, four versions of questionnaires A and B were prepared with different order of amounts (increasing or decreasing) and different order of situations (Chapman and Winkvist, 1998). For questionnaires A.1 and B.1, the order of amounts was increasing, the first situation describing a lottery, and the second one, a penalty. Analogously, for questionnaires A.2 and B.2, the order of amounts was decreasing, and the order of situations was the same as in the two former cases. For questionnaires A.3 and B.3, the order of amounts was increasing and the situation of penalty appeared first. Finally, for questionnaires A.4 and B.4, the order of amounts was decreasing and the order of situations was the same as in questionnaires A.3 and B.3, respectively. The questionnaire A was completed by a total of 48 students, whilst the questionnaire B by 42 students.

It is important to point out that, the same as previous studies, all the choices analyzed here were strictly hypothetical, since the participants did not receive any reward, nor they had to pay for any amount.

Previously to complete the task, the participants had to answer several questions of demographic type. They has to indicate their range of age (18–30, 31–60 or more than 60 years old), their gender (male or female), their origin (if they came from a city or a village, and if their country was Spain or another one), their socio-economic level (low, medium or high), their education level and expertise, and their occupation (student, worker or retired).

The objective of this work has been to analyze the validity of the different discount functions to describe individuals' preferences, as well as to know which of them offers the best fit. To do this, we have studied the significance of the exponential discount function (Samuelson, 1937), the hyperbolic function with exponent s (Myerson and Green, 1995), the quasi-hyperbolic function (Laibson, 1997), the generalized exponential function introduced by Noor (2011), the hyperbolic function deformed by the amount (Parra Oller, 2018), the q -exponential function proposed by Cajueiro (2006) and the q -exponential function deformed by the amount (Cruz Rambaud *et al.*, 2018). Afterwards, we have compared the obtained results in order to know the function which provides a better adjustment. Additionally, this analysis will be done in different choice scenarios (delay and expedite) and different situations (gains and losses).

4.3 Nonlinear models' estimation and Akaike's information criterion

As indicated in Section 3, the researchers have been based on both linear and nonlinear models for the estimation of parameters of the different discount functions. Usually, the discount models used in the intertemporal choice are nonlinear [5]:

- (1) Samuelson (1937)'s exponential discount model:

$$V(x, t) = xe^{-kt}.$$

- (2) Generalized hyperbolic discount model with exponent s or Myerson and Green (1995)'s hyperbola general:

$$V(x, t) = x/(1 + kt)^s.$$

- (3) Noor (2011)'s generalized exponential discount model:

$$V(x, t) = xe^{-kt/x^\alpha}.$$

- (4) Hyperbolic discount model deformed by the amount based on Noor (2011) (Parra Oller, 2018):

$$V(x, t) = x/(1 + kt/x^\alpha).$$

- (5) Cajueiro (2006)'s q -exponential discount model:

$$V(x, t) = x/[1 + (1 - q)kt]^{1/(1-q)}.$$

- (6) Laibson (1997)'s quasi-hyperbolic discount model:

$$V(x, t) = \beta xe^{-kt}.$$

(7) Cruz Rambaud *et al.* (2018)'s q -exponential discount model deformed by the amount:

$$V(x, t) = x/[1 + (1 - q)kt/x^\alpha]^{1/(1-q)}.$$

Nevertheless, some of these models are easily transformable in linear models (intrinsically linear models) so that it is possible to apply the methods of linear estimation. This is the case of the exponential and the quasi-hyperbolic models. The rest of them are intrinsically nonlinear models and cannot be linearized. In these cases, it is necessary to use nonlinear methods for their estimation.

The same as linear models, nonlinear models can be estimated by means of the minimization of the sum of squared residuals. However, the use of this method within nonlinear models becomes very complex. So, some alternatives have emerged like the iterative linearization method which consists in linearizing the nonlinear equation starting from an initial set of parameters' values and, using Taylor's series expansion. Later, the linear approximation is estimated by means of the method of ordinary least squares in order to obtain the values of coefficients. This process is repeated up to obtain the wished convergence. This linearization iterative mechanism can be systematized by the Newton–Raphson and the Gauss-Newton algorithms of optimization.

In our analysis, we will be based on the Gauss-Newton's algorithm (Novales Cinca, 1998) as the estimation method. This algorithm is a version of the Newton–Raphson's algorithm which is used to estimate a nonlinear model by least squares, whose objective function is:

$$F(\theta) = SR(\beta) = \sum_1^T [y_t - f(x_t, \beta)]^2.$$

The Gauss-Newton's algorithm simplifies that of Newton–Raphson, resulting in:

$$\widehat{\beta}_n = \widehat{\beta}_{n-1} + \left[\sum_1^T \begin{pmatrix} \frac{\partial f_t}{\partial \beta} \\ \frac{\partial f_t}{\partial \beta} \end{pmatrix} \begin{pmatrix} \frac{\partial f_t}{\partial \beta} \\ \frac{\partial f_t}{\partial \beta} \end{pmatrix} \right]_{n-1}^{-1} \left[\sum_1^T \begin{pmatrix} \frac{\partial f_t}{\partial \beta} \\ \frac{\partial f_t}{\partial \beta} \end{pmatrix} u_t \right]_{n-1}.$$

Given an initial estimator $\widehat{\beta}_{n-1}$ of vector β , one must obtain the residuals of such estimation and estimate the auxiliary regression of \widehat{u}_t on the gradient vector $\partial f_t / \partial \beta$, evaluated at $\widehat{\beta}_{n-1}$. This gradient vector has the same dimension as β , so the number of coefficients δ estimated in the auxiliary regression will be k . Once introduced the corrections in the initial estimation, $\widehat{\beta}_{n-1}$, a new estimation $\widehat{\beta}_n$ can be obtained:

$$\widehat{\beta}_n = \widehat{\beta}_{n-1} + \widehat{\delta} = \widehat{\beta}_{n-1} + \left[\begin{pmatrix} \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \\ \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \end{pmatrix}' \begin{pmatrix} \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \\ \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \end{pmatrix} \right]^{-1} \begin{pmatrix} \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \\ \frac{\partial f_t(\widehat{\beta}_{n-1})}{\partial \beta} \end{pmatrix}' \widehat{u}_t,$$

equation which reproduces the previous one. This result can be used in the following step of the algorithm as the initial estimation.

The convergence of the algorithm can be achieved, the resultant estimator having an asymptotic normal distribution, being its expectation equal to β and its covariance matrix:

$$Var(\beta) = \sigma_u^2 \left[\sum_1^T \begin{pmatrix} \frac{\partial f_t}{\partial \beta} \\ \frac{\partial f_t}{\partial \beta} \end{pmatrix} \begin{pmatrix} \frac{\partial f_t}{\partial \beta} \\ \frac{\partial f_t}{\partial \beta} \end{pmatrix} \right]^{-1},$$

where the parameter σ_u^2 can be estimated by $\widehat{\sigma}_u^2 = SR(\widehat{\beta}) / (T - k)$, where k is the number of estimated coefficients. Observe that, in case of a linear regression model, the expression of the

algorithm is reduced to the OLS estimator expression:

$$\hat{\beta} = \left(\sum_1^T x_t x_t' \right)^{-1} \left(\sum_1^T x_t x_t \right),$$

where x_t is the column vector of the explanatory variables' observations and y_t the endogenous variable's observation, both corresponding to period t .

Given the wide variety of models used in the field of intertemporal choice, the need for comparing the validity of such models may arise. Economists and psychologists have mainly been based on the utilization of statistical tests to compare the significance of the different functions. However, recently, there have appeared some studies (Takahashi *et al.*, 2008; Lu y Zhuang, 2014) which are based on statistical information criteria to analyze the model which provides the best adjustment to the empirical data. The most used criterion is the so-called Akaike's information criterion (AIC) which can be applied to any procedure whose aim is to choose the most appropriate model, including nonlinear regression models. The AIC is not a statistical test, but its underlying idea is to penalize the excess of adjusted parameters. The criterion of selection is to choose those models with the lowest values of AIC. Thus, the model which better explains the data with a minimum number of parameters is the one that presents a lower value of AIC. In general terms, AIC can be defined as follows:

$$AIC(k) = 2k - 2 \ln(L),$$

where k is the number of independent parameters and $\ln(L)$ is the log-likelihood function of the statistical model.

When the number of parameters (k) is very high in relation to the sample size (n), the results provided by AIC can be unsatisfactory. In this case, when $n/k < 40$, a second order approximation can be used:

$$AIC_c = AIC + \frac{2k(k+1)}{n-k-1}.$$

5. Results

In this Section, we are going to estimate the parameters of some noteworthy discount functions used in intertemporal choice by using nonlinear regression models. To do this, we are going to use the average answers of individuals in each of the four choice scenarios: delayed gains, delayed losses, anticipated gains and anticipated losses. Additionally, we will compare the different models with the second order Akaike information criterion (AICc). In order to achieve these objectives, we will be based on the software "R".

Firstly, we search the outliers of data, that is to say, those individuals whose responses differ considerably from the average. This may be due to the difficulty of the questionnaire which may have led to a lack of understanding of the experiment's purpose by the participants. Other reasons may be that they did not complete it carefully or, even, the tiredness while filling the questionnaire, given that this experiment requires lot of attention from students who must think deeply about their present and future preferences. In this way, data from 36 participants were removed, remaining a total of 54 individuals included in the study.

Then, we fit the average delayed data ($n = 36$) and the anticipated ones ($n = 18$), according to the given periods and amounts, to the different discount functions. So, we obtain the parameters corresponding to the different scenarios, as well as their corresponding p -values (Tables I-IV).

Now, taking into account the sample size and the number of estimated parameters, we can apply the second order Akaike information criterion, starting from the previous estimations.

Table 1.
Parameters and AICc
for intertemporal
choice models on
delayed gains
(average data)

Parameter	Exponential (Samuelson, 1937)		General hyperbola (Myerson and Green, 1995)		Generalised exponential (Noor, 2011)		Hyperbolic deformed by amount based on Noor (2011)		q-exponential (Cajueiro, 2006)		Quasi-hyperbolic (Laibson, 1997)		q-exponential deformed by amount (Cruz Rambaud <i>et al.</i> , 2018)	
	k	α	k	s	k	α	k	α	k	q	k	β	k	q
AIC _c	522.2004		430.5585		506.6904	438.4393	430.5585		430.5585		503.4773		426.5121	
p-value	0.10472		0.27855	0.88202	38.9051	0.4623	0.29628	0.02261	0.24569	-0.13376	0.078529	0.776859	0.07743	α
	1.56e-14 ***		4.94e-12 ***	<2e-16 ***	0.358	1.34e-05 ***	0.0121 *	0.4425	<2e-16 ***	0.00746 **	4.53e-13 ***	2.57e-16 ***	0.03932 *	0.01910 *

Source(s): Authors' own elaboration

	Exponential (Samuelson, 1937)	General hyperbola (Myerson and Green, 1995)	Generalised exponential (Noor, 2011)	Hyperbolic deformed by amount based on Noor (2011)	q -exponential (Cajueiro, 2006)	Quasi-hyperbolic (Laibson, 1997)	q -exponential deformed by amount (Cruz Rambaud <i>et al.</i> , 2018)
AIC _c	432.3392	385.9813	434.9496	422.1441	385.9813	419.7707	381.55
Parameter	k	k	k	k	k	k	k
p -value	0.0193418	0.14890	0.02309	0.020787	0.037485	0.0168123	0.00464
	<2e-16 ***	2.16e-06 ***	0.476	0.425	1.74e-13 ***	5.92e-16 ***	0.2215
		10 ***	0.899	0.933	1.06e-07 ***	<2e-16 ***	1.36e-08 ***
			α	α	q	β	q
			0.01510	-0.008933	-2.972240	0.9674406	-3.251384
			0.02309	0.020787	1.06e-07 ***	0.9674406	0.182299
			0.476	0.425	1.06e-07 ***	<2e-16 ***	0.0157 *

Source(s): Authors' own elaboration

Table II. Parameters and AIC_c for intertemporal choice models on delayed losses (average data)

Table III.
Parameters and AICc
for intertemporal
choice models on
expedited gains
(average data)

	Exponential (Samuelson, 1937)	General hyperbola (Myerson and Green, 1995)	Generalised exponential (Noor, 2011)	Hyperbolic deformed by amount based on Noor (2011)	q -exponential (Cajueiro, 2006)	Quasi-hyperbolic (Laibson, 1997)	q -exponential deformed by amount (Cruz Rambaud <i>et al.</i> , 2018)
AIC _c	488.2697	412.8241	490.8978	480.9247	412.8241	435.77	415.4195
Parameter	k	k	k	k	k	k	k
	0.04150	4.328173	0.03811	0.04939	0.51623	0.023082	0.1615
p -value	9.17e-09 ***	0.000111 ***	0.806	0.803	1.15e-06 ***	1.55e-11 ***	0.656
		s	α	α	q	β	q
		0.1119271	-0.00746	-0.01839	-7.38424	0.835755	-7.3851
		4.92e-13 ***	0.983	0.958	6.15e-12 ***	<2e-16 ***	0.1017
		***	***	***	***	***	***

Source(s): Authors' own elaboration

	Exponential (Samuelson, 1937)	General hyperbola (Myerson and Green, 1995)	Generalised exponential (Noor, 2011)	Hyperbolic deformed by amount based on Noor (2011)	q -exponential (Cajueiro, 2006)	Quasi-hyperbolic (Laibson, 1997)	q -exponential deformed by amount (Cruz Rambaud <i>et al.</i> , 2018)
AIC _c	499.2611	446.3527	501.8698	485.7222	446.3527	434.3313	449.1664
Parameter	k	k	k	k	k	k	k
	0.08668	3.87723	0.16721	0.31080	0.8072	0.046383	2.04385
p -value	2.38e-08 ***	0.00268 **	0.806	0.799	6.38e-05 ***	2.54e-14 ***	0.762
		s	α	α	q	β	q
		1.17e-09 ***	0.877	0.852	6.82e-08 ***	0.765653	2.04385
						<2e-16 ***	1.33e-07 ***
							0.778

Source(s): Authors' own elaboration

Table IV. Parameters and AIC_c for intertemporal choice models on expedited losses (average data)

In this way, we obtain that, in delayed gains, the order of the AICc is q -exponential deformed by the amount $< q$ -exponential = general hyperbola $<$ hyperbolic deformed by the amount $<$ quasi-hyperbolic $<$ generalized exponential $<$ exponential. Thus, the q -exponential model deformed by the amount (Cruz Rambaud *et al.*, 2018) is the best discount function to explain the average behavior of individuals in decisions with delayed gains. On the other hand, the q -exponential and the general hyperbola explain individuals' decisions in a similar way. Finally, the traditional exponential model exhibits the worst fit.

With respect to delayed losses, the order of the AICc varies in the following way: q -exponential deformed by the amount $< q$ -exponential = general hyperbola $<$ quasi-hyperbolic $<$ hyperbolic deformed by the amount $<$ exponential $<$ generalized exponential. Once again, the q -exponential model deformed by the amount shows the best fit. So, in the context of losses, the model with a higher AICc, and then the worst fit, is the generalized exponential model proposed by Noor (2011).

On the other hand, in anticipated gains, the order of the AICc is q -exponential = general hyperbola $<$ q -exponential deformed by the amount $<$ quasi-hyperbolic $<$ hyperbolic deformed by the amount $<$ exponential $<$ generalized exponential. In this case, the general hyperbola and the q -exponential functions offer an explanation of the data better than the q -exponential deformed by the amount. Similar to delayed losses, the generalized exponential is the model which presents the worst fit.

In anticipated losses, however, the quasi-hyperbolic model provides a better explanation to the answers of participants in the experiment. In this case, the order of the AICc is the following: quasi-hyperbolic $<$ q -exponential = general hyperbola $<$ q -exponential deformed by the amount $<$ hyperbolic deformed by the amount $<$ exponential $<$ generalized exponential.

6. Discussion

In this manuscript, we have analyzed the suitability of some discount functions to explain the different anomalies, mainly the magnitude and delay effects, revealed in the ambit of intertemporal choice. Thus, the main contribution of this paper is that the q -exponential model deformed by the amount (Cruz Rambaud *et al.*, 2018) is the discount function which better explains the individuals' delayed decisions on gains and losses for different amounts and waiting periods. This is the first time that a model different from the general hyperbola or the q -exponential exhibits a better fitting. This is because the q -exponential function deformed by the amount includes the other functions as particular cases. This empirical analysis verifies empirically the validity of the model proposed by Cruz Rambaud *et al.* (2018).

In contexts of anticipation, however, the strength of this model is lower, being the hyperbolic (or q -exponential) model with exponent s which provides a better explanation on gains, but not on losses. In effect, in the situation with losses, the quasi-hyperbolic model shows a better fitting than the general hyperbola and the q -exponential model deformed by the amount. This leads us to think that the differences in the decision making on delay and anticipation affect the explanatory validity of models.

Takahashi (2005) provides a possible explanation of why the individual decisions best fit the general hyperbola or their generalizations, such as the q -exponential model (Han and Takahashi, 2012). Takahashi (2005) considers that individuals have a logarithmic time perception which affects their decision-making. So, even if they try to make rational (exponential) decisions, this perception would distort the resulting choices. This leads to an inconsistency over time, which can be explained by hyperbolic discounting. Traditionally, the comparison of discount functions has been focused on the simple exponential and the hyperbolic functions (Kirby and Maraković, 1995; Myerson and Green, 1995; Green *et al.*, 1997; Madden *et al.*, 2003). Nevertheless, in the last years, this study has included other functions

introduced in recent works (Takahashi *et al.*, 2008; Doyle, 2013; Lu and Zhuang, 2014). Following this research line, in this work, we have compared a wide range of functions, including the simple exponential function, the general hyperbola, the generalized exponential function by Noor (2011), the hyperbolic function deformed by the amount based on Noor (2011) (Parra Oller, 2018), the q -exponential function (equivalent to the general hyperbola), the quasi-hyperbolic model and the q -exponential function deformed by the amount. Unlike the papers by Takahashi *et al.* (2008) and Lu and Zhuang (2014), in which the comparison among models was made with an only amount in a delay scenario, in this manuscript the comparison has been carried out by using four different amounts (100, 2,000, 25,000 and 100,000 euros) in two different scenarios (delay and anticipation), and in two different situations (gains and losses).

With respect to the comparison of the fitting goodness of the different discount functions, most of previous studies were based on statistical tests (Kirby and Maraković, 1995; Kirby, 1997; McKerchar *et al.*, 2010, 2013; Charlton *et al.*, 2013). However, our manuscript has been based on a criterion of statistical information which has been recently incorporated into the study of intertemporal choice, *viz* the Akaike's information criterion.

Indeed, the methodology presented in this paper supposes an extension of the statistical methods in the field of intertemporal choice. It will allow us to improve the empirical analysis and, in this way, to obtain results closer to reality.

In our opinion, the results derived from this research can be of interest for the banking sector. In effect, the knowledge of the discount function which better fits people's preferences is of great importance for banks when designing their offer of financial products. Moreover, the potential extension of this analysis to other goods (food, drinks, etc.), instead of money, makes this manuscript useful for consumers preferences and so for marketing research.

A possible limitation of this empirical analysis is the number of participants. In this way, future research must be addressed to increase the sample size, as well as the heterogeneity of respondents. Indeed, these measures will improve the validity of our findings. Another limitation could be the fact that participants responded only one of the two questionnaires, delay or anticipation. Indeed, it could be interesting to analyze the preferences of all individuals in both scenarios.

7. Conclusions

This paper has been focused on the empirical analysis of the different discount functions used in the ambit of intertemporal choice in order to know the function which fits better the individuals' preferences.

The revision of the existing literature shows the strengths of the general hyperbola over the rest, mainly with respect to the traditional model of Samuelson (1937). The majority of works compare the simple hyperbolic function, or alternatively the general hyperbola, with the exponential function. However, nowadays, the field of study has been extended to other discount functions of recent appearance, as proposed by Cruz Rambaud *et al.* (2018).

Regarding the statistical methodology, the researchers have mainly focused on the use of nonlinear least squares regression analysis, through the Gauss-Newton's algorithm, in order to determine the fitting goodness of the involved discount functions, and of statistical tests to compare the functions' significance.

With the objective of knowing what functions fits better the individuals' preferences, we have administered a questionnaire to students of Economics of the University of Almería (Spain). In this survey, they had to indicate their preferences on decisions involving gains and losses, in both delay and anticipation situations. Through these data, we have compared the significance of the fitting of some discount functions, by using the nonlinear least squares regression analysis to estimate the discount functions' parameters, and the Akaike's information criterion of second order to compare the fitting goodness.

The results show that, for the first time, a function different from the general hyperbola or q -exponential, the so-called q -exponential function deformed by the amount, explains better the behavior of individuals for delayed decisions. In situations of anticipation, however, the general hyperbola is better on gains and the quasi-hyperbolic on losses. Moreover, this study differs from the rest because it has been used different amounts to verify the adjustment of functions, as well as different choice scenarios (delay and anticipation) and situations (gains and losses).

Finally, it is important to emphasize that this study confirms the explanatory superiority of the q -exponential discount function deformed by the amount, recently proposed by Cruz Rambaud *et al.* (2018).

Notes

1. Preference reversals or dynamic inconsistency: If an individual has to choose between a smaller, immediate amount and a larger, later amount, he will probably prefer the immediate amount. But, if the delay increases in a same period for both amounts, the preferences of this individual will reverse, and he will prefer the larger, later amount.
2. Discount rate decreasing as time increases. People show more impatience on the reception of an immediate reward than a delayed one.
3. Preference for immediate rewards.
4. The discount rate decreases as amount increases, that is to say, people show more patience on the reception of a large amount than a smaller one.
5. $Y_t = f(X_t, \beta) + u_t$, where $f(X_t, \beta)$ is a nonlinear function of the vectors' elements X_t and β .

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Appendix 1
Questionnaires

A1. Demographic questions

- (a) Age: Between 18 and 30 years old
 Between 31 and 60 years old
 + 60 years old

- (b) Gender: Male
 Female

- (c) Place of origin: City or Town
 Village

If this place is not found in Spain, please, indicate the country: _____.

- (d) How do you define your socio-economic level? Low
 Medium-low
 Medium
 Medium-high
 High

- (e) Level of education: Without studies
 Primary studies
 Secondary studies (High school)
 Professional training
 University education:
 Bachelor
 M.a.
 Phd

In case of professional training, secondary studies or university studies, indicate the area of knowledge which these belong to:

_____ (f.e. economy, psychology, mechanics,...).

- (f) Point which is your current occupation: Student
 Worker (Active or out of work)
 Retired

If you are working, indicate which is the post that you perform within the company:

_____.

A2. Delay questionnaire (A)

1st SCENARIO:

Suppose that *today* you have won €100, €2,000, €25,000 and €100,000 in the lottery, and that they offer you to delay the receipt of these awards *3 months, 1 year, 3 years, 5 years, 10 years* or *20 years*. Now, indicate in the table in blank the amount that, as minimum, you would be willing to receive in the different waiting periods; for that the award received with posterity equalises the satisfaction to what you would get to receive the award in this moment.

Table A1.
Choices on
delayed gains

	Amount today	€100	€2,000	€25,000	€100,000
1.1	Amount in 3 months				
1.2	Amount in 1 year				
1.3	Amount in 3 years				
1.4	Amount in 5 years				
1.5	Amount in 10 years				
1.6	Amount in 20 years				

2nd SCENARIO:

In this case, you must assume that you have been fined *today* with €100, €2,000, €25,000 and €100,000, and that they offer you to delay the payment of these penalties *3 months, 1 year, 3 years, 5 years, 10 years* or *20 years*. Now, indicate in the table in blank the amount that, as maximum, you would be willing to pay in the different waiting periods; for that the penalty paid with posterity is as attractive as it would be to pay it in this moment.

Table A2.
Choices on delayed
losses

	Amount today	€100	€2,000	€25,000	€100,000
2.1	Amount in 3 months				
2.2	Amount in 1 year				
2.3	Amount in 3 years				
2.4	Amount in 5 years				
2.5	Amount in 10 years				
2.6	Amount in 20 years				

A3. Expedite questionnaire (B)*1st SCENARIO:*

Suppose that you have won €100, €2,000, €25,000 and €100,000 in the lottery, and that you cannot receive these awards until after *3 months, 1 year, 3 years, 5 years, 10 years* or *20 years*. Now, indicate in the table in blank the amount that, as minimum, you would be willing to receive at the current time; expediting the receipt of such award in order to avoid the different periods of waiting.

1.1	<i>Amount today</i>				
	Amount in 3 months	€100	€2,000	€25,000	€100,000
1.2	<i>Amount today</i>				
	Amount in 1 year	€100	€2,000	€25,000	€100,000
1.3	<i>Amount today</i>				
	Amount in 3 years	€100	€2,000	€25,000	€100,000
1.4	<i>Amount today</i>				
	Amount in 5 years	€100	€2,000	€25,000	€100,000
1.5	<i>Amount today</i>				
	Amount in 10 years	€100	€2,000	€25,000	€100,000
1.6	<i>Amount today</i>				
	Amount in 20 years	€100	€2,000	€25,000	€100,000

Table A3.
Choices on
expedited gains

2nd SCENARIO:

In this case, you must assume that you have been fined with €100, €2,000, €25,000 and €100,000, and that you must pay such penalties in *3 months, 1 year, 3 years, 5 years, 10 years* or *20 years*. Now, indicate in the table in blank the amount that, as maximum, you would be willing to pay at the current time; expediting the payment of such debt in order to avoid the different periods of waiting.

2.1	<i>Amount today</i>				
	Amount in 3 months	€100	€2,000	€25,000	€100,000
2.2	<i>Amount today</i>				
	Amount in 1 year	€100	€2,000	€25,000	€100,000
2.3	<i>Amount today</i>				
	Amount in 3 years	€100	€2,000	€25,000	€100,000
2.4	<i>Amount today</i>				
	Amount in 5 years	€100	€2,000	€25,000	€100,000
2.5	<i>Amount today</i>				
	Amount in 10 years	€100	€2,000	€25,000	€100,000
2.6	<i>Amount today</i>				
	Amount in 20 years	€100	€2,000	€25,000	€100,000

Table A4.
Choices on expedited
losses

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Market structure, institutional quality and bank capital ratios: evidence from developing countries

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Abstract

Purpose – This paper investigates the role of market structure and institutional quality in determining bank capital ratios in developing economies.

Design/methodology/approach – The generalised methods of moment technique is used to control for auto-correlation and endogeneity in a sample of 79 publicly listed commercial banks. The study period is between 2000 and 2016.

Findings – Results show that market structure (proxied with bank competition) as well as institutional quality (regulatory quality) lowers bank capital in the sampled banks. This suggests that banks operating in less competitive markets with good regulatory quality do not need to engage in excessive risk-taking activities that would necessitate holding increased level of capital. Furthermore, the interaction of competition and regulatory quality reinforces the main findings, suggesting the importance of the two variables in determining bank capital ratio.

Research limitations/implications – Research has limitation in that the study investigated publicly listed commercial banks, the findings may not be applicable to non-listed banks.

Practical implications – Taking into cognisance the developing nature of the banking system in Africa, the findings from this study imply that the maintenance of an improved regulatory quality in an environment where healthy competition exists would encourage banks to hold capital ratios appropriate for their level of banking activities, that is, the banks would not engage in excessive risk-taking activities.

Originality/value – This is one of the first papers that examine the effect of market structure and institutional quality on bank capital ratios in developing countries that have bank-based financial systems.

Keywords Bank capital, Competition, Concentration, Endogeneity, Regulatory quality, Africa

Paper type Research paper

1. Introduction

Bank capital plays a significant role in maintaining the stability of any financial system because it not only supports daily operations of the bank but also reassures relevant stakeholders in the industry of the continued existence of the bank. However, some banks maintain capital in excess of what regulatory bodies specify, and extant literature provides several reasons why this is so. For example, high adjustment costs may be incurred by banks which fall short of minimum capital ratios in the process of adjusting back to the minimum. To prevent these costs, banks may decide to hold capital in excess of regulatory requirements so that they are above the minimum required at any point in time (Alraheb *et al.*, 2019).



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Banks may also hold excess capital to meet up with unexpected investment opportunities and to mitigate a rise in risks associated with increase in credit facilities when efficient supervision is absent (Milne, 2002; Vithessonthi, 2014). Such risky behaviour, when it goes bad, erodes bank capital. To prevent capital erosion, regulatory bodies put in place minimum capital requirements for banks that serve as disciplinary mechanisms to dissuade banks' management from taking unnecessary risks that would adversely affect banks' capital (Anginer *et al.*, 2018). The disciplinary measure has, however, not prevented banks from engaging in excessive risks as evidenced in the sub-prime mortgage/global financial crisis of 2007–2009 where most of the troubled financial institutions had their capital ratios above the minimum required level prior to the crisis (Anginer *et al.*, 2018). Moreover, Calomiris and Jaremski (2016) argue that weaker market discipline by depositors may provide an impetus for banks to reduce capital ratios and engage in risky lending.

Market structure viewed in terms of bank competition lowers market power, earnings and franchise value, making banks engage in excessive risk-taking in order to increase capital ratios to mitigate losses that may arise from such risks (Liu *et al.*, 2013) [1]. Similarly, Allen *et al.* (2011) argue that competition encourages banks to have higher capital levels because it (competition) displays the level of commitment a bank has towards effective monitoring and attracting creditworthy customers. Extant literature also shows that customer's lending behaviour, shareholder's rights and deposit insurance influence the level of capital a bank would have. Whereas information-sensitive customers and strong shareholder's rights encourage higher capital, the presence of deposit insurance lowers bank capital (Allen *et al.*, 2011). The implication of these arguments is that strong institutions should exist alongside higher bank capital ratios. Furthermore, development of quality institutions is crucial to maintaining financial stability and resistance to local or international shocks as observed in the 2007/2008 global financial crisis (Alraheb *et al.*, 2019).

The financial system in African countries is mostly bank-based, underscoring the importance of banks in the system and the role it plays in maintaining the stability of the financial system to ensure growth of the economy (Ozili, 2018). One way of maintaining stability is for banks to have adequate capital to support its business activities (Chiaromonte and Casu, 2017; Ozili, 2018). The ripple effect of the 2007–2009 global financial crisis also made most African countries to put in place regulatory measures that would enhance financial stability through increased capital ratios. For instance, in keeping up with the BASEL III requirements concerning capital, commercial banks in Kenya were required to raise their capital to \$12.5 million by 2012, from \$3.3 million in 2008. Similarly, Zambian commercial banks had to increase their minimum capital to \$2.2 million, from \$358,240. In Algeria, the minimum capital was increased to \$155 million, from \$39 million (Oduor *et al.*, 2017). However, the presence of institution-related issues such as poor regulatory quality, inaccurate information disclosure and poor corporate governance policies poses a challenge to the maintenance of adequate capital by banks in developing countries (Alraheb *et al.*, 2019; Anginer *et al.*, 2018). This implies that banks in such countries would hold just enough capital to meet regulatory requirements which would create moral hazard especially where capital is costly (Allen *et al.*, 2012).

This study contributes to existing literature in a number of ways. First, it is the first study that investigates the role played by competition (as a form of market structure) and regulatory quality (to capture institutional quality) in determining bank capital ratios in publicly listed commercial banks in African countries. Given the scarcity of literature from this region and other developing countries, two recent works related to our study are by Otero *et al.* (2017, 2019). While the former investigated competition, concentration and risk-taking, the latter study examined market structure, performance and efficiency, with both studies focusing on the Middle East and North African (MENA) region. Our study deviates from

these two studies by examining the role played by market structure and institutional quality on bank capital ratio in African countries. Our results provide empirical evidence from the banking sector of developing countries where banks operate in challenging environments and there is a higher probability of destabilisation due to capital erosion than in developed countries where the issues are less severe. Second, noting that previous studies mostly focused on how bank-level and macroeconomic factors affect bank capital ratio (Flamini *et al.*, 2009; Francis, 2013; Ozili, 2015), we carry out our investigation on African banks by focusing on market structure and institutional quality because the region had witnessed varying levels of positive development in the quality of institutions and the opening up of its economy to international integration. The financial and trade openness suggests more entry into the financial sector and may induce a more competitive and efficient sector that could drive bank performance that would enhance stability in the system (Otero *et al.*, 2019).

In our empirical analysis, we consider the endogeneity of bank capital and use the two-step system generalised moment method (Sys-GMM) for the investigation. The results reveal that bank competition and regulatory quality lower bank capital, suggesting that in less competitive markets where the regulatory quality is high, banks do not need to engage in excessive risk-taking activities that would necessitate holding increased levels of capital. These findings are strengthened when we investigate whether competition is conditioned on the quality of existing regulation.

The rest of the paper is structured as follows: In Section 2, we discuss related literature. Section 3 addresses the methodology employed in the study in terms of model, method and variables. Section 4 discusses the results. We conclude the paper in Section 5 with relevant policy implications.

2. Related literature

Theoretical literature provides insights on why banks hold capital in excess of what is required by regulatory authorities. One is the capital buffer theory where proponents of the theory argue that even in the absence of regulation, a bank would need to maintain an appropriate capital level because the market requires them to do so to remain in business. For instance, Berger (1995) and Berger *et al.* (1995) argue that banks have capital in excess of regulatory requirement to take advantage of unexpected profitable opportunities or to absorb unanticipated losses. Where regulation exists, banks may hold excess capital to avoid high adjustment costs and penalties that may result from being unable to meet minimum regulatory requirements (Rime, 2001). Another theory is the charter or franchise value where bank earnings are important in determining bank capital ratios. Here, bank managers build up capital from high earnings, and cost efficiency to guard against liquidation and high capital ratios indicate bank quality (Demstet *et al.*, 1996). Keeley (1990) explains bank charter value as the present value of future profits that banks expect to earn from operations and banks would choose high capital to protect its charter. Thus, reduced earnings may lead a bank to engage in risky projects to reverse the fall. The trade-off theory is also important because anticipated rise in bankruptcy costs due to an increase in asset portfolio could imply an increase in insolvency risk. To prevent this, banks increase their capital-to-assets ratio, and ultimately the capital ratio (Berger, 1995). In terms of market structure/competition, Allen *et al.* (2011) presented a model where market competition encourages banks to hold excess capital for several reasons such as indicating banks' commitment to monitoring and attracting creditworthy and information-sensitive borrowers. Higher capital ratios also depict the presence of strong shareholder rights protection, while deposit insurance reduces capital ratio. Recently, Alraheb *et al.* (2019) showed that institutional variables significantly influence bank capital ratios in MENA countries, depending on the level of financial market development. They found that institutional qualities are important in determining bank

capital ratio in countries where the stock market is less developed. This further reinforces our motivation for this study given that the financial system in the region is bank-based and research-focused on institutions is lacking from this region. In addition, Anginer *et al.* (2018), while investigating ways by which institutional environment affect bank capital and fragility, found that systemic risk lowers bank capital and is more obvious for banks operating in less developed markets where issues such as information asymmetry and inefficient supervision are present. The authors established that capital may be used to replace a weak institutional environment to reduce systemic risk. However, the extent to which this is applicable to African banks is not known. Related literature on bank competition is concerned with improving stability of the financial system while maintaining a healthy competition between financial institutions. For instance, Liu *et al.* (2013), using a competition index that indicated how much capital a bank has to cushion the effect of unforeseen losses as a proxy for fragility, show that in regional markets in the European Union, increased (decreased) competition seems to improve (worsen) stability in uncompetitive banking environments unlike what is obtainable in more competitive markets where fragility is increased. As observed by Beck and Cull (2013), the banking environment in African countries is not as competitive as the ones in more developed economies; thus, we expect results that are different from what is obtainable in developed financial systems.

Besides the preceding theoretical discussion on bank capital, literature also suggests that bank-specific factors may influence the level of capital a bank holds. An example is bank size which may exert either a positive or negative effect on capital. In terms of positive effect, large-sized banks derive certain benefits for being big. For instance, lower costs of raising additional capital due to benefits resulting from economies of scale enable large-sized banks to acquire more capital at a lower cost than smaller-sized banks (De Jonghe and Öztekin, 2015). Furthermore, large banks may consider maintaining excess capital to have good ratings that will promote operations (Jackson *et al.*, 2002). However, due to the “too-big-to-fail” condition where regulators are unwilling to close big banks, a large-sized bank may choose to hold less capital than a small-sized bank, suggesting that size does not matter (Luc Laeven *et al.*, 2016). Another important factor is bank liquidity because more liquid assets and better capitalised banks are considered as safer banks (Chiaramonte and Casu, 2017). This happens when the liquidity premium required on rate of return on bank shares declines such that the reduction encourages banks to raise additional equity [2].

3. Methodology

3.1 Model and method

To examine the role of market structure and regulatory quality in determining bank capital ratio, we follow studies such as Anginer *et al.* (2018), Liu *et al.* (2013) and Schaeck and Cihak (2012) and model bank capital as a function of competition, a set of bank-specific and macroeconomic and institutional variables as presented in Eqn (1).

$$\gamma_{i,t} = \beta_0 + \beta_1\gamma_{i,t-1} + \beta_2\psi_{i,t} + \beta_3\chi_{i,t} + \beta_4\kappa_{i,t} + \mu_i + \eta_t + \varepsilon_{i,t} \quad (1)$$

where γ is the capital ratio for bank i , at period t , and $\gamma_{i,t-1}$ is one period lagged bank capital. The measures for competition/market structure is captured by ψ . χ is a vector of bank-specific variables and κ captures macroeconomic and institutional variables. μ_i is time-invariant unobservable bank-specific effect, η_t is time-specific effect common to all banks but changes through time, $\varepsilon_{i,t}$ is the time-varying error term, $\beta_0 - \beta_4$ are coefficients estimates. Table 1 provides a description of the variables in Eqn 1.

We use the two-step Sys-GMM of Blundell and Bond (2000), an instrumental variable technique, over other methods such as the generalised least squares method to address potential endogeneity between capital ratio (γ) and competition (ψ) which may arise due to

S/N	Variable	Description	Source
1.	Bank capital	Ratio of equity to total assets (%)	Bankscope
2.	Lerner index	Difference between output prices and marginal costs (relative to prices) and is calculated as $\frac{P-MC}{P}$ where P is the price of banking outputs and MC is marginal costs. Higher values of the Lerner index indicate less bank competition (%)	World Bank Global Financial Development Report
3.	Bank concentration	Total assets held by 3 largest banks of a country to the total assets of all banks in the country (%)	World Bank Global Financial Development Report
4.	Bank profitability	Return on assets and is calculated as the ratio of a bank's net income to its average assets (%)	Bankscope
5.	Credit risk	Ratio of loan loss reserves to gross loan (%)	Bankscope
6.	Bank liquidity	Ratio of liquid assets to total assets (%)	Bankscope
7.	Bank size	Natural logarithm of bank total assets	Bankscope
8.	Gross domestic product	Year on year growth rate of real GDP (%)	World Bank development Indicators database
9.	Inflation	Inflation based on annual consumer price index (%)	World Bank development Indicators database
10.	Financial market development	Ratio of domestic credit to the private sector by commercial banks to GDP (%)	World Bank development Indicators database
11.	Regulatory quality	Perception of the ability of government to formulate and implement sound policies and regulations that promote private sector development. Takes a value between -2.5 and 2.5	World Bank governance Indicators database

Table 1.
Variable description
and sources

Note(s): Table 1 shows the description and source of variables employed in the study. Values of the Lerner index are extracted from the Global Financial Development Report of the World Bank

reverse causality in Eqn (1). The method in addition takes into account serial correlation between the lagged dependent variable ($y_{i,t-1}$) and other variables in the regression model [3]. Furthermore, the Sys-GMM controls for unobserved heterogeneity and considers the issue of unit roots in the macroeconomic data (Binder *et al.*, 2005). The Sys-GMM is preferred over the difference GMM because it reduces potential bias in finite samples and yields more consistent coefficient estimates (Roodman, 2009). We report important test statistics such as the Arellano and Bond AR (1), AR (2) and the Hansen test to validate the use of the Sys-GMM estimator. While the AR (1) and AR (2) checks for the absence of first- and second-order serial correlation in differenced residuals of the model, Hansen test checks for overidentifying restrictions and nonexistence of correlation between the error term and instruments used in the model with a null of valid instruments. It is equally important to note that Eqn (1) is a partial adjustment model that accounts for adjustment costs which arises when banks try to adjust to meet capital requirements. High adjustment costs may prevent banks from instantaneous change in capital when they fall short of regulatory requirements, making them liable to penalties (Brei and Gambacorta, 2016; Etudaiye-Muhtar *et al.*, 2017; Ozili, 2015). To avoid this situation, banks would need to increase the capital ratio, and a positive and significant coefficient of the lagged capital ratio would indicate the presence of adjustment costs.

3.2 Data

Eqn (1) and method described in Section 3.1 is used to analyse bank-specific and country-level data obtained from Bankscope and World Bank Development Indicators for the period 2000

to 2016. Number of banks in the sample is driven by data availability [4]. We follow Punt and Van Rooij (2003) and use only publicly listed commercial banks because the observed group is homogenous and allows for better estimates. To remove duplicate bank-specific information, data are collected from consolidated statements in Bankscope, while macroeconomic and institutional quality data are from World Bank database for the same period. We include banks with at least three years of observations only following the procedures of Etudaiye-Muhtar *et al.* (2017) and Vithessonthi (2014) in anticipation of a small sample size and to guard against small cross-sectional variations. We address the potential effect of outliers in the data by employing a robust regression estimation technique to estimate regression coefficients following the technique of Frank and Goyal (2009) and Verardi and Croux (2009) [5]. Our final sample size consists of an unbalanced panel of 79 banks from 24 countries (see Appendix 1).

3.3 Discussion of variables

Our main independent variables of interest are market structure and institutional quality. We use bank-specific and macroeconomic variables that have been established by literature to affect bank capital as control variables. Table 1 presents a summary of variable description and source.

3.3.1 Market structure and institutional quality. Our variable for market structure is based on the credit market model developed by Allen *et al.* (2011), where bank capital changes due to creditors' behaviour in the credit market rather than regulatory requirements. In the model, market forces make banks hold capital levels well above the required amount even though it may be costly for them to do so. Competition is seen to encourage banks to hold higher capital levels because it signifies commitment to entice and monitor creditworthy customers. Furthermore, market structure and profits are two factors necessary to maintain financial stability. For instance, Otero *et al.* (2017, 2019) both show that market power drives performance in banks in the MENA region (a developing region with similar characteristics with banks in the present study). This suggests that such banks, upon earning more profits, build up their capital ratio to indicate financial stability and entice creditworthy customers. This position is in line with the assertion of Schaeck and Cihak (2012) that a bank becomes attractive to borrowers if its capital is observable because of the higher level of capital, which improves its ability to attract good credit and suggests a positive coefficient for bank competition. Nonetheless, studies also show that the existence of the too-big-to-fail syndrome (especially in situations where there are a few large banks) encourages banks to hold less capital, a situation explained by the moral hazard issue (De Jonghe and Öztekin, 2015; Schaeck and Cihak, 2012). Based on these arguments, we use bank concentration ratio and Lerner index as our variable for market structure following Otero *et al.* (2017, 2019) who also used two indicators for bank competition. Although several measures are available to capture market structure, our choice of these two variables is due to their availability for banks in the sample [6]. Higher values of bank concentration imply a less competitive market, while that of Lerner index suggests a more competitive market. Regulatory quality, which measures the perception of the ability of government to formulate and implement sound policies and regulations that promote private sector development (banking sector inclusive), is our proxy for institutional quality. This takes a value between -2.5 and 2.5 as obtained from World Development Governance Indicators (WGI) provided by Kaufmann *et al.* (2011). Higher values of this variable indicate higher quality of regulation and formulation, and we expect a positive effect on bank capital.

3.3.2 Bank-specific variables (profitability, risk, liquidity and bank size). In terms of profitability, higher profit levels enable banks to increase their capital ratios to protect themselves against possible liquidation and signal positive information to the market about bank value (Etudaiye-Muhtar *et al.*, 2017; Rime, 2001). This suggest a positive relationship

with bank capital, which is consistent with the pecking order theory and for regions with less developed financial markets such as the ones in this study (Alraheb *et al.*, 2019). We use the return on assets as our measure for bank profitability. Risk is another important factor that banks consider when determining the level of capital to hold (Schaeck and Cihak, 2012). For example, risk-based capital standards such as the Basel Committee Accord may destabilise a bank's capital ratio and the bank would need to readjust. In addition, banks may engage in excessive risk-taking to improve its earnings, and therefore the capital ratio (Vithessonthi, 2014). In this paper, we proxy risk with the ratio of loan loss reserves to gross loan and expect a positive association with bank capital. Bank liquidity measures a bank's financial strength because it acts as a buffer for distress and bank runs. Nonetheless, there has to be a balance between liquidity and bank capital in order to prevent a situation where liquidity affects bank capital negatively (Vithessonthi, 2014). These two positions imply that the effect of liquidity on bank capital is unclear. Our proxy for liquidity is the ratio of liquid assets to total assets. Relating to size, larger-sized banks have incentives such as lower costs of capital that enable them obtain additional capital and prevent taking on excessive risk (Konishi and Yasuda, 2004). Additionally, to maintain good ratings, large banks would need to have capital in excess of market-determined reserves (Jackson *et al.*, 2002). Consequently, we expect bank size to have a positive coefficient. Size is measured at the natural logarithm of total assets.

3.3.3 Macroeconomic variables. Macroeconomic variables affect bank capital ratios mainly in two ways: procyclical or countercyclical, depending on business cycle fluctuations (Brei and Gambacorta, 2016; Durafe and Jha, 2018). During an economic boom, banks tend to increase their capital ratio to benefit from potential investment opportunities/take advantage of increased credit activities (Durafe and Jha, 2018; Schaeck and Cihak, 2012). Furthermore, banks may decide to use an expansionary monetary policy regime to increase capital ratios (Laeven and Majoni, 2003). Nevertheless, a thriving economy also implies a lower loan default rate, so banks do not necessarily need to increase capital ratio and may decide to lower the ratio (Ayuso *et al.*, 2004; Brei and Gambacorta, 2016). We use the growth rate of real GDP to capture the effect of business cycles on bank capital. We also include inflation as a control variable because literature establishes a negative relationship between inflation and bank capital. For instance, Hortlund (2005) argues that inflation increases bank debt, leading to a reduction in bank capital. This situation continues until leverage-induced increasing returns are sufficient to hold them at constant levels. Inflation is measured as annual percentage of consumer price index. In terms of financial market development, a re-balancing of the capital ratio of banks is possible when there is positive development in financial markets. Leaning on the finance-growth theory, banks would take advantage of lower costs of funding attributable to development of the markets, thus obtaining additional capital at minimal cost (Bena and Ondko, 2012; Levine, 2005). However, financial liberalisation may also have the opposite effect, that is, lower bank capital. This occurs usually in markets where information asymmetries and excessive risk-taking by banks exist and mostly in markets where efficient supervision is not available (González and González, 2014; Vithessonthi, 2014). In this type of market, efficient supervision is also absent. The two different positions imply that the expected relationship between bank capital and financial market development is ambiguous. We use the ratio of domestic credit to the private sector by commercial banks to GDP as our proxy for financial market development.

4. Empirical results

4.1 Descriptive statistics and correlation

Table 2 presents the descriptive statistics of variables outlined in Table 1. The average values of the main variables of interest, that is, Lerner index and bank concentration are 0.309 and

Variable	Mean	Standard deviation	Minimum	Maximum
Bank capital	11.647	5.912	-4.21	83.21
Bank concentration	53.408	14.943	32.521	100
Lerner index	0.309	0.093	-0.084	0.459
Bank profitability	1.944	1.667	-9.92	7.36
Credit risk	6.011	5.898	0.19	45.16
Bank liquidity	24.901	27.784	0.35	81.6
Bank size	5.444	0.975	3.55	6.436
Gross domestic product	4.311	2.973	-24	14.047
Inflation	7.295	5.304	-1.086	36.908
Financial market development	45.745	34.803	7.137	160.125
Regulatory quality	0.455	0.144	0.004	0.836

Source(s): Bank-level and country-level data as outlined in the data section

Table 2.
Descriptive statistics

53.408, respectively. For bank concentration, approximately 53% of total bank assets are held by the three largest banks, implying a less competitive market. Nonetheless, the Lerner index of 0.309 shows a competitive market, implying that high concentration does not necessarily translate to high market power. This is in line with the position of Leon (2014) that the different measures used to capture competition do not give the same interpretation, that is, do not give the same inferences. Regulatory quality has a mean of 0.455, with a maximum of 0.836 buttressing the low quality of regulation in the system.

The correlation matrix in Table 3 shows that the variables generally have low correlations, implying that multicollinearity is not an issue. Most variables are seen to have values less than 0.5, with the only exception being bank concentration and Lerner index. However, this is not a problem since the two market structure variables do not enter the regression equation at the same time. Bank capital is negatively correlated with bank concentration, while it has a positive correlation with Lerner Index with values of -0.254 and 0.097 , respectively. However, without controlling for other variables that affect bank capital, it would be inappropriate to make inferences on the nature of the relationship between market structure and bank capital using correlation matrix. Consequently, we run Eqn (1) using the two-step Sys-GMM, an instrumental variable technique as outlined in the method section.

4.2 Regression estimates (market structure, regulatory quality and bank capital)

In Table 4, we report the results obtained from Eqn (1) in columns 1 for bank concentration, and in 2 for Lerner index. The dependent variable in both columns is bank capital. The two market structure variables have different coefficient signs and statistical significance in line with the assertion of Leon (2014) and inferences made from the descriptive statistics and correlation matrix.

The coefficient for bank concentration is negative and statistically significant (-0.035 , $p < 0.01$) in column 1. This suggests that the less competitive nature of banks in the study, as noted in the descriptive statistics, leads to a lower bank capital ratio. The result is consistent with the assertions of Schaeck and Cihak (2012) and Uhde and Heimeshoff (2009) that banks tend to hold higher capital ratios when operating in competitive environments and conversely for banks in less competitive settings. From the moral hazard view, the too-big-to-fail syndrome that encourages banks to hold less capital may be applicable to the banks in this study given that 53.408% of the total assets are held by the three largest banks in the study (see Table 2). Regulatory authorities view them as too big to fail and would put in place measures to prevent such from happening (Mishkin, 1999). The Lerner index, although positive, has a non-significant effect on bank capital, implying that market power does not

Table 3.
Correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11
(1) Bank capital	1.000										
(2) Lerner index	0.097**	1									
(3) Bank concentration	-0.254*	-0.603***	1								
(4) Bank profitability	0.361*	0.048	0.044	1							
(5) Credit risk	-0.049	0.198***	-0.243***	-0.325***	1						
(6) Bank liquidity	0.424	-0.043	0.044	0.019	-0.016	1					
(7) Bank size	0.073**	-0.063	0.058	-0.112**	-0.081*	0.077*	1				
(8) Gross domestic product	0.117**	0.026	-0.136***	0.185***	-0.057	0.038	-0.083**	1			
(9) Inflation	0.231***	-0.071	-0.015	0.329***	0.039	0.180***	-0.045	-0.015	1		
(10) Financial market development	-0.272***	-0.095***	0.304***	-0.334***	-0.047	-0.119***	0.177***	-0.279***	-0.279***	1	
(11) Regulatory quality	-0.191***	0.057	0.290***	0.010	-0.204***	-0.024	-0.039	-0.136***	-0.312***	0.447***	1

Note(s): *, ** and *** represents 1%, 5% and 10% significant levels, respectively

	1	2
Bank capital _(t-1)	0.654*** (0.024)	0.121*** (0.013)
Bank concentration	-0.035*** (0.006)	-
Lerner index	-	2.612 (1.606)
Bank profitability	0.647*** (0.036)	0.885*** (0.142)
Credit risk	0.023 (0.017)	0.018 (0.043)
Bank liquidity	-0.017* (0.009)	-0.014 (0.028)
Bank size	0.514*** (0.144)	0.323*** (0.118)
Gross domestic product	-0.017 (0.010)	-0.089*** (0.032)
Inflation	-0.048*** (0.009)	-0.073*** (0.021)
Financial market development	0.001 (0.003)	0.006 (0.010)
Regulatory quality	-0.022*** (0.006)	-0.100*** (0.020)
F-statistics <i>p</i> -value	0.000	0.000
Time dummy	Yes	Yes
AR (1) <i>p</i> -value	0.027	0.063
AR (2) <i>p</i> -value	0.635	0.348
Hansen <i>p</i> -value	0.445	0.314
Number of banks	79	79

Note(s): Table 4 reports coefficient estimates of Eqn (1), with small sample adjustment and corrected standard errors in parenthesis using the two-step system GMM technique. Dependent variable in both columns is bank capital. Variables are as defined in Table 1. Columns 1 and 2 present results when bank concentration and Lerner index are used as measures of market structure, respectively. *** and * refer to 1% and 10% level of significance, respectively. The insignificance of AR (2) indicates the absence of second-order serial correlation in first-differenced errors. The *p*-value of Hansen is also insignificant, implying that instruments are valid and are not overidentified

Table 4.
Regression estimates

have any influence on capital ratio. Liu *et al.* (2013) and Alraheb *et al.* (2019) found similar results for banks in 10 European countries and the MENA region, respectively. The different results obtained from the two variables further affirm Leon (2014) that they do not necessarily give the same inference. Overall, the results show that bank concentration is a more important determinant of bank capital for this study than the Lerner index, which is more of a measure of pricing market power (Leon, 2014). The institutional variable represented by regulatory quality shows a negative and statistically significant coefficient in both columns (-0.022 , $p < 0.01$; and -0.100 , $p < 0.01$), suggesting that bank capital reduces with improvement in the quality of regulation. It is possible that with stronger regulatory quality, banks would have no need to engage in excessive risk activities, necessitating an increase in capital ratio (Ozili, 2018; Vithessonthi, 2014).

Taken together, the two variables (competition and institutional quality) suggest that high regulatory quality in less competitive markets dissuades banks from engaging in excessive risk-taking activities that would necessitate holding capital ratio in excess of regulatory requirements. In addition, the concentrated market may increase the information asymmetry problem common in less developed financial markets. This makes it difficult for banks to monitor and screen borrowers, and they would be unable to differentiate between high- and low-quality debtors (Ariss, 2010). However, while a high regulatory quality may be sustained, there is a need to encourage healthy competition that can lead to an increase in bank capital because a reduced capital ratio may affect bank stability.

In line with the pecking order theory, the results show positive and statistically significant coefficients for bank profitability in both columns (0.647 , $p < 0.01$; 0.885 , $p < 0.01$), implying that banks increase their capital ratios following improved earnings to guide against unforeseen circumstances (Alraheb *et al.*, 2019). Consistent with Konishi and Yasuda (2004) and Jackson *et al.* (2002), the coefficients of bank size in columns 1 and 2 are positive and statistically significant (0.514 , $p < 0.01$; 0.323 , $p < 0.001$, respectively), suggesting that

large-sized banks benefit from economies of scale when raising additional capital. In addition, large banks would need to have capital in excess of market-determined reserve order to maintain good credit ratings, thus the positive coefficients. Although bank liquidity serves as a buffer to prevent bank runs, the results in Table 4 (column 1) for bank concentration show an inverse relationship between liquidity and bank capital ($-0.017, p < 0.1$), indicating that more liquid banks would have lower capital ratios. A bank that is highly liquid does not necessarily need to have excess capital ratios because the risk of a bank run is low (Vithessonthi, 2014).

The sign and level of significance of gross domestic product coefficient in the Lerner index column ($-0.089, p < 0.01$) implies that the variable is countercyclical, inferring that in a booming economy, there is lower probability of loan default; thus, there is no need for banks to increase capital ratio and may decide to lower the ratio, in line with the arguments of Ayuso *et al.* (2004) and Brei and Gambacorta (2016). Inflation has negative and statistically significant coefficients in both columns ($-0.048, p < 0.01$; $-0.073, p < 0.01$), consistent with the argument of Hortlund (2005) that it increases bank debt leading to a reduction in bank capital. This situation remains until leverage-induced increasing returns are sufficient to hold them at constant levels. We do not find support for either the finance-growth or financial liberalisation theory, because the coefficient for financial market development is insignificant in both columns.

To validate the results in Table 4, we report p -values of F -statistics, AR (2), Hansen and lagged bank capital. The significance of F -statistics at 1% significance level in the two columns implies the joint significance of all variables in explaining bank capital. The non-significance of AR (2) shows the absence of serial correlation in differenced residuals, while that of Hansen indicates that the instruments used are valid and the model is not over-identified. Furthermore, the positive and significant coefficients for the lagged bank capital justify the use of a dynamic model and the presence of adjustment costs that may hinder a bank from instantaneous change in capital ratio, consistent with earlier arguments of Brei and Gambacorta (2016), Ozili (2015) and Etudaiye-Muhtar *et al.* (2017).

4.3 Indirect effect of market structure and regulatory quality on bank capital

In the preceding section, we investigated the direct effect of market structure and institutional quality on bank capital ratio. In this section, we interact the two variables to determine their indirect effect and test the hypothesis that strong institutions and healthy competition existing side by side should encourage banks to hold capital in excess of what is required by regulatory authorities. To do this, we remodify Eqn (2) to include an interactive term (market structure*regulatory quality), and the results are presented in Table 5.

$$\gamma_{i,t} = \beta_0 + \beta_1\gamma_{i,t-1} + \beta_2\psi_{i,t} + \beta_3\chi_{i,t} + \beta_4\kappa_{i,t} + \beta_5\delta_{i,t} + \mu_i + \eta_t + \varepsilon_{i,t} \quad (2)$$

where $\delta_{i,t}$ represents the interaction of market structure and competition for bank i at period t . All other variables remain as defined in Table 1. Results from Eqn (2) are presented in Table 5.

The coefficient for the interaction term in Table 5 is negative and statistically significant in column 1 ($-0.001, p < 0.01$), suggesting that the direct effect on bank capital by market structure and regulatory quality is accentuated when the two variables exist alongside each other. This provides support for the results presented in Table 4 that high regulatory quality in less competitive markets dissuades banks from engaging in excessive risk-taking activities that would necessitate holding capital ratio in excess of regulatory requirements. Column 2 for Lerner index has an interactive term that is not significant. Furthermore, we observe that signs and significance of coefficients of control variables in the regression equation are not qualitatively different from what was reported in Table 4.

	1	2
Bank capital _(t-1)	0.654*** (0.013)	0.473*** (0.083)
Bank concentration	-0.164*** (0.012)	-
Lerner index	-	-14.543 (10.663)
Bank profitability	0.629*** (0.043)	0.998*** (0.174)
Credit risk	-0.003 (0.018)	0.039 (0.048)
Bank liquidity	-0.017** (0.008)	-0.022 (0.029)
Bank size	0.327*** (0.086)	0.428** (0.169)
Gross domestic product	-0.032*** (0.007)	-0.113*** (0.036)
Inflation	-0.051*** (0.008)	-0.072*** (0.025)
Financial market development	0.003 (0.003)	0.013 (0.011)
Regulatory quality	-0.038** (0.019)	-0.182*** (0.054)
Market structure*regulatory quality	-0.001*** (0.000)	0.339 (0.217)
F-statistics <i>p</i> -value	0.000	0.000
Time dummy	Yes	Yes
AR (1) <i>p</i> -value	0.010	0.023
AR (2) <i>p</i> -value	0.736	0.483
Hansen <i>p</i> -value	0.248	0.363
Number of banks	79	79

Note(s): Table 5 reports coefficient estimates of Eqn (2), with small sample adjustment and corrected standard errors in parenthesis using the two-step system GMM technique. Dependent variable in both columns is bank capital. Variables are as defined in Table 1. Columns 1 and 2 present results when bank concentration and Lerner index are used as measures of market structure, respectively. *** and ** refer to 1% and 10% level of significance, respectively. The insignificance of AR (2) indicates the absence of second-order serial correlation in first-differenced errors. The *p*-value of Hansen is also insignificant, implying that instruments are valid and are not overidentified

Table 5.
Interaction effects
(competition
regulatory quality)

5. Conclusion

Given the developing nature of the African financial system, this paper empirically investigates the nexus between market structure, institutional quality and bank capital ratio for a sample of 79 banks in 24 African countries for the period 2000–2016. The descriptive statistics suggests that the banking sector is concentrated and non-competitive. Controlling for endogeneity and autocorrelation, the regression results show that concentration and regulatory quality lowers bank capital ratio. Consistent with prior studies on less developed financial systems, our results imply that regulatory quality in less competitive markets (our sample) lowers bank capital, an indication that banks in such markets are dissuaded from engaging in excessive risk-taking activities that would necessitate holding capital ratio in excess of regulatory requirements. Our results have important policy implications for regulatory authorities and bank management. While improved regulatory quality should be maintained, banks should be encouraged to engage in healthy competition to improve the intermediation process. This would motivate banks to hold capital ratios appropriate for their level of banking activities and not engage in excessive risk-taking activities that would erode capital. Noting that our sample is taken from publicly listed commercial banks, further research may investigate and compare results from non-listed banks to determine if there is any difference in findings between the two categories.

Notes

1. Market structure in this study relates to how competitive the banking sector is. We use the two terms interchangeably.
2. Liquidity premium reduces when the share of funds invested in cash and near-cash equivalents increase, thereby reducing bank liquidity risk.

3. See Roodman (2009) for a detailed explanation of the method.
4. Anginer *et al.* (2018) also stopped in 2016 because data from Bankscope database were discontinued in January 2017. In terms of data availability, Boateng *et al.* (2018) used a similar approach.
5. Econometrics literature also establishes that GMM is robust with respect to heteroskedasticity and non-normality of data (e.g. Antoniou *et al.*, 2008)
6. In using these two variables, we take note of the view of Leon (2014) that although the two variables are measures used to capture competition, they may not give the same interpretation that is., do not give the same inferences.

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(The Appendix follows overleaf)

Appendix 1

The countries and sample banks in each country for the study are as below

S/N	Country	Sample no.
1.	Botswana	3
2.	Burkina Faso	1
3.	Cote d'Ivoire	4
4.	Egypt	7
5.	Gambia	1
6.	Ghana	5
7.	Kenya	7
8.	Libya	1
9.	Malawi	3
10.	Morocco	5
11.	Mozambique	1
12.	Namibia	1
13.	Niger	1
14.	Nigeria	8
15.	Republic of Benin	1
16.	Rwanda	2
17.	Senegal	1
18.	South Africa	8
19.	Sudan	1
20.	Tanzania	4
21.	Tunisia	8
22.	Uganda	2
23.	Zambia	1
24.	Zimbabwe	3

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Campaign participation, spreading electronic word of mouth, purchase: how to optimise corporate social responsibility, CSR, effectiveness via social media?

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Abstract

Purpose – The purpose of this paper is to investigate how to optimise corporate social responsibility (CSR) when communicating via social media. In particular, the communication type, cause proximity and CSR motives are addressed facing the increased demand for transparency and the grown consumers' expectations towards socially responsible brands.

Design/methodology/approach – Online survey was developed, based on a profound literature review and a field research we did on the actual social media behaviour of socially responsible brands. Consumers attitudes and behavioural reactions in terms of willingness to participate in a campaign, to spread e-WOM and to purchase were investigated, as a function of CSR motives (value vs performance vs value and performance) and cause proximity (national vs international), respectively, with monologue (study 1) and dialogue communication type (study 2).

Findings – Cause proximity enhanced the campaign participation, and this effect was pronounced for both, monologue and dialogue type of communication. CSR motives modulated the willingness to spread electronic word-of-mouth, and this holds for both, monologue and dialogue communication. Attitudes and purchase intention were highest when value- and performance-driven motives were communicated, but these effects appeared only when the message was in a dialogue form of communication. Message credibility and CSR motives credibility perception further modulated consumers response.

Practical implications – The outcomes could be used in developing marketing (communication) strategies leading to values and revenues optimisation.

Originality/value – The results are discussed in a framework of how CSR resonates via social media.

Keywords Corporate social responsibility, Cause proximity, Attitudes, Purchase intention, e-WOM, Credibility

Paper type Research paper

1. Introduction

Corporate social responsibility (CSR) was recognised as an efficient tool to enhance attitudes towards a company (Bhattacharya and Sen, 2004), its financial performance and market value (Du *et al.*, 2010). Defined as commitment to improve community well-being through discretionary business practices and contributions of corporate resources (Kotler and Lee, 2005), CSR has been increasingly incorporated in companies' portfolio over the past decade (e.g. Badenes-Rocha *et al.*, 2019; Bigné *et al.*, 2010; Du *et al.*, 2010; Groza *et al.*, 2011).



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Note, however, that launching CSR initiatives, and even communicating these, e.g. via the company's web page, does not necessarily mean that consumers respond to these initiatives. A recent study indeed reported that the overall CSR consumer discourse is still very limited (D'Acunto *et al.*, 2020), despite general interest in CSR (Ettinger *et al.*, 2018). An auditing of the literature even showed that incorporating CSR into company's strategies is paradoxically associated with corporate social irresponsibility (Riera and Iborra, 2017). The above outcomes concerning the way consumers perceive corporate activities are a warning call to the expanding number of CSR initiatives. Namely, there is increased demand for transparency and emergent need to better understand the effectiveness of CSR.

Furthermore, the drastic change of the communication landscape forced companies to change the way they interact with their customers (Kumar *et al.*, 2016; Colicev *et al.*, 2018) when communicating about the brand (Stojanovic *et al.*, 2018), the company (Bigné *et al.*, 2019) and CSR initiatives (Badenes-Rocha *et al.*, 2019). In particular, social media (e.g. Facebook, Twitter) are increasingly used to faster and more efficiently reach customers.

Social media implementation, nevertheless, raised consumers' expectations regarding CSR. Recent papers, auditing relevant literature, acknowledged the need for digitalisation in CSR communication (Verk *et al.*, 2019), as well as the consumers' sensitivity by asking: do CSR messages resonate via social media (Saxton *et al.*, 2019). The burning question however is: *How CSR messages resonate via social media, and thus, how to optimise CSR effectiveness via social media?*

The current paper addresses this question, providing in-depth exploration on various parameters hypothesised as key drivers of CSR effectiveness. We complement the existing body of literature bringing together theories of CSR motives (e.g. Groza *et al.*, 2011; Ellen *et al.*, 2006), cause proximity effect (e.g. Grau; Folse, 2007; Groza *et al.*, 2011), communication type (e.g. Du *et al.*, 2010; Korschun and Du, 2013), credibility (e.g. Flanagan and Metzger, 2000; Goldsmith *et al.*, 2000) and social media impact (e.g. Badenes-Rocha *et al.*, 2019; Bigné *et al.*, 2019) in a single framework. With this framework, we aim at shedding much needed light on how to maximise the CSR effectiveness.

First, we look at consumers' attitudes and how these influence behavioural reactions in terms of willingness to participate in a campaign, to spread electronic word-of-mouth (e-WOM) and to purchase, when consumers are exposed to social media posting about CSR. Second, we explore how the above parameters resonate as a function of *cause proximity* (national vs international), *CSR motives* (value vs performance vs value and performance) and *communication type* (monologue vs dialogue), emerging as major determinants of consumer response. Third, we investigate how perceived message credibility and CSR motives credibility can influence consumers' attitudes and behavioural responses. Forth, the outcomes are summarised in a framework of how CSR messages resonate via social media.

The paper is organised as follows: introducing the theoretical background that inspired the empirical research. Based on a profound literature review and a field research we did on the actual social media behaviour of socially responsible brands, an online survey was developed, addressing how to optimise the CSR impact via social media. Two studies are reported, respectively, when consumers are exposed to monologue (study 1) and dialogue (study 2) form of communication. The results are discussed in a framework of how CSR resonates via social media. The paper sums up with practical implications suggesting development of marketing (communication) strategies leading to values and revenues optimisation.

2. Theoretical background

2.1 Cause proximity

Cause proximity reflects the distance between the CSR activity and the consumer (Grau and Folse, 2007) and was associated with local, regional, national and international initiatives (Varadarajan and Menon, 1988). Note, however, previous studies are not univocal on proximity

effect when it comes to cause-related marketing. While local donations and positive message framing served as effective cues to generate favourable attitudes (Grau and Folse, 2007), the hypothesised proximity effect was not significant on attitudes (Ross *et al.*, 1992). A plausible explanation for the discrepancies in findings could be the fact that these earlier studies employed different scales and measurements. A study re-examining the proximity effect reported a moderate role of spatial proximity of the CSR initiative on values-driven attributions (Groza *et al.*, 2011). It was also found that proximity (local vs national vs international) affects consumer identification with the cause and the corporate image evaluation. Previous findings are a cornerstone to build around and to further look at how proximity reflects in behaviour reactions.

In the present context, addressing the effect of social media, it is important to investigate how proximity influences consumers' attitudes and response in terms of willingness to participate in a campaign (Grau and Folse, 2007), to spread word-of-mouth (Zeithaml *et al.*, 1996), online (Stojanovic *et al.*, 2017) and to buy a product (Groza *et al.*, 2011). We hypothesise:

- H1a. Attitudes will be more positive when national (than international) cause is initiated and communicated to consumers.
- H1b. Willingness to *participate in a campaign* will be higher when national (than international) cause is initiated and communicated to consumers.
- H1c. Willingness to spread *e-WOM* will be higher when national (than international) cause is initiated and communicated to consumers.
- H1d. Willingness to *buy* a product will be higher when national (than international) cause is initiated and communicated to consumers.

Following the classical theory, that attitudes are beliefs about an object/person that affect intention to behave and actual behaviour (theory of planned behaviour (TPB), Ajzen, 1991), we are interested to know how beliefs about various corporate motives may modulate consumer's response.

2.2 Corporate social responsibility motives

Three types of CSR motives were classified in a taxonomy, in line with the company's actions, as performance-, stakeholder- or value-driven motives (Groza *et al.*, 2011). The performance-driven motives are defined as an instrument to achieve a company's performance objectives in terms of sales raise, profitability and investments return (Swanson, 1995). While stakeholder-driven motives reflect the implementation of CSR initiatives, which align to stakeholders' norms (Maignan and Ralston, 2002), the value-driven motives reflect the CSR initiatives businesses generate to positively impact the society (Hooghiemstra, 2000).

CSR motives underlying a company's actions have also been addressed from the perspective of consumers (Groza *et al.*, 2011; Ellen *et al.*, 2006). When consumers perceive that a company focuses on itself, i.e. to achieve its performance objectives (Ellen *et al.*, 2006), this reflects performance-driven CSR motives (in terms of Swanson, 1995). When a company focuses on others than itself, i.e. stakeholders, this is comparable to stakeholder-driven CSR (as defined by Maignan and Ralston, 2002). Respectively, the society-oriented activities are attributed to the value-driven CSR motives.

CSR motives were reported to significantly influence consumers' perception and thus response (Sen *et al.*, 2009; Vlachos *et al.*, 2009). Not surprisingly then, in various studies, different motives were extensively explored. In general, the nature of CSR initiatives (value-, strategic-stakeholder-driven) reflects consumer attribution effects, and these attributions are mediators in consumers' responses to CSR (Groza *et al.*, 2011). Consumers responded most positively to CSR initiatives judged as values driven and strategic, while CSR efforts perceived as egoistic received negative reactions (Ellen *et al.*, 2006). Overall attitude was greater in socially motivated

than in the profit-motivated conditions (Becker-Olsen *et al.*, 2006), but this effect was only pronounced with high fit between the firm and social initiative. In the low fit condition, both, profit and social motives influenced attitudes positively. The authors explained these results with consumers' beliefs that a firm could be profit motivated. However, consumers are sceptical in case of discrepancy between stated objectives and the firm's actual actions. In other words, performance-strategic and social-value motives are not mutually exclusive. One might even argue that combining value- and performance-driven motives could generate most positive response. Whether this is the case, we test:

- H2. When a message combines value- and performance-driven CSR motives (in comparison to a message communicating only value-driven or only performance-driven CSR motive),
- H2a. *attitudes* will be more positive, and there will be:
- H2b. higher willingness to *participate in a campaign*;
- H2c. higher willingness to spread *e-WOM*; and
- H2d. increased *buying intention*.

We have to point out here that attitudes towards company (Grau and Folse, 2007; Ellen *et al.*, 2006) and purchase intention (Bianchi and Bruno, 2019; Goldsmith *et al.*, 2000; Groza *et al.*, 2011) received attention in the earlier CSR literature. Furthermore, positive attitudes influence positively the purchase intention, as defined with the brand equity theory (Aaker, 1996; Keller, 1993).

What is much needed and more interesting in the present context is to explore *how CSR resonates via social media the interplay between attitudes and behaviour*. Knowing that social media could change brand awareness (Colicev *et al.*, 2018) and participating in a firm's social media is a function of the customers' attitudes (Kumar *et al.*, 2016), it is worth looking at causal relationships. In particular, we are interested to know how attitudes influence e-WOM spread and willingness to participate in CSR campaign. A recent study exploring the effects of social media use reported that intention to develop e-WOM depends on brand image and awareness (Stojanovic *et al.*, 2018), in line with the brand equity theory. A study in the CSR context also showed that attitudes influence purchase intention and intention to spread e-WOM (Chu and Chen, 2019). Based on the previous findings, we assume:

- H3. The more positive the *attitudes* are, the higher will be:
- H3a. the willingness to *participate in a campaign*;
- H3b. the willingness to spread *e-WOM*; and
- H3c. the *purchase intention*.

Note that initial attitudes towards company and CSR perception may change over time (Bigné, *et al.*, 2010) and through communication (Bigné *et al.*, 2019). Therefore, we could expect that the above hypothesised effects might be modulated over time by further communication.

2.3 Communication type

Although combining user- and company-generated content was acknowledged in communicating CSR and in stimulating consumer engagement (Badenes-Rocha *et al.*, 2019), social networking platforms and sites are most commonly utilised in a traditional one-way company-to-consumer communication (Saxton *et al.*, 2019), referred to as *monologue* form of communication. Message in a one-way ad format was found to generating better consumer responses to the company, in comparison to a CSR message posted by another Facebook user (Kim and Xu, 2019). It was even reported that communicating CSR initiatives

internally elicited greater perceptions of trust and satisfaction towards the organisation than the external CSR message and the chief executive officer's (CEO's) personal life message (Wang and Huang, 2018).

In the digital age, however, public could not be kept away. By contrast, there is an emergent need to bring the public in and to examine the dialogic form of communication in CSR efforts. A *dialogue* type of communication we refer to as two-way communication between a company and its stakeholders and/or customers. Participating in dialogues on virtual platforms can lead to active stakeholder engagement (Korschun and Du, 2013) and might overcome stakeholder's scepticism towards company's CSR activities (Badenes-Rocha *et al.*, 2019).

Furthermore, bringing the consumers in, i.e. engaging in dialogues on social media, by proactively seeking their feedback to a company's activities can encourage perceiving the CSR as more favourable (Du *et al.*, 2010). Building favourable image (Bigné *et al.*, 2010) and development of sustainable consumer–stakeholder's connection (Badenes-Rocha *et al.*, 2019) is very important, as it could bring extra value to the company (Kumar *et al.*, 2010), and is a prerequisite for building strong brands (Keller, 1993).

Therefore, the focus should be on exploring constitutive approaches to best communicate CSR. Assuming that interrogative (than narrative) message framing will have high potential to generate dialogues, we hypothesise that active stakeholder engagement on virtual platforms may emerge. CSR messages in a dialogue form indeed led to consumers' more positive attitudinal and behavioural reactions, in comparison to when a CSR message was communicated in a monologue form (Bialkova *et al.*, 2015). Consumers were more willing to participate in a campaign, to spread e-WOM and to purchase when engaged in dialogue (than monologue) form of communication. The authors further noted that message credibility is a factor in CSR communication effectiveness (Bialkova *et al.*, 2015).

2.4 Credibility

Information credibility is a crucial component in consumer perception, as reported at the infancy of internet communication (Flanagin and Metzger, 2000), and in adoption of e-WOM on social networks (Aghakhani *et al.*, 2018). Therefore, it is worth paying attention to: How credibility of information reflects in a consumer's response when CSR is communicated via social media?

This investigation is especially relevant, taken that increased message credibility could lift customers trust and thus engagement (Badenes-Rocha *et al.*, 2019). Consumers trust was further associated with brand authenticity (Hernandez-Fernandez and Lewis, 2019), which enhanced brand credibility and value perception (Del Barrio-Garcia and Prados-Peña, 2019). Moreover, corporate credibility, reflecting believability of company's intentions and communications at a particular moment in time, influences attitudes and purchase intention (Goldsmith *et al.*, 2000). Consumers respond most positively to corporate initiatives perceived to be oriented to help others while responding negatively to a company's motivation perceived as stakeholders oriented (Ellen *et al.*, 2006). Put differently, motives credibility perception seems to play a role in consumer response towards a company's CSR efforts. Taken the abovementioned, we expect:

- H4.* Message credibility as well as CSR motives credibility perception will mediate the effect of attitudes on willingness to participate in a campaign (*H4a*), to spread e-WOM (*H4b*) and to purchase (*H4c*).

Based on the previous findings that monologue and dialogue forms of communication might have different effectiveness (Bialkova *et al.*, 2015), and that user- and company-generated contents reflect differently consumer's engagement (Badenes-Rocha *et al.*, 2019), we test the above hypotheses, respectively, with monologue (study 1) and dialogue (study 2) CSR messages communicated via social media. The two empirical studies are described in detail below.

3. Method section

3.1 Study 1

3.1.1 *Participants.* In total, 120 participants (38 men) took part in the study. They were native Dutch, age between 18 and 66 years old. In total, 62% had university education. Participants were randomly assigned to one of the experimental conditions as explained hereafter.

3.1.2 *Stimuli and design.* A 2 (Proximity: national vs international cause) × 3 (CSR motives: value vs performance vs value and performance) between participants design was employed.

Facebook posts have been created for each of the conditions, based on a field study exploring the actual brand behaviour on social media (Facebook and Twitter) of a well-known cosmetic brand operating internationally. Each Facebook post encompassed the brand logo, a picture, a text and a cause logo. Half of the participants were presented with a logo communicating a national cause, and the other half a logo communicating an international cause. The picture was the same for all participants, i.e. presenting an animal. The text varied between participants, namely, one-third of the participants were presented with a message communicating value, one-third with a message communicating performance and one-third with a message combining value- and performance-driven motives. In study 1, the message was in monologue (narrative) form. See Table A1 for examples on message framing. Table A2 presents a summary of the main manipulated factors.

3.1.3 *Procedure.* The study was conducted online, i.e. a questionnaire was distributed via e-mails and Facebook. Information about the research purpose and a consent form were provided prior to the study.

Participants were first presented with the Facebook post. Afterwards, they had to answer questions addressing the message effectiveness in terms of attitude towards the company, willingness to participate in CSR campaign, spreading electronically word of mouth (e-WOM), purchase intention. Perceived message credibility and perceived CSR motivation were also measured. The final part of the survey encompassed questions addressing demographics.

3.1.4 *Instrument.* Scales from previous relevant work were adopted for the current context, to measure the constructs of interest (see Table 1 for summary of the constructs used, and Table A3 for details). The scale for attitude towards the company encompassed three items and was derived from MacKenzie and Lutz (1989). An example of an item is “My attitude towards the company is” (1 = unfavourable, 7 = favourable). The scale for willingness to participate in the CSR campaign had three items, used by Grau and Folse (2007)

Construct	Measuring scale	Cronbach's α (study 1)	Cronbach's α (study 2)
Attitudes	3 items: 1 = <i>unfavourable</i> , 7 = <i>favourable</i> , e.g. “My attitude towards brand X is”	0.97	0.89
e-WOM spread	3 items: 1 = <i>not at all likely</i> , 7 = <i>extremely likely</i> , e.g. “How likely is it that you say positive things online about brand X to other people?”	0.96	0.95
Campaign participation	3 items: 1 = <i>strongly disagree</i> , 7 = <i>strongly agree</i> , e.g. “I would be willing to participate in this campaign”	0.93	0.93
Purchase intention	4 items: 1 = <i>very unlikely</i> - 7 = <i>very likely</i> , e.g. “What is the likelihood to purchase a product from X”	0.96	0.93
Message credibility	5 items: 1 = <i>not at all believable</i> , 7 = <i>extremely believable</i> “The information provided in the message was”	0.97	0.95
CSR motives	8 items: 1 = <i>strongly disagree</i> , 7 = <i>strongly agree</i> “X is making the offer because feels morally obliged to help”	0.74	0.79

Source(s): MacKenzie and Lutz (1989), Zeithaml *et al.* (1996), Grau and Folse (2007), Flanagin and Metzger (2000), Groza *et al.* (2011), Ellen *et al.* (2006); See Appendix, Table A3 for details

Table 1.
Summary of the
constructs used
(source, items and
reliability check)

in the context of cause-related marketing. An example of an item is “I would be willing to participate in this campaign” (1 = strongly disagree, 7 = strongly agree). The willingness to spread e-WOM encompassed three items, e.g. “How likely is it that you say positive things online about the company to other people?” (1 = not at all likely, 7 = extremely likely). The scale was adopted from Zeithaml *et al.* (1996) for the current context of e-WOM. The scale for purchase intention encompassed four items, e.g. “What is the likelihood to purchase a product from the company” (1 = very unlikely, 7 = very likely). The scale was previously used by Groza *et al.* (2011) to study consumers’ response to CSR. The scale for perceived credibility of the message included four items and was derived from Flanagin and Metzger (2000). An example of an item is “The information provided in the message was” (1 = not at all believable, 7 = extremely believable). The scale for perceived CSR motivation included eight items and was adopted from Ellen *et al.* (2006). An example of an item is “The company is making the offer because feels morally obliged to help” (1 = strongly disagree, 7 = strongly agree).

All scales used had high internal validity, all Cronbach’s alpha > 0.70 (Table 1). *T*-tests were conducted to check that all dependent variables are significantly different from neutral.

3.1.5 Analytical procedure. *T*-tests were conducted to probe for the proximity effect. ANOVAs were conducted to test the CSR motives impact. Regression models were performed to explore the interplay between attitudes, consumers’ willingness to participate in CSR campaign, to spread e-WOM, to purchase. Further regression modelling tested whether and how perceived credibility of the message and perceived CSR motivation interplay in changing attitudes and behaviour responses. In the following, we present only the results substantiated statistically.

3.2 Results (study 1)

3.2.1 Cause proximity. Cause proximity (national vs international) influenced the willingness to participate in a CSR campaign (see Figure 1, left panel). Participants were more likely to participate in a campaign with national than international cause ($M = 4.93$ vs $M = 3.39$), as revealed by a significant *T*-test outcome, $t(118) = 5.38, p < 0.0001$. Attitudes towards the brand ($M = 5.01$), purchase intention ($M = 4.27$) and willingness to spread e-WOM ($M = 3.49$) were relatively high. Cause proximity, however, did not modulate these parameters, all *p*-values > 0.1.

3.2.2 Corporate social responsibility motives. Participants were most likely to spread e-WOM when the messages communicated performance and value ($M = 4.23$) than only value ($M = 3.15$) or only performance-driven motives ($M = 3.08$), $F(2, 117) = 6.68, p < 0.005$.

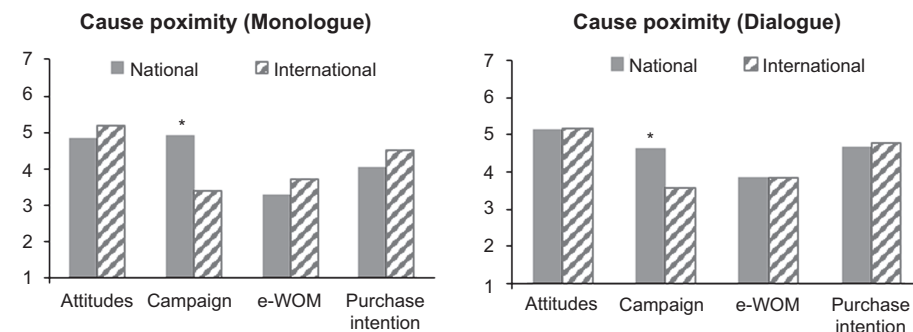


Figure 1. Attitudes, campaign participation, e-WOM and purchase intention as a function of cause proximity (national vs international), for study 1 (left panel) and study 2 (right panel)

Note(s): NB. With asterisk, significant differences

Perceived message credibility as well as perceived CSR motivation were also highest when participants saw a performance- and value-driven motives message, p -values < 0.01 .

There was a tendency for most positive attitude towards the brand when the message combined performance and value ($M = 5.44$), than communicating only one of these motives (respectively $M = 4.80$ and $M = 4.76$). Purchase intention was also highest when the message communicated performance and value ($M = 4.68$) than only value- ($M = 4.18$) or only performance-driven motives ($M = 3.96$). However, none of these effects was substantiated statistically, all p -values > 0.1 . Figure 2 (left panel) provides an overview on the effects of CSR motives.

3.2.3 Credibility. How perceived message credibility and CSR motives credibility can influence consumers' responses was investigated. Regression models explored the interplay between attitudes and behaviour reactions in terms of campaign participation, willingness to spread e-WOM and to purchase. The modelling is conducted following Baron and Kenny's (1986) definition of mediators' influences. Therefore, consequent analyses are done to test: (1) the effect of message and CSR credibility on attitude; (2) the effect of message and CSR credibility on campaign participation, purchase intention, willingness to spread e-WOM; (3) the effect of attitudes on campaign participation, purchase intention, willingness to spread e-WOM; (4) the effect of message and CSR credibility on campaign participation, purchase intention, e-WOM, when including attitude as a mediator.

Table 2 summarises the outcomes of model 4 (for study 1), and details on statistics for other models are presented below.

Message credibility explained 65% of the variance in attitudes. The model testing the effect of message credibility and CSR motivation on attitudes also explained 65% of the variance, $R^2 = 0.65$, $F(2, 117) = 109.60$, $p < 0.0001$.

Purchase intention was higher with increased message credibility ($\beta = 0.11$), and when CSR motivations were perceived more positively ($\beta = 0.15$), $R^2 = 0.50$, $F(2, 117) = 59.14$, $p < 0.0001$. Willingness to spread e-WOM also increased when the message ($\beta = 0.11$) and the

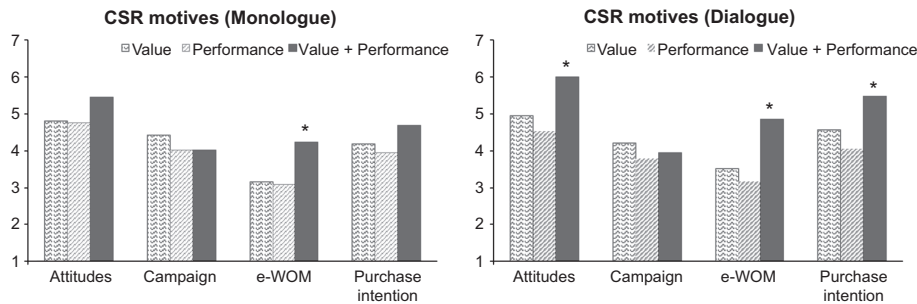


Figure 2. Attitudes, campaign participation, e-WOM and purchase intention as a function of CSR motives (value vs performance vs value and performance)

Notes(s): NB. With asterisk, significant differences

	Campaign participation $R^2 = 0.043$			e-WOM $R^2 = 0.437$			Purchase intention $R^2 = 0.595$		
	b	β	p	b	β	p	b	β	p
Attitude	0.10	0.10	0.538	0.09	0.09	0.463	0.54	0.52	<0.0001
Message credibility	0.01	0.01	0.992	0.45	0.37	<0.01	0.12	0.10	0.385
CSR perception	0.44	0.24	0.048	0.49	0.28	<0.005	0.45	0.26	<0.001

Table 2. Summary of the statistics for model 4 (study1)

CSR motivations ($\beta = 0.16$) were perceived as more credible, $R^2 = 0.45$, $F(2, 117) = 44.95$, $p < 0.0001$. Concerning the campaign participation, CSR motivation explained 4% of the variance of the model. However, the model encompassing message credibility and CSR motivation perception was not substantiated statistically, $p > 0.05$.

The more positive the attitude towards the company was, the higher was the willingness to spread e-WOM ($R^2 = 0.28$, $F(1, 118) = 46.39$, $p < 0.0001$); and the purchase intention ($R^2 = 0.53$, $F(1, 118) = 133.16$, $p < 0.0001$).

The model encompassing attitudes, message credibility and perception of CSR motives had a relatively low explanatory power concerning the campaign participation. The models concerning the willingness to spread e-WOM and the purchase intention had a good explanatory power, see Table 2 for exact statistical outcomes.

3.3 Study 2

3.3.1 Design, procedure, instrument were the same as in study 1. The only difference concerned the type of communication, i.e. in study 2, the message was in a dialogue (interrogative) form, see Table A1.

3.3.2 Participants. In total, 120 participants (43 men) took part in the study. They were native Dutch, age between 18 and 64 years old. And, 66% had university education. Participants were randomly assigned to one of the experimental conditions.

3.4 Results (study 2)

3.4.1 Cause proximity. Participants were more likely to participate in a campaign when national than international cause was communicated ($M = 4.62$ vs $M = 3.56$), as substantiated statistically by T -test, $t(118) = 3.56$, $p < 0.001$. Cause proximity did not modulate attitudes towards the brand ($M = 5.15$), neither purchase intention ($M = 4.71$) nor e-WOM ($M = 3.85$), all p -values > 0.4 . See Figure 1, right panel, for details on the cause proximity effect.

3.4.2 Corporate social responsibility motives. CSR motives played a major role in consumers' response (see Figure 2, right panel). Attitude towards the brand was most positive when the message communicated performance and value ($M = 5.99$) than only value- ($M = 4.95$) or only performance-driven motives ($M = 4.53$), $F(2, 117) = 15.99$, $p < 0.0001$. Purchase intention was also highest when the message communicated performance and value ($M = 5.53$) than only value- ($M = 4.57$) or only performance-driven motives ($M = 4.06$), $F(2, 117) = 13.62$, $p < 0.0001$. Participants were most likely to spread e-WOM when presented with a message communicating performance and value combined ($M = 4.84$) than with a message communicating one of these motives separately (respectively $M = 3.52$ vs. $M = 3.17$), $F(2, 117) = 13.26$, $p < 0.0001$.

3.4.3 Credibility. The same modelling procedure as in study 1 was followed for study 2.

Message credibility explained 37% of the variance in attitudes. Adding perception of CSR motivation to the model increased the explanatory power to 46%, $R^2 = 0.46$, $F(2, 117) = 49.35$, $p < 0.0001$.

The regression modelling further reported that the higher the perceived message credibility ($\beta = 0.27$) and perceived CSR motivations were ($\beta = 0.39$), the higher was the purchase intention, $R^2 = 0.36$, $F(2, 117) = 33.40$, $p < 0.0001$. Willingness to spread e-WOM also increased when the message ($\beta = 0.41$) and the CSR motivations ($\beta = 0.23$) were perceived as more credible, $R^2 = 0.35$, $F(2, 117) = 31.55$, $p < 0.0001$. Concerning the campaign participation, the message credibility explained only 8% of the variance in the model. Adding perception of CSR motivation to the model did not change its explanatory power.

The more positive the attitude towards the company was, the higher was the willingness to take part in the company's CSR campaign ($R^2 = 0.12$, $F(1, 118) = 15.53$, $p < 0.005$); to spread

e-WOM ($R^2 = 0.27$, $F(1, 118) = 43.15$, $p < 0.0001$); and the purchase intention ($R^2 = 0.49$, $F(1, 118) = 117.51$, $p < 0.001$).

The model encompassing attitudes, message credibility and perception of CSR motives had a relatively low explanatory power concerning the campaign participation. The models concerning the willingness to spread e-WOM and the purchase intention had a good explanatory power, see Table 3 for exact statistical outcomes.

4. General discussion

The goal of the present paper was to understand: *How CSR messages resonate via social media, and thus, how to optimise the CSR effectiveness via social media?* Addressing this question, we complement the existing body of literature bringing together theories of CSR motives (Groza *et al.*, 2011; Ellen *et al.*, 2006), cause proximity effect (Grau and Folse, 2007; Groza *et al.*, 2011), communication type (Du *et al.*, 2010; Korschun and Du, 2013), credibility (Flanagin and Metzger, 2000; Goldsmith *et al.*, 2000) and social media impact (Badenes-Rocha *et al.*, 2019; Bigné *et al.*, 2019) in a single framework.

The results are clear in showing that cause proximity, CSR motives and communication type are crucial determinants for consumers' attitudes and behaviour reactions in terms of willingness to participate in a campaign, to spread e-WOM and to purchase (see Figure 3 for a model summary). Message credibility and CSR motives credibility perception further modulated consumers response, as described in detail below.

4.1 Cause proximity

Willingness to participate in a CSR campaign was higher when national than international cause was launched (H1b confirmed), and this effect was pronounced for both, monologue (study 1) and dialogue message framing (study 2). Cause proximity, however, did not modulate neither attitudes (H1a rejected), neither willingness to spread e-WOM (H1c rejected) nor purchase intention (H1d rejected), see Figure 1.

Note that previous studies were not univocal on the effect of proximity. While hypothesised proximity effect was not significant on attitudes in some earlier studies

	Campaign participation $R^2 = 0.123$			e-WOM $R^2 = 0.377$			Purchase intention $R^2 = 0.529$		
	<i>b</i>	β	<i>p</i>	<i>b</i>	β	<i>p</i>	<i>b</i>	β	<i>p</i>
Attitude	0.35	0.28	0.019	0.28	0.22	0.027	0.58	0.55	<0.0001
Message credibility	0.16	0.10	0.378	0.48	0.33	0.002	0.09	0.07	0.423
CSR perception	0.01	0.01	0.943	0.24	0.15	0.160	0.24	0.18	0.053

Table 3. Summary of the statistics for model 4 (study2)

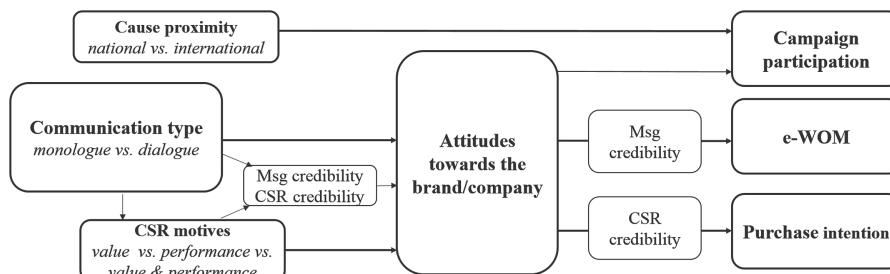


Figure 3. Conceptual framework

(Ross *et al.*, 1992), later it was shown (Grau and Folse, 2007; Groza *et al.*, 2011) that cause proximity modulates the attitudes, consumer identification with the cause and thus the corporate image evaluation. A plausible explanation for differences in findings could be the difference in manipulated factors, e.g. cause type, CSR motives, as well as the brand perception. Another explanation could be the nature of research itself, i.e. while the abovementioned studies explored the effect of the manipulated factors without implementing media, hereby we specifically explore the role of social media in CSR effectiveness.

Further explanation could be that consumers have favourable attitudes towards the company (Bhattacharya and Sen, 2004) and/or social media positively influenced the brand image (Stojanovic *et al.*, 2018). If this is the case, one could expect that any type of CSR activity is positively evaluated, irrespective of cause proximity. Hereby, consumers indeed reported very positive attitudes towards the brand, and relatively high purchase intention, irrespective of cause proximity.

Taken the abovementioned, we could say that proximity modulates behaviour responses, e.g. campaign participation, willingness to spread e-WOM, purchase intention with different magnitude. This is very interesting finding, opening new avenues to explore proximity effect, also when combined with other cause attributes.

4.2 Corporate social responsibility motives

Campaign participation did not differ with respect to CSR motives, opposite to our expectation in H2b. This is another important outcome, taken that, in general, our respondents were very much interested to participate in the campaign. It might be the case that people would like to take part in the campaign as they consider that CSR means “doing good”, and thus reflecting the moral aspects of behaviour. A recent study found that people indeed are very willing to behave in environmentally and socially responsible manner (Hosta and Zabkar, 2020).

Spreading e-WOM and purchasing, by contrast, are not necessarily associated with moral, but rather with financial aspects as related to marketing objectives. Willingness to spread e-WOM hereby was highest when message combined value- and performance-driven motives (H2c confirmed), and this effect appeared for both monologue and dialogue type of communication. Attitudes (in line with H2a) and purchase intention (in line with H2d) also changed, being highest when message combined value- and performance-driven motives. However, these effects were pronounced only for dialogue type of communication. This is a very important outcome, showing that CSR messages not just resonate via social media (Saxton *et al.*, 2019), but have different resonance as a function of CSR motives and communication format. The current results nicely cohere with other studies that consumer response may change over time (Bigné, *et al.*, 2010) and through communication (Bigné, *et al.*, 2019).

Furthermore, the regression modelling reported a strong relation between attitudes and behavioural consumers’ response (in line with TPB, Ajzen, 1991). The more positive the attitudes were, the higher was the willingness to spread e-WOM (H3b supported) and to purchase (H3c supported). These findings provide a direct link between attitudes towards company (Grau and Folse, 2007; Ellen *et al.*, 2006), purchase intention (Bianchi and Bruno, 2019; Goldsmith *et al.*, 2000; Groza *et al.*, 2011), spreading e-WOM (Chu and Chen, 2019; Stojanovic *et al.*, 2018) and thus being essential building blocks in our framework (Figure 3).

We have to also point out here that the more positive the attitudes were, the higher was the willingness to participate in a campaign (in line with H3a). Note, however, that the positive correlation between attitudes and campaign participation was only pronounced for dialogue message framing. This is another important finding, confirming the crucial role of communication type in optimising the CSR effectiveness.

4.3 Communication and credibility

Monologue vs dialogue message framing resonated differently on CSR effectiveness when it comes to attitudes and purchase intention (Figure 2). The current findings cohere with previous research that dialogue form of communication enhances attitudes and thus increases purchase intention (Bialkova *et al.*, 2015). A plausible explanation for the positive effect of dialogue could be the better stakeholders (Korschun and Du, 2013) and consumers' engagement (Badenes-Rocha *et al.*, 2019), in comparison to one-way communication.

A further explanation for the more favourable CSR perception when consumers being engaged in a dialogue could be found in the credibility effect. Information credibility is a crucial component of consumer perception in internet communication (Flanagin and Metzger, 2000) and in adoption of e-WOM on social networks (Aghakhani *et al.*, 2018).

Hereby, message credibility was higher with dialogue than monologue communication type, as substantiated statistically with additional *T*-test run across both studies $t(238) = 2.10, p < 0.05$. Furthermore, the more credible the message was perceived, the more positive were the attitudes. These outcomes are in line with previous research that increased message credibility could lift customers trust and engagement (Badenes-Rocha *et al.*, 2019), improve brand perceived value (del Barrio-Garcia and Prados-Peña, 2019; Hernandez-Fernandez and Lewis, 2019) and enhance attitudes (Bialkova *et al.*, 2015).

Interestingly, however, hereby in monologue type of communication message credibility explained the total effect on attitudes, while in dialogue type of communication attitude's formation was modulated by message credibility and CSR motives credibility perception. This is another important contribution in understanding how CSR resonates via social media. Namely, in the one-way communication, message credibility is the fundament. In the two-way communication, engaging consumers on social media, by proactively seeking their feedback seems to overcome their scepticism towards message credibility and thus can enhance the CSR credibility perception. The current findings nicely support previous work that engaging consumers in virtual dialogues lead to perceiving the CSR as more favourable (Du *et al.*, 2010) and thus to building a favourable brand image (Bigné, *et al.*, 2010).

Moreover, message credibility as well as CSR motives credibility perception mediated the effect of attitudes on willingness to spread e-WOM (supporting H4b). Note, however, this effect was with different magnitude for monologue (Table 2) and dialogue (Table 3) message framing. CSR motives credibility perception mediated the effect of attitudes on purchase (*H4c* supported partially), and this effect was pronounced for both, monologue and dialogue message framing. A slightly different look at these data (Tables 2 and 3) show that message credibility mediated the effect of attitudes on e-WOM, while CSR credibility perception mediated the effect of attitudes on purchase intention. These outcomes are new and crucial in understanding the way CSR resonates via social media. They are a cornerstone to build around, to satisfy the increasing demand for transparency and the growing consumers' expectations regarding CSR.

5. Managerial implications and future research

Any brand wants to know what consumers think about the brand, what influences costumers' attitudes and behaviour toward the brand. Consumers' attitudes and behaviour, however, could change as a function of CSR communicated via social media, as the present study shows. The current outcomes could be taken by managers to:

First, carefully select and honestly communicate their *CSR motives*. Combining value- and performance-driven CSR motives (than communicating only value or only performance) led to favourable attitudes and highest purchase intention, and this effect was better pronounced with dialogue message framing. Thus, it seems that consumers can accept that a firm is profit oriented. However, this performance-driven motivation should be well framed.

What seems to be much more important is the believability of a company's intention and communication at a particular moment in time (as recognised a while ago, e.g. Becker-Olsen *et al.*, 2006; Goldsmith *et al.*, 2000). In this respect, dialogue type of communication provides opportunity to directly address the company's CSR initiatives, and thus to rise transparency.

In this respect, the second recommendation: brands should prioritise the *type of communication*, i.e. bringing public in, involving in dialogue, especially taken the digital era we are living in. Such dialogue type of communicating CSR could stimulate consumers' engagement (Badenes-Rocha *et al.*, 2019), but also will increase the message credibility perception, as demonstrated hereby. A further enhancement of consumers-brand engagement could possibly be achieved when launching communications via different channels, i.e. a follow-up research could compare the role of Facebook vs Twitter, in CSR effectiveness. And, another study could even explore different platforms effect (e.g. digital vs augmented reality vs virtual reality). This might be a challenging task, but will bring extra value, if incorporated in the portfolio of socially responsible brands.

Third, as the *cause proximity* increased the willingness to participate in a CSR campaign, alliance between a cause and consumers should be sought in CSR initiatives. Although previous studies reported that cause proximity modulates the attitudes (Grau and Folse, 2007; Groza *et al.*, 2011), hereby we have not confirmed such relationship. Note that the current study explored the CSR effectiveness via social media, while abovementioned studies did not look at media impact. Also, the study was conducted in The Netherlands, a country with traditions in social initiatives. Thus, it would be interesting to conduct a follow-up study in a country where CSR initiatives are not that popular. A further cross-cultural comparison (e.g. European Union (EU) vs USA vs emerging markets) could explore how CSR resonates via social media, depending on consumers' nationality and culture.

Last, but not least, the message *credibility* should be guaranteed. Information credibility is a crucial component in consumer perception (Flanagin and Metzger, 2000), and in adoption of e-WOM on social networks (Aghakhani *et al.*, 2018). As demonstrated hereby, the more credible the message was perceived the more positive the attitudes towards the company were, and the higher was the willing to spread e-WOM.

Therefore, by incorporating appropriate communication strategies, a CSR initiative might reflect in spreading favourable e-WOM, increased campaign participation and purchase grow. Such positive outcomes of CSR activities could build long-term consumer-stakeholder's connection. As known, sustainable consumer-stakeholder's connections (Badenes-Rocha *et al.*, 2019) bring extra value to the company (Kumar *et al.*, 2010) and predetermine brand success (Keller, 1993).

6. Conclusions

Addressing the change of customer-brand interactions in the digital era and the increased demand for transparency in CSR communication, the current paper explored how CSR resonates via social media, and thus providing understanding on how to optimise the CSR effectiveness via social media.

Based on a profound literature review and a field research we did on the actual social media behaviour of socially responsible brands, an online survey was developed. In particular, consumers' attitudes and behavioural reactions in terms of willingness to participate in a campaign, to spread e-WOM and to purchase were explored.

The results are clear in showing that: (1) cause proximity enhanced the campaign participation, and this effect was pronounced for both, monologue and dialogue message framing. (2) Combining value- and performance-driven motives increased the willingness to spread e-WOM, and this effect appeared for both, monologue and dialogue communication. (3) Attitudes and purchase intention were highest when value- and performance-driven motives

were communicated together, but these effects appeared only when the message was in a dialogue framing. (4) Message credibility and CSR credibility perception mediated the effect of attitudes on willingness to spread e-WOM, and to purchase, and these effects had different magnitude as a function of communication type. (5) The more credible the message was perceived the more positive the attitudes towards the company were, and the higher was the willingness to spread e-WOM. (6) The more credible the CSR motives were perceived, the more positive the attitudes towards the company were, and the higher was the purchase intention.

In sum, the parameters emerging hereby as key drivers of message optimisation provide insights on how to be most appropriately combined to enhance the CSR impact. The current outcomes could be directly implemented in a company's social media campaigns to amplify values and maximise business returns to CSR.

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Study 1



The Body Shop Nederland
3 mei

Een van onze belangrijkste waarden is Animal Protection. Zo zorgen wij voor naleving en bewustwording van onze dierenbeschermingsprincipes door onze prestaties te meten, te monitoren en te rapporteren. The Body Shop is tegen het gebruik van dieren voor cosmetische doeleinden. Onze positie hierin is stevig, langdurig en zal nooit willens en wetens in gevaar worden gebracht.

Onze 100% vegetarische en diervriendelijke Colour Crush™ Eyeshadow (30 Colours) collectie, bestaande uit 30 mono oogschaduw in opvallende must-have tinten, is een lust voor het oog... Colour Crush™ Eyeshadow is 100% vegetarisch en diervriendelijk, omdat het niet wordt gekleurd met een extract van luizenschildjes. De intense tinten kunnen zowel nat als droog aangebracht worden, als enkele kleur, samen of met kleurverloop om je eigen look te creëren.

Study 2



The Body Shop Nederland
3 mei

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Laat ons weten welk doel, op het gebied van dierenbescherming, u graag wilt voordragen aan The Body Shop Foundation en maak kans op een The Body Shop product.

One of our most important values is Animal Protection. By measuring, monitoring and reporting our performances, we comply with and create awareness of our animal protection principles. The Body Shop is against the use of animals for cosmetic purposes. Our point of view in this is solid, of long-term and will never ever be jeopardised

Our 100% vegetarian and animal-friendly Colour Crush Eyeshadow (30 Colours) collection, which exists of eyeshadows in 30 remarkable must-have shades, is a feast for the eye... Colour Crush Eyeshadow is 100% vegetarian and animal-friendly because no animals (in this case lice) were used. The intense shades can be applied wet as well as dry, as a separate colour or together with one of the others to create your own look

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Please let us know what type of cause in the field of animal protection would you like to nominate for the Body Shop Foundation, and have a chance to win one of our products

Table A1.
Example of message framing: value- and performance-driven motives combined, respectively, monologue (study 1) and dialogue (study 2) condition

Factor	Level	Definition	Key sources
Cause proximity	National vs international	Reflects the distance between the CSR activity and the consumer	Grau and Folse (2007) Groza <i>et al.</i> (2011) Ross <i>et al.</i> (1992) Varadarajan and Menon (1988)
CSR motives	Value-driven Performance-driven Value- + performance- driven	Defined in line with the company's actions Value driven – generated to positively impact the society (Hooghiemstra, 2000) Performance-driven – instrument to achieve company's performance objectives (Swanson, 1995)	Becker-Olsen <i>et al.</i> (2006) Groza <i>et al.</i> (2011) Ellen <i>et al.</i> (2006) Hooghiemstra (2000) Maignan and Ralston (2002) Swanson (1995) Sen <i>et al.</i> (2009) Vlachos <i>et al.</i> (2009)
Communication type	Monologue Dialogue	One-way company-to-consumer communication Two-way communication between a company and its stakeholders and/or customers	Badenes-Rocha <i>et al.</i> (2019) Bialkova <i>et al.</i> (2015) Bigné <i>et al.</i> (2019) Du and Vieira Jr. (2012) Du <i>et al.</i> (2010) Kim and Xu (2019) Korschun and Du (2013) Saxton <i>et al.</i> (2019) Wang and Huang (2018)

Table A2.
Main manipulated factors, determined as key drivers of CSR effectiveness by the relevant literature

Construct	Items used	Source
Attitude towards the company	My attitude towards X is " <i>1 = unfavourable – 7 = favourable</i> " My attitude towards X is " <i>1 = negative – 7 = positive</i> " I " <i>1 = dislike – 7 = like</i> " brand X	MacKenzie and Lutz (1989)
e-WOM	How likely is that you Say positive things online about brand X to other people? Recommend online brand X to someone who seeks your advice Encourage friends and relatives online to do business with X <i>1 = not at all likely – 7 = extremely likely</i>	Adapted from Zeithaml <i>et al.</i> (1996) for the current context of e-WOM
Campaign participation (intention)	I would be willing to participate in this campaign I would consider purchasing a product from X to provide help to the cause It is likely that I would contribute to this cause by getting involved in this campaign <i>1 = strongly disagree, 7 = strongly agree</i>	Grau and Folse (2007)
Purchase intention	What is the likelihood to purchase a product from X <i>1 = very unlikely – 7 = very likely</i> <i>1 = improbable – 7 = probable</i> <i>1 = impossible – 7 = possible</i> <i>1 = low intent to purchase – 7 = high intent to purchase</i>	Groza <i>et al.</i> (2011) in the CSR context
Message credibility	The information provided in the message was <i>1 = not at all believable – 7 = extremely believable</i> <i>1 = not at all accurate – 7 = extremely accurate</i> <i>1 = not at all trustworthy – 7 = extremely trustworthy</i> <i>1 = not at all biased – 7 = extremely biased</i> <i>1 = not at all complete – 7 = extremely complete</i>	Flanagin and Metzger (2000)
CSR motives perception	X is making the offer because They feel morally obliged to help They have a long-term interest in the community Their owners of employees believe in this cause They want to make it easier for consumers who care about the cause to support it They are trying to give something back to the community They will get more customers by making this offer They will keep more of their customers by making this offer They hope to increase profits by making this offer <i>1 = strongly disagree – 7 = strongly agree</i>	Ellen <i>et al.</i> (2006)

Table A3.
The survey

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