Review

Corporate Social Responsibility on Twitter: A Review of Topics and Digital Communication Strategies' Success Factors

Katharina Pilgrim [1]* and Sabine Bohnet-Joschko [1]

[1] Chair of Management and Innovation in Health Care Faculty of Management, Economics and Society, Alfred-Herrhausen-Str. 50, 58455 Witten/Herdecke University, Witten, Germany; sabine.bohnet-joschko@uni-wh.de

* Correspondence: katharina.pilgrim@uni-wh.de; Tel.: 00492302926595

Abstract: Corporate social responsibility (CSR) has become increasingly important for companies in recent years. On the one hand, regulatory frameworks require the disclosure of measures for sustainable management. On the other hand, for long-term corporate success, stakeholders must be strategically engaged in the dialog on sustainability aspects. Social media, and Twitter in particular, offer the potential to foster a meaningful stakeholder dialogue on CSR topics. Due to Elon Musk's acquisition in the fall of 2022, this strategic disruption provides an opportunity to systematically capture the platform's past activities and strategies to synthesize practical information that can guide Twitter usage decision making and be used for research to serve as the basis for future comparative longitudinal studies of changes in usage. We conducted a literature review including 42 papers to contribute to the body of evidence on CSR communication strategies on Twitter across industries and countries by deriving interdisciplinary suggestions for strategic CSR-related stakeholder management. Results cover relevant CSR topics, prioritized stakeholder groups for CSR communication on Twitter and successful communication strategies for companies to obtain beneficial results, such as generating social media capital. The results contribute to the strategic planning and implementation of CSR stakeholder management on Twitter and offer starting points for future studies on social media mining and CSR communication strategies.

Keywords: Corporate Social Responsibility; Twitter; Stakeholder Management; Social Media Communication; Social Media; CSR; Communication Strategy

1. Introduction

As corporate social responsibility (CSR) concepts continue to evolve, balancing differing stakeholder interests remains a persistent management challenge [1]. Starting at a voluntary level, international legislators are now putting pressure on companies by making the implementation of CSR measures in defined areas and disclosure mandatory [2]. At the same time, to enhance stakeholders' company perception, its actions and ethics [3], CSR disclosure is becoming a more sophisticated and strategically motivated process with expectations of a return [4]. Thus, carrying out socially responsible behavior becomes a strategy of legitimation and survival [5, 6]. As sharing nonfinancial information can ameliorate information asymmetries and leave a company in a better position compared to its non-disclosing competitors [7], the utilization of communication channels beyond mandatory reports, dedicated primarily to regulatory authorities, to address other relevant stakeholders is key. From 2024 onwards due to the new Corporate Sustainability Reporting Directive (CSRD) over 20.000 companies listed on an European-market will be required to implement and report on corporate social responsibility (CSR) activities for the first time. Knowing which activities work best for stakeholders or within ones industry, and should therefore be picked up, addressed and reported on preferentially, becomes a key challenge. Utilizing existing publicly available information from sources with CSR

topic engagement can provide a powerful solution [8]. In this context, social media platforms offer large data on public CSR discussions, which can serve as an information resource for the development of a company's own CSR strategy. In the search for suitable communication channels, Twitter in particular offered a good environment for corporate communication and stakeholder management in the context of CSR [9]. The microblog became a medium for large user interaction on ethical corporate practices [10] and a valuable channel to create an emotional bond, positively impacting consumer trust [11]. At the same time, Twitter offers low-threshold access to historical data via the publicly available API. Thus, the number of studies on CSR communication on Twitter, as a sentiment and opinion-forming platform, exceeds those that include other business networks, such as LinkedIn, by approximately three times (GoogleScholar hits of CSR and Twitter: 208,000 in August 2022 compared to 76.000 hits of CSR and LinkedIn).

With the future unpredictable change in Twitter usage due to Elon Musk's acquisition in fall 2022, this strategic disruption provides an opportunity to systematically capture the platform's past activities and strategies up to that point to synthesize practical information that can guide Twitter usage decision making and be used future comparative longitudinal studies of changes in usage. As scoping reviews have become an increasingly popular approach for synthesizing research evidence by mapping the existing literature in the field of interest in terms of the volume, nature, and characteristics of the primary research [12], we conducted a scoping review to identify (1) parameters that define relevant content in the context of digital CSR stakeholder management and (2) favorable communication techniques that are a driver for a successful CSR communication strategy on Twitter. While existing reviews regarding CSR on Twitter focus on trends and topic changes over time [13], our review combines, compares and discusses recent literature including those reviews focusing on CSR topics and adds findings regarding communication strategies to condense research findings and elaborate on the importance of implementing a proactive and meaningful stakeholder management strategy for CSR on Twitter. This review aims to contribute to the body of evidence on CSR communication strategies on Twitter across industries and countries by deriving interdisciplinary suggestions for strategic CSR-related stakeholder management. The review results contribute to a better understanding of CSR communication and how strategic stakeholder management on Twitter can add value to the company especially for those who have to prepare a sustainability report for the first time from 2024 onwards.

The paper is structured as follows: Initially, we provide background information on "Digital CSR communication strategies and indicators of success". "Method" describes the systematic research process including data collection and analysis. In the "Results and Discussion" section we first provide sample descriptives by identifying geographical focus, target groups and time lapse of research topics. We then present the identified and clustered CSR-related topics communicated and trends to gain a better understanding of which topics seem to be suitable for digital CSR-related communication on Twitter. We discuss findings on identified CSR communication strategies regarding strategy choice and possible factors for successful digital stakeholder management. Finally, we point out implications for digital CSR related stakeholder management in practice, shed light on limitations and future research and close with a conclusion.

2. Digital CSR communication strategies and indicators of success

As social media have become one of the most important instruments for public information, engagement and stakeholder relationship building [14, 15], depending on these objectives, the following three strategic approaches to communication in CSR literature have developed: (1) A broadcasting [16] or information strategy [17], which doesn't contribute to relationship building and rather focusses on public information. Following a (2) stakeholder response [17] or reactive strategy, companies take opinions and tendencies from the milieu into account by passively reacting to user comments, questions or remarks [16]. When dialogue with stakeholders is fostered to carry out actions that result

in some mutual benefit [18] a (3) stakeholder involvement [17] or engagement strategy is applied [19]. As two-sided or symmetric communication and relationship building are core principles of public relations, they have also been highlighted further in studies on Twitter and CSR [16]. Co-creation is one example for an engagement strategy, with stakeholders being directly addressed via tagging to nudge them either in replying or re-tweeting with each party contributing to the dissemination (by forwarding), and potentially to the construction (by modification) of the message [20].

Communicating good deeds and inviting stakeholders to engage in the conversations about a cause [21] [22-24] can generate a stock of social resources referred to as social media capital (SMC) [25], which ultimately indicates the communication success. Employee dialogue for example helps attract and retain talented employees [26] and strongly predicts employee engagement [27], motivation [28] and increased organizational commitment [29]. Some argue that retweets and likes are indicators of success that reflect to not only what extent the message resonates with online stakeholders [30] or impacts society [31, 32] but also increases customer loyalty [33] [34]. SMC can thus expend to achieve organizational outcomes [22] such as favorable attitudes and better support behaviors (e.g. purchase, seeking employment, investing in the company), building corporate image, strengthen stakeholder–company relationships by having a significant positive impact on customer identification and satisfaction [35], enhance stakeholders' advocacy behaviors [36] and overall corporate reputation [37, 38]. When stakeholders engage with each other including the exchange of marketing relevant information on a service or brand, to shape most likely consumers behavior and attitudes towards products or the company itself, it is referred to as Word of Mouth (WOM) [31, 39] As for Twitter, CSR topics are found to be a socialization agent that facilitate electronic Word of Mouth (eWOM).. Adding the analysis of stakeholder sentiments and thus a directional (positive or negative) association to the eWOM activities [32, 40] CSR topics in general are related to customers' positive WOM [41], which is thus another indicator of (digital communication strategy) success.

3. Material and Method

3.1. Data collection

Five databases with complementary research areas and focus were selected for a literature review [42]: EconBiz (1) as the virtual subject library for the field of economics., ScienceDirect (2), covering topics of physical sciences and engineering, life sciences, health sciences, social sciences and humanities, (3) Taylor and Francis Online, adding a source for information science, mathematics and statistics, (4) MDPI (Multidisciplinary Digital Publishing Institute), focusing on open access journal publication and (5) PubMed for biomedical literature from MEDLINE. We chose to limit publications that date back not before 2013. We selected this period in view of the absolute monthly platform users as well as the monthly growth rate: in the first 7 years (until 2013), Twitter was able to surpass 200 million monthly active users worldwide for the first time. In the following 8, the platform was able to acquire around another 100 million users, however, the growth rate has since then leveled off. At the same time, Twitter Inc. became a public trade company in November 2013, which has transformed the way the platform is used in general. In addition, social media in general continue to evolve rapidly, so that studies prior to publication in 2013 could only examine the first few years (Twitter was founded in 2006), with an unrepresentative number of corporations using the platform specifically for CSR purposes at that time [43]. The keywords for our search strategy were identified independently by both authors as part of preliminary exploratory feasibility searches. In an iterative process, keywords were identified and condensed to define the two subject areas as components of a compound search: (A) communication channel (keywords: Twitter with the synonym tweeting) and (B) communicated content (keywords: CSR with the synonyms Corporate Social Responsibility, Sustainability, and Corporate Citizenship) in agreement with each other.

After applying this search strategy in the 5 stated databases as well as in an additional search in GoogleScholar as part of the identification process, we systematically reviewed results according to the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram as follows (Fig. 1) [44, 45]: By removing duplicates (45), inaccessible studies (1) and inappropriate results after abstract (94) and full-text screening (13) according to defined in- and exclusion criteria, we identified 42 relevant publications for analysis in our review. Criteria for inclusion were: (i) findings had to be published as journal article, review, case study or conference proceedings, (ii) research must include companies/brands or their direct stakeholders and (iii) papers using data from Twitter and other social networks, if the analysis also includes an individual consideration of each platform. Literature was excluded if one of the following applied throughout the screening process: (i) focus of Twitter as a company and its CSR activities, (ii) research with no clear Twitter focus, (iii) research discussing political topics or sustainability with no clear CSR focus.
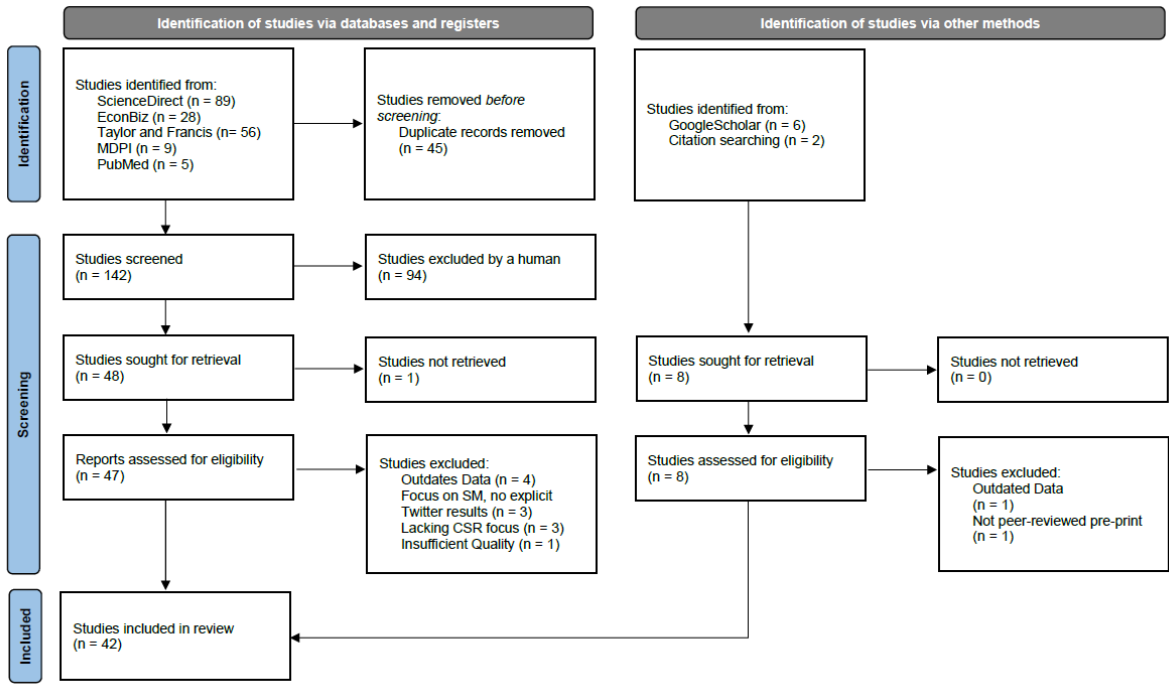

Figure 1. PRISMA Flow Diagram 2020 [45]

3.2. Data Analysis

The applied data analysis corresponds to successfully applied methodologies in the context of systematic reviews as well as CSR topics [46, 47] and was chronologically as follows [42]: First, one of the authors read all of the articles and coded them based on a coding manual. Codes for sample description included (i) publication year, (ii) target group, (iii) geographical focus, (iv) sample selection criteria, and (v) sample size. For code generation regarding CSR topic clusters, we followed the sustainable development goal (SDG) wedding-cake by Folke et al. (2016) that enabled us to cluster CSR topics by the sustainable triple-bottom-line [48] (environmental, economic, and social topics). For context: In 1992, the United Nations defined three pillars of sustainability at the Rio Conference, also referred to as sustainable triple-bottom-line [49]. It describes a balance of social, economic, and environmental goals that must be pursued simultaneously and reconciled to ensure sustainable development [50]. For the first time, the importance of economic gains and societal benefits formally became the guiding principle of international policy.

In 2015, United Nation (UN) member states committed to achieve 17 Sustainable Development Goals (SDGs), on a national level, which cover aspects of the sustainable triple-bottom line, as part of the subsequent Agenda 2030 [51]. Although the triple bottom line seems to be gaining acceptance in the long term in the context of CSR in science, politics and practice, there were already scientific cluster approaches and definitions for CSR topics before the conference in Rio, which evolved over time and in some cases complement or stand alongside the triple bottom line:

In the context of manifesting a universally valid definition of corporate social responsibility, Archi B. Carroll developed the Corporate Social Performance (CSP) approach as early as 1979 based on the 3-phase model described by Sethi in 1975, which classifies an adaptation of corporate action to social needs [52, 53]. Later, Carroll (1991) identifies four areas of social responsibility for companies and presents them within an explanatory perspective he has conceived by means of a fixed hierarchical order represented by a four-level pyramid. He describes the first two levels, which include economic and legal responsibility and which at the same time form the foundation of the pyramid, as fundamental demands of society in order to ensure the existence of the company [54]. Level three outlines a company's ethical responsibility, equivalent to social expectations. Philanthropic responsibility, which encompasses an exclusively voluntary commitment that goes beyond the expectations of society, stands at the top of the pyramid. Carroll's three-domain model from 2003 is a refinement of the four-level pyramid, in which both the hierarchy and the philanthropic level as a whole were no longer taken up as part of a conceptual change. This decision is based on the acknowledgement that companies voluntarily engage in social activities for both economic and ethical motives, as well as their combination, and that philanthropy can therefore be subsumed as part of the task. A Venn diagram graphically represents the relationship between the remaining three dimensions of responsibility - economic, legal and ethical - by visualizing intersections, resulting in a total of seven possible categories of corporate social responsibility [55].

Thus, for CSR topics initially defined according to Schwartz & Carroll's (2003) three-dimensional model (economic, legal and ethical) or Caroll's CSR pyramide (1991) we relied on a topic classification framework that matches the 17 SDGs to the three-dimension-model [56] to then again draw on the CSR wedding-cake for clustering SDGs to the CSR triple-bottom-line.

For CSR strategy identification, we drew on the systematization proposed by Etter (2013) and explained earlier (broadcasting, reacting, engaging) [16]. The coding manual was refined gradually during the coding process and comprised several stages for codes that needed interpretation (especially communication strategies). We ensured intercoder reliability via double coding by one of the authors and a third researcher who was not part of the data research and screening process. To assess the reliability of the coding scheme, we compared their codings for n=8 studies (19% of our sample) by computing Krippendorff's Alpha [57]. Intercoder-reliabilities lay between .86 and .95. Deviations were subject to discussion until the authors agreed on which coding was appropriate and consistent with the remaining codings.

4. Results and Discussion

4.1 Sample descriptives

17 different geographic foci (countries) were chosen in the reviewed 42 publications (Fig. 2). 21 studies had a national focus, 5 studies an international one by including at least two countries in their sample, with either a comparison of two different cultural, political or economic systems being the research aim. 16 studies chose a sample of either companies that operate globally or user tweets within the entire platform.
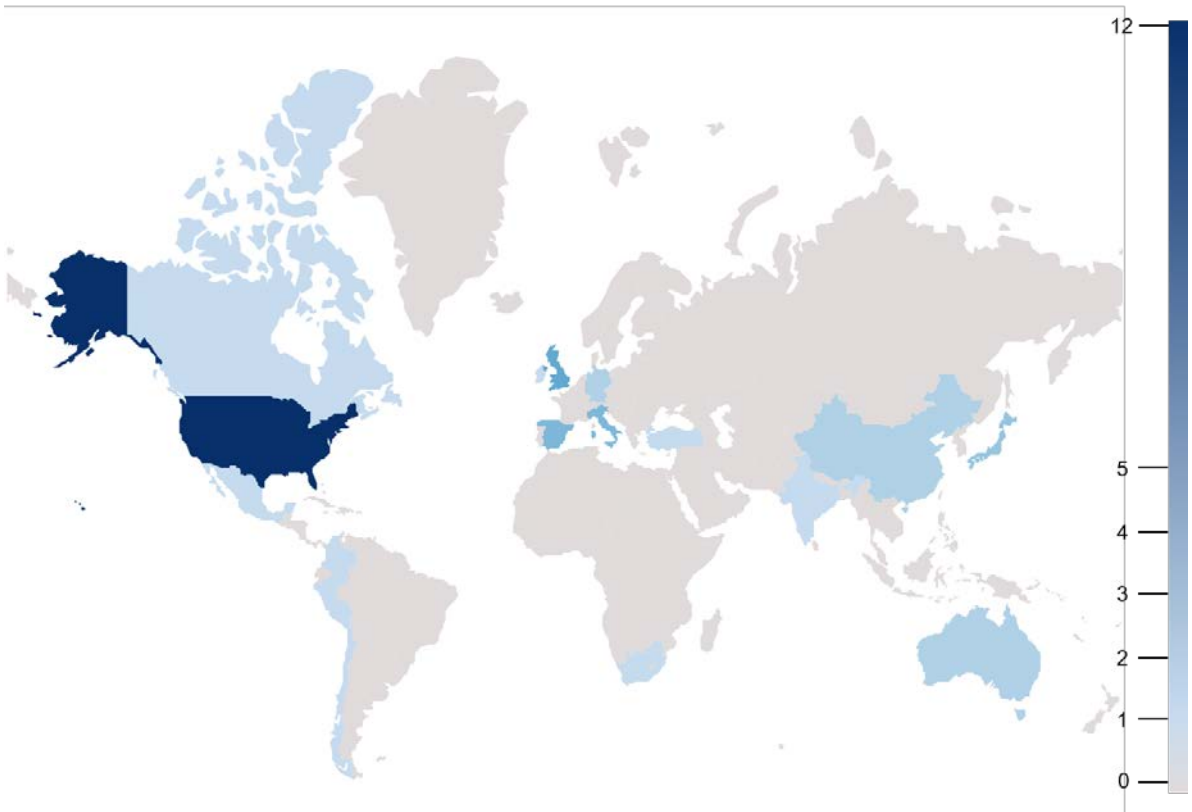
Figure 2. Geo-map of target group focus.

The further target group analysis included the assignment to an industry, applied sample definition parameters, and sample size. Table 1 provides an overview structured by publication year. The following numbering refers to table S1, which contains further sample information and is available as supplementary material.

Table 1. Target group descriptives.

Publi-cation year	No.	Stakeholder				Companies	Industry/ Sector	Names di-closed	Sample selection criteria	Sample Size	Sample Tweet Number
		Con-sumer/ Twitter user/ Citi-zen	NPOs	CEOs	Brands	Firms/ Corpo-rations				Twitter Ac-counts	Tweets/ Retweets/ Re-plies
2022	15	✓				✓			CR Magazine' 100 best Cz	71	22.951
	23	✓				✓		✓	Diversity Inc Top 50	5	2.217
	42	✓				✓	Container Shipping	✓	not disclosed	8	6.566
2021	1					✓			FTSE 350	not disclosed	67.908
	2	✓				✓		✓	Listed in Major Global Stock (15 SE listed)	483	4.484
	7	✓	✓				Educa-tion	✓	individual sys-tematic	1	not diclosed
	10			✓		✓		✓	DAX 30	36	154.770

Year										
	11	✓			✓	News Media	✓	individual systematic	6	6.666
	12	✓			✓	Banking	✓	individual systematic	41	2.816
	14	✓			✓	Consumer Brands	✓	individual systematic	3.093	44.432
	16	✓**				Alcohol	n.a.	n.a.	175**	n.a.
	26	✓**					n.a.	n.a.	219**	n.a.
	27	✓			✓			AIDA	417	917.864
	29	✓				Mining	n.a.	n.a.	not disclosed	2.000.000
	33	✓			✓*		✓	Fortune 200	42	163.402
2020	21	✓**				Alcohol	n.a.	n.a.	839**	n.a.
	25	✓		✓			✓	individual systematic	8	428.000
	31	✓			✓		✓	Blue Chip Companies (EuroStock 50)	50	127.811
	34	✓			✓			Fortune 150	41	1.079
2019	13		✓		✓			Fortune 200, Hootsuite	93	194.644
	17				✓		✓	National CSR Ranking by IIM Udaipur (India)	34	4.091
	20	✓**				Alcohol	n.a.	n.a.	177**	n.a.
	22		✓			Alcohol	✓	not disclosed	6	1.805
	28	✓					n.a.	n.a.	223.476	414.926
	32	✓			✓*		✓	Fortune 500	38	1.125
	38	✓			✓	Airline	✓	individual systematic	6	not diclosed
	39				✓	Tabacco	✓	individual systematic	4	3.301
	40	✓	✓					Council on Foundation List on Website	198	not disclosed
	41	✓			✓			Forbes Ranking of 2000 Largest Corporations	30 + 54 FB accounts	2.672
2018	4	✓					n.a.	n.a.	not disclosed	178.908
	6		✓		✓			Cone Non-Profit Power Brand 100	65	5.859
	30			✓	✓	Consumer Apparel	✓	Newsweek's Greenest Companies Rankings	11	187.177
	35	✓			✓	Banking	✓	individual systematic	2	2.719
	36		✓		✓			MERCO Ranking	93	1.657
2017	3		✓	✓			✓	individual systematic	63	32.641
	18	✓**					n.a.	n.a.	507**	n.a.

Year										
	37	✓**					n.a.	n.a.	253**	n.a.
2016	5	✓				✓	✓	IBEX 35	20	5.106 + 416 FB postings
2014	9	✓				✓	✓	CR Magazine' 100 best Cz	30	41.864
2013	8	✓				✓		CR Magazine' 100 best Cz	30	41.864
	19	✓				✓		Fortune 500	222	not disclosed
	24	✓			✓			IBEX 35	35	5.352
Total	42	32	5	3	4	27	21		228.682	5.051.509

*specific corporate CSR accounts
**experiment participants

Especially industries linked to either below-average working conditions regarding health and safety as well as environmental sustainability regarding emissions are focused. With the mining industry in particular, being one of the first to start rethinking their actions for workers health in the 1950s and 60s by investing in health facilities in the US, it shows that CSR related actions have a long history and are not solved today [58]. In 21 studies the company's or their twitter account names are disclosed, which contributes to greater transparency and possibility of study replication for longitudinal approaches.

Looking at the publications over time, we see an increasing trend since 2013, illustrated in absolute numbers, with a peak in 2021 at a total of 12 publications in Fig. 3 section A. In addition, research topics covered two main areas: the identification and analysis of CSR-relevant content (in 22 studies; 52%) and communication strategies (28 studies; 67%).

(A) Publication distribution by year and number of covered topics
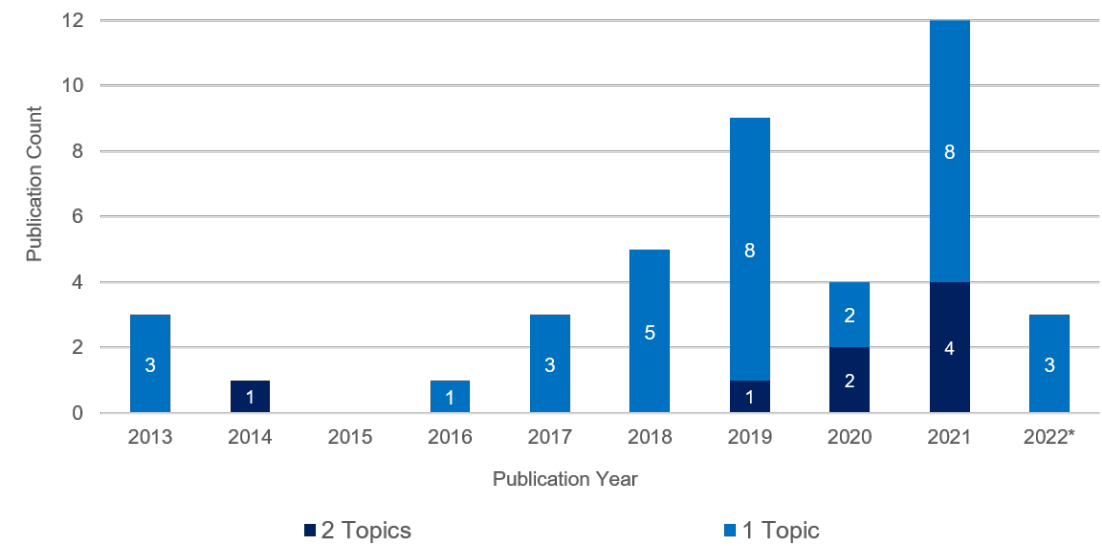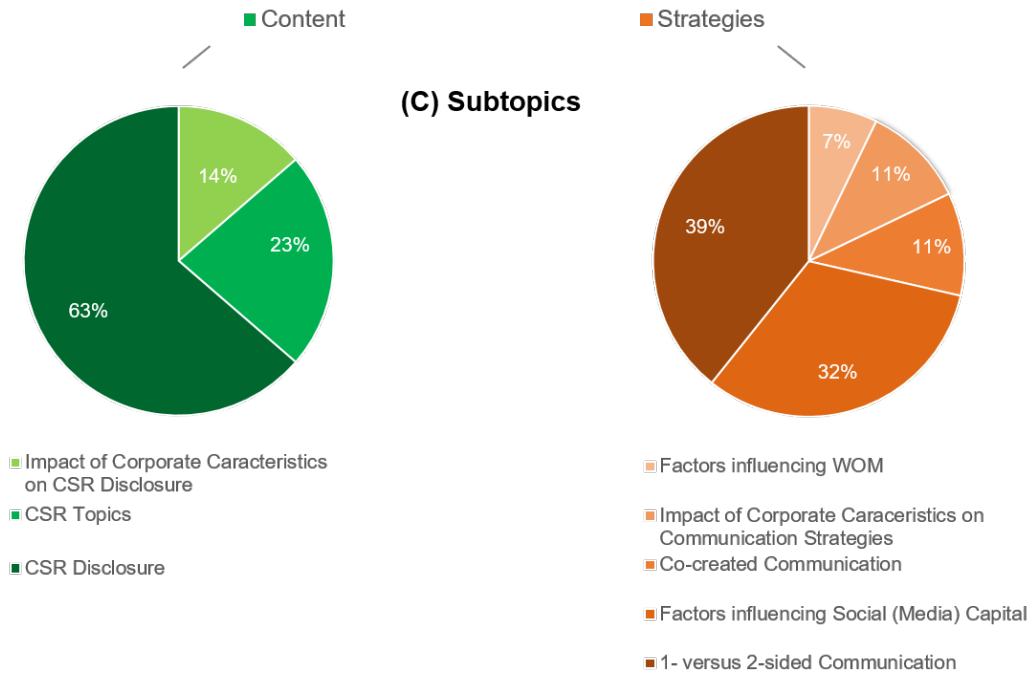

(B) Topic distribution by year

*only January

(C) Subtopics

Impact of Corporate Caracteristics on CSR Disclosure

CSR Topics

CSR Disclosure

Factors influencing WOM

Impact of Corporate Caraceristics on Communication Strategies

Co-created Communication

Factors influencing Social (Media) Capital

1- versus 2-sided Communication
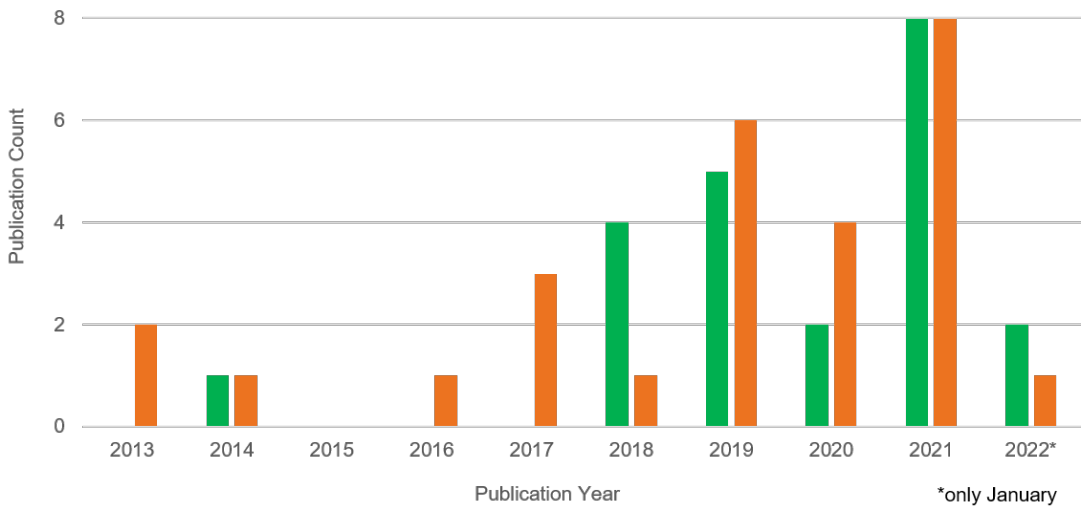
Figure 3. Time lapse of research topics.

Research on CSR-related content only came to the forefront towards the end of the 2020s with a continuous increase in interest since then (Fig. 3, section B). A likewise continuous increase can be observed in studying communication strategies, which, however, already took off about 5 years earlier. This may be related to an initial interest in understanding social media communication in general, with CSR being an applicable context approach, as content was easily identifiable by unique tags, and Twitter being known as corporate communication channel since the platforms early days. However, with the introduction of international laws and guidelines on sustainability reporting, the actual content has gained interest to develop implications for reputation-enhancing actions. At the same time, increasing low-threshold possibilities to qualitatively analyze large amounts of data automatically could explain this trend.

We were able to differentiate these two research topics into additional subcategories (Diagram C in Fig. 3). Studies that investigate CSR relevant content for example can be further subdivided into those that investigate whether CSR related content was subject of Twitter communication at all, following a CSR topic analysis (63%) (CSR disclosure). If Twitter activity on CSR topics were known already, the analysis then focused on the specific content only (23%). Results of both subcategories are presented in chapter 4.2.1. Finally, influences on topic choice and CSR disclosure in general e.g. corporate characteristics are covered in chapter 4.2.2. Research on CSR communication strategies mainly revolves around communication direction, weather this is 1- or 2-sided (39%). Impacts of communication strategy choice or corporate characteristics on Social media capital (SMC) (32%) are another field of interest as marketers and managers are continuing to look for ways to measure the return on invest regarding social media activities. Co-created communication as one specific 2-sided communication strategy (12%), how corporate characteristics (e.g. diversity of the board) can influence communication strategy choice (11%) and impacts on Word of Mouth (7%) are further subcategories found, addressed in chapter 4.3.

4.2 CSR topics

8 studies chose a deductive approach with the assignment of identified CSR topics to a predefined category system: Carroll's CSR pyramid, the three-dimensional model by Carroll and Schwartz, SDGs, the ESG approach (Environment, Social, and Governance; an umbrella term for evaluating and identifying sustainable investments) and the Global Reporting Initiative (GRI) standards. For context: To support firms in a high quality and reliable sustainability reporting, developed standards try continuously to draw on international legal frameworks such as the SDGs to enable transparent, comparable and comprehensive reports [59], e.g. as an analytical measurement of negative and positive impacts within the value chain [60, 61]. One relevant example for a CSR reporting standard provider is the Global Reporting Initiative (GRI). Founded in 1997, it serves as an internationally independent organization up to today whose self-proclaimed goal is to enable a comparable and standardized presentation of the environmental, social, and economic activities of large corporations, small and medium-sized enterprises (SMEs), other organizations and governments [62]. Due to the early cooperation with the UN Global Compact, which recommends the application of the GRI standards to its members, it has established itself for the preparation of sustainability reports globally. GRI standards thus support the report preparation based on the UN SDGs.

By analyzing our sample, we observed, that drawing on an established CSR categorization system can facilitate cross-industry and cross-country comparisons on the one hand. On the other hand, our review results show that analysis following a deductive approach often remain at the superordinate level of the category designations. Studies adopting an inductive approach yielded more in-depth content concerning specific CSR-related measures and campaigns, which can contribute significantly to the understanding of communication strategies on Twitter. Similarly, research that focused solely on a sub-

area of CSR, such as diversity or a specific industry, also provided more substantive results than those looking at the entire spectrum of CSR communication. Future research designs can build on that finding when choosing a methodological approach and defining sample and topic cluster approaches.

As explained in our methods section, to cluster communicated CSR topics on Twitter, we drew on the CSR triple-bottom-line, within which the 17 SDG's can be found. For the visualization, we decided to assign the identified topics to the individual levels of the CSR wedding cake (that represent the tripe bottom line and SDGs). Figure 4 thus shows the respective studies that contain one or more content areas (left) (again, numbers are a reference to Table S1 as a supplenetal metarial with further information on the individual studies) as well as a quantitative overview in individual histograms of further identified top subtopic areas (right).
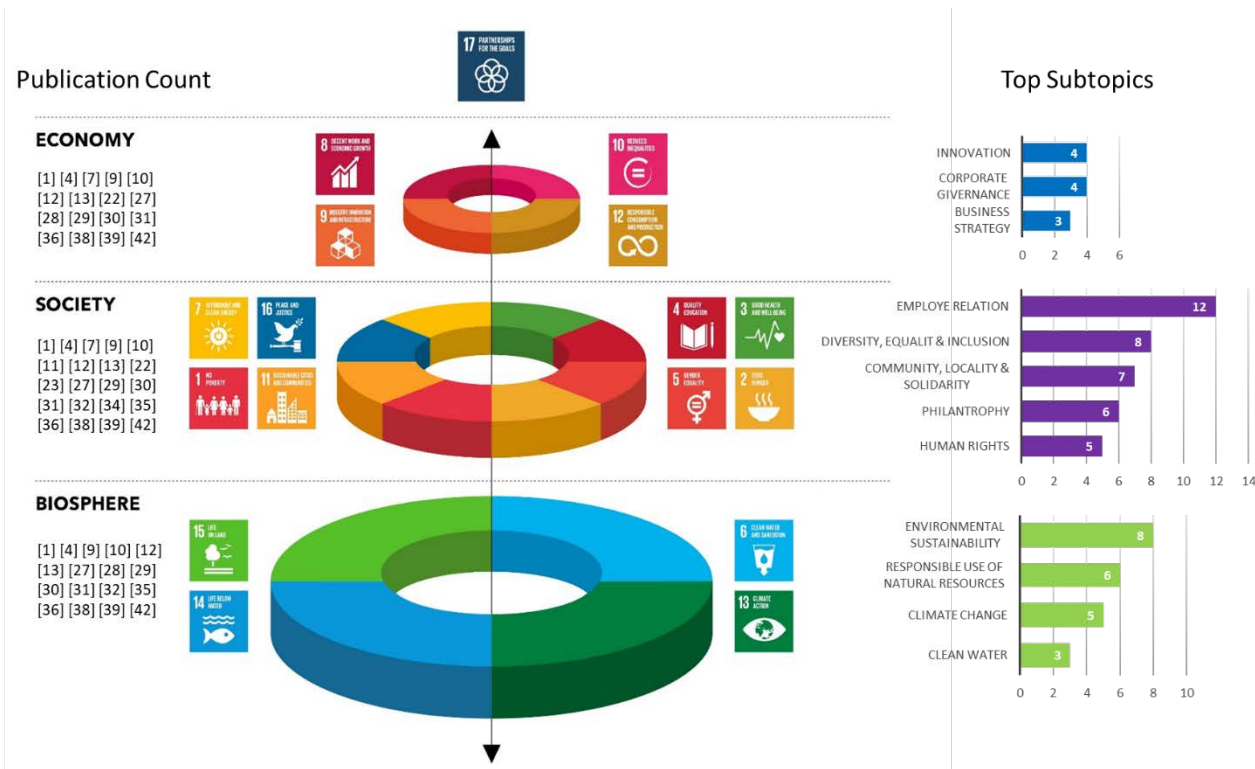

Figure. 4. Topic and subtopics distribution along the CSR triple-bottom-line employing the SDG wedding cake [48].

4.2.1 Social, Environmental and Economical CSR topics

Social aspects are not only identified as a topic communicated on in most studies (Fig. 4), but are also predominantly classified as focal topics within each study as they for example generate the most retweets [63]. The internal stakeholder group of employees takes on a special status, as 52% of the studies cover (i) employee relation topics such as working conditions, career and education, social security, remote work opportunities, employee health, labor practices and safety. The discussion of (ii) diversity and inclusion as well as measures to promote the equality of minorities or women, is another key topic, as we learn about specific campaigns to combat violence against women for example as well as special programs to promote women in leadership positions. Companies emphasize on the benefits (increased creativity and problem-solving) of diverse teams in the field of innovation, point out their focus on minority hiring as well as their own commitment to breaking social stigma against, for example, transgender people. Issues related to (iii) community, locality or solidarity are the third key subtopic, including the promotion of charitable ac-

tions by donating goods to local communities. Another 29% covered the area of (IV) philanthropy often related to employee volunteering or monetary and product donations to social causes. (v) Human rights are identified in 5 studies, but play a subordinate role in each case, as they only account for around 5% of the total CSR discussion.

We found, that environmental topics are focused on less, which could be as environmental sustainability is becoming more of a hygiene factor rather than being a differentiator. In 47% covering ecological CSR issues, topics mainly cover (i) environmental sustainability. 6 studies identify the topic of (ii) responsible use of natural resources by e.g. setting targets of lower paper consumption. (iii) Climate change is an identified topic in 5 studies with reports on environmental projects, green initiatives or measures taken such as reduced business travel. (iv) Marine pollution and thus the issue of clean water or life below water can be identified in 3 studies.

In general, economic topics related to CSR are the least talked about on Twitter when looking at the results of each topic cluster in our sample. We identified economic topics in 17 studies, with (i) corporate governance being the broadest topic and the most present one, even though it has hardly any significance within the respective study, as it sometimes only accounts for around 2% of CSR tweets. Likewise, 4 studies found that the topic of (ii) innovation often in the context of technology and digitization, was the most popular in the field of economics, with a relatively higher intensity within the individual studies. (iii) Business strategies in the context of CSR could be identified in 3 studies. This topic also takes on greater importance in each case, based on assigned tweet frequencies

It remains to be noted that based on the topic frequencies, within the topic clusters along the CSR triple-bottom-line, those that can generate a direct concern of stakeholders on Twitter also referred to as human interest stood out [64]. Topics that have no implicit direct benefit for stakeholders on twitter, such as human rights, governance or clean water, are identified less frequently. It is clear that sector-specific studies go into greater detail thematically and focus on different key topics depending on the sector, precisely those that are most relevant within the industry.

4.2.2 Reasons for and shift of CSR-topic disclosure

Looking at an overall trend determined by post-quantity, Amine et al. (2021) point out that over the course of time (from 2008 to 2016), companies in the UK are adopting Twitter more frequently to disclose general CSR information with an increase of CSR related posts from under 1 to over 50 % [65]. Esposito et al. (2021) make the same observation in a case study of the University of Salerno in Italy between 2015 and 2021 [66]. Further, it is Chinese companies with a strong preference for incorporating CSR subjects in Twitter communication, which is not surprising, as off China is one of the leading export nations and largest locations of international production facilities, meaning that Chinese companies in particular have also discovered CSR for strategic communication with regard to requirements for supply and service chains [67]. Narrowing down the sample to Euro Stock 50 companies, Twitter became an increasingly used communication channel since 2009, starting with 34% having a Twitter account and reaching 96% in 2016 [43]. The number of CSR-related tweets also increased exponentially, when in 2009 only 12% of the 17 companies with official accounts were engaged in CSR communication, it were already 88% in 2016 [43]. However, the research design chosen didn't allow to draw conclusions on company improvements or specific projects regarding environmental and social impact or their implementation over time. It also didn't examine a possible trend or change of popular CSR topics over time [43]. Interestingly Okazaki et al. (2020) found, that the majority of brands' CSR labeled tweets' content are not even relevant to CSR [68], which underlines the importance of CSR topic definition in regard to stakeholder interest but also legal frameworks. When looking at whether CSR is a topic communicated by CEOs of large companies on Twitter, results show, that they, similar to corporate Twitter accounts, do also not employ the platform for CSR communication in general [56].

A longitudinal study of global consumer apparel companies' sustainable environmental communication between 2010 and 2014 explains, that corporations which already are ranked good corporate citizen, adopted CSR Twitter communication earlier than those with a bad reputation and post more frequently [69]. Further, sustainability performance and CSR ranking have a positive influence on the quantity and quality of information shared on Twitter as high-ranked companies will be more likely than low-ranked firms to demonstrate transparent external CSR communication, as evidenced by participating in the voluntary GRI [69]. Suarez-Rico et al. (2018) found, that firms operating in environmentally-sensitive industries present higher levels of CSR disclosure on Twitter than those in other sectors [70]. Further, there is a positive relationship between the firm operating in a sensitive industry and its level of CSR disclosure on Twitter, and an inverse relationship between the latter variable and the tenure of the CEO [70]. A mining industry specific analysis supports this finding by pointing out that CSR topic discussion among all twitter users is increasingly growing, especially in developing countries and in countries with a bad reputation of environmental and health (mining) conditions [71]. Authors conclude, that CSR appears to be an evolving construct in business and society and its dimensions and trends change over time, although they don't outline the topic changes [71]. The absolute increase of CSR related Twitter communication can also be observed, if narrowing down research focus from a general CSR perspective to a specific subtopic and even add geographical focus. Thus, socio-political positioning posts of German stock exchange companies and their CEOs have also continuously increased between 2014 and 2019 [72]. While in 2014 the average of 6.62 posts with socio-political positioning per month accounted for only 0.00282% of all (analyzed) tweets, 76% of the socio-political positioning posts originated in 2018 and 2019. These studies underline the rising popularity of Twitter indicating its growing importance as a CSR disclosure platform in general [65]. In this context, Amin et al. (2021) discovered, that the presence of women on company boards, especially non-executive women, is positively associated with the extent of CSR disclosure on Twitter [65]. At the same time, larger firms are also found to disclose more CSR information on Twitter compared to smaller ones indicating that firm size plays an important role determining a company's level of CSR disclosure on social media [65].

Looking at actual changes of topic popularity between 2013 and 2016 among all twitter users Chae and Park (2018) showed that CSR topic proportions are in fact fluctuating over the years [13]. They outline a growth in popularity regarding social topics such as employee engagement and community charity. Building topics clusters, analysis indicates that the community-oriented topics of the philanthropic cluster has a strong positive trend [13]. As Gender shift is an emerging megatrend and sustainability is increasingly becoming a hygiene factor, at the same time, the ethical cluster (a discussion of ethics in strategy and social business contexts) is steady and the environmental cluster is even declining over time [13]. As diversity activism increased in western societies, US corporations also changed their approach to diversity notably over time, when in 2017 they stressed the benefits of diversity on their operations via a business-centered diversity communication approach and switched to socially responsible corporate diversity communication by 2021 [10]. When drawing conclusions from CSR topic investigation on Twitter and taking a greater period of time into perspective for analysis, it is crucial to understand, that topic relevancy may change over time and neglecting this development can lead to inappropriate strategic derivations for companies. Future studies could address the question of which time horizon yields the best results relative to model quality depending on the availability of existing datasets (specifically for automated qualitative analysis methods).

4.3 CSR Communication strategies

When exploring digital CSR-related communication on Twitter, research primarily focusses on identified strategies employed, in regard of a 1- or 2-sided approach. Thus,

we will summarize findings regarding strategy choice at first and will then focus on detected success factors. As the analysis is complex and approaches often employ machine learning approaches, that are at their most heterogeneous, the presentation of our results thus does not focus on the methodological approaches, but on the empirical results affecting communication strategy success. Future studies could address this and investigate which mythological approaches are employed and shed light on limitations and advantages of each method systematically.

4.3.1 Communication strategy choice

Broadcasting

The majority of companies tend to use social media similar to other mass communication channels - by mainly distributing information in a one-way or asymmetric communication approach and not engaging stakeholder in their tweets [11, 16, 18, 43, 68, 71, 73, 74]. Although Twitter is a social network, the full potential of its interactivity is thus not being used [74]. By only disseminating CSR-related information, companies do not foster communication commitment and show no interest in establishing stakeholder relationships through the identification of and focus on shared goals and common interests [16]. Mamic et al. (2013) even put a price on the possible costs for businesses due to the absence of an active listening and thus dialogic communication strategy in social media, which may even reach up to one million euros daily [74]. Cortado et al. (2016) therefore highlight the necessary to change the way companies communicate their CSR issues, by shifting to a two-way communication, as is already has been the case in other enterprise relations [18].

Reacting

At the same time, Kaul et al. (2019) observe a slight shift from broadcasting to adoption of reacting and engaging strategies [75]. Rodríguez et al. (2020) detected that still 61% of large European companies employ an one-way information strategy, but 39% a two-way response strategy and none a two-way collaborative strategy [43]. Especially the banking and finance sector appear to be most prone to online CSR communication strategy adaption, which has also shifted to a highly reactive-one [75]. This may be due to societal and regulatory pressure to report on ESG (Environmental, Social & Governance) criteria to support transparency about a sustainable investment portfolio to potential shareholders and to counter negative feedback. When questioning, whether a stakeholder message has certain characteristics, so that corporate Twitter accounts feel the necessity to interact, Saxton et al. (2021) found with data from 2014 that corporate Twitter account responsiveness is positively associated with stakeholder urgency in terms of both the originality of a stakeholder message and the expression of positive sentiment [76]. By at least responding to questions or remarks, companies tap in the potential to establish stakeholder relationships over time and foster beneficial outcomes, such as trust, involvement, and commitment, for both sides [16]. By using a digital questionnaire Kollat et al. (2017) highlight, that asymmetric communication efforts lead to higher trust towards the company compared to symmetric dialog-centered communication [11] as consumers do not appreciate the feeling of excessive company engagement, especially when they detect self-promotion [11]. Results are limited, as the amount of online dialogue is highly dependent on the topic of interest. With a fictitious company and participants evaluating use cases, they in reality might not even engage with, can bias result regarding attitudes towards an online communication strategy.

Engaging

Although a shift in strategy choices in observed, it is still only a minority of companies on Twitter, that approach their network proactively via for example tags and nurture a real dialogue to open the possibilities for online relationship management [16]. When looking at brands for example, dialogues among a consumers are present, but brands

themselves are rarely part of the conversation [68]. Looking especially at the implementation of co-created communication, there is only limited evidence [20, 77]. We only find that social CEOs do activate their community and are thus able to leverage their reputation [56]. Companies are thus not tapping into the potential for co-creation by not adding mentions of individual consumers nor audience specific and relevant message, that are inherent in social media [68].

An accelerator for a dialogic strategy e.g. in the educational sector is the rise of COVID-19, which led to the collapse of traditional formal one-sided communication and thus has imposed the need to converse with stakeholders on social topics. Social Media became a major source of digital socialization as in person meetings were regulated due to health safety measures [66]. Companies were thus pressured by a major shift in society and the acceleration of digitalization in every personas and businesses life, to adapt and overcome former gaps regarding digital communication and interaction. Even after the pandemic, the meaning of social media to exchange ideas especially on social causes is not expected to decline, as companies now more than ever levelled their online communication game up by introducing workforce especially for digital employer and consumer communication, which came to stay and last.

Influencing factors

Lee e al. (2013) found that a high CSR rating leaves companies in a favorable condition to absorb the risks associated with the use of new media and enables early adoption. The social supports facilitate companies to establish a greater online community in regards to follower count in a shorter period of time [78]. Baboukardos et al. (2021) for example point out that companies with better social performance are also more likely to engage in and hence communicate stakeholder-oriented actions for the COVID-19 pandemic [79]. More precisely this can be determined as Corporate Social Advocacy (CSA) with companies responding to events or developments that are not self-initiated and affecting it only indirectly if at all as transparent form of political engagement [80]. Adding findings by Froehlich and Knobloch, the bigger the company, the more likely they will engage in especially CSA communication, when in turns companies with B2B business model are less likely to adapt this kind of communication on Twitter [72]. Reason are greater public and legal pressure to face up to social responsibility in general, greater political influence that come with increasing company size and greater cognitive legitimacy that comes with less vulnerability [53, 72, 81]. To provide the means to possible criticism regarding CSR topics communicated, Etter (2013) found, that specialized CSR company accounts react more efficiently and appropriately than general company Twitter accounts by the allocation of staff and time resources [19]. CSR accounts thus do not only disseminate more CSR information, but also have a significantly higher level of interactivity [19].

4.3.2 Success factors of CSR communication strategies

Communication on corporate giving like philanthropic donation especially with video content increases social media engagement behavior as in number of retweets, comments and likes [66, 71]. And again, socially responsible firms are able to harvest proactive stakeholders' participation also referred to as user-driven communication or WOM without investing more resources (firm-driven communication) [78]. In addition, by driving consumer engagement behavior, CSR campaigns on Twitter have an influence on enduring audience cause engagement behavior over a longer period of time [82].

Equivalent to our findings regarding CSR topic choices and shifts over time, it is again, special CSR related events that trigger communication and engagement with stakeholder on Twitter. Thus, specific periodically recurring events as well as crisis are an important and strategically to be implanted pillar in Twitter CSR communication strategies [72]. Besides the benefits of tapping into existing social movement discussions, increasing engagement can be generated if communicated CSR topics are made explicit by the use of hashtags [83], though non-CSR posts with hashtags related to the triple-bottom-line are

retweeted and liked less, since users may feel mislead [63]. Patuelli et al. (2021) [63] find that stakeholder engagement measured by retweets and likes is in general not homogeneous and varies depending on the communities with again the social dimension scoring a higher number of retweets compared to the other CSR dimensions [63].

Overton et al. (2021) found that individuals inferred more value-driven motives from CSR messages that are directly connected to their actions compared to CSA messages which ultimately creates more positive attitude changes towards the company and WOM intentions [84]. Since findings were experiment based, they will need to be backed up with an analysis of real Twitter data [84]. In that context O'Brien et al. (2018) for example also found that customers prefer firms addressing social issues which are aligned with their core purpose and are then willing to be engaged by addressing them [33]. Interestingly, a company tweeting about converting part of its original production to for example cover the needs arising from the pandemic and the support for workers were most appreciated by the Twitter community leading to positive sentiment and WOM [85].

Further, for industries that are the focus of public attention due to their per se environmentally harmful products and services such as aviation, digital CSR engagement on Twitter is a driver of positive WOM which aligns with the concept, that customers are concerned about issues other than service quality and value for money [86]. Results are in line with Markovic et al. (2021) that demonstrate the positive affect of CSR topics on customers' positive WOM through brand authenticity [41]. Especially environmental and social CSR engagement act as safeguards in reducing online negative WOM about the company; while economic CSR engagement has only a small effect [41, 66]. Especially companies following long-term consistency in approaching for example diversity topics on Twitter receive more positive sentiments and higher engagement than companies that made swift changes in the aftermath of increased pressure from activist groups [10]. Additionally communication on diversity topics that go beyond a company's own CSR objectives again increased positive user responses [10].

Pons et al. (2021) found that environmental tweets with the word "environment" throw a positive sentiment while tweets with the word "climate" mainly have a negative mood, since Twitter users associate climate change with the increase in severity and frequency of certain environmental disasters and, tweets containing the word "environment" mainly refer to environmental and sustainable practices which are seen as valuable to fight against climate change and to improve the environmental behavior of companies [71]. Findings are in line with studies on framing effects, whereas the cognitive bias influences peoples decision on options based on whether the options are presented with positive or negative connotations and attitudes towards a subject [87, 88]

In addition it is the overall Twitter follower count that shows a positive effect on user sentiment [89, 90], with especially men being more influenced than women [91]. As social proof, the positive effect of a large network, among other things to increase credibility when it comes to purchasing decisions, is already known from other industries [92, 93]. For women in turn the sentiment towards a company's CSR content was positively influences by the organization type being non-profit rather than profit [91]. Effective acquisition of social capital for non-profit organizations by CSR communication on Twitter is content and connection based [94]. Thus, it appears to rely less on the quantity of organizations' stakeholder engagement than on the diversity of that engagement, both in terms of stakeholder connections and complexity of message elements [94]. Adding to these experimental findings, a machine learning approach with real Twitter data confirms that a company with more direct connections with others is more likely to have an opportunity to obtain public support regarding positive user sentiment [21]. Thus, network size is crucial to access social resources and to mediated the relationship between corporate retweets/response and stakeholder support [21].

When looking at an experiment comparing CSR message content in terms of product-related messages designed especially for the stakeholder group of customers, framing information within a CSR context has a positive impact on consumers' purchase intention rather than just highlighting product benefits and attributes [38]. At the same time, adding an ethical aspect to product or community relations messages did not leverage attitudes towards the brand, the stakeholder engagement or even WOM intentions. Thus, Uzunoğlu et al. (2017) found just limited impact on consumer outcomes of CSR messages within both product and community relations [38]. Interestingly, also in this case, the experimental based findings contradict somehow empirical findings employing Twitter data directly, as off we question, weather experiments are the right choice of study design when investigating questions regarding stakeholder engagement or sentiment, since mutual interest and network size and positioning play a key role when measuring Social Media KPIs.

5. Implications, limitations and conclusion

5.1 Implications

Our review results contribute to a better understanding of CSR-related communication strategies on Twitter by highlighting the content to prioritize, as well as beneficial techniques and tactics by summarizing, discussing and classifying current results in the context of communicated CSR topics and specific communication strategies on Twitter in different markets and across different nations. The review systematically captured the platform's past activities and strategies up to 2022 to synthesize practical information that can guide Twitter usage decision making and be used for research to serve as the basis for future comparative longitudinal studies of changes in usage due to the Twitter acquisition by Elon musk in fall 2022 which could probably lead to a change in platform use. The following is a summary of the implications for marketers from the review results discussed.

First, our review results show, that when opting in for CSR-Twitter communication, it is an all or nothing approach. To reach the right target group that is interested in CSR topics, study results show that it is recommended to establish a company account that clearly revolves around sustainability issues. In this way, complaints about products or services, but also other marketing activities, can be continued on the actual corporate account, thus minimizing the risk that CSR issues are perceived as a pure marketing measure by online stakeholders. In addition, a second account can already enable co-created content by linking, sharing and referring between the different company accounts. It is then crucial to grow a community fast, as overall follower count does positively influence especially men's attitudes towards the company.

Second, community connections need to be as diverse as possible, e.g. with employees, business partner or NGOs. To establish a strong connection with stakeholders, it is essential to not only initiate but find the dialogue – on the own company CSR account by directly addressing relevant stakeholder via tag or mention but also on stakeholder accounts by actively looking for CSR topics that one can contribute to. Answers and messages should be rather short and to the point and in an appropriate frequency, particularly no self-promotion may be added.

We found that recurring events, such as Earth Day or International Women's Day, must be considered in strategic communication with special content. In addition, attention should be paid to national or local grievances affecting society, so that own charity projects can be initiated. Content wise it is thus communication on corporate giving like philanthropic donation that increases social media engagement behavior as in number of retweets, comments and likes. Also framing the message with a positive wording and being aware of positive trigger words in the CSR context such as 'environment' can add to positive stakeholder perception and positive eWOM.

Our review results made clear, that social CSR-topics are particularly suitable for generating positive effects on twitter. Customers for example prefer engaging with posts

on social issues which are aligned with the company's core purpose. It is thus crucial to not make sudden shifts due to maybe trends or even topics other businesses are engaging with, because positive sentiment and a high level of engagement can demonstrably only be achieved if authentic topics that match the company's orientation and image are pursued over a longer period of time and built on one another.

Looking not only on content, but the Tweet structure – tagging relevant stakeholders and key opinion leaders is also crucial when trying to trigger engagement as well as positive sentiments not only about the Tweet, but also the company itself. CSR topics need to be made explicit by the use of the right hashtags. Sometimes even a cause-related or unique company-cause-related hashtag can help addressing the right community and differentiating from more general topics within that cause. Finally, messages need to be diverse and of different complexity, with videos being on the forefront.

5.2. *Limitations and future studies*

The presented review results are subject to a number of limitations. As studies included in the synthesis are diverse in geographic focus as well as target groups selected, identified CSR-related subjects or even communication strategies may be less generalizable. Future research could address these limitations and perform comparative studies. Employed methods were not explicitly part of our review, which is why the quality of specifically ML methods could only be considered to a limited extent in the results discussion. Therefore, an analysis of the ML pipelines used in the context is another relevant field worth researching. Finally, we found that experimental research approaches in particular are often at odds with research findings based on original Twitter data. We therefore propose to repeat these approaches with Twitter data. Since it is not possible to predict how the use of Titter by companies on CSR topics will change after Elon Musk's takeover and the accompanying strategic realignments, this review provides the basis for a future comparative longitudinal study

5.3. *Conclusion*

With the increasing regulatory and social pressure on companies of all sectors in terms of authentic and transparent communication on CSR topics, an increase in digital communication via social media and especially Twitter can be observed in the past decade. Instead of the one-sided communication strategy initially adopted by marketing via classic mass media, also for CSR the focus is increasingly shifting to dialogic communication. We were able to derive con-tent focal points from the topics represented most, which will perspectively increase in the next few years both in quantity and content quality. In particular, social topics that directly affect, customers as well as local communities and employees generate interaction and thus profitable SMC, such as increased loyalty or brand reputation. Companies need to become aware of social networks' advantages as CSR management tools and as drivers for collaborative interaction with stakeholders that would enable a more sustainable and inclusive implementation of CSR principles in their activities. By directly addressing diverse stakeholders via mention or tag, companies can further facili-tate a platform for co-creation when they are at the same time broadcasting their social good deeds, which in a CSR context can lead to positive word of mouth and in the end create value for the company. As it is striking that in not one study ethical aspects play a significant role or are even mentioned regarding public Twitter data use, companies need to always consider the reflective, responsible and ethically demanding use of social media, if they want to use the possibility of analyzing social media KPIs in the context of a strategic CSR stakeholder management.

Supplementary Materials: The following supporting information can be downloaded at: www.mdpi.com/xxx/s1, Table S1: Sample

References

1. O'Riordan, L.; Fairbrass, J., Managing CSR stakeholder engagement: A new conceptual framework. *Journal of business ethics* **2014,** 125, (1), 121-145.

2. Halkos, G. E.; Nomikos, S. N., Reviewing the status of corporate social responsibility (CSR) legal framework. *Management of Environmental Quality: An International Journal* **2021**.

3. Nekhili, M.; Nagati, H.; Chtioui, T.; Rebolledo, C., Corporate social responsibility disclosure and market value: Family versus nonfamily firms. *Journal of Business Research* **2017,** 77, 41-52.

4. Cantrell, J. E.; Kyriazis, E.; Noble, G., Developing CSR giving as a dynamic capability for salient stakeholder management. *Journal of business ethics* **2015,** 130, (2), 403-421.

5. Freeman, R. E.; McVea, J., A stakeholder approach to strategic management. *Available at SSRN 263511* **2001**.

6. Martínez, J. B.; Fernández, M. L.; Fernández, P. M. R., Corporate social responsibility: Evolution through institutional and stakeholder perspectives. *European journal of management and business economics* **2016,** 25, (1), 8-14.

7. Chiu, T.-K.; Wang, Y.-H., Determinants of social disclosure quality in Taiwan: An application of stakeholder theory. *Journal of business ethics* **2015,** 129, (2), 379-398.

8. Wang, R.; Huang, Y., Communicating corporate social responsibility (CSR) on social media: How do message source and types of CSR messages influence stakeholders' perceptions? *Corporate communications: An international journal* **2018**.

9. Zhang, M.; Jansen, B. J.; Chowdhury, A., Business engagement on Twitter: a path analysis. *Electronic Markets* **2011,** 21, (3), 161-175.

10. Maiorescu-Murphy, R. D., Business-centered versus socially responsible corporate diversity communication. An assessment of stakeholder (dis) agreement on Twitter. *Public Relations Review* **2022,** 48, (1), 102138.

11. Kollat, J.; Farache, F., Achieving consumer trust on Twitter via CSR communication. *Journal of Consumer Marketing* **2017**.

12. Pham, M. T.; Rajić, A.; Greig, J. D.; Sargeant, J. M.; Papadopoulos, A.; McEwen, S. A., A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Research synthesis methods* **2014,** 5, (4), 371-385.

13. Chae, B.; Park, E., Corporate Social Responsibility (CSR): A Survey of Topics and Trends Using Twitter Data and Topic Modeling. *Sustainability* **2018,** 10, (7), 2231.

14. Manetti, G.; Bellucci, M.; Bagnoli, L., Stakeholder engagement and public information through social media: A study of Canadian and American public transportation agencies. *The American Review of Public Administration* **2017,** 47, (8), 991-1009.

15. Rybalko, S.; Seltzer, T., Dialogic communication in 140 characters or less: How Fortune 500 companies engage stakeholders using Twitter. *Public relations review* **2010,** 36, (4), 336-341.

16. Etter, M., Broadcasting, reacting, engaging - three strategies for CSR communication in Twitter. *Journal of communication management : an international journal* **2014,** 18, (4), 322-342.

17. Morsing, M.; Schultz, M., Corporate social responsibility communication: stakeholder information, response and involvement strategies. *Business ethics: A European review* **2006,** 15, (4), 323-338.

18. Cortado, F.-J.; Chalmeta, R., Use of social networks as a CSR communication tool. *Cogent Business & Management* **2016,** 3.

19.   Etter, M., Reasons for low levels of interactivity:(Non-) interactive CSR communication in Twitter. *Public relations review* **2013,** 39, (5), 606-608.

20.   Burton, S.; Soboleva, A.; Daellenbach, K.; Basil, D. Z.; Beckman, T.; Deshpande, S., Helping those who help us : co-branded and co-created Twitter promotion in CSR partnerships. *The journal of brand management : an international journal* **2017,** 24, (4), 322-333.

21.   Jiang, Y. N.; Park, H., Mapping networks in corporate social responsibility communication on social media: A new approach to exploring the influence of communication tactics on public responses. *Public Relations Review* **2022,** 48, (1), 102143.

22.   Saxton, G. D.; Guo, C., Social media capital: Conceptualizing the nature, acquisition, and expenditure of social media-based organizational resources. *International Journal of Accounting Information Systems* **2020,** 36, 100443.

23.   Saxton, G. D.; Guo, C., Online stakeholder targeting and the acquisition of social media capital. *International Journal of Nonprofit and Voluntary Sector Marketing* **2014,** 19, (4), 286-300.

24.   de Zúñiga, H. G.; Barnidge, M.; Scherman, A., Social media social capital, offline social capital, and citizenship: Exploring asymmetrical social capital effects. *Political Communication* **2017,** 34, (1), 44-68.

25.   Zhang, H.; Gupta, S.; Sun, W.; Zou, Y., How social-media-enabled co-creation between customers and the firm drives business value? The perspective of organizational learning and social Capital. *Information & Management* **2020,** 57, (3), 103200.

26.   Lim, J. S.; Greenwood, C. A., Communicating corporate social responsibility (CSR): Stakeholder responsiveness and engagement strategy to achieve CSR goals. *Public relations review* **2017,** 43, (4), 768-776.

27.   Duthler, G.; Dhanesh, G. S., The role of corporate social responsibility (CSR) and internal CSR communication in predicting employee engagement: Perspectives from the United Arab Emirates (UAE). *Public relations review* **2018,** 44, (4), 453-462.

28.   Branco, M. C.; Rodrigues, L. L., Corporate social responsibility and resource-based perspectives. *Journal of business Ethics* **2006,** 69, (2), 111-132.

29.   Turker, D., How corporate social responsibility influences organizational commitment. *Journal of Business ethics* **2009,** 89, (2), 189-204.

30.   Chae, M.-J., Driving consumer engagement through diverse calls to action in corporate social responsibility messages on social media. *Sustainability* **2021,** 13, (7), 3812.

31.   Huete-Alcocer, N., A literature review of word of mouth and electronic word of mouth: Implications for consumer behavior. *Frontiers in psychology* **2017,** 8, 1256.

32.   Alboqami, H.; Al-Karaghouli, W.; Baeshen, Y.; Erkan, I.; Evans, C.; Ghoneim, A., Electronic word of mouth in social media: the common characteristics of retweeted and favourited marketer-generated content posted on Twitter. *International Journal of Internet Marketing and Advertising* **2015,** 9, (4), 338-358.

33.   O'Brien, I. M.; Jarvis, W.; Soutar, G.; Ouschan, R., Co-creating a CSR strategy with customers to deliver greater value. In *Disciplining the Undisciplined?*, Springer: 2018; pp 89-107.

34.   Iglesias, O.; Markovic, S.; Bagherzadeh, M.; Singh, J. J., Co-creation: A key link between corporate social responsibility, customer trust, and customer loyalty. *Journal of Business Ethics* **2020,** 163, (1), 151-166.

35.   Perez, A.; del Bosque, I. R., The stakeholder management theory of CSR: A multidimensional approach in understanding customer identification and satisfaction. *International Journal of Bank Marketing* **2016**.

36.   Du, S.; Bhattacharya, C. B.; Sen, S., Maximizing business returns to corporate social responsibility (CSR): The role of CSR communication. *International journal of management reviews* **2010,** 12, (1), 8-19.

37.   Dijkmans, C.; Kerkhof, P.; Beukeboom, C. J., A stage to engage: Social media use and corporate reputation. *Tourism management* **2015,** 47, 58-67.

38.   Uzunoğlu, E.; Türkel, S.; Akyar, B. Y., Engaging consumers through corporate social responsibility messages on social media: An experimental study. *Public relations review* **2017,** 43, (5), 989-997.

39.   Katz, E.; Lazarsfeld, P. F., *Personal influence: The part played by people in the flow of mass communications*. Routledge: 2017.

40.   Chu, S.-C.; Sung, Y., Using a consumer socialization framework to understand electronic word-of-mouth (eWOM) group membership among brand followers on Twitter. *Electronic Commerce Research and Applications* **2015,** 14, (4), 251-260.

41.   Markovic, S.; Iglesias, O.; Qiu, Y.; Bagherzadeh, M., The CSR Imperative: How CSR Influences Word-of-Mouth Considering the Roles of Authenticity and Alternative Attractiveness. *Business & Society* **2021**, 00076503211053021.

42.   Tranfield, D.; Denyer, D.; Smart, P., Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management* **2003,** 14, (3), 207-222.

43.   Rodríguez, P.; Chalmeta, R., Analysis of the use of Twitter as a tool for the management and communication of the CSR of leading European firms. *International Journal of Web Based Communities* **2020,** 16, (2), 180-201.

44.   Moher, D.; Liberati, A.; Tetzlaff, J.; Altman, D. G., Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of Internal Medicine* **2009,** 151, (4), 264-269.

45.   Page, M. J.; McKenzie, J. E.; Bossuyt, P. M.; Boutron, I.; Hoffmann, T. C.; Mulrow, C. D.; Shamseer, L.; Tetzlaff, J. M.; Akl, E. A.; Brennan, S. E., The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery* **2021,** 88, 105906.

46.   Endenich, C.; Trapp, R., Ethical implications of management accounting and control: A systematic review of the contributions from the Journal of Business Ethics. *Journal of business ethics* **2020,** 163, (2), 309-328.

47.   Fatima, T.; Elbanna, S., Corporate Social Responsibility (CSR) Implementation: A Review and a Research Agenda Towards an Integrative Framework. *Journal of Business Ethics* **2022**, 1-17.

48.   Folke, C.; Biggs, R.; Norström, A. V.; Reyers, B.; Rockström, J., Social-ecological resilience and biosphere-based sustainability science. *Ecology and Society* **2016,** 21, (3).

49.   Purvis, B.; Mao, Y.; Robinson, D., Three pillars of sustainability: in search of conceptual origins. *Sustainability science* **2019,** 14, (3), 681-695.

50.   Tomislav, K., The concept of sustainable development: From its beginning to the contemporary issues. *Zagreb International Review of Economics & Business* **2018,** 21, (1), 67-94.

51.   Caiado, R. G. G.; Leal Filho, W.; Quelhas, O. L. G.; de Mattos Nascimento, D. L.; Ávila, L. V., A literature-based review on potentials and constraints in the implementation of the sustainable development goals. *Journal of cleaner production* **2018,** 198, 1276-1288.

52.   Carroll, A. B., A three-dimensional conceptual model of corporate performance. *Academy of management review* **1979,** 4, (4), 497-505.

53.   Sethi, S. P., Dimensions of corporate social performance: An analytical framework. *California management review* **1975,** 17, (3), 58-64.

54.   Carroll, A. B., The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business horizons* **1991,** 34, (4), 39-48.

55.   Schwartz, M. S.; Carroll, A. B., Corporate social responsibility: A three-domain approach. *Business ethics quarterly* **2003,** 13, (4), 503-530.

56.   Grover, P.; Kar, A. K.; Ilavarasan, P. V., Impact of corporate social responsibility on reputation—Insights from tweets on sustainable development goals by CEOs. *International journal of information management* **2019,** 48, 39-52.

57.   Krippendorff, K., Computing Krippendorff's alpha-reliability. **2011**.

58.   Gray, H., *New directions in the investment and control of pension funds*. Investor Responsibility Research Center: 1983.

59.   Tsalis, T. A.; Malamateniou, K. E.; Koulouriotis, D.; Nikolaou, I. E., New challenges for corporate sustainability reporting: United Nations' 2030 Agenda for sustainable development and the sustainable development goals. *Corporate Social Responsibility and Environmental Management* **2020,** 27, (4), 1617-1629.

60.   Zimon, D.; Tyan, J.; Sroufe, R., Drivers of sustainable supply chain management: Practices to alignment with un sustainable development goals. *International Journal for Quality Research* **2020,** 14, (1).

61.   Muñoz-Torres, M. J.; Fernández-Izquierdo, M. Á.; Rivera-Lirio, J. M.; Ferrero-Ferrero, I.; Escrig-Olmedo, E.; Gisbert-Navarro, J. V.; Marullo, M. C., An assessment tool to integrate sustainability principles into the global supply chain. *Sustainability* **2018,** 10, (2), 535.

62.   de Villiers, C.; La Torre, M.; Molinari, M., The Global Reporting Initiative's (GRI) Past, Present and Future: Critical reflections and a research agenda on sustainability reporting (standard-setting). *Pacific Accounting Review* **2022**, (ahead-of-print).

63.   Patuelli, A.; Caldarelli, G.; Lattanzi, N.; Saracco, F., Firms' Challenges and Social Responsibilities during Covid-19: a Twitter Analysis. *arXiv preprint arXiv:2103.06705* **2021**.

64.   Yuan, S., Comparative analysis of Chinese and Japanese corporate communication on Facebook and Twitter. *Chinese Journal of Communication* **2019,** 12, (2), 224-243.

65.   Amin, M. H.; Mohamed, E. K.; Elragal, A., CSR disclosure on Twitter: Evidence from the UK. *International Journal of Accounting Information Systems* **2021,** 40, 100500.

66.   Esposito, B.; Sessa, M. R.; Sica, D.; Malandrino, O., Corporate Social Responsibility Engagement through Social Media. Evidence from the University of Salerno. *Administrative Sciences* **2021,** 11, (4), 147.

67.   Yang, F.; Zhang, X., The impact of sustainable supplier management practices on buyer-supplier performance: an empirical study in China. *Review of International Business and Strategy* **2017**.

68.   Okazaki, S.; Plangger, K.; West, D. C.; Menéndez, H. D., Exploring digital corporate social responsibility communications on Twitter. *Journal of business research : JBR* **2020,** 117, 675-682.

69.   Reilly, A. H.; Larya, N., External Communication About Sustainability: Corporate Social Responsibility Reports and Social Media Activity. *Environmental Communication* **2018,** 12, (5), 621-637.

70.   Suárez-Rico, Y. M.; Gómez-Villegas, M.; García-Benau, M. A., Exploring Twitter for CSR Disclosure: Influence of CEO and Firm Characteristics in Latin American Companies. *Sustainability* **2018,** 10, (8), 2617.

71.   Pons, A.; Vintrò, C.; Rius, J.; Vilaplana, J., Impact of Corporate Social Responsibility in mining industries. *Resources Policy* **2021,** 72, 102117.

72.   Fröhlich, R.; Knobloch, A. S., "Are they allowed to do that?" Content and typology of corporate socio-political positioning on TWITTER. A study of DAX-30 companies in Germany. *Public Relations Review* **2021,** 47, (5), 102113.

73.   Shi, D., How Do Businesses Help during Natural Disasters? A Content Analysis of Corporate Disaster Aid on Twitter. *International Journal of Strategic Communication* **2020,** 14, (5), 348-367.

74.   Mamic, L. I.; Almaraz, I. A., How the larger corporations engage with stakeholders through Twitter. *International journal of market research : JMRS ; the journal of the Market Research Society* **2013,** 55, (6), 851-872.

75.   Kaul, A.; Chaudhri, V. In *Communicating CSR on Twitter: Impact on Rank and Reputation*, CSR COMMUNICATION CONFERENCE, 2019; 2019; p 125.

76.   Saxton, G. D.; Ren, C.; Guo, C., Responding to diffused stakeholders on social media : connective power and firm reactions to CSR-related Twitter messages. *Journal of business ethics* **2021,** 172, (2), 229-252.

77.   Dong, C.; Rim, H., Exploring nonprofit-business partnerships on Twitter from a network perspective. *Public relations review* **2019,** 45, (1), 104-118.

78.   Lee, K.; Oh, W.-Y.; Kim, N., Social media for socially responsible firms: Analysis of Fortune 500's Twitter profiles and their CSR/CSIR ratings. *Journal of business ethics* **2013,** 118, (4), 791-806.

79.   Baboukardos, D.; Gaia, S.; She, C., Social performance and social media activity in times of pandemic : evidence from COVID-19-related Twitter activity. *Corporate Governance: The International Journal of Business in Society* **2021,** 21, (6), 1271-1289.

80.   Dodd, M. D.; Supa, D., Testing the viability of corporate social advocacy as a predictor of purchase intention. *Communication Research Reports* **2015,** 32, (4), 287-293.

81.   Hillman, A. J.; Hitt, M. A., Corporate political strategy formulation: A model of approach, participation, and strategy decisions. *Academy of management review* **1999,** 24, (4), 825-842.

82.   Holiday, S.; Hayes, J. L.; Britt, B. C.; Lyu, Y., The cause effect: the impact of corporate social responsibility advertising on cause consumer engagement behavior after brand affiliation ceases. *International Journal of Advertising* **2021,** 40, (2), 199-224.

83.   Saxton, G. D.; Gomez, L.; Ngoh, Z.; Lin, Y.-P.; Dietrich, S., Do CSR Messages Resonate? Examining Public Reactions to Firms' CSR Efforts on Social Media. *Journal of Business Ethics* **2019,** 155, (2), 359-377.

84.   Overton, H.; Kim, J. K.; Zhang, N.; Huang, S., Examining consumer attitudes toward CSR and CSA messages. *Public Relations Review* **2021,** 47, (4), 102095.

85.   Giacomini, D.; Martini, M.; Sancino, A.; Zola, P.; Cavenago, D., Corporate social responsibility actions and organizational legitimacy at the peak of COVID-19 : a sentiment analysis. *Corporate Governance: The International Journal of Business in Society* **2021,** 21, (6), 1043-1058.

86.   Vo Tam Thien; Xiao, X.; Ho, S. Y., How does corporate social responsibility engagement influence word of mouth on Twitter? : evidence from the airline industry. *Journal of business ethics : JOBE* **2019,** 157, (2), 525-542.

87.   Albers, W.; Harstad, R. M., A framing effect observed in a market game. In *Game Equilibrium Models II*, Springer: 1991; pp 308-336.

88.   O'Shea, B.; Watson, D. G.; Brown, G. D., Measuring implicit attitudes: A positive framing bias flaw in the Implicit Relational Assessment Procedure (IRAP). *Psychological assessment* **2016,** 28, (2), 158.

89.   Joo, J.; Lee, Y.-J.; Yoon, H. J., Interdependent self-construal and number of Twitter followers: consumer responses to alcohol industry corporate social responsibility (CSR) campaign on Twitter. *International Journal of Advertising* **2021**, 1-26.

90.   Lee, Y.-J.; O'Donnell, N. H.; Hust, S. J. T., Interaction Effects of System-Generated Information and Consumer Skepticism: An Evaluation of Issue Support Behavior in CSR Twitter Campaigns. *Journal of Interactive Advertising* **2019,** 19, (1), 15-28.

91.   Lee, Y.-J.; Yoon, H. J.; O'Donnell, N. H., The Effect of Number of Follower Cues and Organization Type on Perceived Social Norm Responses to CSR Campaigns on Social Media: A Gender Comparison. *Journal of Interactive Advertising* **2020,** 20, (3), 225-239.

92.   Talib, Y. Y. A.; Saat, R. M. In *Social proof in social media shopping: An experimental design research*, SHS Web of Conferences, 2017; EDP Sciences: 2017; p 02005.

93.   Lee, T. K.; Kim, Y.; Coe, K., When social media become hostile media: An experimental examination of news sharing, partisanship, and follower count. *Mass Communication and Society* **2018,** 21, (4), 450-472.

94.   Xu, W. W.; Saxton, G. D., Does stakeholder engagement pay off on social media? : a social capital perspective. *Nonprofit and voluntary sector quarterly : journal of the Association for Research on Nonprofit Organizations and Voluntary Action* **2019,** 48, (1), 28-49.