Determinants of Corporate Sustainability Message Sharing on Social Media: A configuration approach

Keywords: sustainability, message sharing, social media, fsQCA, information adoption, information quality, source credibility

Determinants of Corporate Sustainability Message Sharing on Social Media: A configuration approach

Dr. Hanne Knight
University of Plymouth
Drake Circus
Plymouth, UK
PL4 8AA
Email: hanne.knight@plymouth.ac.uk

Dr. Mohamed Yacine Haddoud
Liverpool Business School, Liverpool John Moores University.
Redmonds Building
Brownlow Hill
Liverpool
L3 5UGE
Email: M.Y.Haddoud@ljmu.ac.uk

Dr. Phil Megicks*
Southampton Business School
University of Southampton
University Road
Southampton
SO17 1BJ
Email: p.r.megicks@soton.ac.uk
Tel: +44 7783059507

* Corresponding author

Determinants of Corporate Sustainability Message Sharing on Social Media: A configuration approach

ABSTRACT

With an increasing number of consumers receiving information on social media, companies have adopted these channels to communicate their sustainability efforts. Digital channels enable reaching large audiences in a short period of time, and engaging consumers in message sharing activities to reap those rewards has its own challenges. Companies need to understand what increases sharing of their sustainability messages, but they must be mindful of not overstating their sustainability efforts which may be perceived as greenwashing. The Information Adoption Model is used to assess how message information quality and source credibility affect sharing of corporate sustainability messages. A fuzzy-set Qualitative Comparative Analysis is conducted on a survey of UK social media users (n= 527). Results show that dimensions of information quality and source credibility act in combination to influence sustainability message sharing. The study informs managers what to stress in social media message planning to facilitate effective sustainability communications.

Keywords: sustainability, viral message sharing, social media, fsQCA, information adoption, information quality, source credibility

1. INTRODUCTION

Digital technologies have become a key vehicle for facilitating information exchange between companies and their stakeholders (Leiderman, 2019). Given that research suggests that eight out of ten customers care about sustainable behaviour of their favourite brand (Haller, Lee, & Cheung, 2020), digital technologies are key channels to explore when facilitating the dialogue between corporate sustainability communication and consumers. The power balance between business, government and consumer groups has shifted as consumers are able to exert more direct influence through social media channels (Langley & van den Broek, 2010). Ford's One Tank Adventure campaign on fuel efficiency is a great illustration of this shift. Receiving more than 30 million YouTube hits and over 1.6 billion media impressions (Pearson et al., 2016), it demonstrates the power of social media to create an environmentally conscious identity, and illustrates the effectiveness of digital technology in sharing messages and promoting corporate sustainability claims (Lyon & Montgomery, 2013).

However, the growing amount of sustainability information has resulted in increasing scepticism about its authenticity, with consumers using social media channels to question the sustainability of business operations and to call out companies for greenwashing (Lyon & Montgomery, 2013; Pearson et al., 2016). Greenwashing is considered here to be the "selective disclosure of positive information about a company's environmental or social performance, while withholding negative information on these dimensions" (Lyon & Maxwell, 2011, p. 5). Companies who are sharing their sustainability efforts hope to gain consumers' trust and ultimately raise purchase intention (Hajli, 2018). Yet, due to the lack of regulations in most social media channels, some companies communicate their sustainability claims without really committing to them (Signitzer & Prexl, 2008), leading to consumer mistrust. Therefore, organisations need to understand how they can communicate their efforts on social media

whilst being perceived as credible and not engaged in greenwashing. Achieving this will increase the chances of information adoption in the form message sharing.

The current research considers the determinants of sustainability information sharing. Typically, users share content they perceive as meaningful (Borges-Tiago, Borges & Cosme, 2019) as they do not want to circulate messages that could irritate their friends or waste their time (Yang & Wang, 2015). With corporate sustainability messages, sharing happens when these are perceived to be genuine. Hajli (2018) explains that individuals share corporate information, which shapes social word-of-mouth (WOM) in the form of informational or emotional support for the online communities. Translating this into the context of communicated sustainability, corporate efforts would enact consideration for sharing mainly when messages are perceived as trustworthy.

Companies sharing of messages has become significant as shared content has the ability to reach large audiences in a relatively short period of time at little cost (Tellis, MacInnis, Tirunillai & Zhang, 2019). Yet, engaging consumers in message sharing activities has its own set of challenges, particularly when companies are aiming for viral marketing (Kozinets, De Valck, Wojnicki & Wilner, 2010). Tölkes (2020) postulates that corporate sustainability messages require special treatment in the communication process for consumers to understand this information and act on it. It is therefore important to identify the key features companies should focus on to increase the sharing of their sustainability messages on social media channels. Moreover, when pursuing strategies based upon a sustainable positioning, there is a danger of evoking scepticism amongst its audience resulting in negative electronic word-of-mouth (eWOM), retribution and boycotting behaviours (Dunn & Harness, 2018). So, understanding how and why messages are shared, is critical for the effective implementation of corporate sustainability strategies.

In the extant literature, several studies investigated factors that increase sharing of corporate online messages and viral marketing (e.g., Berger & Milkman, 2012; Borges-Tiago et al., 2019; Dubois et al., 2016; Tellis et al., 2019). This research focusses on aspects of the message communication by adopting the Information Adoption Model (IAM) to assess the relationship between factors of message quality (e.g., information accuracy), source credibility (e.g., source expertise) and sharing behaviour. Hence, the overarching aim of this study is to investigate the drivers of sustainability message sharing on social media.

This research contributes to the literature on sustainable business strategy, marketing, and consumer behaviour both theoretically and practically. It fills a gap in the current literature by examining the key determinants of social media message sharing in the context of corporate sustainability communications. As Tölkes (2020) suggests, how companies communicate their corporate sustainability strategy is important for consumers to adopt these messages. Understanding what consumers value with regards to corporate sustainability messages in the online context will guide companies in communicating a sustainable positioning (Figge, Hahn, Schaltegger & Wagner, 2002; Saxton, Gomez, Ngoh, Lin & Dietrich, 2019), and designing sustainability initiatives in innovation and new product development (e.g., Nijssen & Ordanini, 2020; Zhang, Gupta, Sun & Zou, 2020).

To achieve the aim of this research, a configuration approach will be applied. Here, the complexity underlying the influence of information quality factors and source credibility aspects on sharing behaviour will be explored. Practically, this study offers managers insights into how to plan their sustainability communications on social media with regard to the information included and how to present credibility for the company's message to be shared. This is important as valuable information is produced on these platforms, which offers a credible form of eWOM communication that is trusted by individuals (Hajli, 2018).

2. THEORETICAL BACKGROUND

2.1 Determinants of Corporate Sustainability Message Sharing

Web 2.0 has created a number of new ways in which consumers may be exposed to a company's messages. A plethora of online content (commercial and non-commercial) is generated each day, and users who are exposed to such content must decide whether to consume it or not; and ultimately whether to share it or not. When the process of consuming and sharing content is repeated frequently it leads to content going viral (Tellis et al., 2019) and when commercial messages are shared, this process is often referred to as viral marketing. Viral marketing has a number of benefits for companies. Industry reports show that 2.4 billion conversations take place every day that involve a brand (Keller & Fay, 2012) which influences consumers' attitudes and decision making (Cheung et al., 2008). Furthermore, there appears to be a causal link between WOM and product adoption and sales (Godes & Mayzlin, 2009). Overall benefits of viral marketing are seen as the ability to reach large audiences in a relatively short period with very low budgets (Kaplan & Haenlein, 2011; Tellis et al., 2019).

Given the trend of consumer concern about sustainability, viral marketing and sharing behaviour should be encouraged to enhance purchase intention and brand values for companies that care about sustainability. Leiderman (2019) argues that social media is the perfect platform for corporate sustainability messages given that both social media and sustainability rely on the community and collaboration to be successful. Furthermore, whilst sustainability deals with global issues, social media provides a global audience potentially resulting in an ideal fit. However, for consumers to notice those messages, they need to be compelling and evoke emotions among the readers. The literature on sustainability and social media usage highlights two different strands of research. Firstly, the majority of literature stems from the sustainability education background and looks at how social media can be used to facilitate learning for

sustainability (Abbas, 2019; Ahmed, 1999; Andersson, & Öhman 2017; Blewitt, 2011). Secondly, only minimal research looks at how companies should communicate their sustainability efforts on social media (see for example Lee, 2017).

Extant literature investigating the effect of viral marketing in the sustainability context finds that green viral communication influences green purchase intention (Chang, 2015). It also identifies the mediating effect of informational interpersonal relationships between the association of green viral communication with green purchase intention. Informational interpersonal relationships are defined as "the tendency to accept information from others as evidence about reality" (Chang, 2015, p. 4839). These findings indicate that viral marketing can indeed have an impact on people's sustainable behaviour, and provides impetus for why it is important to understand how sharing of sustainability messages can be increased. Given that consumers live in a content-rich and time poor environment (Tellis et al. 2019) there is an argument to identify what makes people consume and share online content, to inform the marketing decisions of companies. Research on viral marketing and the drivers for sharing have recognized the importance of content related features such as information relevance (Cheung et al., 2008), information accuracy (Filieri & McLeay, 2013) and the sentiment of content (Stieglitz & Dang-Xuan, 2013; Tellis et al., 2019). Stieglitz and Dang-Xuan (2013) find that emotionally charged Twitter messages are shared more often and more quickly compared with neutral tweets. This is in line with the research of Tellis et al. (2019) who find that positive emotions of amusement, excitement, inspiration, and warmth increase sharing. Furthermore, the importance of the information source has been researched in the viral marketing discussion with varying results (Cheung et al., 2008; Liu, Liu & Li, 2012).

Network characteristics that might drive sharing have been discussed in the extant literature (Peng et al., 2018), together with the importance of who is sharing the information, which has also been observed in the sustainability literature (Chang, 2015). Benefits of viral

marketing (e.g., limited costs of developing awareness) and the demand from consumers to hear about corporate sustainability efforts raises the question as to how companies can best utilize the social media landscape to benefit from the advantages of viral marketing. Despite the benefits of consumers sharing corporate messages on social media and creating viral marketing for companies, there are no existing studies that aim to identify drivers for message sharing particularly in the sustainability context.

It could be argued that these previously identified drivers also translate to a setting of communicating sustainable business strategies. However, there are further layers of complexity at play when reviewing the relationship between social media and corporate sustainability communication. Whilst social media provides an excellent platform to reach audiences more efficiently (Tellis et al., 2019), it also empowers consumers to put pressure on companies about their sustainability (Pearson, Tindle, Ferguson, Ryan & Litchfield, 2016). Instances show on numerous occasions where consumers have blamed companies for greenwashing or overstating their sustainability actions (Pearson et al., 2016). As social media has provided a platform for consumers to voice their concern to millions of other users, companies have lost some of the communication control. Weber (2010) states: "These days, one witty tweet, one clever blog post, one devastating video—forwarded to hundreds of friends at the click of a mouse—can snowball and kill a product or damage a company's share price" (Weber, 2010; see also Pearson et al., 2016). The emotionally charged nature of sustainability (Kals & Maels, 2002), together with social media providing a platform for consumers to be heard, presents an impetus for examining exactly what drives consumers to share sustainability messages.

2.2. Information Adoption Model (IAM)

The IAM can aid in the identification of what the drivers of sustainability message sharing may be. It was originally formed to improve an understanding of how people form intentions towards adopting knowledge (Filieri et al., 2013) and has been utilized to illustrate how consumers can be influenced in their adoption of information posted online (Cheung et al., 2008). In terms of sustainability message adoption, Han et al. (2018) find that personal norms and values are activated through pro-environmental user generated content on social media. Sustainability content found online whether from peers and family, or from a corporate institution can be seen as a necessary pre-step to change personal norms and values which are essential to sustainable product adoption.

When applied in an online context, the nature of arguments in the message is expressed in the IAM as argument quality (information quality). In addition, issues or themes that are not directly related to the subject matter of the message, are labelled as source credibility (Sussman & Siegal, 2003). The sustainability literature identifies both the argument/information quality as well as source credibility as important when it comes to information adoption. For example, Kronrod, Grinstein, and Wathieu (2012) find that the consumers' involvement with sustainability should impact how the corporate message is communicated, using more assertive language with consumers who believe sustainability to be important. Source expertise and trust have often been discussed in the sustainability context as being signalled through the use of sustainability branding (e.g., Zouganeli, Trihas & Antonaki, 2012) and certification (Font, 2002). An explanation of how these variables have been studied in terms of influencing sharing behaviour is now considered.

2.3 Information Adoption, and Viral Marketing Sharing

The process of information adoption is a key aspect of social media usage and integral to the implementation of the IAM (Erkan & Evans, 2016; Hussain, Guangju, Jafar, Ilyas, Mustafa & Jianzhou, 2018). This could involve actions including the reading of content online, requesting help online, asking for recommendations and many more. In attempting to develop understanding of social media adoption it is important to investigate what factors influence users in their adoption of information online and in particular how they interact with others, notably sharing information through eWOM. These have been identified in relation to the IAM as *inter alia* the need for social interaction, economic incentives, and self-worth reinforcement (Hussain et al., 2018).

The research presented here considers information adoption in the form of sharing specifically in regard to the influences on the exchange of messages with other social media users about a company's sustainability activities. It seeks to examine how the sharing of such information may be related to viral marketing activity of a company's sustainable behaviour which results in advocacy/endorsement from one user to another through the passing on of messages (Dobele, Toleman & Beverland, 2005; Roy, Butaney, Sekhon & Butaney, 2014). The IAM model explores information adoption as being mediated through information usefulness, meaning that for information to be adopted, they need to be perceived as useful to consumers (Cheung et al., 2008). Borges-Tiago et al. (2019) establish that users share content they perceive meaningful, which is why information usefulness as a mediator has been forgone in the current study as we postulate that consumer only share information that they perceive to be useful.

2.3.1 Information (Argument) Quality

A vast number of users create countless amounts of content online every day, leading to potentially diminished information quality (Cheung et al., 2008). Bhattacherjee and Sanford (2006, p. 811) define argument quality as "the persuasive strength of arguments embedded in an informational message". Studies measure information quality as users' perceptions of relevance, timeliness, accuracy, and comprehensiveness (Cheung et al., 2008) as well as appropriate amount of information and content objectivity (Liu et al., 2012).

When reviewing the results of extant studies with regards to information quality, and argument quality in relation to the IAM, Cheung et al. (2008) find that users adopt information online if it is perceived as comprehensive and relevant. These findings compare with Filieri and McLeay (2013) who suggest that information accuracy, information value added, information relevance and information timeliness strongly predict information adoption. Additionally, Liu et al. (2012) measure whether objective information is more likely to be shared than subjective information (content objectivity), but did not find support for this relationship. Furthermore, Sparks, Perkins, and Buckley (2013) study online reviews' persuasiveness in a sustainability context and find information quality to have an impact, indicating that vague content is less persuasive than specific content about the sustainability efforts of the brand. Building upon research undertaken hitherto, in the context of this study, particular perceived components of sustainability information quality - relevance, accuracy, and timeliness - are seen as affording particular insight into social media users' message sharing.

Perceived relevance relates to the extent to which the information provided to the social media user is applicable to their specific expectations of a company's sustainability efforts. The relevance of the message is something that the individual user perceives and will vary

according to what they are looking for (Wang & Strong, 1996); and relevance is an important element of decision making as users spend little time reading messages (Dunk, 2004). It is suggested that it is crucial for companies to be aware that only the most appropriate messages are likely to capture the interest of readers, and potentially be shared (Hussain, et al., 2018). So, the extent to which a message is perceived to be relevant to a user, when forming beliefs and making decisions about the company's sustainability behaviour, is an important consideration in determining whether they will share the information.

Perceived accuracy is the correctness of information, and its reliability; it reflects the extent to which a social media user perceives the information in a message is correct (Wixom & Todd, 2005). It also depends on how a user perceives that a message is believable, credible, and valid (Wang & Strong, 1996), which is likely to affect their behaviour in terms of reading and possibly sharing its content. The accuracy of information in messages relating to a company's sustainability behaviour is a potentially important factor in influencing online message engagement (Filieri & McLeay, 2013), with more accurately perceived message content promoting greater viewing and onward communication.

Perceived timeliness is the social media users' assessment of how current and up-to-date a message is (Cheung et al., 2008). Past research identifies timeliness as a key contributor to the quality of information (Suh, Greene, Israilov & Rho, 2015) which enhances consumers' resultant decision making based upon improved expertise and reduced uncertainty. It has also been established that timeliness is significantly associated with information adoption in an online setting (Filieri & McLeay, 2013). The currency of an issue raised in a social media message relating to a company's sustainability activities can therefore influence users' engagement and its potential for sharing with others.

2.3.2 Source Credibility

In the IAM, source credibility refers to influences on consumers that are not directly related to the subject matter of the message. Literature in the sustainability context often reviews personal norms as drivers for sustainable behaviour (e.g., Jansson, Nordlund & Westin, 2017); and source credibility appears to be particularly important when it comes to sharing intentions. Cheung et al. (2008) look at the information source to detect if it is important for the source to be credible for sharing to occur. No significant relationship was found that supported the notion that source credibility is essential when users decide to adopt and share a message. It is important to note that this study takes place within an online customer community, and the information is provided by other equal users rather than experts. Sparks et al. (2013) found consumers' generated content with regards to the sustainability behaviour of a company to be more persuasive than that of the company itself. Yet, companies' eco-logos and awards have been identified as influencing the persuasiveness of a message. These somewhat conflicting findings provide impetus for the importance of source expertise.

Source Expertise is the extent to which the source of a message is regarded as an expert. Liu et al. (2012) identify that source trustworthiness and source expertise have a significant effect on sharing information (in the form of retweeting). They analyse tweets sent out during emergencies, where source credibility naturally plays a much more important role than when looking into restaurant reviews as was the case with Cheung et al. (2008). Hajli (2018) also examine factors that impact eWOM adoption, finding that both credibility and information usefulness impact upon social WOM adoption. Moreover, research into the importance of networks in impacting sharing finds that a receiver is more likely to share content from a sender with whom they share more common mutual followers and common followees (Peng et al., 2018). The significance of common followers can also be seen as a reflection of the importance of trusting the information source, therefore reflecting the credibility of that source.

Source Trustworthiness is the extent to which the recipients of information perceive the source to be trustworthy (Petty & Cacioppo, 1986). Multiple sources are often prevalent in an online environment in conveying messages relating to a company, including the company itself. Social media users have to assess the trustworthiness of a source when deciding whether to include the information provided in their belief formation and decision making. If the source is perceived to be trustworthy then the information is regarded as useful and leads to effective communication (Liu et al, 2012). Additionally, Chu and Kamal (2008) identify that the perceived level of trustworthiness of a source in an online environment directly influences the reader's message elaboration and has a significant effect on argument quality. Further, in communications research the persuasive effectiveness of a message is regarded as having a greater impact on perceptions and beliefs (Cheung et al, 2008). We suggest that the degree of trustworthiness of a social media source in the context of information about a company's sustainability will influence the user's likelihood to share it. Summarising, in line with the IAM (Cheung et al., 2008) and aforementioned sources, information quality and source credibility have been identified as the two main determinants of information adoption in the context of sharing of online messages. Information quality comprises the three dimensions of information relevance, accuracy, and timeliness, while source credibility has source expertise and source trustworthiness as its two dimensions (See Table 1).

INSERT TABLE 1 ABOUT HERE

Pappas and Woodside (2021) posit that configurations of factors underpin peoples' experience and use of information systems. Past studies show that consumers' engagement with online content and eWOM is associated with multiple interactions across several determinants. For instance, exploring online hotel reviews, Gonçalves et al. (2018) conclude

that consumer behaviour is complex and determined by configurations of factors including personal motivations, social concern, and consumer empowerment. Likewise, Wang, Li, and Liu (2020) suggest that eWOM use is predicted by combinations of information quality components such as eWOM accuracy, completeness, sidedness, relevance, and timeliness, alongside consumer-specific characteristics.

Similarly, in the context of sustainability, studies have found both information quality and source credibility are associated with consumer behaviour. Sparks et al. (2013) research the effects of content source and certification on consumer behaviour in an eco-resort setting and find interactions to be complex. They stress that in an environmentally relevant tourism context, certification, and eco-logos influence consumers' perceptions of the company's sustainability efforts. They also found customer-generated content being perceived as more trustworthy than manager-generated content (Sparks et al., 2013). This could link back to perceptions of some dimensions of argument quality being more important when coming from peers rather than from a company. On a wider level, a study on green buying behaviour confirmed that complex configurations of several consumption values were relevant (Gonçalves et al., 2016). Similarly, Agag, Brown, Hassanein, and Shaalan (2020) showed that travellers' willingness to pay more for green travel products is associated with combinations of values, normative influence, personality traits and beliefs. Based on these findings, this study investigates combinations of information quality and source credibility factors associated with viral message sharing in the context of sustainability.

3. DATA COLLECTION AND METHOD

3.1 Sample

This study takes place in the UK. Most current research on viral marketing and sustainability takes place in developed nations (Baker, 2016; Tellis, et al., 2019) and to compare findings, a

similar background in internet access and social media usage is essential. UK citizens are active users of social media with around 39 million engaged in 2017 (Johnson, 2020). The UK is among the Top 20 countries of The Global Sustainable Competitive Index (GSCI) which measures the sustainability competitiveness of countries based on quantitative measures derived from sources such as the World Bank, the IMF and other UN agencies (Solability, 2020). Together the widespread social media usage and the nation's competitive sustainability positioning presents an excellent arena for undertaking this research.

Data collection involved a panel of active social media users compiled by SmartSurvey (a UK-based source of digital survey solutions). It provides a consumer audience survey panel with approximately 20 million respondents in over 70 countries, and has been used in previous studies (e.g., Garcia, Moizer, Wilkins & Haddoud, 2019; Onjewu, Haddoud & Nowiński, 2021). Data were collected over a period of four weeks between June and July 2020, providing a panel-based non-probability sample. Despite generalisability issues, non-probability sampling is often used in consumer-based studies in online settings (e.g., Clemes, Gan & Zhang, 2014; Hussain et al., 2018; Pappas, Papavlasopoulou, Mikalef & Giannakos, 2020). It is recognized that non-probability sampling can generate good quality data when samples have high participation levels (Garcia et al., 2019). Drawing upon previous studies in the domain, the survey instrument is divided into four parts: 1) the measurement of the quality of companies' sustainability information; 2) the measurement of the source credibility of companies distributing sustainability information on social media; 3) sharing activities; and 4) demographic questions. Prior to administering the survey three researchers reviewed the questionnaire's structure, content, and wording. Following this, it was piloted with academics and students to review ambiguities, meanings, and other potential issues. Initial statistical tests were used to assure that all of the constructs are valid and reliable.

A total of 527 usable questionnaires were obtained. The sample comprises approximately 56% female and 44% male respondents with the majority (59%) being 55 years or older and the remainder being between 18 and 54 years old. Most respondents (58%) engaged with social media for up to one hour on average each day, with around 21% engaging for about 2 hours, and a further 18% engaging for a longer than that.

3.2 Measures

Each construct is measured with several items (multi-item approach) based on extant scales to achieve construct validity and reliability (Cheung et al., 2008). The constructs were adapted to fit the research context of sustainability. Source trustworthiness and expertise, as well as information relevance, accuracy, timeliness and sharing behaviour were measured with a five-point Likert scale, ranging from strongly disagree (1) to strongly agree (5). (See Table 2).

INSERT TABLE 2 ABOUT HERE

3.3 Analytical Approach

To analyse the data, the study adopts Ragin's (2000) fuzzy-set Qualitative Comparative Analysis (fsQCA), utilizing the fsQCA v3.1b software (Ragin & Davey, 2016). fsQCA offers a deeper and richer understanding of data compared to traditional analysis methods (Pappas, Kourouthanassis, Giannakos & Chrissikopoulos, 2016). The technique is able to identify combinations of conditions (if any) leading to the sought outcome (Fiss, Marks & Cambré 2013; Ordanini, Parasuraman & Rubera, 2014). Unlike traditional regression-based techniques, where only the general trend of the data is captured, fsQCA considers contrarian cases that do not fit that trend (Schlittgen, Ringle, Sarstedt & Becker, 2016; Woodside, 2013). This addresses

potential heterogeneity issues (Gelhard, Von Delft & Gudergan, 2016), and unravels the equifinality phenomenon wherein different equally effective combinations of conditions may lead to the same outcome (Gonçalves, Lourenço & Silva, 2016).

According to Pappas and Woodside (2021), users' experience and use of information systems in general (online message sharing in this case) are complex and often the result of multiple configurations. When it comes to behaviours towards sustainability, previous studies confirmed the presence of complexity and equifinality wherein several pathways or configurations are associated with sustainability behaviours (e.g., Gonçalves et al., 2016; Yadav, Balaji & Jebarajakirthy, 2019). These demonstrated that sustainable behaviours are associated with interdependent conditions that act collectively. Furthermore, fsQCA is considered more robust than variance-based methods as its sensitivity to outliers is relatively minimal (Pappas & Woodside, 2021). Based on the above, fsQCA is particularly relevant and advantageous when studying factors associated with viral sharing of online sustainability messages.

3.4. Construct Reliability and Validity

Latent variables' reliability and validity are assessed prior to conducting the fsQCA. Since this cannot be undertaken with fsQCA, a structural equation modelling approach was utilized with the aid of Warppls software (Kock, 2020). This two-step process is commonly used in fsQCA analysis (Pappas et al., 2016; Haddoud, Jones & Newbery, 2021). Table 3 depicts the scores for Cronbach's Alpha (α), Composite Reliability (CR), and Average Extracted Variance (AVE). All values achieve acceptable levels, confirming no major issues concerning reliability and convergent validity. Additionally, common method bias was assessed using Harman's one-factor test (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). The

single factor accounted for less than 50% of the total variance, suggesting no major risk of bias of this type in the data.

INSERT TABLE 3 ABOUT HERE

3.5 Calibration

Calibration entails converting the data into fuzzy-membership scores, using three qualitative anchors reflecting: no-membership (0), cross-over (0.5) and full-membership (1), which requires identifying corresponding values in the Likert scales (Woodside, 2011). The present study relies on the 5th percentile (lower-threshold), 95th percentile (upper-threshold) and 50th percentile (cross-over point) values to establish the corresponding Likert scale thresholds (Beynon, Jones & Pickernell, 2016). Table 4 shows the percentile values used for each. Since Likert scales can potentially generate a large number of cross-over points (0.5), which will be excluded from the truth table, such values can be increased or decreased by 0.01 so they can be in or out of the category (Kent, 2015). Here, cross-over points were assigned the value 0.51.

INSERT TABLE 4 ABOUT HERE

4. RESULTS

4.1 fsQCA Necessity Analysis

Following calibration, a necessity analysis is conducted which identifies the conditions necessary for viral message sharing, yet not sufficient to exhibit this behaviour (Kent, 2015).

A condition exhibiting a consistency score of at least 0.90 is deemed necessary (Legewie, 2013). Consistency reflects the degree to which cases that share a condition or configuration agree in displaying the sought outcome (Ragin, 2008). Table 5 exhibits the necessity analysis results, and indicates that none of the factors is a necessary condition for viral message sharing.

INSERT TABLE 5 ABOUT HERE

4.2 fsQCA Sufficiency Analysis

In this step, several combinations of factors associated with viral message sharing are obtained. A consistency threshold is set to identify those combinations likely to result in high message sharing. Most researchers suggest scores exceeding 0.74, reflecting an informative combination (Skarmeas, Leonidou & Saridakis, 2014; Woodside, 2013). Here, a cut-off value of 0.80 is selected. Furthermore, a frequency threshold is determined which refers to the minimum number of cases each combination required to warrant assessing the sub-set's relation with the outcome (Ragin, 2008). We adopted a threshold of 5 cases as per Ragin's (2008) suggestion to use higher thresholds (e.g., 5 and 10) when large samples are involved.

INSERT TABLE 6 ABOUT HERE

Table 6 shows four different configurations associated with viral message sharing. For clarity, full circles represent the presence of a condition whereas blank circles indicate the absence of a condition. Blank cells indicate that the presence or absence of that condition do not matter for the outcome. Additionally, through fsQCA, researchers are able to identify core vs.

complementary (peripheral) conditions. Core conditions exhibit a strong association with the outcome, whereas peripheral conditions represent a weaker association (Fiss, 2011). The larger circles indicate core conditions (presence or absence), while smaller circles indicate peripheral conditions.

To evaluate the empirical relevance of each combination, coverage values are assessed (Ordanini et al., 2014). Coverage captures "the degree to which a cause or causal combination 'accounts for' instances of an outcome" (Ragin, 2008, p. 44). Coverage can be raw and unique, with raw coverage typically overlapping with other combinations, while unique coverage is exclusive to a combination (Beynon, et al, 2016). Overall solution coverage is provided to show the extent to which a set of configurations determines outcomes (similar to the R-square value in multivariate methods) (Woodside, 2013).

The paths obtained are first discussed separately to ascertain distinctive features associated with viral sharing. Next, an overarching narrative focusing on patterns emerging across those paths takes place to provide a holistic view of the findings. As per Table 6, four paths associated with viral message are identified. The first exhibits high information relevance and high trustworthiness as core conditions, alongside the presence of high source expertise as a complementary condition, despite low information accuracy. This path suggests that viral sharing by consumers will occur when trusted experts post a sustainability message that is perceived relevant, despite a lack of accuracy and regardless of its timeliness. The second involves high information accuracy and high trustworthiness as core conditions, alongside high source expertise as a complementary condition with information relevance being low. Here, accurate sustainability messages posted by trusted experts, will also be virally shared by consumers, despite as not being perceived as relevant and regardless of its timeliness. The third includes high information relevance, high accuracy, and high source expertise as core conditions, with high information timeliness as a complementary factor. This path suggests that

when sustainability messages posted by experts are perceived to be accurate, relevant, and timely they will be virally shared by consumers regardless of whether these are trusted or not. The fourth encompasses high information relevance, high accuracy, and high trustworthiness as core conditions, with the presence of high information timeliness as a complementary factor. Here, customers are likely to virally share sustainability messages when these are perceived as relevant, accurate, timely and posted by trusted sources. The expertise of the source does not matter in this instance. Across the four paths, based on the raw coverage scores, the third and fourth are the most empirically relevant, followed by the first two. These four paths have a solution coverage of 0.69, which indicates the explained proportion of viral message sharing. The following patterns can be noted:

1. When all dimensions of information quality are present, only one dimension of source credibility is needed (high source expertise or high trustworthiness). Contrastingly, when all dimensions of source credibility are present, only high relevance or high accuracy are required.

2. High information relevance and high information accuracy can be substitutes for one another when both dimensions of source credibility are high.

3. High source expertise and high trustworthiness can be substitutes for one another when all dimensions of information quality are high.

4.3. Negation Analysis

In fsQCA, a negation analysis can also be performed to explore combinations of low message sharing (See Table 7). Here, three combinations associated with low message sharing emerged (using 5 and 0.81 as frequency and consistency thresholds).

INSERT TABLE 7 ABOUT HERE

The first involves low relevance, low accuracy and low trustworthiness, with all of these conditions being core. This suggests that when consumers perceive sustainability messages as irrelevant, inaccurate and untrusted, these will not be virally shared regardless of the expertise of the source and timeliness of the message. The second involves low accuracy, low timeliness, low expertise, and low trustworthiness with low timeliness and low trustworthiness being core conditions. Here, sustainability messages posted by untrusted sources with low expertise, that are perceived to be inaccurate and untimely, will not be virally shared by consumers regardless of how relevant the messages are. The third involves high timeliness, with the presence of low relevance, low expertise and low trustworthiness, all as core conditions. This suggests that despite being timely, irrelevant sustainability messages posted by untrusted sources with no expertise will not be virally shared. In sum, low levels of information quality and credibility together are associated with low message sharing behaviour.

4.4. Robustness Checks

It is recommended to test different frequency and consistency thresholds to assess the stability of the results. Frequency thresholds of 10 and 14 were used and they yielded results relatively consistent with the initial findings. While less combinations emerged due to the higher frequency cut-off, it was still noted that when all information quality conditions are present, only one credibility dimension is required and vice versa. Furthermore, a higher consistency threshold was tested (0.82) in which the same trend was also confirmed. (See Appendix 1).

5. DISCUSSION AND CONCLUSION

5. 1 Discussion of Findings

This study is unique as it adopts a configuration approach wherein combinations of conditions are identified as opposed to single factors associated with social media users' corporate sustainability message sharing. It offers insights into this complex behaviour that is determined by the combined influence of different message characteristics. Findings outline interactions across specific information quality and credibility dimensions that are associated with consumers' willingness to share messages. A noteworthy contribution to advancing the IAM emanates from our research as it demonstrates exact combinations of factors that are essential in an online context for message sharing to occur. fsQCA results identify four combinations of the dimensions of information quality and source credibility that are likely to be associated with viral sharing. All of these include at least one factor from information quality and source credibility, supporting the view that in IAM, both dimensions (information quality and source credibility) need to interact to reach adoption (Sussman & Siegal, 2003). This overarching finding provides support for the IAM model in an online sustainability context. Beyond this contextual aspect, our study extends understanding of the IAM by inspecting the individual dimensions of both factors in more detail.

High information relevance and high information accuracy appear to be substitutes for one another - the message needs to be either relevant or accurate. To reach viral sharing, these need to be complemented with both high source expertise and high trustworthiness. This could suggest that when source credibility is established through both high trustworthiness and high expertise, social media users become less demanding in terms of information quality. Whilst consumers might be skeptical of companies greenwashing their activities, they will have more confidence in sources perceived as highly trustworthy and an expert in their field, and care less

about the quality of the information shared. Lyon and Montgomery's (2013) view of the impact of social media on corporate greenwashing supports this, which argues that companies with strong environmental reputations benefit from the use of social media to communicate their sustainability efforts. Furthermore, contrary to the work of Filieri and McLeay (2013) who identified both information accuracy and timeliness as important factors in consumers' adoption of information we find that timeliness of the sustainability information provided by the company is less important when expertise and credibility are high. Cheung et al. (2008) identify that relevance and comprehensiveness of argument quality positively impacts information usefulness yet do not find support for accuracy of the message. They explain this in terms of the impossibility for the audience to determine whether what they read on social media is accurate or not. It might be difficult for the reader of the sustainability message to establish if the information is indeed accurate, which is one reason for why consumers are more concerned about companies greenwashing their sustainability activities. This would explain why, in addition to highly perceived accuracy or relevance, both source credibility factors of trustworthiness and expertise are needed for users to decide whether to share a sustainability message. The research of Sparks et al. (2013), set in a sustainability context, supports this by suggesting that credibility cues in the form of certification of eco standards strengthen consumers' beliefs. This extends the IAM through recognizing that, when source credibility is fully established through highly perceived trustworthiness and expertise, not all criteria of information quality need to be present for message adoption to occur.

High source expertise and high trustworthiness can also be substitutes for one another - high source expertise could replace high trustworthiness for sharing of the sustainability message on social media to occur. However, this only holds true when all dimensions of information quality are present, suggesting that if perceived relevance, accuracy and timeliness of sustainability information are high, less emphasis is put on the source credibility of the

message. This shows that companies that are perceived as less trustworthy or having less expertise in sustainability issues could overcome this by focusing on how they publish information on social media. For example, when there are negative headlines around the impact of fast fashion on the environment, small fashion businesses could use social media channels to communicate relevant and accurate information about their sustainable operations. Their messages could still go viral as they could be seen as particularly relevant and timely despite those businesses not yet being perceived as very trustworthy or as experts in their field. Lyon and Montgomery (2013) also find that in particular smaller niche businesses that merely focus on green products should use social media. Furthermore, this supports the findings of Borges-Tiago et al. (2019) who demonstrate that the message needs to be meaningful and relevant for consumers to participate in viral communication. Our study adds to this by identifying which dimensions of information quality need to be present for sharing to occur, and demonstrates that argument quality in the IAM becomes more important if the source's credibility is not fully established.

The overall picture indicates that when all dimensions of information quality (i.e., the quality of the argument in the message) are present, only one dimension of source credibility (expertise or trustworthiness) is required. Revisiting the small sustainable fashion business example, if they get the timing right (e.g., when bigger competitors are making headlines for unsustainable behaviour), they may benefit from communicating their sustainable business behaviour with highly visible expertise cues, such as certification from established standards organizations. Contrastingly, when all dimensions of source credibility are present, only relevance or accuracy are needed. The former scenario - all information quality present, alongside one factor of source credibility - has more empirical relevance showing the somewhat greater relevance of information quality for the social media user when it comes to sharing corporate sustainability messages; and provides impetus for the possibility that the quality of

information seems potentially more important than the source as an antecedent to sharing behaviour on social media. This partially contradicts Langley and van den Broek (2010) who reviewed social media characteristics as drivers for sustainable behaviour. They found that both presentation of achievements (in form of qualitative information such as stories, testimonials or descriptions of what initiatives have accomplished) and an easy way of sharing such information result in social media initiatives with high number of participants.

The relatively lower empirical relevance of combinations involving both high trustworthiness and high source expertise simultaneously may be explained by anyone being able to distribute a message about their sustainability efforts online, and it being difficult to determine the perceived trustworthiness or expertise of the source (Cheung et al., 2008). This would also explain why combinations with information qualities in terms of relevance, accuracy and timeliness have a greater empirical relevance to sharing behaviour given the opportunity of the reader to determine whether a message is relevant to them. Information relevance has been shown to be a strong predictor in previous studies (Cheung et al., 2008; Filieri & McLeay, 2013), which may be due to the audience visiting the social media pages of companies voluntarily (Tellis et al., 2019). For users to engage with the content voluntarily, it needs to be relevant to them otherwise they would not engage with it. Berger & Milkman (2012) stress that interesting content is positively linked to virality, showing more support for the current results. It is interesting to note that high timeliness does not seem to be a relevant condition on its own; only in combination with both high relevance and high accuracy does it appear to influence sharing behaviour. This may be attributed to the sustainability efforts of companies not necessarily being an imminent front of mind topic for users, making it less time sensitive than potentially other topics.

Both information quality and source credibility are important conditions for companies when planning the sharing of sustainability messages. The negation analysis supports this since

the absence of both types of conditions (i.e., quality and credibility) is associated with low sharing. That said, for sharing to occur, not all sub-dimensions need to be present. When all information quality conditions are fulfilled (i.e., high relevance, high accuracy, and high timeliness), only one dimension of source credibility is required. Alternatively, the presence of both source expertise and trustworthiness overcomes the requirement for all three information quality dimensions. Nonetheless, the former scenario seems to be more prevalent among people sharing sustainability messages in social media communities.

5.2 Theoretical Implications

Our findings offer a number of contributions to theory. First, whilst sharing behaviour has been researched in a number of different contexts (Cheung et al., 2008; Filieri & McLeay, 2013; Tellis et al., 2019), our research measures sustainability sharing behaviour. The analysis using a configuration approach, enables deeper understanding of the complexities of the factors influencing behaviour and the relationships between them. Encouraging consumers to behave more sustainably is at the forefront of trying to tackle issues our planet is facing. Social media channels enable faster information exchange and greater communication among consumers regarding sustainability (Pearson et al., 2016). But challenges have been identified, and critique is offered of whether online sustainability talk actually translates into actions and behavioural change. One way of empowering consumers to create change is through leveraging the speed and ease of sharing messages via social media (Langley & van den Broek, 2010), and our study provides further insight into achieving this.

Second, it has been suggested that consumers find content relating to the sustainability behaviour of a company to be more persuasive when received by other consumers rather than that published by the company itself (Sparks et al. 2013). This provides impetus for the importance of this study as it extends prior research by showing exactly which dimensions of

information quality and source credibility are crucial for consumers to willingly participate in sharing companies' sustainability messages.

Third, the current research extends the IAM by demonstrating how information quality and source credibility in the sustainability setting complement each other. New insights are added on the interactions of information quality and source credibility dimensions, as well as their empirical relevance. Specifically, this research establishes that although the key antecedents of message sharing are all important conditions, combinations of the source and information/argument determinants are flexible in the way that they can be shaped to achieve the desired outcomes.

5.3 Managerial Implications

Overall, this study offers companies opportunities for adopting a more nuanced approach to planning different combinations of factors into their sustainable strategy communications on social media. It is claimed that sustainable initiatives online can have an impact on the power balance between business, government, social movement organizations and consumer groups, as they could exert more direct power over the market (Langley & van den Broek, 2010). Companies are under immense pressure to show how they contribute to solving challenges such as climate change and pollution. Consumers increasingly demand that companies have a social conscience and social media have opened up channels for communication that facilitate public scrutiny of their sustainability behaviour. One way for companies to use social media to their advantage is to communicate their sustainability efforts using these channels which provide relatively quick and inexpensive access to large audiences (Tellis et al., 2019). Social media also provides a conduit for efficient communication (Schweidel & Moe, 2014), commitment demonstration (Amran, Ooi, Mydin & Devi, 2015) and enhancing customers' engagement in sustainable development (Dobele et al., 2014). However, communicating

sustainability through social media campaigns can have the reverse effect and may lead to unintended consequences such as accusations of greenwashing. In this regard, Arli and Dietrich (2017, p. 837) recognised that "*many of these social campaigns end up backfiring*".

Our results indicate that companies facing challenges in establishing expertise or trustworthiness could focus more on the quality of the information and argument in the messages communicated, which should be accurate, timely, and relevant to the audience. The current findings suggest that information quality dimensions, combined with only one of the source credibility dimensions, is sufficient for sharing to occur. Companies could promote the efficient use of resources by focusing on either the expertise or trustworthiness dimension. With regard to specific sustainability strategies, the insights provided here can enable companies to plan effective messaging in establishing new markets for their sustainable initiatives, and the co-creation of sustainable new products through social media communications that involve the company and its customers (Zhang, Gupta, Sun & Zou, 2020).

5.4 Limitations and Future Research

The study examines self-reported intention to share companies' sustainability messages rather than actual sharing activity. Despite the popularity of self-reported measures in management research, it is acknowledged that they could lead respondents to over-express agreement or disagreement (Taras, Rowney & Steel, 2009). However, in a study comparing actual measures vs. reported measures relating to social media use it was found that while the respondents overestimated their use, their reported measures were consistent and strongly correlating with actual use (Junco, 2013). We posit that for this study, consistency is more important as the focus is on relative differences in sharing across respondents rather than the intensity *per se*. Moreover, in addition to the common method bias test, the calibration process mitigates overestimation (which was based on percentiles rather than the nominal value), and it is

anticipated that the self-reported measures were unlikely to introduce a major bias. Saying that, we still call for future research to study the real-life sharing behaviour of sustainability messages on social media channels using qualitative techniques such as netnographic analysis and social media data analytics. This study utilised a panel based third-party company to collect data. This may have limitations in terms of sample representativeness. In fact, the used sample seems to be biased toward older people. We therefore call future works to use more representative samples to confirm our findings.

This research refers to general social media channels without specifying the platforms being used. A comparison across different social media channels may result in interesting findings, particularly with regard to whether they affect respondents' perceptions of the platform and its users in relation to their relative effects on the determining factors of information quality and source credibility (Yang, Basile & Letourneau, 2020). Our research framework is simplified and only measures three dimensions of information quality and two of source credibility. Further research could explore the effect of additional factors such as information understandability (Wang & Strong, 1996), audience involvement (Wheeler, Petty & Bizer, 2005) and transparency (Becker, Weigan & Reinartz, 2019) on sharing. It would also be interesting to test whether sharing a company's sustainability messages is an indicator of enhanced credibility among the company's consumers as Lee (2017) suggests. Furthermore, it would be useful to investigate the effects of consumers' pro-environmental predispositions and the level of social media engagement as potential moderators of the relationship between information quality, source credibility and viral sharing.

Regarding the sustainable business strategy activities that are communicated via social media, it would be beneficial to examine whether some platforms and sources are more effective in achieving their desired outcomes compared to others. For example, would one platform be more appropriate for communicating new product or innovative supply chain

initiatives compared with more general business positioning and reputation-based initiatives? Complementary sources may need to be carefully selected, along with the message content to ensure that the desired sustainability outcomes are achieved. Additionally, different companies may find that their sustainability messaging is better understood using a particular social media channel, source and message which is consistent with their overall business strategy. It would be interesting to investigate this to determine whether innovation-oriented companies need to use a different approach to implementing effective sustainability message sharing compared with those adopting an efficiency-oriented strategy (Yuan, Lu, Tian & Yu, 2020). The cross-sectional nature of the data should be accounted for when inferring causality in our results. To overcome this, an opportunity exists to undertake experimental studies into the perceptions of social media users of corporate communications and their antecedents, and to establish their effects on specific outcomes in regard to enhancing effective sustainability business strategies in the digital age.

REFERENCES

Abbas, J., Aman, J., Nurunnabi, M., & Bano, S., (2019). The impact of social media on learning behavior for sustainable education: Evidence of students from selected universities in Pakistan. *Sustainability*, 11, 1-23.

Agag, G., Brown, A., Hassanein, A., & Shaalan, A. (2020). Decoding travellers' willingness to pay more for green travel products: closing the intention–behaviour gap. *Journal of Sustainable Tourism*, *28*(10), 1551-1575.

Ahmed, P. & Hardaker, G., (1999). The role of on-line communities on the Internet for sustainable development. *Business Strategy and the Environment*, 8, 75-81.

Amran, A., Ooi, S., Mydin, R., & Devi, S. (2015). The impact of business strategies on online sustainability disclosures. *Business Strategy and the Environment,* 24(6), 551–564.

Andersson, E. & Öhman, J. (2017). Young people's conversations about environmental and sustainability issues in social media. *Environmental Education Research*, 23 (4), 465-485.

Arli, D., & Dietrich, T. (2017). Can social media campaigns backfire? Exploring consumers' attitudes and word-of-mouth toward four social media campaigns and its implications on consumer-campaign identification. *Journal of Promotion Management*, *23*(6), 834-850.

Baker, A., Donthu, N & Kumar, V., (2016). Investigating how word-of-mouth conversations about brands influence purchase and retransmission intentions", *Journal of Marketing Research*, Vol. LIII, 225–239

Becker, M., Weigan, N., & Reinartz, W., (2019). Does it pay to be real? Understanding authenticity in TV advertising. *Journal of Marketing*, 83 (1), 24-50.

Beynon, M. J., Jones, P., & Pickernell, D. (2016), Country-based comparison analysis using fsQCA investigating entrepreneurial attitudes and activity. *Journal of Business Research*, 69(4), 1271-1276.

Bhattacherjee, A. & Sanford, C. (2006). Influence processes for information technology acceptance: an elaboration likelihood model. *MIS Quarterly*, 30 (4), 805-25.

Berger, J. & Milkman, K. (2012). What makes online content viral? *Journal of Marketing Research*, 49 (2), 192–205.

Blewitt, J. (2011). Critical practice and the public pedagogy of environmental and conservation media. *Environmental Education Research*, 17 (6), 719-734.

Borges-Tiago, M., Tiago, F., & Cosme, C., (2019). Exploring users' motivations to participate in viral communication on social media. *Journal of Business Research*, 101, 574–582.

Chang, S., (2015). The influence of green viral communications on green purchase intentions: The mediating role of consumers' susceptibility to interpersonal influences. *Sustainability*, 4829-4849.

Cheung, C., Lee, M., & Rabjohn, N., (2008). The impact of electronic word-of-mouth. *Internet Research*, 18 (3), 229-247.

Chu, S. C., & Kamal, S. (2008). The effect of perceived blogger credibility and argument quality on message elaboration and brand attitudes. *Journal of Interactive Advertising*, 8, 26–37.

Clemes, M. D., Gan, C., & Zhang, J. (2014). An empirical analysis of online shopping adoption in Beijing, China. *Journal of Retailing and Consumer Services*, 21(3), 364-375.

DeLone, W.H. & McLean, E.R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9-30.

Dobele, A., Toleman, D. & Beverland, M., (2005). Controlled infection! Spreading the brand message through viral marketing. *Business Horizons*, *48*(2), pp.143-149.

Dobele, A., Westberg, K., Steel, M. & Flowers, K. (2014). An examination of corporate social responsibility implementation and stakeholder engagement: A case study in the Australian mining industry. *Business Strategy and the Environment*, 23, 145-159.

Dubois, D., Andrea Bonezzi, & Matteo De Angelis (2016). Sharing with friends versus strangers: how interpersonal closeness influences word-of-mouth valence. *Journal of Marketing Research*, 53 (5), 712–27.

Dunk, A.S., (2004). Product life cycle cost analysis: the impact of customer profiling, competitive advantage, and quality of IS information. *Management Accounting Research*. *15*(4), pp.401-414.

Dunn, K., & Harness, D. (2018). Communicating corporate social responsibility in a social world: The effects of company-generated and user-generated social media content on CSR attributions and scepticism. *Journal of Marketing Management*, 34(17-18), 1503-1529.

Erkan, I. & Evans, C., (2016). The influence of eWOM in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior*, *61*, pp.47-55.

Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. (2002). The sustainability balanced scorecard–linking sustainability management to business strategy. *Business Strategy and the Environment*, 11(5), 269-284.

Filieri, R., & McLeay, F., (2013). E-WOM and accommodation: an analysis of the factors that influence travelers' adoption of information from online reviews. *Journal of Travel Research*, 53(1), 44–57.

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal*, 54(2), 393-420.

Fiss, P. C., Marx, A., & Cambré, B. (2013). *Configurational theory and methods in organizational research: Introduction*. Emerald Group Publishing Limited.

Font, X., (2002). Environmental certification in tourism and hospitality: Progress, process and prospects. *Tourism Management*, 23. 197-205.

Garcia, E., Moizer, J., Wilkins, S., & Haddoud, M. Y. (2019). Student learning in higher education through blogging in the classroom. *Computers & Education*, 136, 61-74.

Gelhard, C., S. Von Delft, & S. P. Gudergan (2016). Heterogeneity in dynamic capability configurations: equifinality and strategic performance. *Journal of Business Research*, 69(11), 5272–5279.

Godes, D. & Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Marketing Science*, 23 (4), 545–60.

Gonçalves, H. M., Lourenço, T. F., & Silva, G. M. (2016). Green buying behavior and the theory of consumption values: A fuzzy-set approach. *Journal of Business Research*, *69*(4), 1484-1491.

Gonçalves, H. M., Silva, G. M., & Martins, T. G. (2018). Motivations for posting online reviews in the hotel industry. *Psychology & Marketing*, *35*(11), 807-817.

Haddoud, M. Y., Jones, P., & Newbery, R. (2021). Export intention in developing countries: A configuration approach to managerial success factors. *Journal of Small Business Management*, 59(1), 107-135.

Hajli, N., (2016). Ethical environment in the online communities by information credibility: A social media perspective. *Journal of Business Ethics*, 149, 799-810.

Haller, K., Lee, J., and Cheung, J. (2020). *Meet the 2020s consumers driving change*. IBM Institute for Business Value, accessed on April 4th 2021, retrieved from https://www.ibm.com/downloads/cas/EXK4XKX8

Hussain, S., Guangju, W., Jafar, R.M.S., Ilyas, Z., Mustafa, G. & Jianzhou, Y., (2018). Consumers' online information adoption behavior: Motives and antecedents of electronic word of mouth communications. *Computers in Human Behavior*, *80*, pp.22-32.

Jansson, J., Nordlung, A., & Westin, K., (2017). Examining drivers of sustainable consumption: The influence of norms and opinion leadership on electric vehicle adoption in Sweden. *Journal of Cleaner Production*, 154, 176-187.

Johnson, J. (2020). Social Media usage in the United Kingdom (UK) – Statistics & Facts", accessed on September 1st 2020, retrieved from https://www.statista.com/topics/3236/social-media-usage-in-the-uk

Junco, R. (2013). Comparing actual and self-reported measures of Facebook use. *Computers in Human Behavior*, 29(3), 626-631.

Kals, E. and Maels, J., (2002). *Sustainable development and emotions in Psychology of Sustainable Development*. Kluwer Academic Publishers, pp. 97-122.

Kaplan, A., & Haenlein, M., (2011). Two hearts in three-quarter time: How to waltz the social media/viral marketing dance. *Business Horizons*, 54, 253-263.

Keller, E. & Brad F. (2012). *The face-to-face book: Why real relationships rule in a digital marketplace*. New York: The Free Press.

Kent, R. A. (2015). *Analysing quantitative data: Variable-based and case-based approaches to non-experimental datasets*. London: Sage

Kock, N. (2020). *WarpPLS User Manual: Version 7.0*. Laredo, TX: ScriptWarp Systems.

Kronrod, A., Grinstein, A., and Wathieu, L., (2012). Go Green! Should Environmental Messages Be So Assertive? *Journal of Marketing*, 76, 95–102.

Kozinets, R. V., de Valck, K., Wojnicki, A. C., & Wilner, S. J. S. (2010). Networked narratives: Understanding word-of-mouth marketing in online communities. *Journal of Marketing*, 74(2), 71-89.

Langley, D. and van den Broek, T., (2010). Exploring social media as a driver of sustainable behaviour: case analysis and policy implications. *Internet Politics and Policy Conference*, 16-17 September, Oxford.

Lee, Y. (2017). Corporate sustainable development and marketing communications on social media: Fortune 500 enterprises. *Business Strategy and the Environment*, 26, 569-583.

Leiderman, S., (2019). How to promote your sustainability story on social media? Accessed on the 22nd of April, 2021, retrieved from https://sustainablebrands.com/read/marketing-and-comms/how-to-promote-your-sustainability-story-on-social-media-as-a-b2b-company

Lovett, Mitchell J., Renana Peres, & Ron Shachar (2013). On Brands and Word of Mouth. *Journal of Marketing Research*, 50 (4), 427–44.

Lyon, T. P., & Montgomery, A., W. (2013). Tweetjacked: the impact of social media on corporate greenwash. *Journal of Business Ethics*, 118. 747–57

Lyon, T., & Maxwell, J. (2011). Greenwash: Corporate environ- mental disclosure under threat of audit. *Journal of Economics and Management Strategy*, 20, 3-41.

Onjewu A-KE, Haddoud MY, Nowiński W. (2021) The effect of entrepreneurship education on nascent entrepreneurship. *Industry and Higher Education*. April doi:10.1177/09504222211014038

Ordanini, A., Parasuraman, A., & Rubera, G. (2014). When the recipe is more important than the ingredients: A qualitative comparative analysis (QCA) of service innovation configurations. *Journal of Service Research*, *17*(2), 134-149.

Pearson, E., Tindle, H., Ferguson, M., Ryan, J. and Litchfield, C., (2016). Can We Tweet, Post, and Share Our Way to a More Sustainable Society? A Review of the Current Contributions and Future Potential of #Socialmediaforsustainability. *Annual Review of Environment and Resources*. 41, 363–397.

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Chrissikopoulos, V. (2016). Explaining online shopping behavior with fsQCA: The role of cognitive and affective perceptions. *Journal of Business Research*, 69(2), 794-803.

Pappas, I. O., Papavlasopoulou, S., Mikalef, P., & Giannakos, M. N. (2020). Identifying the combinations of motivations and emotions for creating satisfied users in SNSs: An fsQCA approach. *International Journal of Information Management*, 53, 102128.

Pappas, I. O., & Woodside, A. G. (2021). Fuzzy-set Qualitative Comparative Analysis (fsQCA): Guidelines for research practice in Information Systems and Marketing. *International Journal of Information Management*, 58, 102310.

Peng, J., Agarwal, A., Hosanagar, K., & Yvengar, R., (2018). Network overlap and content sharing on social media platforms. *Journal of Marketing Research*, 55, 571–585.

Petty, R. E., & Cacioppo, J. T. (1986). *Communication and Persuasion: Central and peripheral routes to persuasion*. New York: Springer.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.

Roy, S., Butaney, G., Sekhon, H., & Butaney, B., (2014). Word-of-mouth and viral marketing activity of the on-line consumer: the role of loyalty chain stages theory. *Journal of Strategic Marketing*, 22 (6), 494-512.

Ragin, C.C. (2000). *Fuzzy-Set Social Science*. University of Chicago Press.

Ragin, C. C. (2008). *Redesigning social inquiry: Set relations in social research*. Chicago: University of Chicago press.

Ragin, C. C. (2019), "*User's guide to fuzzy-set/qualitative comparative analysis 3.1b*." Irvine, California: Department of Sociology, University of California.

Ragin, C.C., & Davey, S., (2016). *Fuzzy-Set/Qualitative Comparative Analysis 3.0*. Irvine, California: Department of Sociology, University of California.

Saxton, G. D., Gómez, L., Ngoh, Z., Lin, Y. P., & Dietrich, S. (2019). Do CSR messages resonate? Examining public reactions to firms' CSR efforts on social media. *Journal of Business Ethics*, 155(2), 359-377.

Schlittgen, R., Ringle, C. M., Sarstedt, M., & Becker, J. M. (2016). Segmentation of PLS path models by iterative reweighted regressions. *Journal of Business Research*, 69(10), 4583-4592.

Schweidel, D., & Moe, W. (2014). Listening in on social media: a joint model of sentiment and venue format choice. *Journal of Marketing Research*, 51(4), 387–402.

Sichtmann, C. (2007). An analysis of antecedents and consequences of trust in a corporate brand. *European Journal of Marketing*, 41(9/10), 999-1015.

Skarmeas, D., Leonidou, C. N., & Saridakis, C. (2014). Examining the role of CSR scepticism using fuzzy-set qualitative comparative analysis. *Journal of Business Research*, 67(9), 1796-1805.

Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and information diffusion in social media—sentiment of microblogs and sharing behavior. *Journal of Management Information Systems*, 29 (4), 217-248.

Solability (2020), "*The Global Sustainable Competitiveness Index*", accessed on September 1st, 2020 retrieved from: http://solability.com/the-global-sustainable-competitiveness-index/the-index.

Sparks, B., Perkins, H.E., Buckley, R., (2013). Online travel reviews as persuasive communication: The effects of content type, source, and certification logos on consumer behavior. *Tourism Management*, 39, 1-9.

Suh, M., Greene, H., Israilov, B., & Rho, T., (2015). The impact of customer education on customer loyalty through service quality. *Services Marketing Quarterly*, *36*(3), 261-280.

Sussman, S., & Siegal, W. (2003). Informational influence in organizations: An integrated approach to knowledge adoption. *Informational Systems Research*, 14 (1), 47-65.

Taras, V., Rowney, J. & Steel, P. (2009). Half a century of measuring culture: Review of approaches, challenges, and limitations based on the analysis of 121 instruments for quantifying culture. *Journal of International Management*, 15(4), 357-373.

Tellis, G., MacInnis, D., Tirunillai, S., & Zhang, Y., (2019). What drives virality (sharing) of online digital content? The critical role of information, emotion, and brand prominence. *Journal of Marketing*, 83 (4), 1-20.

Tölkes, C., (2020). The role of sustainability communication in the attitude-behaviour gap of sustainable tourism. *Tourism and Hospitality Research.* 20 (1), 117-128.

Wang, P., Li, H., & Liu, Y. (2020). Disentangling the factors driving electronic word-of-mouth use through a configurational approach. *Internet Research*, 30 (3), 925-943

Wang, R. Y., & Strong. D. M. (1996). Beyond accuracy: What data quality means to data consumers. *Journal of Management Information Systems*, 12 (4), 5-34.

Weber T., (2010). Why companies watch your every Facebook, YouTube, Twitter move. BBC News, Oct. 3. Accessed 22nd of April 2021, retrieved from http://www.bbc.co.uk/news/business-11450923

Wixom, B.H. & Todd, P.A. (2005). A theoretical integration of user satisfaction and technology acceptance. *Information Systems Research*, 16 (1), 85-102.

Woodside, A. G. (2011). Responding to the severe limitations of cross-sectional surveys: Commenting on Rong and Wilkinson's perspectives. *Australasian Marketing Journal*, 19(3), 153-156.

Woodside, A. G. (2013). Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research*, 66, 463-472

Woodside, A. G., & Zhang, M. (2012). Identifying x-consumers using causal recipes: "Whales" and "jumbo shrimps" casino gamblers. *Journal of Gambling Studies*, 28(1), 13-26.

Wu, C. & Shaffer, D. (1987). Susceptibility to persuasive appeals as a function of source credibility and prior experience with the attitude object. *Journal of Applied Psychology*, 52, 677-88.

Yadav, R., Balaji, M. S., & Jebarajakirthy, C. (2019). How psychological and contextual factors contribute to travelers' propensity to choose green hotels? *International Journal of Hospitality Management*, 77, 385-395.

Yang, J., Basile, K., & Letourneau, O. (2020). The impact of social media platform selection on effectively communicating about corporate social responsibility. Journal of Marketing Communications, 26(1), 65-87.

Yang, H., & Wang, Y., (2015). Social sharing of online videos: examining American consumers' video sharing attitudes, intent, and behavior. *Psychology & Marketing*, 32 (9), 907–919.

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

Zouganeli, S., Trihas N., Antonaki, M. & Kladou, S., (2012). Aspects of Sustainability in the Destination Branding Process: A Bottom-up Approach, *Journal of Hospitality Marketing & Management*, 21(7), 739-757.

Table 1: Corporate Sustainability Message Sharing Determinants and Dimensions

Determinants	Dimensions	Main references
Information Quality	Information relevance Information timeliness Information accuracy	Cheung et al., (2008); DeLone & McLean (2003); Liu et al., (2012); Filieri & McLeay (2013); Hussain et al. (2018); Suh et al., (2015); Wixom & Todd (2005).
Source Credibility	Source expertise Source trustworthiness	Cheung et al., (2008); Chu & Kamal (2008); Hajli (2018); Liu et al., (2012); Peng et al., (2018).

Table 2: Construct Measurement Scale Items

Construct	Items	Source
Information Relevance	The information I obtain on social media about firm's sustainability efforts is relevant as it matches my needs.	Filieri & McLeay, 2013,
	The information I obtain on social media about firm's sustainability efforts is appropriate for satisfying my needs.	
	The information I obtain on social media about firm's sustainability efforts is applicable to my needs.	Citrin, 2001 in Cheung et al., 2008
Information Accuracy	The information I obtain on social media about firm's sustainability efforts are correct.	Wixom & Todd, 2005, in Cheung et al., 2008
	The information I obtain from social media about firm's sustainability efforts is accurate.	
	The information I obtain on social media about firm's sustainability efforts are reliable.	
Information Timeliness	The information I obtain on social media about firm's sustainability efforts are current.	Wixom & Todd, 2005 in Cheung et al., 2008
	The information I obtain on social media about firm's sustainability efforts are timely.	

	The information I obtain on social media about firm's sustainability efforts are up-to-date.	
Source Expertise	Firms that portray their sustainability efforts on social media are knowledgeable about sustainability.	Wu & Shaffer, 1987 in Cheung et al., 2008
	Firms that portray their sustainability efforts on social media are experts in evaluating sustainability.	
Source Trustworthiness	I believe that firms that publish information on social media about their sustainability efforts have high integrity.	Sichtmann, 2007
	Firms that publish information on social media about their sustainability efforts appear to be more trustworthy than firms who do not publish any of their efforts.	
	Firms that publish information on social media about their sustainability efforts seem to deliver on their promises.	
	My impression of the believability of firms that publish information about their sustainability efforts on social media is very high.	
	My confidence in firms that publish information about their sustainability efforts on social media is very high.	
Sharing of Message	I engage in forwarding promotions offered by firms who talk about their sustainability efforts on social media to others.	Roy, 2014
	I engage in forwarding information about firms that portray their sustainability messages on social media to others.	

	I often share social media posts in which firms talk about their sustainability efforts with my friends/relatives/colleagues.	Own item development
	I often like social media posts in which firms talk about their sustainability efforts.	Own item development

Table 3: Cronbach's Alpha, Composite Reliability and Average Variance Extracted (AVE)

	Cronbach's Alpha	Composite Reliability	AVE
INFACC	0.93	0.96	0.89
INFREL	0.93	0.95	0.88
INFTIME	0.92	0.95	0.87
SOURCEXP	0.81	0.91	0.84
TRUSTWOR	0.92	0.94	0.77
VIRAL	0.95	0.96	0.87

INFREL= Information Relevance; INFACC = Information Accuracy; INFTIME = Information Timeliness; SOURCEXP = Source Expertise; TRUSTWOR = Trustworthiness; VIRAL = Message Sharing

Table 4: 5^{th}, 50^{th} and 95^{th} Percentiles of the study conditions and outcome

	INFREL	**INFACC**	**INFTIME**	**SOURCEXP**	**TRUSTWOR**	**VIRAL**
5^{th}	1	1	1	1.5	1	1
50^{th}	3	3	3	3	3	2
95^{th}	4.2	4	4.3	4	4.1	4.2

INFREL= Information Relevance; INFACC = Information Accuracy; INFTIME = Information Timeliness; SOURCEXP = Source Expertise; TRUSTWOR = Trustworthiness; VIRAL = Viral Message Sharing

Table 5: Necessity Analysis for Viral Message Sharing

	Consistency	**Coverage**
INFREL	0.78	0.79
INFACC	0.73	0.78
INFTIME	0.80	0.74
SOURCEXP	0.77	0.75
TRUSTWOR	0.79	0.79

INFREL= Information Relevance; INFACC = Information Accuracy

INFTIME = Information Timeliness; SOURCEXP = Source Expertise

TRUSTWOR = Trustworthiness.

Table 6: Solutions Leading to “high” (Viral) Message Sharing

Conditions	**VIRAL MESSAGE SHARING**			
	Combination 1	**Combination2**	**Combination 3**	**Combination 4**
INFREL				
INFACC				
INFTIME				
SOURCEXP				
TRUSTWOR				
Raw Coverage	0.40	0.36	0.63	0.64
Unique Coverage	0.01	0.01	0.01	0.02
Consistency	0.82	0.80	0.83	0.84
Solution Coverage	0.69			
Solution Consistency	0.82			

 *= Presence of core condition*

 *= Presence of complementary condition*

 *= Absence of condition*

Blank Cells = Presence or absence does not matter.

Table 7: Solutions Leading to "low" Message Sharing

Conditions	**LOW MESSAGE SHARING**		
	Combination 1	**Combination2**	**Combination 3**
INFREL	⬭		⬭
INFACC	⬭	○	
INFTIME		⬭	●
SOURCEXP		○	⬭
TRUSTWOR	⬭	⬭	⬭
Raw Coverage	0.65	0.59	0.43
Unique Coverage	0.05	0.01	0.009
Consistency	0.82	0.83	0.82
Solution Coverage	0.67		
Solution Consistency	0.81		

⬭ *=Absence of core condition*

● *= Presence of core condition*

● *= Presence of complementary condition*

○ *= Absence of condition*

Blank Cells = Presence or absence does not matter.

Appendix 1: Robustness Tests

	Raw Coverage	**Unique Coverage**	**Consistency**
Frequency cut-off = 10; Consistency Cut-off = 0.80			
Relevance*Accuracy*Timeliness*Expertise	0.63	0.01	0.83
Relevance*Timeliness*Expertise*Trustworthiness	0.64	0.02	0.84
Accuracy*Timeliness*Expertise*Trustworthiness	0.63	0.01	0.83
Frequency cut-off = 14; Consistency Cut-off = 0.80			
Relevance*Accuracy*Timeliness*Expertise	0.63	0.01	0.83
Accuracy*Timeliness*Expertise*Trustworthiness	0.63	0.01	0.83
Frequency cut-off = 5; Consistency Cut-off = 0.82			
Relevance*~Accuracy*Expertise*Trustworthiness	0.40	0.02	0.82
Relevance*Accuracy*Timeliness*Trustworthiness	0.64	0.26	0.84