

Social Media as a Tool to create Environmental Awareness in Transparent, Sustainable Supply Chains

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ABSTRACT

Over the last decade, social media has risen to become one of the most influential ways of communication. Additionally, social media has become a frequently used tool by companies to communicate their efforts in making the supply chain more sustainable. However, it is currently unclear whether these actions are truly sustainable or whether it is a form of greenwashing. Consequently, this research performs literature research to define the effectiveness of social media when communicating transparent, sustainable supply chains. The results of the research show that TV is still slightly more effective in communicating and creating awareness compared to social media [27]. TV creates awareness in 58% of the cases, contrary to 55% of social media [27]. However, the results also show social media is getting more effective among younger generations [27]. Respectively, social media created awareness in 78% and 61% under generation Z and millennials [27]. Consequently, social media is most likely to become more effective in communication and creating awareness compared to traditional media in the following years.

Keywords

Social media, sustainability, transparency, supply chains, environmental awareness, greenwashing, consumerism

1. INTRODUCTION

While social media and sustainability seem to be different topics, both have a thing in common: the interest in both topics has increased significantly during this century [4, 39]. The impact of social media has risen to a level that we currently use social media for the communication of news, election campaigns and even business processes. Due to its quickness and easiness, social media has overtaken traditional media as the common way of communication [14]. Also, social media is perceived as a more reliable source of information and knowledge than traditional communication platforms [16]. Accordingly, sustainability is also being communicated on social media.

Social media tends to be the main resource for consumers when examining to what extent a brand or product is sustainable [7]. However, social media also tends to be an ideal way for companies to mislead consumers about the companies' environmental performance, also known as greenwashing [9]. Addressing sustainability is key for managing corporate reputation [42]. Due to the complexity of transparently communicating sustainability, companies can relatively easily tweak their way of communication.

Furthermore, companies can also lack the knowledge on how to inform people clearly and transparently. As stated, transparently communicating sustainability is complex and troublesome. The whole supply chain, from raw materials to sourcing, production, distribution, retailing, and consumption should be considered [38]. Generally, companies do not have all this information,

which makes it impossible for companies to communicate this transparently. As a result, it is usually easier for companies to take part in a form of greenwashing than acquiring all the necessary information.

Thus, due to the lack of transparent information, greenwashing is still happening on a large scale. As a result, people lack transparent information on how to actively contribute to a more sustainable world. Over the last years, consumers have become increasingly aware that their purchasing behaviour has an environmental impact, and therefore, the demand for sustainable brand and products is increasing [48]. However, the increasing occurrence of greenwashing has negative effects on consumer confidence in green products, eroding the consumer market for green products and services [9, 17].

Consequently, truly sustainable companies do not receive the benefits they deserve. Sustainability has shown to be a major indicator of the performance and sales of businesses [2]. However, sustainable companies barely achieve a competitive advantage due to greenwashing of other unsustainable companies.

Ideally, social media should be used to communicate the sustainable actions of companies in a transparent way. Preferably, communication should be done in asymmetric two-way, between companies and (potential) consumers. Asymmetric two-way communication considers stakeholder responses. Thus, we can define how stakeholders react to the way of communication and how social media should be used to increase the environmental awareness of customers. Consequently, we can define how people are not a passive part of the environmental problem but can become an active part of the solution.

1.1 Research goal

Altogether, the combination of sustainability and social media creates an environment for research. Consequently, the main goal of this research is to define how social media can be used to communicate transparent, sustainable supply chains to create greater environmental awareness. As discussed in Section 2, research on the effectiveness of communications is also proposed in other literature [44].

1.2 Research Questions

To achieve the research goal, we should define the main research question. The research ought to answer the research question (RQ) and thus, meet the research goal. Consequently, the research question is closely aligned with the research goal.

- RQ: 'To what extent can social media create transparent, sustainable supply chains to contribute to more environmental awareness?'

However, the combination of topics makes it difficult to answer the research question, without splitting it up. Therefore, sub-questions are defined to make the research more viable. First, a sub-question (SQ) should answer what 'transparent, sustainable supply chains' entail.

- SQ1: What are the requirements for transparent, sustainable supply chains?

Secondly, the research should define in what way social media can help in communicating transparent, sustainable supply chains, as defined in SQ1. SQ2 should also answer how communication on social media can create greater environmental awareness.

- SQ2: What is the most effective way of communicating transparent, sustainable supply chains, intending to create greater environmental awareness, on social media?

Lastly, SQ3 compares social media to traditional communication platforms. We examine to see how effective the usage of social media is for creating environmental awareness.

- SQ3: 'To what extent is communication through social media effective in creating more environmental awareness, compared to traditional mediums?'

where we measure effectiveness as the percentage of the information that is successfully communicated to the receiver.

Altogether, the sub-questions give a good base for answering the research question, and consequently, meeting the research goal.

2. LITERATURE REVIEW

Due to the newness and complexity of both topics, literature is scarce on the combination of the research topics. Nevertheless, several papers are highly relevant for certain parts of the research. Consequently, combining these papers gives this research a good base.

One of the topics is *Corporate Sustainability*, likely due to the importance for both the private and public sector. Corporate sustainability is an umbrella term for various other concepts that, in one way or the other, all refer to the role of business in society [44, 50]. Among these concepts are Corporate Sustainability Communications (CSC), Corporate Social Responsibility (CSR) and the Triple Bottom Line (TBL).

First, we discuss the existing literature on Corporate Sustainability Communications (CSC). Existing literature discusses the relevance of CSC for companies and to what extent companies can benefit from successfully communicating Corporate Sustainability [25, 44, 47]. The papers conclude that companies that successfully communicate Corporate

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Sustainability have a competitive advantage over their competitors [25, 44, 47]. Moreover, research by Signitzer and Prexl [44] proposes that future research should focus on the most effective way of communicating Corporate Sustainability, which is fairly in line with the goal of this research.

Secondly, we review the existing literature on the topic of Corporate Social Responsibility (CSR). The importance of CSR for companies are discussed in various papers and it is obvious that companies profit from effectively applying CSR. Increased businesses' customer loyalty, enhanced firm's reputation and attracted and retained competent employees are a handful of the mentioned benefits [3, 15, 28, 37, 51]. Consequently, CSR has become greatly important for companies. However, the key challenge for securing the business benefits from CSR lies in maximizing the awareness of the firms' activities among the stakeholders, while minimizing the scepticism [30].

Additionally, the Triple Bottom Line (TBL) goes hand in hand with CSR. Social-responsibility expert John Elkington developed the triple bottom line framework to create a framework that considers the trade-offs between economic, ecological, and social goals [13, 45]. The framework made it easier for companies to measure and communicate their financial, social, and ecological measures. However, due to the importance of a good TBL and CSR, both the Sustainability reports have fallen prone to greenwashing, as transparency is one of the limitations of CSR reporting and the TBL [1, 6, 26, 44]. Research that examined over 2,200 products having positive environmental claims, found that there was a form of greenwashing in 98% of these claims [8].

Nevertheless, CSR is still of great importance for both companies and consumers. Companies should use CSR to inform consumers about financial, social, and environmental awareness. For that reason, social media is increasingly important as a medium for companies to convey a message linking a company to solving global goals [29]. Over the last years, the United Nations Sustainable Development Goals have been the centre of companies relating to global issues, which is in line with the previous statement. However, companies mainly use social media to promote their financial incentives, while communications regarding social and ecological impact are deficient [31].

Therefore, there is a need for a transparent way of communicating financial, social, and ecological incentives. However, due to the scope of this research, we only aim to find out what the most efficient way is for companies to communicate their ecological actions, transparently. Already, research proposes recommendations on how companies should communicate their ecological incentives [42]. However, the paper is over six years old, making it somewhat outdated in the fast-paced social media world. Nevertheless, Reilly proposes recommendations when communicating sustainability, even specific recommendations when communicating sustainability over social media communication.

The most important general recommendation is that companies should benchmark the industries and specify the industry norms for sustainability initiatives and metrics [40, 42]. Also, as previously discussed, companies should avoid greenwashing, as greenwashing can negatively influence the firm's reputation in the end [42]. Furthermore, companies should include stakeholders in the sustainability message, as embedding sustainability within a corporate culture is critical to institutionalize it [41].

Then, Reilly also proposes recommendations specifically for social media. First, companies should use social media best practices; companies should employ good social media etiquette and questions on social media should be answered appropriately [20, 29]. Companies should be able to handle negative online comments, and they should be aware of the reputational risk [20, 42].

Also, companies must report and communicate concrete outcomes and not vague buzzwords, as it helps users of social media to have a better understanding of the firm's (sustainable) actions [42]. Furthermore, users demand new content frequently. Therefore, companies should update their content daily [42].

Lastly, companies should keep up with the newest social media trends. For example, research shows a measurable trend toward communicating through image and video rather than text-based content [10]. Consequently, it explains why Instagram has grown significantly over the last years and why more and more businesses are communicating through Instagram [32].

All in all, Reilly suggest valuable recommendations. During this research, we take findings into account, and we will validate them in this paper.

3. METHODOLOGY

In the literature review, we already touched upon some of the topics that are of importance for this research. Corporate sustainability, social media and influencing consumer behaviour are the main topics are of importance for the literature review.

For SQ1, we perform a literature review to define the requirements for transparent, sustainable supply chains. We need the definition to help us in answering the other sub-questions.

Next, we execute a literature review for SQ2. The literature review aims to compare and define the most effective ways of communicating transparent, sustainable supply chains.

Also, we perform a literature review for SQ3. Literature should compare the efficiency of social media compared to traditional media when communicating transparent, sustainable supply chains.

Lastly, we combine the findings of the sub-questions with a literature review in the field of social media and transparent, sustainable supply chains to answer the research question. Based on the findings of all the research questions, we can meet the research goal.

4. RESULTS

In this section, we try to answer the sub-questions to get a good base for answering the research question and sub-questions, and ultimately, meeting the research goal. First, we define the requirements of transparent, sustainable supply chains. Then, we examine the best way is to communicate transparent, sustainable supply chains. Lastly, we research to what extent social media is an effective tool for communicating transparent, sustainable supply chains.

4.1 Sub-Question 1

As research on transparent, sustainable supply chains is limited, we subdivide the topic when examining this sub-question. First, we discuss what supply chains entail. Next, we define the requirements for transparent supply chains. Lastly, the requirements for sustainable supply chains are discussed. In the

end, we can combine the findings, to define the requirements for transparent, sustainable supply chains.

4.1.1 Supply Chains

As discussed in the literature review, the whole supply chain regards the complete process from raw materials to sourcing, production, distribution, retailing, and consumption [38]. This statement gives a good idea of what supply chains entail. Furthermore, other literature proposes the following definition:

"A supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer" [5]

Contrary to the first statement, this statement explicitly highlights the interaction between companies. Nevertheless, the first definition also mentions the 'process', which implies that there a flow between companies. Also, it discusses that supply chains produce value in the form of products and services.

Consequently, the statements are complementary, and it is best to combine both definitions to define our definition for a supply chain. The definition is as follows:

A supply chain is the complete process of producing value in the form of products and services, where other organization are involved through the upstream and downstream linkages.

Accordingly, we use this definition of supply chains in this paper.

4.1.2 Transparent Supply Chains

The call for transparency in supply chains has grown over the past years [11]. Consumers are increasingly critical on the social and environmental impact of a firm's action [48]. But what does transparency in supply chains imply?

In his paper, Handfield explains perfectly what transparency in supply chains should entail. Transparency is:

"the ability to track the origins of products and services, thereby providing full disclosure of the "carbon footprint" and "human labour footprint" associated with products." [23]

Handfield shows what transparency within supply chains should be like and what the effects are. Moreover, Handfield concludes that both the consumer and companies have an interest in more transparent supply chains [23].

Furthermore, research by Harbert [24] also proposes the two main matters that should be included in a transparent supply chain. First, transparent supply chains should be visible. The supply chains should accurately identify and collect data from all the links in the supply chain. Secondly, the transparent supply chain should be disclosed. Information should be communicated at the level of detail required, both internally and externally.

If we combine the findings, we can define the requirements for a transparent supply chain. Consequently, a transparent supply chain should be:

1. able to track the origins of products and services, thereby providing full disclosure of the "carbon footprint" and "human labour footprint" associated with products. [23]
2. visible; accurately identifying and collecting data from all links in your supply chain. [24]

- disclosed; communicating that information, both internally and externally, at the level of detail required or desired. [24]

And as a result, transparent supply chains will:

- allow individual consumers to make the right decisions in their consumption patterns [23]
- hold large corporations more accountable to understanding, what is going on in their supply chains. And most importantly, whether their supply chains are “good”. [23]

All in all, the findings show the importance of implementing transparency within the supply chain. Furthermore, we defined the requirements for transparent supply chains.

4.1.3 Sustainable Supply Chains

Generally, sustainability is often considered only as ecological sustainability, while social and economic sustainability is often neglected by the public. Consequently, in his paper, Dyllick made a framework to include the other aspects when discussing sustainability. Dyllick framed the three dimensions of sustainability as the business case (economic), the natural case (environmental), and the societal case (social) [12].

Altogether, the three dimensions play a vital role in what is called *sustainable development*. Sustainable development is defined as “a development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [49]. Still, the definition is somewhat vague, but it gives a clear image of what sustainable development entails.

Consequently, both findings demonstrate what sustainable development entails. However, we still must convert it to comply with supply chains.

According to Seuring, in sustainable supply chains, environmental and social criteria need to be fulfilled by the members to remain competitive within the supply chain, while it is expected that competitiveness would be maintained through meeting customer needs and related economic criteria [43].

Thus, when we combine the findings, the requirements of a sustainable supply chain should:

- be ecologically, socially, and economically sustainable [12]
- meet the needs of the presents, without compromising the ability of future generations to meet their own needs [49]
- maintain competitiveness, through customer needs and related economic criteria [43]

Altogether, the list provides adequate insights into what sustainable supply chains imply.

4.2 Sub-Question 2

The main goal of SQ2 aims to find the most effective way of communicating transparent, sustainable supply chains. Additionally, the sub-question aims to address how greenwashing can be tackled, as communication plays a big part in greenwashing. Furthermore, there are several ways sustainability can be communicated. These will be discussed in the following subsections.

4.2.1 Greenwashing

Over the last years, consumers have become increasingly aware that their purchasing behaviour has an environmental impact, and therefore, the demand for sustainable brand and products is increasing [48]. Consequently, companies need to adapt and

conform to the sustainable needs of the consumers. Thus, companies should produce products that have little impact on the environment. However, the process of creating environmental-friendly products can be troublesome and (financially) risky, as the products must be reinvented. Consequently, it is often easier for companies to take part in greenwashing, than to completely change their products.

this creates an opportunity for greenwashing to exist.

As stated in Section 1, greenwashing is the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or services [9]. Generally, it is easier for companies to adjust their communication to meet the needs of their customers than to adjust their products. Research even shows that there is a form of greenwashing in 98% of the products that have positive environmental claims [8]. The main problem with greenwashing is that it deceives consumers into buying products with the idea that the products have environmental benefits [19].

Research also proposes ways on how to tackle greenwashing. First and foremost, companies must tell the truth and not mislead [19]. Telling the truth is the most important part when communicating transparent, sustainable supply chains. Secondly, companies should make clear and definite claims, which allows consumers to substantiate the claims [19]. Thirdly, consumers should validate the claims and should not engage in unfair communication practices [19].

4.2.2 Communication about Sustainability

Communication about Sustainability, also known as CaS, implies the processes where information, interpretations, and opinions concerning the sustainability issues are exchanged and discussed [18]. Issues are transformed and framed in horizontal communication that can take place on many different levels, ranging from interpersonal face-to-face interaction up to the mediated level of mass communication [33].

CaS incorporates the perception of sustainability issues as it serves significant functions of framing concerns and structuring facts, arguments, and claims through establishing a common understanding of the issue at stake [18]. Simply put, CaS is used to facilitate the understanding of sustainability.

4.2.3 Communication of Sustainability

Communication of Sustainability (CoS) focuses on the primarily mono-directional, sender-receiver flow of communication, where the sender pursues a certain objective of communication [35]. Some applications of CoS are to inform individuals, to create social engagement and action. Consequently, CoS aims to influence human behaviour, while CaS only tries to inform people.

4.2.4 Communication for Sustainability

Communication for Sustainability (CfS) tries to facilitate societal transformation towards the normative goals of sustainable development [34]. CfS is not only about providing information but trying to transform society to meet normative goals of sustainable development. The way of communication can be bidirectional, which in our case means that a two-way stream of communication between the companies and customers is possible.

4.2.5 Most effective way of Communication

Generally, CaS is used for framing and structuring environmental claims, argument, facts, and issues. Consequently, CaS will not be the most effective way for our research, as it does not try to actively influence the consumers’ behaviour.

CoS and CfS can both be used to communicate for a call to action.

However, CoS is used by the mass in the sense that journalists report on topics such as scientific findings or political meetings [36]. Usually, there is a one-way stream of information; from the journalist to society.

Especially combined with social media, CfS can be used to propose changes for the rethinking of behaviour [34]. Additionally, CfS allows a two-way stream of communication. In our case, this implies that the companies can communicate their actions to the customers, but that the customers can also communicate back to the companies and even hold them accountable. All in all, CfS is the best way of communication for our research.

4.3 Sub-Question 3

In this section, we aim to answer whether communication through social media is effective compared to traditional mediums, like TV, radio, and newspapers. We define several pros and cons to define the outcome.

On the one hand, an advantage of social media is that people tend to have a higher feeling of interpersonal relationship on social media compared to traditional media [22]. Interpersonal relationships play a large role in advocating pro-environmental behaviour, and therefore, social media seems a better medium than traditional mediums [22]. Moreover, as stated in Section 1, social media is perceived as a more reliable source of information and knowledge than traditional communication platforms [16, 21].

Furthermore, we can use the findings of sub-question 2, where we discussed that CfS is the best way in communicating transparent, sustainable supply chains. CfS has the advantage that the communication stream is bidirectional. Consequently, CfS is more applicable to social media, than to traditional media, which often has a one-way communication stream.

Additionally, research shows that 4.14 billion active social media users, concluding that the reach of traditional media is significantly less [46].

On the other hand, research shows that TV advertising is still the most effective way of creating awareness [27]. TV is superior to social media, with creating awareness in consumers in 58% of the cases [27]. Social media only has a conversion rate of 55% [27]. However, this rate is notably high under the new generation. Generation z shows a conversion rate of 78% and millennials 61% [27]. Consequently, the findings show that social media is likely to overtake traditional media in creating awareness.

5. CONCLUSION

5.1 Summary

All in all, the results of the sub-questions gave us essential information for answering the research questions. First, the findings of sub-question 1 gave us a good base on what supply chains entail and provided us with a list of requirements for a transparent, sustainable supply chain. The definition and requirements of a transparent, sustainable supply chain are as follows.

A transparent, sustainable supply chain:

1. is the complete process of producing value in the form of products and services, where other organization are involved through the upstream and downstream linkages.
2. can track the origins of products and services, thereby providing full disclosure of the “carbon footprint” and “human labour footprint” associated with products. [23]
3. is visible; accurately identifying and collecting data from all links in your supply chain. [24]
4. is disclosed; communicating that information, both internally and externally, at the level of detail required or desired. [24]
5. is ecologically, socially, and economically sustainable [12]
6. meets the needs of the presents, without compromising the ability of future generations to meet their own needs [49]
7. maintains competitiveness, through customer needs and related economic criteria [43]

The list gives a good overview of what transparent, sustainable supply chains entail and gave us a good base for answering the other research questions.

Next, we discussed different ways of communicating sustainability in sub-question 2. For our research goal, *Communication for Sustainability* proved to be the most efficient way of communicating sustainability. The advantage of Communication for Sustainability is that it has a two-way stream of communication and that it aims to influence human behaviour.

Lastly, we examined to what extent social media is effective in communicating transparent, sustainable supply chains and how this can contribute to greater environmental awareness. While TV is slightly more effective, soon social media will likely be the most effective medium for communicating sustainability and contributing to greater environmental awareness.

Altogether, the results of the sub-questions show that social media is an effective way when communicating transparent, sustainable supply chains. Currently, TV is slightly more effective in creating awareness, but social media will likely overtake TV soon.

5.2 Future Work

These findings provide a respectable base for future research. However, these findings should first be substantiated by empirical research. Furthermore, future research should examine whether there is a difference between industries when communicating transparent, sustainable supply chains.

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