

Social Media Communication Factors in Energy Campaigns

Sustainable Social
Factors
Strategies Participation
Communication
Attitude Campaigns
Slacktivists Behaviors
Energy Media

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Summary

This is a research graduation project for the master program Science Communication program at TU Delft, conducted at TNO as a research internship: 'Social Networks as a Driver of Sustainability Behavior', from January 3rd to July 1st, in 2011.

With the rise of social media, collective actions in the forms of social movements and campaigns regarding sustainable issues are attracting more attention and online participation. This results in 'online slacktivism', which refers to the phenomenon where a large population participate via the internet. However, it is not clear yet which factors in social media communication strategies contribute to 'online slacktivism', nor the impacts and implications of such phenomenon on relevant stakeholders and issues. To understand the extent to which social media communication factors contribute to the participation of online slacktivists in energy campaigns, this study is designed with a triangulation of qualitative and quantitative methodologies.

In the qualitative case study, literature survey, semi-structured interviews, observations and cluster method are applied to investigate the social media communication strategies applied and to identify the social media communication factors. In the quantitative analysis, 55 energy campaigns are analyzed based on the conceptual framework established from the qualitative study. By operationalizing the concepts and applying factors analysis to reconstruct the conceptual framework, multiple regression analysis is conducted to investigate the relationships between the social media communication factors and the participation of 'online slacktivist' in energy campaigns.

It is observed that there are differences in the conceptual frameworks in the qualitative case study and the quantitative analysis. It could be concluded from the multiple regression analysis that: i) factors with lower perceive ease of use, more effort to perform actions and behavior objectives which has higher relevance to real-world actions in the concept 'action barrier' has a negative effect on participation ii) factors with presence of interaction through discussion, presence of online community, the possibility to collaborate, and share in the concept 'network opportunities' contribute positively to participation iii) factors with rational arguments and presence of use suggestion/tips in the concept 'content of the communication message' contribute negatively to participation iv) factors with presence of visualization of group achievements, competition, individual and group achievements, and personal profile in the concept 'comparison of social content' contributes negatively to participation. For factors which are excluded in the regression analysis, future research need to be carried out to investigate the extent of their contributions to participation.

The report ends with discussions on the research results, quality of the research, implications for relevant stakeholders and issues, and also gives recommendations for future study.

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Chapter 1: Introduction

Developments which take environmental sustainability, economic sustainability and socio-political sustainability issues¹ into considerations are essential for creating a better environment for present and future generations. Relevant stakeholders have to reach consensus when discussing technological, political, societal, ecological, and economical issues (Gladwin, Kennelly, & Krause, 1995).

Collective action in the form of social movements and campaigns are regularly initiated to tackle various sustainability related issues. The internet has become a major organizing and mobilizing tool for environmentalists (Castells, 2001). With the rise of social media over the last decade, these social initiatives are incorporating social media in their communication strategies for organizing campaigns. A new and interesting phenomenon is emerging: 'online-slacktivism', which describes the participation of consumers or citizens via the internet, from the safety and comfort of their living room. Because of their huge numbers, slacktivists can have a great contribution to social initiatives and their power is driven by new communication dynamics created by social media (Langley & van den Broek, 2010).

This research aims to investigate the impact of social media communication strategies on 'online-slacktivism' by defining and measuring the key factors which contribute to the participation of 'online slacktivist'. A triangulation of qualitative case study and quantitative analysis is conducted to investigate the impact.

1.1 Sustainable development and social initiatives regarding energy issues

In the Brundtland report (1985) the definition of sustainable development is stated: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

On the societal and political agenda, sustainable development has become a global trend which receives much attention from policy makers, industry, the public and NGOs (Rave, Jolivet, & Mourik, 2009). Without doubt there is a common interest among various stakeholders towards a sustainable future. But since societal needs are fulfilled by a complex interplay of interdependent systems (de Haan, 2011), sustainable development is not only about innovations and technologies. It also relates to human dimensions, for example the public's ability to adapt to new energy transitions (Webler & Tuler, 2010), and social acceptance issues regarding socio-political, community and market aspects (Wuestenhagen,

¹ http://en.wikipedia.org/wiki/Sustainable_development

Wolsink, & Buerer, 2007).

The tensions between technical and societal aspects in sustainable developments often result in disruptive forces where collective actions are formed amongst individuals who share common values (King, 2006). Different types and scopes of social movements will result in different levels of impacts on societal change (Aberle, 1966). When it comes to energy related issues, social initiatives cover different topics on various scales, ranging from Greenpeace organizing international campaigns against nuclear power energy², people signing petitions against biomass energy plants in Leith³, to other smaller and local initiatives. Although various online campaigns related to energy topics are very different in focus and scope, a common characteristic of energy-related initiatives over the last decade is that they are increasingly incorporating social media into their communication strategies to motivate a larger online population.

1.2 Social media and 'online-slacktivism'

Social media is a new media created for the purpose of social interactions online, by means of web-based technology⁴. From 'weblogs' back in Web 1.0 to MySpace in 2003 and the era of Web 2.0 where online platforms contain contents and applications which could be modified in collective ways, for example the wikis (Kaplan & Haenlein, 2010), and also the rise of Facebook in 2004, followed by Twitter, LinkedIn, social media is giving more power for people to share, connect and communicate in new ways. For example, Facebook has more than 700 million active users worldwide⁵ and there are 110 million Twitter messages exchanged every day⁶. With multiple means of media, people have quicker access to current information (Garrett, 2006), distribution of knowledge and information, instant feedback and information sharing online.

The internet not only facilitates and supports traditional, offline collective actions but also results in new forms of collective action (Van Laer & Van Aelst, 2009). An emerging phenomenon that could be observed is 'online-slacktivism'.

The term 'slacktivist' appeared in 1990s where it first described a person in a negative light who does not actively involve in supporting social causes but makes themselves feel good

2 <http://www.greenpeace.org/international/en/campaigns/nuclear/>

3 <http://www.call4.org/campaigns/halt-large-scale-biomass-in-scotland/>

4 http://en.wikipedia.org/wiki/Social_media

5 <http://www.facebook.com/press/info.php?statistics>

6 <http://blogs.forbes.com/oliverchiang/2011/01/19/twitter-hits-nearly-200m-users-110m-tweets-per-day-focuses-on-global-expansion/>

by wearing a cause-related wristband, a T-shirt with slogan or other visible form of support. 'Online slacktivism' refers to the phenomenon where a large online population participates via their computers. Without the internet and social media they would not participate in social initiatives due to several barriers, such as fatalism or busyness. But social media helps them to overcome these barriers and they get to participate in various kinds of ways and often cause a great impact on the social activities (Langley & van den Broek, 2010). For example, with a simple 'click' on the campaign's website, an online slacktivist can send a protest message to the energy companies and put pressure on them to change their unsustainable policies; by watching and sharing campaign video clips, the viral effect will also increase public awareness of the issues and leads to an increase of potential participants.

Social media strategies are changing the dynamics of communication and reshaping collective actions, especially how they are formed online. Given the recent successful examples of social media campaigns, for example Greenpeace's Kit-Kat campaign against Nestle buying palm oil from companies that destroy rainforests, it is clear that social initiatives could result in a large number of online participants. Therefore, the power of 'online slacktivists' in energy campaigns should not be underestimated.

1.3 Problem Definition

Although social media communication strategies seem to be incorporated in a lot of energy-related campaign initiatives, the mechanism of how online slacktivism works and the impacts of such campaigns still remain unclear. Having a better insight into the key factors which contribute to achieving effective outcomes and understand how they contribute to which specific outcome is very useful for campaign initiators in designing and developing effective social media communication strategies in campaigns. For relevant stakeholders, understanding the mechanism of the new media will also provide them with additional insights to the phenomenon of 'online slacktivism', its implications and powers.

In demarcating the research problem into operational constructs, first an exploration of relevant stakeholders and factors are drawn. Figure 1.1 shows an overview of relevant stakeholders (organizations such as NGOs, Social initiatives, municipalities, energy companies, etc.), participants (activists and slacktivists), and targets (energy companies under attack, sustainable behaviors), and other factors related to the research framework.

Energy campaigns are organized by initiators with energy issues as the context and the goals of the organization as the starting point (eg: Greenpeace NL 'we want to protect our planet'⁷). In organizing campaigns there are strategies related to the objectives of the campaign, which

⁷ <http://www.greenpeace.nl/wie-zijn-we>

include goals such as raising public awareness of climate change, initiating protests against toxic use of substances and nuclear power, etc.

1. Attack/protest campaigns: campaigns which focus on initiating protests against energy issues and often have a target, for example energy companies, local government, and etc.
2. Proactive energy campaigns: campaigns which focus on behavioral change or good actions to improve the environment.
3. Corporate campaigns: organizational campaigns which focus on establishing a positive image and reputation use social media to communicate about the organization's sustainable behaviors.

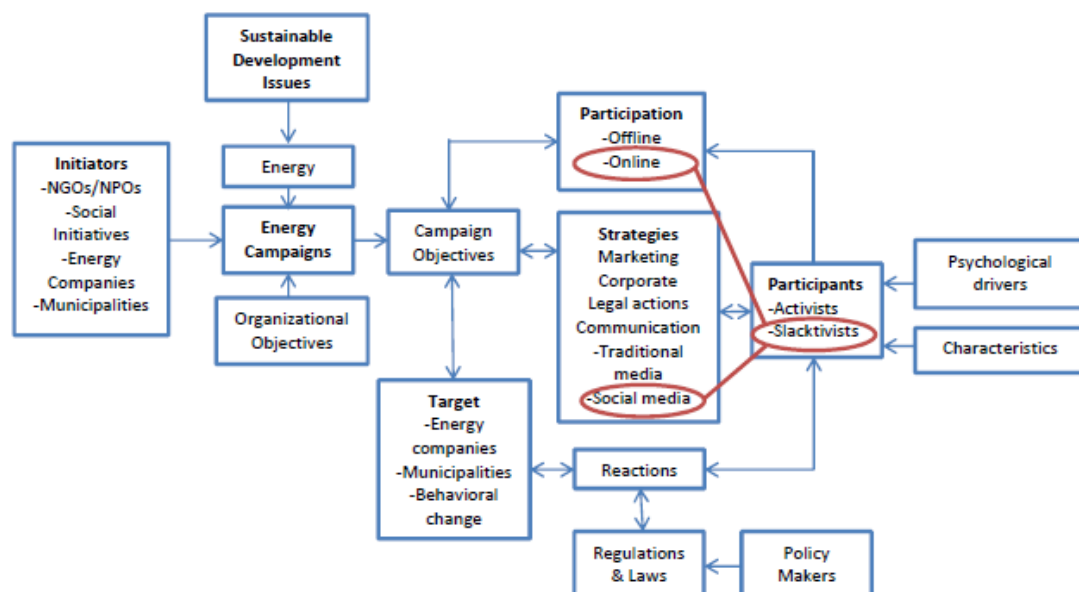


Figure 1.1 An overview of relevant stakeholders and factors in the research framework

1.4 Research Questions

In this research, the main objective is to understand the impact on 'online slacktivism' of organizations using social media communication strategies in organizing energy campaigns. The main goal is to identify the factors which contribute to the participation of 'online slacktivists' and also to investigate the strength of the relationships between these factors and their impacts. The main research question asked in this research is:

To what extent do the factors in social media communication strategies contribute to the participation of online slacktivists in energy campaigns?

Several sub-questions are drawn to be able to answer the main research question:

1. How do the initiators make use of social media communication strategies in their energy campaign to target the 'online slacktivists'?
2. How do the 'online slacktivists' participate in the social media energy campaigns?
3. Which factors in the social media strategies contribute to the participation of online slacktivists in the energy campaigns?
4. What are the relationships between these factors and the participation of online slacktivists in the energy campaigns?

To further define the research question the following terms are briefly explained:

Social media factors

Social media factors refer to the factors in the communication strategies of social media as part of the communication strategies in the energy campaigns. In the first part of the research, which is the qualitative case study, the factors will be drawn to define the conceptual framework most relevant to answering the research question.

Social media communication strategies

In the energy campaigns several strategies are used to achieve the objectives of the campaigns, for example PR strategies, marketing and advertisement, project management strategies, legal actions, and communication strategies. In this research the focus will be social media communication strategies.

Participation

Participation refers to the actions performed by the online slacktivists which are in line with the objectives of the energy campaigns. In this research, participation is defined as the 'outcome', or the 'dependent' variable for the second part of the research, which is the quantitative analysis. The types and levels of participation are derived from the qualitative case study.

Online slacktivists

As stated in the introduction section, online slacktivists refer to the large online population who do not actively participate in energy initiatives due to certain barriers (busyness and

fatalism). But with the internet and social media these barriers are lowered.

Energy campaigns

The subjects studied in this research are energy campaigns. Due to limited time for data collection the research focuses on a broader scale of energy initiatives, including protest campaigns regarding energy issues, proactive campaigns related to energy issues, initiated by a range of initiators, for example NGOs, social initiatives, or municipalities, etc.

To answer the main research question the research will be conducted in two parts: a qualitative case study and a quantitative analysis. The first part of the research gives an overall answer to the first three sub-questions. The quantitative analysis provides additional insights to the first three sub-questions by taking 55 cases into study, and also gives answer to the last sub-question. Chapter 2 gives an overview of the scientific background of the research, which is sustainable development. Chapter 3 introduces the background information of the communication research. A detailed research methodology is included in chapter 4. Chapter 5 and chapter 6 describe the results of the qualitative case study and quantitative analysis. Chapter 7 concludes the research. Chapter 8 discusses the research quality, gives recommendations for future research and describes the implications of the research on relevant stakeholders and issues. Some additional information related to the research is attached in the appendix.

1.5 The research as an internship at TNO

The research is conducted at TNO as an internship: 'Social Networks as a Driver of Sustainability Behavior'. The internship takes place at TNO in Delft. The duration of the internship is 6 months, starting from January 3rd until July 1st 2011. The aim of the internship, as stated in the internship description, is to carry out a research project into the implications of internet-based social networks as a driver of sustainability behavior.

The researcher, however, takes the initiative to draw up the research questions, design the research methodologies and conduct the research steps independently, while receiving guidance from TNO. During the internship the researcher also participates in a project group: SISI (Slacktivism's Impact through Social ICT) and interact with other colleagues. It is also expected that part of the results from this research will contribute to the SISI project.

Several choices in the research focus, data collection, selection of research methodology and operationalization process are made due to time limitation and the boundaries of the internship. Also, research details which contain confidential information will not be included in this report due to codes of conduct.

Chapter 2: Sustainable Development

This chapter gives an overview of the scientific context of the science communication research, which is sustainable development. The goal is to investigate the added value of communication research to the domain of sustainable development. The first part of the chapter describes the background information with regards to sustainable development, followed by stakeholder analysis. The third part of the chapter defines the research problem and proposes several discussion points which will be addressed in chapter 8, the discussion chapter.

2.1 Sustainable development

An overview of sustainable development

There are many definitions when it comes to sustainable development. The most frequently quoted one is from Brundtland's report (1985), that "sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

In the report of United Nations '2005 World Summit', three pillars are mentioned which contribute to sustainable development: economic development, social development, and environmental protection. The well-being of these three areas is intertwined, not separate (McKeown, 2002). And, in *Sustainable Development -The UK Government's approach (2005)*, four major objectives are mentioned: social progress which recognizes the needs of everyone, effective protection of the environment, prudent use of natural resources, and maintenance of high and stable levels of economic growth and employment.

It is clear that, regardless of the different definitions, sustainable development covers a wide range of issues, including inequity of resources, environmental, economic and geo-political issues. Issues regarding sustainable development listed under United Nations' division for sustainable development include: agriculture, biodiversity, waste, energy, climate change, industrial development, rural development, and etc. (United Nations Department of Economic and Social Affairs: Division for Sustainable Development). Sustainable development issues are also interrelated, for example, the production and consumption of fossil fuels affects human health and quality of life, ecological balance and biodiversity.

From 2005, member states of the United Nations started formulating and implementing national sustainable development strategies (NSDS) to meet one of the targets of the World Summit on Sustainable Development. By 2009, Europe shows the status of these strategies with 88% of the countries reporting their status and 77% already implementing NSDS. Although there are differences in institutional, developmental and biophysical conditions

among countries, it is shown that in their strategies the linkage between different dimensions (economic, social and environmental) are recognizable (National sustainable development strategies). The challenge, however, is to develop a balanced sustainable development framework specific enough for an empirical analysis and at the same time universal enough to accommodate various dimensions in the sustainable development sphere (Steure, 2005).

It could be concluded from the overview that sustainable development is rather complex in nature, with more issues yet to be identified and incorporated in the overall sustainable development framework.

Sustainable development in the Netherlands

In the Netherlands's National Environmental Policy Plan (NMP) back in 1989, it states that environmental problems are caused by 'an interplay of three aspects', namely: i) effects are occurring at a high scale level, causing a distance between measures taken and visible results, ii) issues arise at the continental and global levels, and iii) implications of environmental capacity is not only affecting natural ecosystems but also human activities.

In 1933, Netherlands launched a 5-year sustainable technology development program where various stakeholders such as scientists, policy makers and NGOs participated and collaborated to achieve the goals of bringing technological developments and design instruments together for a sustainability-oriented future (Jansen, 2003). In August 2002, a four-year sustainable development strategy was drawn up to meet the goal of World Summit on Sustainable Development (WSSD) (van Zijst, 2006). In 2008, Sustainable business issues have received the most attentions in boardrooms (Jaargids 2011, p.122).

For the general public, energy issues are perceived the most important issues in sustainable development. According to a survey in 2009 on 6,615 respondents, the top five most regarded themes for the energy section are: natural energy sources (48%), air pollution (34%), energy conservation (34%), stewardship (33%), and climate change (31%). The Dutch consumers find it important that energy suppliers should make use of natural energy resources, reduce pollutions and lower energy consumption (Wie Doet Het Licht Uit, 2009). And on Tuesday, December 7, 2010, the Parliament received 45,000 signatures from citizens who believe that the Dutch energy sector should accelerate sustainable development.

It could be concluded that for the general public, sustainable development, especially related to energy issues, is regarded important in the modern society,.

2.2 Stakeholder Analysis

The dynamics in the composition of social networks which includes producers, users, regulators, societal groups, etc, are crucial in the respect that they stimulate development, carry expectations and articulate new requirements and demands. For example, the needs and interests of the stakeholders are constantly changing, and there might be conflicting

expectations among stakeholders (Business strategy for sustainable development, 1994). Therefore, a stakeholder analysis can be useful in identifying possible conflicts during the initial phase of sustainable development. In this section, an overview of stakeholders related to sustainable development will be given. Figure 2.1 shows an overview of stakeholders related to sustainable development.

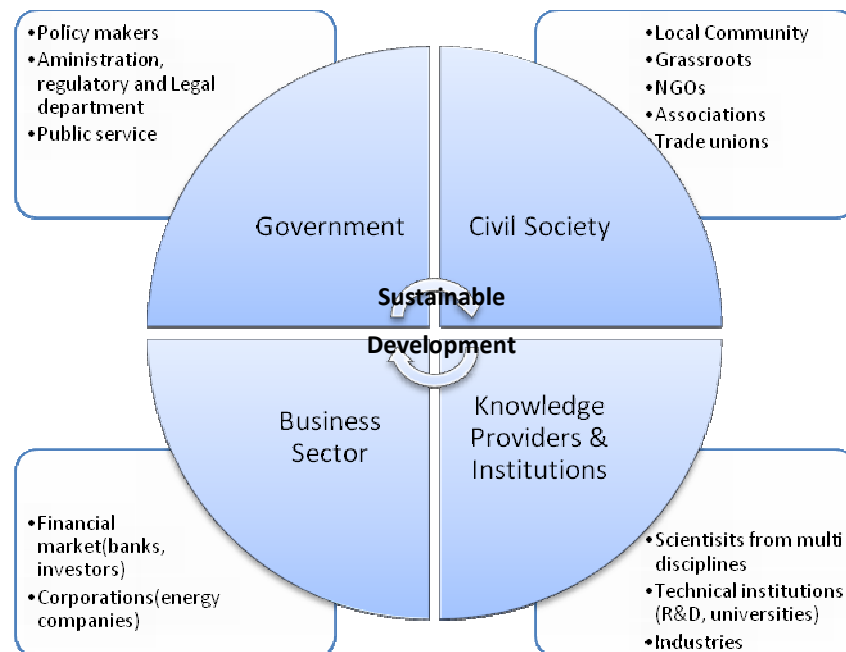


Figure 2.1 Stakeholders in sustainable development (adapted from the model ‘unique roles of development players’ in *Optimizing Participation of Stakeholders in Developing and implementing Sustainability Strategies*)

A general definition of ‘stakeholder’ described by Wikipedia is “anyone who has an interest in the project. Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion. They may also exert influence over the project’s objectives and outcomes.” In describing the stakeholders for sustainable development, four major actors are identified in this research: government, the civil society, business sector, and knowledge providers.

Government

On the national level, the government designs and monitors the framework for the activities in achieving sustainable development, supervises the production, process, and business levels of the integrated technologies. Furthermore, policies and regulations are established, implemented and disseminated.

For regional and local government, carrying out administration procedures while managing local issues are the main tasks. Since local residents’ acceptances of new technologies and developments are closely related to the possible societal changes, such as job opportunities,

infrastructure, risks and safety issues, managing issues and monitoring the transitional process is one of the most challenging parts for the local government.

Civil Society

The civil society includes the public at large, local communities, grassroots, associations, NGOs and trade unions who share uncoerced collective actions with common interests, purposes and values. For example, NGOs support technology which creates sustainability in the environment and also influences the process of technology development, of whether the impacts will influence society (i.e. pollution problems, human welfare, etc.).

Business Sector

The business sector includes investors and corporations who assess and provide financial support to sustainable development with cost-benefit economical assessment. The business sector is also influential on the market of sustainable development.

Knowledge Providers

Knowledge providers refer to those who generate knowledge during the process of creating sustainable development, which include a network of multi-disciplinary scientists, scholars, experts and researchers from universities, research centers and industries.

Innovations of technologies concern multiple dimensions and actors. From the stakeholder analysis it could be concluded that various stakeholders take part in the dimension of sustainable development related to legislative compliance, allocating natural and financial resources, identifying issues, managing and implementing projects, and etc. However, sustainable development also creates different opportunities and raises different issues for different stakeholders, since innovation capabilities are not only resulted from linear elements or purely on a market level, but also on a system level which encompasses different components that have impacts on technological levels as well as societal levels, regarding the overall innovation performance of the system (Edquist, 1997).

Interactions between the stakeholders with authentic and effect communication are also important, in which concrete information about sustainable initiatives should be communicated, and demands related to each aspects should be approached (Jaargids 2011, p.125). However, there exists differences in communicating about sustainable initiatives among different stakeholders. For example, sustainable projects organized and implemented from top-down (i.e. governmental energy projects) and sustainable initiatives from bottom-up (i.e. social initiatives) are different in communication objectives, strategies and approaches. Moreover, different objectives might conflict with each other. For example, industrial growth, which is an important aspect in achieving the social aspect, might conflict with preserving natural resources (The Worldbank).

When communication about sustainable initiatives responds to the wrong dimensions, the process can also be unsuccessful and ineffective. Therefore, research is needed to investigate

which aspects in communicating sustainable development are most relevant and effective to the target groups.

2.3 Problem definition and discussion points

In chapter 1, the introduction chapter, it states that energy issues in sustainable development is becoming one of the popular items for slacktivist campaigns, and that social media plays an important role in contributing to the participation of online slacktivists in energy campaigns. For slacktivists, energy issues communicated from the abstract level of 'sustainable development' might not achieve great results in their participation in sustainable behaviors, but when these issues are communicated with online energy campaigns via social media, which makes it easy to participate with simple actions, the slacktivists are more willing to participate. Therefore, it is proposed that factors in social media communication strategies help bridge the gap for the slacktivists from only being aware of the energy issues related to 'sustainable development', to really participating in the energy campaigns which are relevant to their lives.

A study on the social media communication factors in energy campaigns would provide insights into the domain of sustainable development from the communication perspective: which kind of energy issues are communicated in the energy campaigns and in which ways, to which extend the factors in social media communication strategies help contribute to participation, and also the possible impacts and implications on sustainable development.

Three discussion points are proposed in this section in relation to this research on the study of social media communication factors in energy campaigns:

1. Which energy issues are communicated in the energy campaigns and in which respects?
2. To which extend could social media have impact on the facilitation, adoption, and transition of sustainable development?
3. What is the added value of the study of social media communication strategies in the domain of sustainable development?

In chapter 8, the discussion chapter, these discussion points will be addressed based on the findings of the communication research.

Chapter 3: The Theoretical Background

In this chapter the theoretical background will be elaborated to establish the research framework. First, background information regarding online slacktivists' participation and the subsets of slacktivists will be elaborated. Furthermore the lens of the study: the communication perspective, will be explored to set up the research framework, with a closer look into the theoretical backgrounds of social media communication strategies: the characteristics of social media, the communication channel, means and process, and also the communication strategies applied in energy campaigns. Last, an overview of the characteristics of the research will be defined.

3.1 Online slacktivists' participation

In this section, background information on online slacktivists will be elaborated. Section 3.1.1 introduces online participation and section 3.1.2 describes the subsets of the online slacktivists.

3.1.1 Definition of online participation

According to the Oxford English dictionary, participation is defined as 'the action of taking part in something'. Under different circumstances the aims for participation are also different. Some participation levels refer to engagement and involvement, while some focuses on collaboration between different people.

In Sherry Arnstein's 'ladder of participation' (Arnstein, 1969), she states that the pyramid of involvement should be established from: i) information & feedback; ii) consultation in which people are invited to express their interests and concerns; iii) involvement & partnership where people are actively participating in decision making. On the bottom level, people are manipulated into decisions; on a higher level, people are consulted about what needs to be done through an external agents; on the highest level, people mobilize themselves and initiate actions without the involvement of any external group.

In the 'revised theory of participation' proposed by Nina Simon in *The Participatory Museum*, she mentioned the design of social participation via 'me to we', in which there are five stages of participation⁸: from providing people access to the content, opportunities to take actions, see how their actions and interests fit with the organization, connect people to others to share their interests, to finally makes the institution a social sphere for people to interact.

In online participation, people perform these actions through a virtual, online environment.

⁸ <http://museumtwo.blogspot.com/2010/01/revised-theory-of-social-participation.html>

Various online media have enormous knowledge-sharing resources and many of them have unique features⁹. The online technical system (ex: website) provides the context for people to interact and respond. In developing social software the biggest challenge is to facilitate interaction and engagement (Gao et al., 2010). The 'Google Generation' brings forward a different culture of participation, in which several skills are defined, for example the ability of multitasking, navigating trans-media and networking between people¹⁰.

In the reader-leader framework (Preece & Shneiderman, 2009), the differences between readers, contributors, collaborators and leaders in online communities are proposed. People move from one form of participation to another, in a non-linear way. In most online communities, 90% of the users are lurkers who never contribute, 9% of users contribute a little, and 1% of users account for almost all the action¹¹.

It could be concluded that under different circumstances of online media use and the objectives of the media strategies, online participation is defined and described differently.

For demarcation of the research questions and to design the research protocol, the term 'participation' of online slacktivists is defined in this research as: ***the actions of performing various online behaviors which are associated to either being aware of the energy campaign organized by the organization, getting information and distributing information of the energy campaign, or contributing to the energy campaign in line with its objectives.***

In 3.1.2 the subsets of online slacktivists will be introduced to further explain the types of participation contributed from different groups. However, in this research, rather than looking at how different subsets move from one to another-from the least active to the most active in a longitude timeframe, the study is focused on giving a descriptive overview on the types and levels of participation expected by the organizations when they set up the energy campaigns and also observe the types of participation resulted from the online energy campaigns.

3.1.2 The subsets of online slacktivists

In this research, the participants of online slacktivists are defined in three major categories as stated in Table 3.1: i)lurkers are those who receive, read or observe information; ii)sharers who use share options to distribute information; iii)contributors who participate in more active ways.

⁹ http://en.wikipedia.org/wiki/Online_participation

¹⁰ <http://www.frankwatching.com/archive/2008/03/14/klaar-voor-de-participation-culture/>

¹¹ http://www.useit.com/alertbox/participation_inequality.html

Subsets	Types of participation
Lurkers	Receive information Read information
Sharers	Share information
Contributors	Perform actions provided on the online medium

Table 3.1 The subsets of online slacktivists

Lurkers

In internet culture, a lurker is a person who reads discussions on a message board, newsgroup, chatroom, file sharing or other interactive system, but rarely or never participates actively¹². About 90% of the online people are lurkers and there are many reasons why people only browse, read online but do not post or upload information, or only participate in a relatively passive way (Preece, 2004). As stated by Jakob Nielsen in his weblog useit.com¹³, there's an inequality in participation, which follows the 90-9-1 rule: 90% of the users are lurkers who do not contribute, 9% of the users contribute sometimes but it is not their priorities, and only 1% of the users really actively participate and contribute. And sometimes the lurkers even become more attached to the community than the real contributors (Baym, 2000).

In this research, lurkers refer to those who receive or read information about energy campaigns but does not share information or really contribute to the campaign. But one particular feature of social media strategies is that lurkers might also have an impact on the campaign. For example, when they read the texts or watch the videos of a protest campaign, the numbers of hits increase and the pressure groups can use this to put pressure on the target of the protest campaign, or market and advertise about the success of the campaign. Lurkers are not aware that they are having an impact by browsing the websites but the collective behaviors of certain actions (ex: watch video clips) counts as a form of participation in the energy campaigns.

Sharers

In this research, sharers refer to those who distribute information about the energy campaign. It could be that they hit the 'like' button on the webpages, share links, videos about the campaign, or share their opinions. In the virtual environment, sharers contribute to the energy campaigns by passing on information and causing viral effects.

¹² <http://en.wikipedia.org/wiki/Lurker>

¹³ http://www.useit.com/alertbox/participation_inequality.html

Contributors

Contributors in this research refer to those who perform higher degree of active behaviors to contribute to the campaign, for example sending emails to the companies under attack, signing online petitions, or putting on a 'virtual badge' to declare oneself showing allegiance and support for green initiatives, and etc.

3.2 Theories related to online participation

In this section theories related to online participation will be given. Section 3.2.1 introduces the communication perspective and section 3.2.2 describes the social media communication strategies.

3.2.1 The Communication Perspective

In this research the communication perspective is taken to establish the research framework. In this section social media communication strategies will be addressed. First a description of the communication process will briefly summarize the role of communication in online energy campaigns, followed by communication strategies applied, and last, the characteristics of social media and its role in the communication strategies.

Communication process

In the communication process five major components are defined: the sender, message, the receiver, channel and feedback. One of the unique characteristics of social media communication process is that this process is less linear and less one-way than traditional media. The senders and the receivers exchange roles and interact with each other on the channel. The cybernetic concept of feedback communication model (Weiner, 1948, 1986) and the transactional model of communication (Barnlund, 2008) could be used to explain the communication process which takes place in the online energy campaigns.

Sender

In the energy campaigns focused in this research, the main sender is the organization (NGOs, social initiatives, energy companies, or municipalities) who organizes the campaigns. Within the organization different departments function to achieve the organizational goals since communication is most effective when the messages in various medium are consistent with the objectives of the communicator (Jurin et al, 2010). The sender translates the organizational goal into communication objectives and then formulates the core messages to be sent to the receivers by means of communication strategies. With transactional communication process, individuals are simultaneously engaged in sending and receiving of messages.

Message

The messages about the energy campaign are sent via various channels in the communication process, including traditional media (TV, newspapers, radio, posters, etc.) and also social media.

Several communication traditions contribute to the creation of message: semiotic tradition where messages are interpreted as texts, phenomenological where messages are produced, sociopsychological tradition where messages are produced to achieve goals, and also the sociocultural tradition where messages serve the function of bringing people together in some forms of social relationships. The last one- sociocultural tradition, could best describe and explain how slacktivist initiatives apply social media to formulate, design and shape messages in strategic ways to engage the public, and also observe the process of how social groups come to establish certain perceptions and ideas toward the messages.

Framings are also used in translating the messages. Joslyn and Haider-Markel (2002) stated that framing effects have greater impact on technical issues since individuals hold weaker predispositions. In framing complex issues, frames are supposed to reduce confusions by transforming information into comprehensible, manageable messages which is of relevance to people's life experiences (Popkin, 1994). Frames are used to place information in more reliable and diagnostic way (Fiske & S., 1991) since in general people are not motivated to actively search for further information (Petty & Cacioppo, 1986). Social groups also employ frames to reach the goal of mobilizing people with social causes (Snow & Benford, 1992) (Polletta & Ho, 2006).

Receiver

The receiver is the online slacktivists who receive and respond to the messages. One particular feature of online slacktivists is that the receiver might also be the sender in the communication process, given the means of social media. For example, when a sharer posts a link on his personal weblog, website, Facebook, or Twitter, etc. about an energy campaign, those who are in his online social network also receives the information. Instead of the media setting the agenda, with social media the messages are reshaped and retranslated, retransmitted in the online sphere.

Channel

Social media as the channel for communication creates a new model of the communication process which is more hybrid, real-time, and less time and space restricted. With a very complicated network of actors (receivers and senders), multiple transmission routes (cross-media links, options provided by the channel) and the huge capacity of re-generating contents, storing and distributing information, and especially with regards to using social media as the channel for transmission of messages, the symmetrical opportunities on the online platforms for people to generate, create and receive messages, the possibilities in creating different ways of communication with social media is certainly growing and

developing rapidly.

Feedback

In social media communication process, the feedback refers to the responses of the online slacktivists to the communication means, which is described in this research as participation of 'online slacktivists'. With social media as the communication mean, the feedback from the online slacktivists is not only sent to the organization but also to other online slacktivists, causing viral effects.

Table 3.2 gives an overview of the characteristics of the subsets of online slacktivists regarding their behavioral traits, communication roles, the ways they interact with the social media communication strategies, communication effects, how active they are in participating in the campaign, and possible barriers which inhibit their actions.

Types	Lurkers	Sharers	Contributors
Behaviors	Receive info. about the campaign and leave Receive info. and: -Browse the websites -Read messages -Watch videos	Share via social media -directly from the campaign -from other sources	Join virtual protests -send emails -put on a virtual pledge Legal actions -sign petitions Donate -monetary -plant a tree
Communication role	Receivers	Receivers, senders	Receivers, senders
Engagement with the social media & Communication Effect	Consume information via social media The messages stop at the receivers' ends	Use the social media as a channel to distribute info. Viral effect of communication	Use the social media as a mean to perform action Relate to the communication goal
Activeness	Relatively passive Lower involvement	Relatively active Moderate involvement	Active Higher involvement
Possible barriers	They do not care -no interest -not relevant No accessibility to the sites Too much effort to share or contribute	No share options Too much effort to share It is not interesting or important enough to share	No options to contribute online Not interesting to contribute

Table 3.2 An overview of the characteristics of online slacktivists in the social media communication process

The communication process of lurkers, sharers and contributors are not fixed. An individual could act like one of the subsets at the same time or move from group to group, depending on the external and internal barriers in the communication process.

The types of behaviors explain the actions performed by the participants, with different degree of activeness and communication effects. The ways people get involve with the social media is also of importance when studying social media strategies because social media allows people the opportunities to interact with the communication channels. However the degree of involvement and also the possible barriers that inhibit participation are also associated closely to many factors, for example, psychological ones.

3.2.2 Social Media Communication strategies

In this section, the characteristics of social media, social media as communication strategies and also social media as a persuasive technology will be elaborated to provide insights for the establishment of the conceptual framework.

The characteristics of social media

Regarding the characteristics of social media, there are five features proposed by Raessens: multimediality, virtuality, interactivity, connectivity, and intermediality (Raessens, 2001). Multimediality refers to the combination of word, image and sound. This means that more messages are launched simultaneously and interact with each other. Virtuality means that social media also provide the opportunities for people to engage in virtual worlds via some software programs. Interactivity indicates that social media enables more than one-way communication, which isn't only due to the change of technology but also the mentality of people-the new communication culture. Connectivity refers to the fact that people are connected to their technological devices and also to each other, for example the internet connects to people's mobiles, to TV, and etc., and on social networks people can share content, ideas and knowledge. Last, intermediality refers to certain interactions and relationships offered by the media.

Social media as communication strategies

In "Public Media 2.0: Dynamic, Engaged Pulics", Clark states that although Web 2.0 enables the public sphere to appear differently formed, there are certain goals that will remain the same with public engagement, such as educating, informing and mobilizing. Since digital technologies foster new participatory behaviors such as: choice, conversation, curation, creation and collaboration, developing impact measurements are important (Clark, 2009).

Regarding choice aspect, users of Web 2.0 actively search information and solutions online

instead of passively receive information via TV, broadcast and etc. Therefore web makers provide properly formatted access and tags to increase visibility of the sites. Regarding conversation aspect, users use discussion forums to share similar interests about certain issues, and could also be mobilized. Regarding curation, it refers to the phenomenon that the online sphere is a place where the public can share, rank, tag, repost and criticize on a variety of topics. When it comes to creation, user-generated contents on multimedia is growing, which then could be used by the media makers as inputs for creating content. Collaboration refers to activities such as organizing online and offline events in relation to the media projects, with the online media as tools, for example petitions, crowd-sourcing and etc.

Social media as persuasive technology

The design of persuasive technologies is a form of user-centered design to influence user behavior (Lockton et al. 2010). According to Fogg's definition of persuasive technology (B.J. Fogg, 1998), the technology should enable people with user-friendly tools. With social media, it provides interactive technologies and creates experiences. Social influence is triggered in the application of the technology, for example, by social persuasion or amplification of the achievements of other participants through forms of online social interactions in the virtual environment (Bailenson et al., 2004), or by providing feedback and interaction (DiMicco 2004).

Social media communication strategies consist of hybrid elements

The internet integrates various modalities of communication with different kinds of content in a single medium (DiMaggio et al., 2001) which advocate rather than peach. The public create and share knowledge, signal their distinctiveness and establish their identity (Ho & Dempsen, 2010).

Also, social media communication factors are message driven, not channel driven, in which they support unified message integrated with organizations' objectives. Therefore there has to be a balance between information and call-to-action (Currie et al., 2009). It could be concluded that social media communication strategies consist of hybrid elements dependent on the context of the message, the organizational objectives and the medium used in order to achieve online participation.

It could be concluded from the literature review that there are different characteristics and concepts associated with social media communication strategies which could be of influence on online participation. In this research, the factors that constitute the concepts which contribute to the participation of online slacktivists in energy campaigns will be identified.

3.3 Research Characteristics

In section 3.3, the boundaries, limitations and also the nature of the research will be addressed to provide an overview of the outcomes of the research.

3.3.1 Boundaries and Limitations in the research

Given limited time, resources, the angle of study and methodology, and also the requirements of the internship project and graduation thesis, the research boundaries are defined and specified, in Table 3.3.

Limitation	Description	Research boundary
Time	The internship at TNO is a 6-month project in which results are expected by the end of June	Effective research methodologies are designed to answer the research question within the time frame The research topic is related to the SISI project
Available data	To establish validity and reliability of the research, data containing enough information collection is important	When there is insufficient information collected from the data then the researcher need to broaden the research criteria
Research methodology	Qualitative and quantitative research methodology are applied in this research	Given limited time the research is still quite linear (qualitative→quantitative)
Requirements for SC study	The research must meet the requirements of the SC master program	The research is approached from the communication perspective

Table 3.3 Limitations and boundaries of the research

The study is designed for an exploratory research and does not aim to provide normative or strategic advice for designing social media communication strategies for energy campaigns. In this research, the subsets of slacktivists will not be studied, although the dynamics of different subgroups such as the interactions between different levels of involvement in energy campaigns might be interesting in answering the underlying factors to explain why

the slacktivists participate in some cases and not participate in some other cases. The individual motivations of slacktivists will not be included in this study but recommendations will be drawn regarding the factors which might be interesting for a more in-depth inquiry into the social media communication factors for future research.

3.3.2 The nature of the research

The nature of the research is summarized in Table 3.4. Given certain limitations the research boundaries are drawn. In the discussion chapter further discussions regarding validity and reliability will be elaborated in details related to the research limitations and boundaries, with specific aspects that could be improved, and also give recommendations for future research.

Feature	Description
Exploratory and open	The research uses exploratory approaches (qualitative case study) combined with statistical techniques (quantitative analysis) to establish the research grounds instead of using an existing theoretical framework to test the hypothesis
Descriptive and insightful	The aim of the study is to give insights regarding the social media communication factors which could be of influence on participation in energy campaigns

Table 3.4 The nature of the research

Chapter 4: Research Methodology

In chapter 4 the research methodology will be elaborated. First an overview of the research methodology will be given, followed by detailed descriptions of the methodologies.

A combination of qualitative and quantitative methods is applied in this research: first a qualitative case study to identify the social media communication factors which contribute to the participation of online slacktivists in energy campaigns, followed by a quantitative analysis to investigate the effect of these social media communication factors on participation. Figure 4.1 shows an overview of the research methodology.

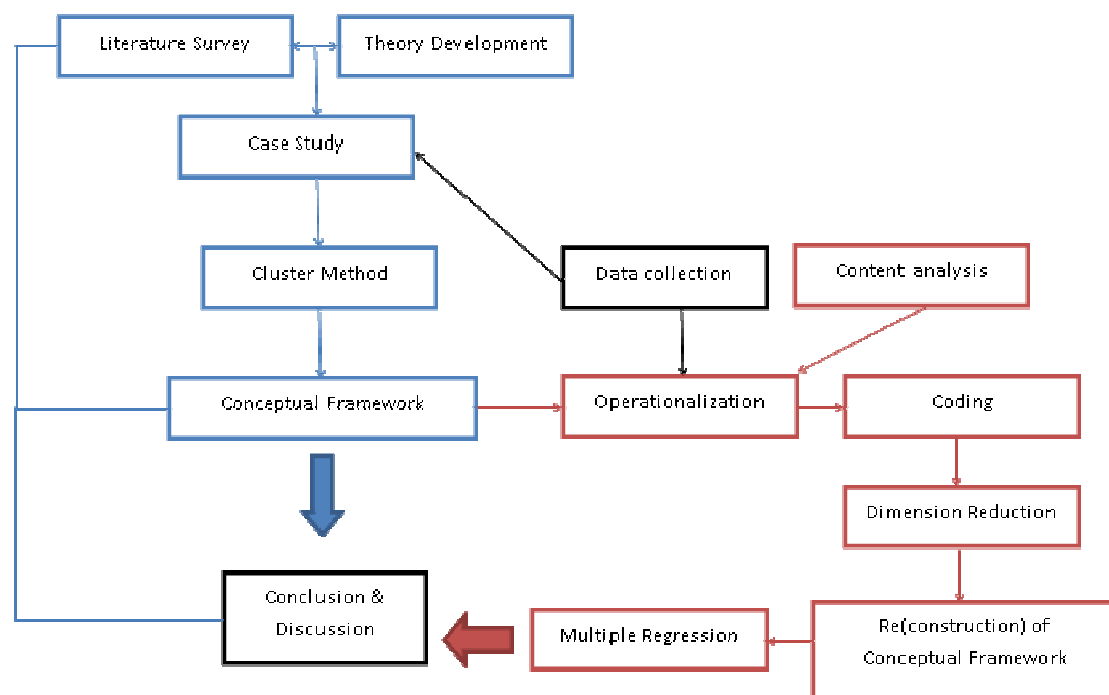


Figure 4.1 An overview of the research methodology

Table 4.1 summarizes the main differences between the qualitative and quantitative research methods. Each of the method has its own strengths and weaknesses. By using a combination of both methods the validity and reliability of the research will be increased by allowing the researcher to look at the research questions with different angles and also collect, analyze data from different levels of inquiries (Verhoeven, 2007).

Methodology	Research content	Research sample	Analytical method	Strengths	Weaknesses
Qualitative Case Study	To explore the latent content of the research data, for example contextual meanings	Smaller sample	Flexible, subjective Use of interviews, observations, and etc.	Explorative and insightful	Difficulties of generalizing, Too subjective
Quantitative Analysis	Emphasis on emergent content (the structure of the content) and not the contextual part of the research data	Larger sample	Systematic, objective Use of categorizing methods, Statistical measurements, and etc.	Efficient and more objective	Contextual parts might be excluded
Triangulation of qualitative and quantitative methods	A combination of different contents	A combination of different sample sets (samples should reflect each other)	An iterative research process, between contextual investigations and statistical, analytical methods	More insights with richer contents and different perspectives of inquiry	Results may contradict with each other and therefore difficult to conclude

Table 4.1 A comparison of different research methods

The qualitative analysis focuses more on the contextual part of the research data, using more explorative and observant techniques to explain the patterns or phenomena of a smaller research sample; the quantitative research methodology focuses on a larger set of data to perform a more subjective measurement. In qualitative research more in-depth inquiry into the study subject is carried out, while in quantitative research a more systematic, statistical approach is often applied.

With a triangulation of qualitative and quantitative methods different contents and sample are investigated with an iterative process. By looking at the research with different perspectives it provides the researcher with a better understanding of the study but at the same time the differences in the research results could also make it difficult to interpret and conclude the research.

Before designing the research methodologies several criteria are drawn up to insure the quality of the research:

1. The research methodologies should be designed to best answer the main research question and also the sub-questions: different methodologies are applied to answer different part of the research.
2. The different research methodologies should be coherent and consistent: there should be a coherent link between different parts of the research and also how the different methodologies are designed.
3. The research methodologies should be achievable given the limitation of time and resources: practical concerns, the boundaries and limitations of the research methodologies should be stated clearly and also included in the discussion chapter.

The qualitative research includes literature survey of the theoretical to substantiate the research design with grounded theories and literatures. Besides literature survey, a case study is carried out with semi-opened interviews, observations and other documents to investigate the research question. Details regarding the qualitative case study is elaborated in 4.2.

In the quantitative research, online energy campaigns are collected, and operationalized with statistical techniques. Details regarding the quantitative analysis is elaborated in 4.3.

4.1 Literature Survey

In section 4.1 the literature survey will be elaborated. First, methods regarding conducting a literature survey will be explained, followed by the types of literatures, the quality and relevance of the literatures, and the key words used for searching literatures.

4.1.1 Methodology of literature survey

In this research, literature survey is part of the research design to help the researcher to get a better understanding of the research topics, identify key factors in the research results and investigate possible explanations to interpret the results.

In carrying out a literature survey the researcher takes the quality and relevance of the research into account in order to establish as complete as possible the perspective of the research topic and also to find substantial support for the research design.

During the literature survey, the researcher starts with the primary literature related to three main research topics: social media communication strategies, sustainable development, and online social movements. Primary literature, secondary literature and also gray literature are also used, obtained from library resources, digital archives, journals and websites.

4.1.2 Types of literature

To gain insights on the theoretical backgrounds for the research multiple types of literatures are used. Table 4.2 shows an overview of the types of literatures and the added values to the research.

Types of literatures	Added value to the research
Primary literature (main theories)	Provide an overview of the most relevant or new topics to establish the theoretical background
Secondary literature (articles, conference papers)	Provide additional insights to relevant research topics
Gray literature (conference papers, reports, and websites)	Provide additional insights to the practice level of the relevant research topics

Table 4.2 Types of literatures and their added value to the research

In this research, the researcher inquires mainly on primary literature to insure the quality of the research. Primary literature provides the researcher with knowledge regarding the topic for research in order to formulate the main research question while secondary literature provides additional insights to how relevant research topics are addressed and which questions are already answered, with what kind of perspectives. Gray literature also provides the researcher with additional insights and knowledge to the more practice level, for example social media communication strategies applied in real cases.

4.1.3 Contents in the literature survey

To be able to grasp an overview of relevant topics related to the research, a multi-disciplinary literature survey is conducted. Table 3.3 gives an overview of the different disciplines approached for the literature survey, in the sequence of the most relevant to the research question, to the least relevant: communication, sustainable development, organizational study, psychology, and design.

Major Disciplines	Sub-disciplines and key words
Communication	Communication strategies Agenda setting, framing, persuasion Web 2.0 Social media Marketing Digital marketing Viral marketing
Sustainable Development	Sustainable energy Wind energy, solar energy, and etc. Sustainable issues Social acceptance Socio-political issues Socio-economical issues
Organizational study	Social movement Online mobilization Online campaigns Online initiative
Psychology	Network theories Motivation theories Social capital Participation Online behavior
Design	User aspect Human-machine interaction Visualization Infographics Contextual design

Table 4.3 Types of research disciplines and the key words for literature survey

The aim of the literature survey is to get an understanding of how to answer the research question: *to what extent do social media communication factors contribute to the participation of online slacktivists in energy campaigns?* Since the main research perspective in the study is communication, the researcher first focuses on the topics regarding communication strategies, social media and etc. to first get an overview of the discipline. And since the factors of social media communication strategies might cover multiple domains of studies, the researcher makes use of other disciplines which might provide answers to the research question. For example social movement, online campaigns, the psychological behaviors of online participation, and also the design aspect of social media strategies, including user-aspect, visualization and etc.

4.2 Qualitative Case Study

In section 4.2 the research methods for the qualitative case study will be elaborated, by first giving an overview of the research methods applied, followed by the study design and how the methods are embedded in the case study. Descriptions of each of the methods will also be given.

The reason that a qualitative case study research methodology is chosen is that this research involves a new paradigm which contains multiple disciplines. More explorations of approaches can enhance the flexibility of the research, as stated by Immy Holloway and Les Todres (2003) in *The Status of Methods: Flexibility, Consistency and Coherence*, that a number of qualitative research strategies are generic, and in order to inquire the primacy of the topic, a range of possible research questions with designed approach should be considered. Thus, by conducting an interpretative research using different methods to collect data, it will give the researcher more insights (Boeije, 2005). And since case studies are a form of intensive research in which the relationships are examined with in-depth interviews or participant observation (Verhoeven, 2007), in designing the qualitative case research protocols, multiple sources of evidence are applied.

In the qualitative research, sub-questions 1, 2, and 3 will be answered by conducting a qualitative case study, with the following methods:

1. An initial round of interviews with a selection of initiators of online energy campaigns to explore the topics related to the research question.
2. Observation of the online energy campaigns to compare results obtained from the interviews and to further explore the topics related to the research question. Also, relevant documents regarding the organizations are also studied to gather more insights into the research topics.
3. Establish the conceptual framework of the research by clustering the most relevant social media factors obtained from the research methods above in order to prepare for the

quantitative analysis.

Table 4.4 shows an overview of the qualitative case study. The research process and results from each of the methods will be further elaborated in chapter 5.

Methods	Descriptions
Semi-opened interviews (section 5.3.1)	A round of interviews with initiators of the online energy campaigns
Participant observations (section 5.3.2)	Non-obtrusive observations of the online energy campaigns
Other documents (section 5.3.3)	A study on the documents related to the organizations and campaigns in the case study
Establish the conceptual framework with cluster method (section 5.4)	A clustering process of the social media factors obtained from the interviews and observations

Table 4.4 An overview of the qualitative case study research methods

4.2.1 Qualitative Case Study Design

In this research, the case study design falls into the type of holistic, multiple-case designs (Yin, 2003). Figure 4.2 shows the structure of the case design, which falls into the boundaries of the research framework in which several pre-conditions need to be fulfilled to be selected as cases. For each case, the contexts differ due to various natures and situations. The choice of multiple-case over single-case design increases the robustness of the research. The cases are holistic in the sense that global perspectives and qualitative approaches are applied during this phase of the research. Thus it gives the research more flexibility and provides insights for analysis.

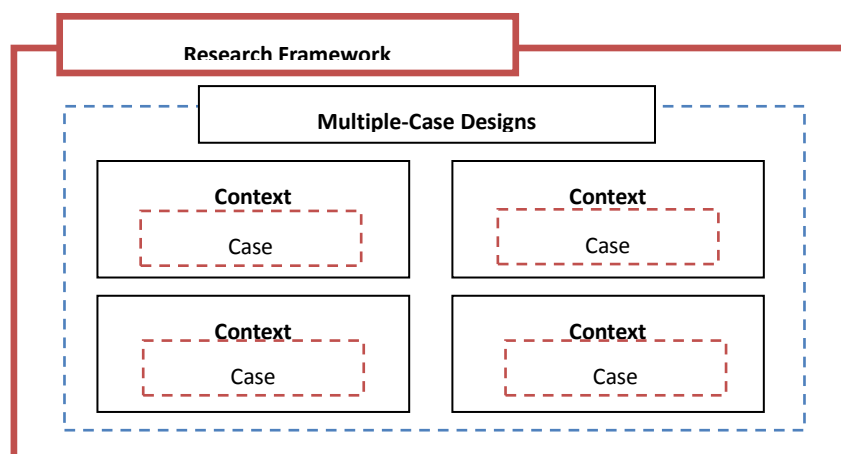


Figure 4.2 An overview of the type of case study design

Multiple Sources of Evidence

In order to increase the validity and reliability of the research, different sources of evidence should be collected for converging lines of inquiry (Yin, 2003). Therefore, in the qualitative case study, multiple research methods are applied. Figure 4.3 gives an overview of the methods applied in the case study and Table 4.5 summarizes the strengths and weaknesses of each of the methods. Further discussions on the quality of the research methodologies will be elaborated in chapter 8.

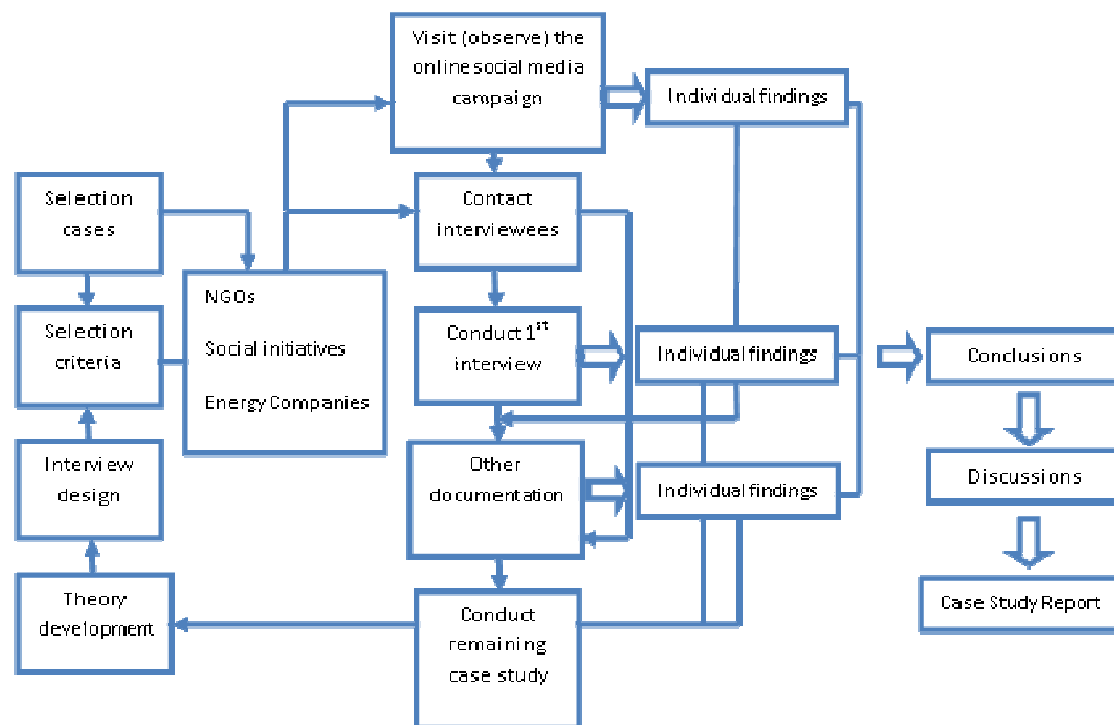


Figure 4.3 An overview of the qualitative case study protocol

Source of evidence	Strengths	Weaknesses
Semi-open question interviews	Case specific Gather insights from the initiator perspective	Bias from the interviewers and interviewees Case dependent
Visit (observe) the social-media energy campaigns' websites	Direct observation Contextual insights and information	Bias from the observer Time-consuming Cases are different
Other documentation regarding the organization and the campaign	Stable and correctness of the evidence Broad coverage of information	Accessibility and retrievability of the information

Table 4.5 An overview of the research methods for the qualitative case study

The case study research is established both from theoretical background and case selection. By investigating the concepts derived from research question dissemination and also the process of case selections, first the observation of the online energy campaigns is conducted to check whether the cases selected fulfill the conditions of the research (selection criteria mentioned in the next paragraph) and whether they fall into the boundaries of the research. After contacting the interviewees the interviews are conducted with semi-opened questions. Simultaneously, investigations of other sources of evidence (observation, other documents) are carried out. Individual findings gathered from different sources of evidence are cross-examined and compared to get a general overview of possible research answers to the case study goals proposed in the previous section. Detailed descriptions of each of the methods are elaborated in the following paragraphs.

Interview

One of the research methodology applied in the qualitative case study is semi-opened interviews with stakeholders who initiate energy campaigns. The selection criteria of the cases include:

1. The use of social media in the communication strategies.
2. The campaign is related to energy issues.
3. Current or recent case.
4. Availability of campaign initiators for being interviewed.

A total number of 10 interviews were carried out, with communication experts (advisors) from 4 NGOs, 3 social initiatives, 2 energy companies and 1 municipality energy project. The choice of interviewing different organizations with various profiles provides the research with a richer scope and broader dimension to the topics investigated. Also, due to limitations on research planning, these interviewees are the optimal options.

Semi-opened interviews were conducted to allow flexibility during the interviews and enhance more interactions between the interviewers and interviewees. According to Roulston (2010) in considering the quality in qualitative interviewing, theoretical assumptions contribute to how research interviews are structured and pose implications.

Therefore the questions follow a structured framework with four main topics: objectives, strategies, social media aspects and participation.

Related to the topic of objectives, questions regarding the organizational goals and communication goals are designed with the aim to gather insights from the perspective of the energy campaign initiators.

Related to the topic of strategies, questions regarding general strategies, communication strategies and social media strategies are designed with the aim to get an overview of the means used in the energy campaigns in relation to the organizational and communication

objectives.

The last topic addresses the main focus of this research: the relationship between social media aspects and participation, with questions designed to explore which social media factors contribute to participation.

The outline of the interview topic list, the finds, and the summary notes made from the interviews are attached in appendix A.

Observation

In order to gather more insights to the perspectives from the receiver end (participants of the energy campaigns), non-intrusive, informal observations of the online campaigns of the cases selected were carried out (Yin, 2003). Thus, besides the energy campaign initiators' perspectives generated from the interviews, the participants' perspective is also investigated for adding insights to the research.

The researcher acts as a participant in the online energy campaigns in various ways, for example reading and tracking information of the energy campaigns, playing the online games, or trying out different social media options. A more complete picture of the research topic inquired is then illustrated by investigating the research materials and data in a more proactive way.

The researcher does not stick to a strict protocol during the observation process but in general two main observation techniques could be summarized in Table 4.6.

Observation	Description	Strengths	Weaknesses
Observation of the campaign websites before the interviews	Visit the campaign websites to get an overview of the campaign Try out the options on the campaign websites	To get insights on the campaign from the user perspective	The researcher might be biased during the interviews
Observation of the campaign websites after the interviews	Visit the campaign websites again to get an overview from the initiator perspective Compare the differences/similarities from the participant/initiator perspectives	To falsify and compare the results from the interviews and observation	Time consuming

Table 4.6 Observation methods

Other documentation

Besides the semi-opened interviews and observation method, other documentations such as the reports of the organizational profiles, media strategy reports, theories and references used by the organizations in developing their social media communication strategies inquired to provide additional insights and information for the research. By cross-examining and comparing the interview results with these documents a more general and complete picture of the relations between the objectives and strategies are drawn.

4.3 Quantitative Analysis

In this section the quantitative analysis will be introduced, first with the protocol for the quantitative research, followed by descriptions of the methodologies applied.

The quantitative research protocol

Figure 4.4 shows an overview of the quantitative research protocol:

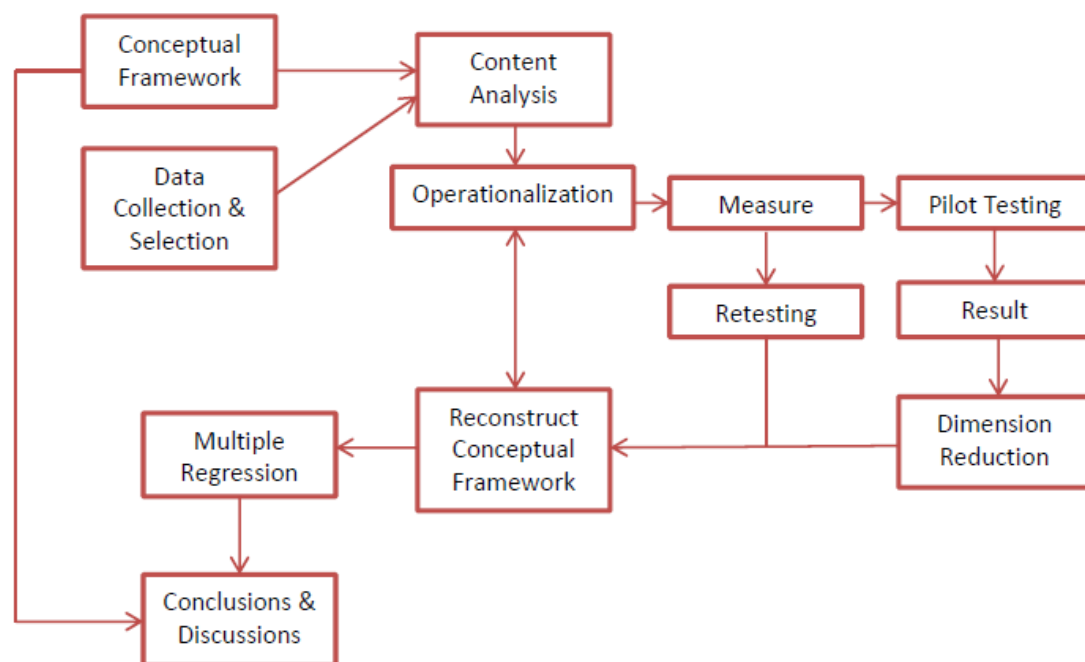


Figure 4.4 An overview of the quantitative case analysis protocol

The results from the qualitative case study and the theoretical background serve as inputs for the quantitative analysis in order to measure the strengths between the social media communication factors and participation defined from the qualitative case study.

It is noted that the process of the quantitative measurement is not linear. After operationalization of the variables, a pilot test is conducted to first verify if the coded variables will be able to answer the research question. Revisions on the coding process are

made to improve the quality of the measurement. Factor analysis is then applied to reduce the dimension of the variables and group them into concepts to reconstruct the conceptual framework. Last, multiple regression analysis will investigate the strengths between the social media communication factors and participation.

Table 4.7 gives a summary of the quantitative research methods. The following paragraphs will further elaborate on the research protocols and also give arguments to why they are selected.

Methods	Descriptions
Data Collection	Besides the cases studied in the qualitative research, more cases will be selected for the quantitative analysis with sufficient amount of data sources
Content Analysis	For inquiry into the communication perspective of the social media factors, content analysis will support the operationalization process
Operationlization	From the conceptual model derived both from the theoretical background and also the qualitative case study, the concepts are operationalized with variables that could be measured with statistical analysis
Statistical analysis (SPSS)	<p>The variables are measured quantitatively, using data collected both from the qualitative case study and also a more extensive amount of data</p> <p>Correlation method is applied to explore the relationships between the variables</p> <p>Dimension reduction is applied with factor analysis to re-construct the conceptual framework</p> <p>Multiple regression method is applied to investigate the strengths between social media communication factors and participation</p>

Table 4.7 An overview of the quantitative research methods

Data collection

For measuring the strengths between social media communication factors and participation a number of cases needed to be collected to construct a statistical validity in measurement. In the criteria for data selection, besides the 10 cases selected for the qualitative case study, a number of cases are collected for the quantitative analysis. The criteria for collecting the cases are similar to those defined in the criteria for conducting the interviews in the qualitative case study.

Criteria	Description
The use of social media	The campaign make use of social media as part of their communication strategies
Energy related campaigns	The objectives of the campaign include energy subjects
Accessibility of data and information for measurement	Information and data could be retrieved online for measurement

Table 4.8 An overview of the criteria for data collection

Content Analysis

Content analysis is a systematic, objective, quantitative analysis of message analytical method which enables objectivity-intersubjectivity scientific investigation, reliability, validity, generalizability, replicability, and hypothesis testing (Neuendorf, 2002). Table 4.9 summarizes the strengths and weaknesses of content analysis.

Strengths	Weaknesses
Unobtrusive	Restrictions on the accessibility to record data
Less restrictions to time and space	Difficulties in establishing content validity due to lack of standardized coding
Could be used repetitively for future researchers	The researcher might be biased and only focus in certain aspects of the research

Table 4.9 An overview of the strengths and weaknesses of content analysis

In this research, content analysis is applied in the quantitative analysis as part of developing the instrument for measurement to establish a coding scheme for analyzing the content of the communication messages.

Operationalization

The main purpose of the operationalization process is to translate the concepts into measurable variables for the statistical analysis. Two criteria in the operationalization process are:

1. The variables measured should be simple, clear, objective, and unambiguous.
2. The variables should be measurable, given the limited research time and resources. That is, alternative variables for measurement needed to be draw up in case of insufficient data.

Measure with statistical analysis (SPSS)

SPSS is a computer software program used for statistical analysis, which contains statistical data analysis, data management and documentation features. In this research SPSS is applied for statistical analysis to answer the final sub-question, using several statistical bases in the software, for example descriptive statistics to give an explorative overview of the collected data, correlations to explore the relationships of the variables, factor analysis to reconstruct the conceptual framework, and also regression methods to measure the strengths between the independent and dependent variables. From the statistical analysis the research results from the qualitative research could be compared in order to draw up conclusions and discussions for the research.

Chapter 5: Qualitative Case Study

The main purpose of the case study is to explore the research topic in a qualitative manner to prepare for the quantitative research. It is expected that by the end of the case study the conceptual framework for this research will be constructed.

In this chapter, first the goals of the case study will be introduced, followed by a short summary of the methodology used to conduct the case study. The second part of this chapter briefly describes the findings from the case study. The last part of this chapter relates the results to constructing the conceptual framework.

5.1 Research goals

The main goal of the case study is to explore the possible answers to the research questions proposed in chapter 1. By the end of the case study the researcher is expected to gain insights to the following topics:

1. An overview of the organizational goals and how the communication goals relate to them
2. An overview of the energy campaign strategies and how the communication strategies relate to them
3. An overview of the social media communication strategies and how they are related to the energy campaign goals
4. An overview of the aspects of social media communication strategies used in the campaigns
5. An overview of the types and levels of (online) participation expected and observed in the energy campaigns

5.2 Summary of the research methodology

In the qualitative case study a triangulation of qualitative methods are applied: semi-structured interviews with energy campaign initiators, observations by the researcher on the online energy campaigns, investigations on relevant documentations, and clustering method to help construct the conceptual framework. The qualitative case study follows the research methodology of Yin's *Case study research design and method* (Yin, 2003).

5.3 Findings

In the case study 10 organizations are selected for investigation, with a triangulation of methods (semi-structured interviews, observation, and other documentation). In this section the main results from the case study are summarized. The detailed findings are attached in appendix A.

5.3.1 Interview

For the qualitative case study semi-opened interviews are conducted. The 10 organization chosen for interviews include 1 municipality, 2 energy companies, 3 social initiatives and 4 NGOs. The organizations are different with regards to their organizational profiles, organizational goals and their communication target groups. For the accessibility of conducting interviews the organizations selected are Dutch ones.

Regarding the energy campaigns, each of the organizations has their own missions and visions related to the energy issues or problems. For example, some campaigns focus on reduction of CO₂ emissions while others focus on bottom-up approach of collective actions or consumer-oriented campaigns.

However, it is clear that the energy campaign goals are closely related to the organizational objectives. Most of the energy campaigns researched in the case study focus on proactive objectives-that is, to address energy or sustainability related issues in positive manners.

Table 5.1 shows an overview of the relationship between the communication goals and strategies which consists of general strategies and especially with focus on the social media strategies.

Communication goals	Strategies	Social Media Strategies
To make people aware that complex, difficult energy issues are understandable	Attract people with multiple benefits Use cross-media strategy Choose most appropriate timing to spread information and trigger people	Connect the campaign to the 'green groups' (ex: Fair trade groups on LinkedIn) or green events Make the steps online easier for people to participate Fun online quiz for people to compete with each other Make use of films and presentations to explain

To make people aware that small ideas and little steps make a huge difference for the environment	Communicate about sustainability in a progressive and logical way To show the participants nice projects and ask them for supports	Use online platform where people see the energy projects and rate them
To create awareness of sustainable behaviors	Conduct research and use the correct references Find surprising facts that spark, trigger and express the message Keep the participants interested Incorporate energy saving concept in a fun way Give the participants space to react and give input; be open about it	Use online platform where people can put their sustainable ideas for others to vote Use motivational factors to design the social media strategies Enhance interactions and presence of the network
To motivate and increase participation	Collaborate with the NGOs Communicate to the participants directly Provide abundant but concise information	Use the website to attract people to participate with attractive designs
To establish a personal relationship with the participants	Actively choosing sustainability and tell the participants	Use of online platform Use of fun online quiz
To communicate about the organization as a sustainable one	Show concrete examples and benefits to the participants React in real-time	

Table 5.1 The communication goals and strategies

The communication objectives of the campaigns include knowledge, attitude and behavioral ones (Grunig & Hunt, 1984). For example, some campaigns aim to make people understand the complex parts of energy issues (knowledge objectives); some aim to communicate about sustainability in a proactive way to create positive attitude, or protest campaigns against energy companies (attitude objectives); some campaigns aim to motivate people to change their behaviors and take part in actions (behavioral objectives).

Regarding the general strategies applied by the organizations, multiple strategies are used for the campaigns, including media strategies, marketing strategies, or collaborations with

stakeholders to achieve the objectives. In communication strategies, cross-media strategies are often applied to inform, make aware, and engage people to participate in energy campaigns. Social media communication strategies are part of the communication strategies, in which they support the other forms of strategies. Design factors (visual, entertainment, etc.), motivational factors, and social factors are mentioned.

Regarding participation, from the interviews and observations the types of (online) participation are derived, as shown in table 5.2. Participation is categorized into four different categories: receive, share, interact, and act.

Types of participation	Description
Receive	The participants are informed, guided, suggested or advised by the initiators of the energy campaigns via the social media
Share	The participants distribute information, reconstruct or reconfigure the content shown in the energy campaigns via social media
Interact	The participants interact with the virtual environment The participants communicate or collaborate with other participants in the energy campaigns
Action	The participants perform actions with real-world relevance which contribute to the outcomes of the energy campaigns

Table 5.2 The types of participation

Table 5.3 summarizes the types of participation related to the communication objectives. From the case study results it could be concluded that there are three main communication objectives: awareness objectives, attitude objectives, and behavioral objectives.

Communication Objectives	Process	Types of Participation
Create awareness of the energy campaign	Generation	Receive Share
Increase awareness of the energy campaign	Reinforcement	Share
Create attitudes towards the energy campaign	Interpretation	Receive Share

Induce behavioral change in accordance with the energy campaign objectives	Reconfiguration Contribution	Interaction Action
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Table 5.3 The types of participation associated with the communication objectives

In designing campaigns different communication strategies deal with different objectives. Regarding awareness objectives the aim of communication is to generate information to the target group by means of message and trying to get people to pay attention to the informational content. Regarding attitude objectives the aim of communication is to create positive or negative (protest campaigns) reactions to the content. Regarding behavioral objectives the aim of communication is to induce behavioral change in accordance to the organizational objectives.

5.3.2 Observation

Besides the interviews, observations of the online energy campaigns are also carried out before and after the interviews to gain insights and verify the findings.

Before the interviews the researcher visit the social media campaigns to get a first impression of the strategies used in the campaigns. The social media strategies implemented are easily seen from the user perspective, and questions are asked during the interviews to investigate the reasons behind the choices made.

After the interviews the researcher revisits the campaign websites to check whether the results obtained from the interviews match with the ones from the observations carried out by the researcher.

It could be concluded that there are not so much differences among the social media strategies observed and those obtained from the interviews.

However, from the observations, only the social media communication strategies from the user perspective could be derived, for example the types of participation, the social media options, and etc. The organizational and communication objectives cannot be directly derived from the observation, and are derived from the interviews.

5.3.3 Other documentation

During the interviews the researcher asks the interviewees to provide additional documents regarding the social media strategies implemented in the campaigns. The three major types of documents include: organizational documents, strategies in previous campaigns, and papers about theories used which are translated into strategies. Table 5.4 gives an overview

of the different types of documentation and their relevance to the research.

Types of documentation	Description	Relevance to the research
Organizational documents (online, off-line)	Reports or additional information about the organization	Provide additional insights to the organizational background and objectives
Strategies in previous or other campaigns	Documents about strategies used in previous campaigns	Provide insights to the heuristics used from past experiences
Papers	Theories related to the strategies implemented in the campaigns	Provide a helicopter view on the strategies, the arguments and supports of the choices made in the design of the strategies

Table 5.4 The types of documentation and their relevance to the research

5.3.4 The Clustering Method

The purpose of clustering the social media factors is to help establish the conceptual framework to prepare for the quantitative analysis. From the interviews and participant observation, a list of social media factors is derived, as shown in Table 5.5. Since the factors of social media listed in Table 5.5 are on different levels, and it would be difficult to establish a conceptual framework, clustering method is applied to re-organize and re-categorize the factors into concepts. Theories and insights are then used to assist the construction of the conceptual framework.

To increase the reliability of the research, the clustering process is done by asking 5 communication experts and also 5 general public (internet users) to cluster and categorize the factors. The participants were given a set of cards with the social media factors from Table 5.5. They were asked to put the cards into categories.

Factors	Description
Visualize	The possibilities to visualize the messages or group achievements
Story-telling	The meaning of the message (content) with either rational or emotional approach
Simple	The message is expressed in a simple way
Understandable	The message is comprehensible
Benefits	The benefits are shown to the user
Empowerment	The feeling of being in control and make personal choices
Feedback	Reward or shown of achievements
Share	The possibility to share information with the personal network
Network/Relationship Building	It is possible to build relationship and reach people via social media
Attractiveness	Originality, integration of graphs Clear, simple layout
Easy to do	The actions are easy to perform
Fun	Entertainment (ex: game, quiz)
Discussion	The possibility to respond to others comments and add personal comments
Co-creation	The possibility to collaborate with others
Easy to use	The functions and options are easy to use
Apps	Functions integrated with mobiles like iPhone
Accessibility	You have access to information anywhere, anytime
Opportunities	Time, space to participate The power to publish
Concrete	The benefits are shown in a concrete way
Social status	Participants can use the forum to show their presence (what they are thinking; what they are doing)
Cross-media	Social media strategies support other offline media/strategies

Table 5.5 The factors of social media communication strategies

It is discovered from the clustering results that four category names constantly reappear: functional, content, social, and individual concepts related to social media. Also, there are certain social media factors grouped together although different concept names are assigned. For example, easy to do, easy to use, and accessibility are grouped together; interaction, collaboration and share are grouped together.

Table 5.6 shows an overview of the clustering results. From the clustering method, four concepts are derived: pre-condition, content, social aspect, and individual opportunities. By referring to literature and also taking into consideration the operationalization process for the quantitative analysis, variables are derived from these four concepts. Detailed descriptions of the concepts, variables and connections to literature is elaborated in 6.2.1, as part of the preparation for instrument development for the quantitative analysis.

Concept	Description	Variables
Pre-condition	The structural part of social media The pre-requisites of making social media accessible and easy to use for the users	Accessibility User Friendliness
Content	The contextual part, how information is presented with social media	Message Attractiveness Fun
Social Aspect	The unique characteristics of social media where people communicate with each other in the virtual world	Interaction Collaboration Share
Individual Opportunities	The motivational drivers enabled by social media	Control Benefits

Table 5.6 An overview of the clustering results

5.4 Conclusions from the qualitative case study

This section concludes on the first three sub-questions formulated in chapter 1, based on the findings from the qualitative case study.

1. How do the initiators make use of social media communication strategies in their energy campaign to target the ‘online slacktivists’?

First, it could be concluded that the communication goals are closely related to the organizational and energy campaign goals. The communication goals are drawn up especially for the target groups of the energy campaigns.

Secondly, the overview of the energy campaign strategies shows that the communication strategies are incorporated in the overall strategies, designed with the specific functions to fulfill the communication goals. The same applies for social media communication strategies: they are incorporated as part of the whole communication strategy to support or enhance other communication strategies.

There are differences among different types of organizations in their communication goals and strategies implemented in their energy campaigns. However, from the results it could be concluded that there is coherency among the campaigns’ objectives, strategies, communication strategies, and social communication strategies.

It is also clear that the factors of social media mentioned are closely related to the communication strategies and social media communication strategies implemented to achieve the energy campaign goals. The same applies to the types and levels of participation in the energy campaigns.

2. How do the ‘online slacktivists’ participate in the social media energy campaigns?

From the interviews and observations it could be concluded that the ‘online slacktivists’ participate in various ways in the social media energy campaigns, mainly in four different levels: receive information, share information, interact with options provided in the campaign or with other online participants, and actions which has a higher impact (real-world contribution) to the campaign.

3. Which factors in the social media strategies contribute to the participation of online slacktivists in the energy campaigns?

From the interviews and observations in the qualitative case study, Table 5.5 gives an overview of the factors in the social media strategies which contribute to the participation of online slacktivists in the energy campaigns. After the clustering method and literature review, a conceptual framework is constructed, as shown in Figure 5.1.

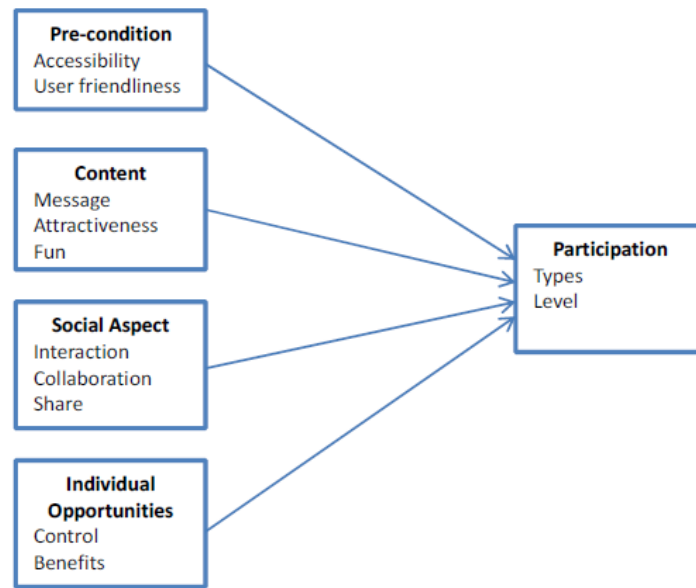


Figure 5.1 The conceptual framework

In the next chapter, this conceptual framework will help operationalize the model for measurement in the quantitative analysis.

Chapter 6: Quantitative Analysis

In Chapter 6, the quantitative analysis will be carried out to give answer to the last sub-question: *What are the relationships between the social media communication factors and the participation of online slacktivists in the energy campaigns?*

The results from the qualitative case study in chapter 5 and the theoretical background in chapter 3 prepare the instrument development for the quantitative analysis. In the following sections, the research methodology of the quantitative analysis will be elaborated, followed by instrument development, results, analysis of results and conclusions. The final conclusions and discussions of the whole research will be further elaborated in chapter 7 and 8.

6.1 Summary of the research methodology

The research methodology in the quantitative analysis consists of three parts: cases and data collection, operationlization, and data analysis. In chapter 4, a throughout description of the research methodology is already given. Therefore in this chapter the main focus will be on the operationlization process and data analysis.

6.1.1 Cases and Data collection

In order to answer the research question: *What are the relationships between the social media communication factors and the participation of online slacktivists in the energy campaigns*, energy campaign cases are collected. The criteria for the cases collection consist of energy related cases in which social media is applied in the campaign strategies. Due to difficulties of getting a large number of cases within limited time, the cases collected contain a wide range of initiatives: NGO/NPOs, social initiatives, community projects, energy companies, and municipalities. 55 cases are identified, including Dutch, English, American, and Australian cases. The descriptions of cases collected for the research is attached in appendix D. Each of these cases is scored with the indicators in the instrument development scheme in appendix B, which connects the concepts, variables, measurement levels, and related theories.

6.2 Instrument development

In this section the operationalization process will be elaborated. Figure 6.1 shows the conceptual framework constructed from the results of the qualitative case study.

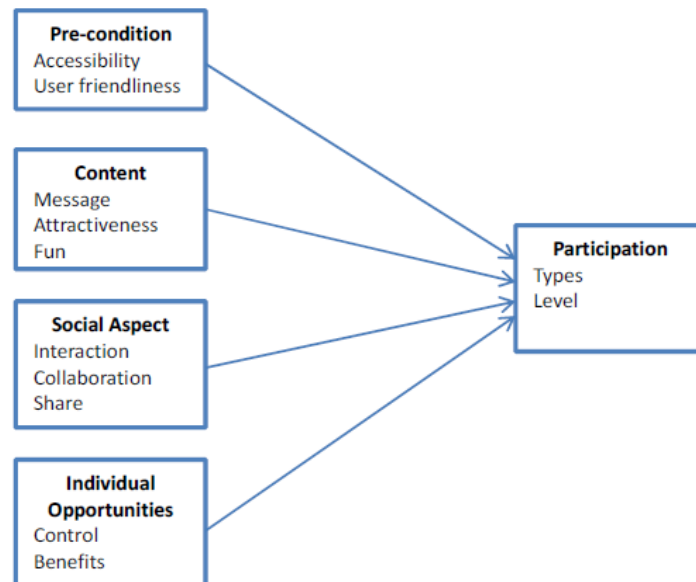


Figure 6.1 The conceptual framework

The relationships between the major concepts with underlying concepts and also the variables are further elaborated in the next section, with theoretical backgrounds and literatures to support the choices made.

6.2.1 The Conceptual Framework

From the communication perspective when demarcating the social media communication factors into conceptual frameworks in online energy campaigns, it is essential to look from the organizational level- that is, to formulate concept in-line with organizational objectives and communication strategies and see how social media fit into the overall strategy.

In the quantitative measurement, four major concepts are drawn up to establish a preliminary theoretical framework for instrument development: pre-conditions for social media, content in social media, social aspects enabled by social media, and individual opportunities provided by social media. In 6.2.2 the variables derived from these concepts will be elaborated.

6.2.2 Concepts and variables

In this section the main research concepts will be explained to re-establish the conceptual

framework for developing the measuring instrument. Table 6.1 shows the concepts and variables of the research framework, which are derived and established both from the theoretical background from chapter 3 and the results from the qualitative case study in chapter 5.

Concepts	Variables
Pre-conditions for social media	Accessibility: presence of cross media campaign User friendliness
Content in social media	Message regarding the objectives of the campaign Message regarding the call to action Message regarding the cause for action Attractiveness: visualization Fun: forms of entertainment
Social aspects enabled by social media	Interaction Collaboration Share
Individual opportunities provided by social media	Control: social identity Benefits: feedback

Table 6.1 Concepts and variables from the conceptual framework: independent variables

The following paragraphs elaborates on the variables which constitute the concepts, with supported arguments constructed from the theoretical background and the qualitative case study results.

Pre-conditions for social media

From the qualitative case study results it could be concluded that one of the essential factors of social media communication strategies is the pre-conditions of social media, which refers to the structural and functional part in social media.

One of the pre-requisites would be cross-media, a media strategy in which the communication objective is applied using a variety of media forms, such as TV, radio, internet, mobile devices, and live events to communicate a synergistic message while taking into account the unique features of each media, the kinds of participatory attitudes and media use of the target audiences (Reynaert, 2009).

Usability is one of the main concepts in the design of such systems, but often in the context of users and how the application is used rather than the designer's point of view (Hollender et al, 2010). One of the criteria in contextual design is user-centered ICT systems, in which the aspects of the users should be researched and understood (Holtzblatt & Beyer, 1998). And as most information systems are task-oriented, perceived ease of use and perceived usefulness, as stated in the Technology Acceptance Model (TAM), are essential variables in

investigating human intentions to use the systems (Kwon & Wen, 2010).

In this study this concept is further demarcated into two variables: presence of cross-media campaign and user friendliness.

Content in Social Media

“The medium is the message” says Marshall McLuhan. Since social media is one form of the media and is often used in the communication strategies with traditional media, the content is also regarded as an important factor. From the case study results it is clear that the social media communication strategies are in-line with the objectives of the energy campaigns. Thus the messages delivered, the strategies applied and also the communication process are regarded important.

In the design process, social media could be perceived as a persuasive technology. As stated in chapter 3, the literature background, framings are used in translating messages, transforming information into comprehensible, manageable messages which is of relevance to people’s life experiences (Popkin, 1994). Also, from the qualitative case study results, it is derived that message regarding the objectives of the energy campaigns, and the call and cause for action determines people’s participation. Organizations can define their communication objectives in three different terms: knowledge, attitude, and behavior (Grunig & Hunt, 1984).

Social visualization is also another factor which constitute the content of social media. The definition of social visualization is to visualize social information for social purposes (Donath, 1995), which concerns visualizing data that concerns people. Three features of social visualization include visibility, awareness, and accountability, enabling people to interact with each other based on their social experiences (Erickson & Kellogg, 2000). Regarding visualization in communication, images could strengthen the message by i)applying Gestalt theory, which is related to human perceptions of images and recognitions of figures, ii)semiotics related to understanding the meanings of the messages, and iii)visual rhetoric which is related to persuasion (van den Broek & Beeldtaal, 2010). From the qualitative case study results, a number of campaigns make use of games, quizzes and competitions as fun factors to attract participants, since being fun and intriguing can make messages engaging (Dobele et al., 2005).

In this study, this concept is further demarcated into several variables: message, visualization, and entertainment.

Social aspect

From the results of the qualitative case study, social aspect is perceived one of the most unique features of social media, with social media as a communication channel for performing social activities.

When social capital is presence, people are motivated to share and exchange information and knowledge to achieve a successful online community (Shiue et al., 2010). Social

persuasion also contributes to sharing behavior in virtual communities (Hsu et al., 2007). Social comparison is another aspect where people match their performance to those around them, in different scales such as group membership, anonymity, and etc. Different displays of social information also influences the types of social comparisons (Grevet & Mankoff, 2010). In this study, this concept is further demarcated into three variables: interaction, collaboration and share.

Individual opportunities

Besides group interaction, individual factors could also be one of the main drivers for participation. In self-motivation theories autonomy is regarded one of the essentials for facilitating social development and well-being (Ryan & Deci, 2000).

When human behavior is combined with social technology people are enabled and given power to create opportunities. With regards to social media, people are 'empowered' to distribute, share and create. Empowerment is defined as "process by which individuals and groups gain power, access to resources and control over their own lives. In doing so, they gain the ability to achieve their highest personal and collective aspirations and goals" (Robbins, Chatterjee, & Canda, 1998, p.91). For successful collaborations generated by ICTs, the presence of personal information is also important (Tanis & Postmes, 2009).

In this study this concept is further demarcated into two variables: feedback and social identity.

Participation Level

Based on the online subsets of slacktivists (lurkers, sharers, and contributors) and new participation behaviors (Clark, 2009) regarding social media as communication strategies, in this research the dependent variable: online participation, is demarcated into three levels: receive, share, and contribute.

Concepts	Variables
Receive	The number of people who log on the websites
Share	The number of people who share about the campaign
Contribute	The number of participants

Table 6.2 Concepts and variables from the conceptual framework: dependent variables

6.3 Model of measurement

In this section the development of measurement will be introduced. A complete instrument development table could be found in appendix B, which shows the four concepts (pre-conditions, content, individual opportunities, and social aspects), the measure level, coding guidelines and supporting literature/sources.

6.3.1 Developing the measurement indicators

To avoid ambiguity and subjectivity in the design of the quantitative research, most of the variables used in this research are of dichotomous nature and measured with nominal level (0 or 1).

Some indicators are measured with interval level, for example the effort to perform an action (1=the action could be performed with a simple click, 2=the action requires more than a simple click, and takes multiple steps, 3=the participant need to fill in some info. to be able to participate, 4= it is necessary to become a member/log in, in order to perform an action, 5=the action requires a real-life action).

The output variables are measured as integers, with a ratio measurement level, for example, the number of participants who contribute to the campaign shown on the campaign websites.

6.3.2 Descriptive overview, correlations and dimension reduction

In order to develop the model of measurement, first the descriptive statistics are obtained to get an overview of the concepts researched and the basic information of the data. Secondly, an overview of the correlations between the variables will be investigated to find out the relationships among the variables. Last, factor analysis is applied to simplify the model of measurement by reducing the numbers of variables to re-construct the conceptual framework. Last, regression analysis is applied to investigate the effects of the independent variables with the dependent variables.

Descriptive Statistics

The descriptive statistics of the independent variables are shown in Table C.1, Figure C.1 and Figure C.2 in appendix C.

Correlations

The correlation results of the independent variables and dependent variables are shown in Table C.2 and Table C.3 in appendix C. From the results it could be seen that some independent variables are highly correlated, for example the perceive ease of use with the effort to perform an action, the presence of competition and individual achievement, and interaction through discussion with the presence of online community. For the dependent variables, the buzz measured from webbed marketing is highly correlated with the number of tweets and tweet reach measured by tweetreach.

Factor Analysis

The aim of the factor analysis method is to reduce the large number of factors and to cluster

the factors into groups and re-construct the model for measurement. In appendix C, Table C.4 shows the results of the factor analysis of the independent variables and Table C.5 shows the results of the factor analysis of the dependent variables.

6.3.3 Reconstruction of the theoretical framework

Dimension reduction obtained from factor analysis only gives insights from the quantitative analysis with statistical approach. Some variables which are loaded together in the factor analysis do not belong to the same concept, for example, variable ‘presence of suggestions/tips’ and ‘the possibility to collaborate’. It is also discovered from the pilot coding and factor analysis that some variables could be excluded from the analysis since they do not show much variance. For example, the variable ‘message regarding knowledge objective of the campaign’ where it measures the presence of information regarding the objectives/goals of the campaign, is coded ‘1’ (present) in all cases. Therefore this variable is excluded in the regression analysis. Variables which are categorical are also excluded from the concept, for example, the variable ‘attitude objective’, since it would not valid to construct regression analysis with variables which might have different effects on the dependent variables (i.e. mediator variables).

Thus, reconstruction of the conceptual framework is needed to prepare for the regression analysis. From the results obtained from the descriptive results, factor analysis and literature, the independent and dependent variables in the reconstructed conceptual framework is described in the following paragraphs.

Independent variables

After re-construction of the conceptual framework, four concepts are proposed: comparison of social content, action barrier, network opportunities and the content of the communication message, as shown in Table 6.4.

Concept	Variables	Literatures
Comparison of social content	Visualization of the message	Social visualization (Donath, 1995)
	Competition	
	Presence of individual achievements	Visual communication (van den Broek & Beeldtaal, 2010)
	Presence of group achievements	Personal importance (Tanis & Postmes, 2009)
	Presence of personal profile	
Action barrier	Perceive ease of use	Design user aspect
	Effort to perform an action	(Hollender et al, 2010)
	Behavior objectives	Factors affecting social network service use (Kwon

		& Wen, 2010) Persuasive technology (B.J. Fogg, 1998)
Network opportunities	Interaction through discussion Presence of online community The possibility to collaborate Share	Virtual communities (Shiue et al, 2007) Social network (Grevet & mankoff, 2010) Social capital
The content of the communication message	Presence of suggestion/tips Arguments for call-for-action	Framing (Popkin, 1994) Effective advertising content (Reynolds & Gutman, 1984)

Table 6.4 Re-established constructs for the independent variables

Comparison social content refers to the presence of individual in the media and how one compares himself/herself to the group, for example by means of competition, social proof (individual and group achievements) and social visualization (visualization of the message).

Action barrier refers to the degree of the action threshold, with regards to user-friendliness of the medium. In this construct, perceived ease of use, effort to perform an action, and the behavioral objectives presented in the campaign (whether the actions has a real-life relevance) will be used for measurement.

Network opportunities refer to the enablement and empowerment of group interactions to achieve collective intelligence or collaborative actions. In this construct four variables will be used for measurement: online discussions, online communities, the possibility to collaborate, and share.

Content of the communication message refers to the message contents being applied in the social media communication strategies, with regards to framing strategies (message contents), for example the use of rational/emotional approach in call-for-action. In this construct the rational approach of communication message will be measured, by taking into account the presence of suggestion/tips and arguments for call-for action.

Dependent variable

It is observed from the factor analysis that most of the variables load on the same component. This could be explained by the 90-9-1 rule, in which most of the users are lurkers (90%) and only 10% of the users actually do something to participate. However, in order to measure the factors that contribute to different levels of participation, in this research the dependent variables are grouped into three levels to match the participation behaviors of the online slacktivists. Table 6.5 shows the re-established concepts for the dependent

variables.

Participation level	Variables
Receive	Sites linked in Reach Tweetchreach
Share	Buzz Number of tweets Number of tweet followers
Contribute	The number of participants

Table 6.5 Re-established constructs for the dependent variables

Receive

For measuring the level of 'receive', variables 'sites linked in', 'reach', and 'tweetchreach' are applied to indicate the amount of online slacktivists who receive information about the energy campaigns.

Share

For measuring the level of 'share', variables 'buzz', number of tweets', and 'number of tweet followers' are applied to indicate the extent to which the message of the campaign get sent across and being distributed.

Contribute

For the level of 'contribute', 'the number of participants' is applied, which indicates the highest level of participation.

Figure 6.2 shows the re-constructed conceptual framework after factor analysis and literature review.

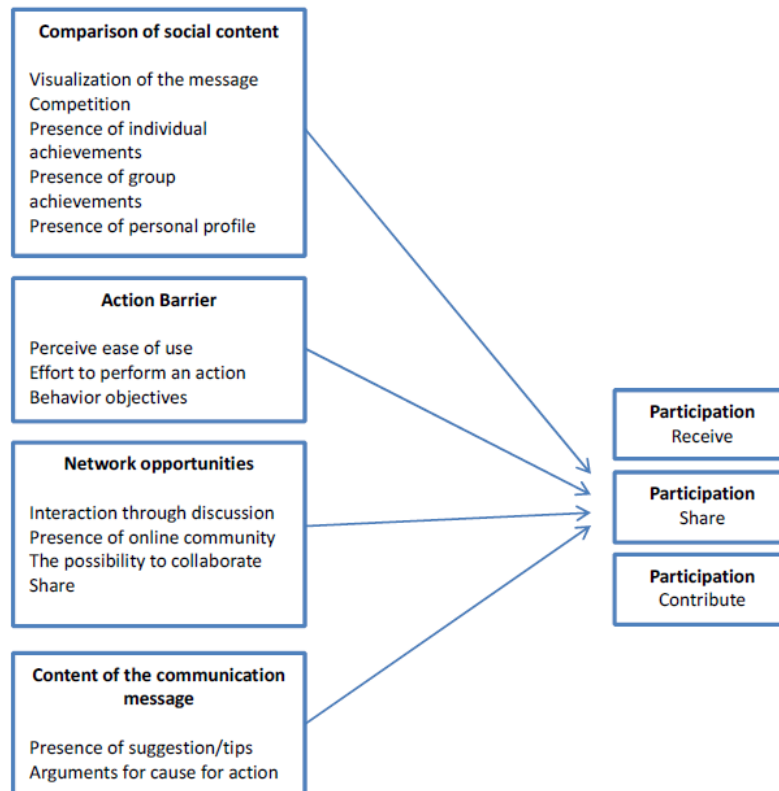


Figure 6.2 The re-constructed conceptual framework

6.3.4 Hypotheses

In this section, the hypothesis will be drawn in relation to the conceptual framework reconstructed in 6.3.3, which will be verified with the regression analysis. Four main hypotheses are proposed:

H1: Visualization of the message, competition, presence of individual and group achievements, and personal profile are factors in the concept 'comparison of social content' in social media communication strategies, which contribute to the participation of online slacktivists in online energy campaigns.

H2: Perceive ease of use, effort to perform an action and behavior objectives are factors in the concept 'action barrier' in social media communication strategies which contribute to the participation of online slacktivists in online energy campaigns.

H3: Interaction through discussion, presence of online community, the possibility to collaborate, and share are factors in the concept 'network opportunities' in social media communication strategies which contribute to the participation of online slacktivists in online energy campaigns.

H4: The presence of suggestions/tips and arguments for call-for-action are factors in the concept 'the content of the communication message' in social media communication strategies which contribute to the participation of online slacktivists in online energy

campaigns.

6.3.5 Analysis

The aim of the quantitative analysis is to investigate the strengths between the social media communication factors and the different levels of online participation, namely: receive, share and contribute. Given the nature of the research, which contains a small set of data and also an exploratory approach, in this research the effect sizes will be given more attention than statistical significance.

Correlations between the constructs and the internal reliability

To check whether the concepts in the reconstructed framework are independent of each other, correlations of the four concepts are measured, shown in Table C.6 in appendix C. To check the reliability of the variables measured in each concepts, the Cronbach's alpha was measured, included in Table C.7. It could be concluded that the correlations among the four concepts are small and therefore independent of each other. For reliability, the comparison of social content shows a high reliability (0.721) and also network opportunities (0.650). Action barrier (0.570) and the content of the communication message (0.533) show relatively lower reliability.

Multiple Regression

The aim of the regression analysis is to investigate the strengths between the social media communications factors and the different levels of participation to answer the last sub-question. After re-establishing both the independent and dependent concepts based on factor analysis and also insights from literature, multiple regression is conducted to investigate the effects of these social media factors on different levels of participation. The detailed steps of the regression analysis is included in appendix C, from Table C.8 to Table C.28. The final results of the multiple regression analysis are summarized in Table 6.6.

	Receive	Share	Contribute
Comparison of social content	-0.087	-0.189	-0.251
Action barrier	-0.332	-0.025	-0.242
Network opportunities	0.193	0.147	0.207
Content of the communication message	-0.229	0.135	-0.325

Table 6.6 Multiple regression results

6.4 Conclusions from the quantitative analysis

In this section, conclusions will be drawn based on the results from the quantitative analysis. In developing the instrument for measurement, variables are first operationalized based on the conceptual framework constructed from the qualitative case study. After pilot coding, factor analysis and literature review, the conceptual framework is reconstructed to prepare for the regression analysis. Figure 6.3 shows an overview of the conceptual framework constructed from the qualitative case study (left figure) and reconstructed in the quantitative analysis to prepare for the regression analysis (right figure).

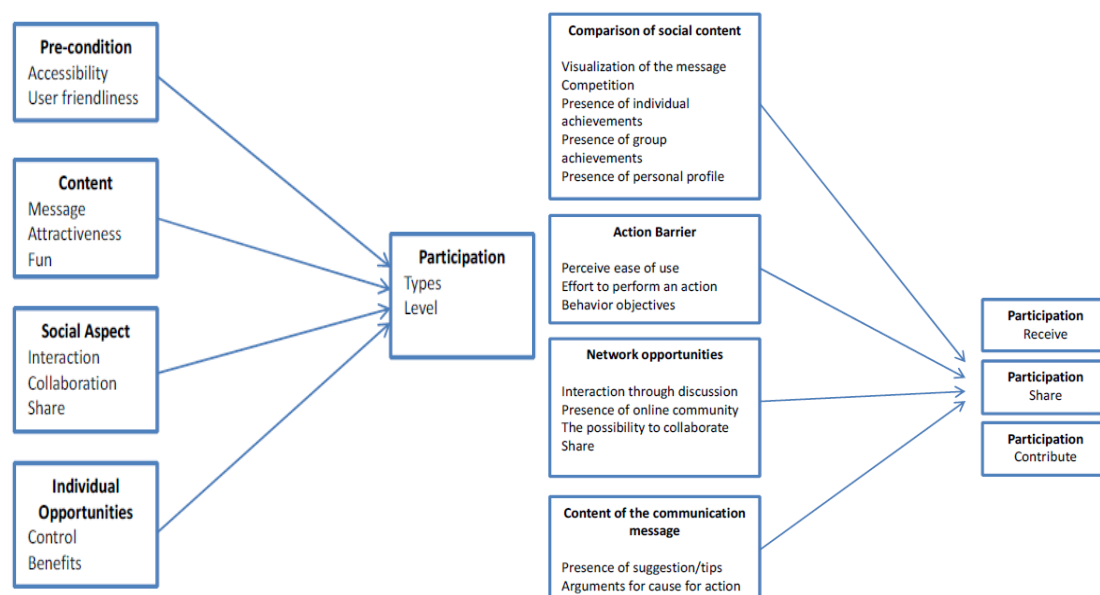


Figure 6.3 An overview of the conceptual framework constructed from the qualitative case study (left figure) and reconstructed in the quantitative analysis to prepare for the regression analysis (right figure)

Results from the regression analysis

By focusing on the relative effect size of each concepts in the reconstructed conceptual framework, on the three levels of participation (receive, share, and contribute), the main results from the regression analysis are summarized as follows:

Regarding the effects on the dependent participation variable 'receive', action barrier shows a negative effect, and the content of the communication message shows that rational message has a relatively strong negative effect. Network opportunity contributes positively, and social comparison has little effect.

Regarding the effects on the dependent participation variable 'share', none of the construct

shows a strong effect.

Regarding the effects on the dependent participation variable 'contribute', action barrier again contributes negatively. Rational communication message also contributes negatively, while network opportunities contribute positively. Social comparison shows a negative effect.

Discussions on the hypotheses

Based on the results from the regression analysis with 55 online energy campaigns, the four hypotheses drawn up in 6.3.4 will be discussed.

From the results obtained in the regression analysis, it is discovered that the concept 'comparison of social content' does not have a large effect on the participation level 'receive' and 'share', but does have a relatively larger negative effect on 'contribute'.

From the results obtained in the regression analysis, it could be concluded that the concept 'action barrier' has a relatively large negative effect on participation, which confirms with the second hypothesis that perceive ease of use, effort to perform an action and behavior objectives are factors in the concept 'action barrier' in social media communication strategies which contribute to the participation of online slacktivists in online energy campaigns.

Regarding the concept 'network opportunities', it contribute positively to participation, which confirms with the third hypothesis that interaction through discussion, presence of online community, the possibility to collaborate, and share are factors in the concept 'network opportunities' in social media communication strategies which contribute to the participation of online slacktivists in online energy campaigns.

Regarding the concept 'content of the communication message', it is discovered that rational message has a negative effect on participation, which implies that factors related to the use of the presence of suggestions/tips and the cause for action with rational arguments mentioned in hypothesis four contribute negatively.

Conclusions on the quantitative analysis

From the quantitative analysis on 55 energy campaigns, the fourth sub-question drawn up in 1.4 could be answered: *what are the relationships between the social media communication factors and the participation of online slacktivists in the energy campaigns?*

Based on the reconstructed conceptual framework in the quantitative analysis, the factors of the social media communication strategies are grouped into four concepts: comparison of social content, action barrier, network opportunities, and message of the communication content.

It could be concluded from the results of the regression analysis that:

1. The concept 'comparison of social content' contributes negatively to participation. Energy campaigns with social media communication factors: visualization of the message, competition, presence of individual and group achievements, and personal profile, result in lower degree of participation.
2. The concept 'action barrier' has a negative effect on participation. Energy campaigns scored with lower perceive ease of use, more effort to perform actions and behavior objectives which has higher relevance to real-world actions, result in lower degree of participation.
3. The concept 'network opportunities' contribute positively to participation. Energy campaigns with social media communication factors: interaction through discussion, presence of online community, the possibility to collaborate, and share, result in higher degree of participation.
4. The concept 'content of the communication message' contribute negative to participation with rational message. Energy campaigns scored with higher cause for action with rational arguments and the ones who use suggestion/tips, result in lower degree of participation.

Chapter 7: Conclusions

In this chapter, conclusions of the research will be drawn, based the findings from the qualitative case study and quantitative analysis. To answer the main research question: *To what extent do the factors in social media communication strategies contribute to the participation of online slacktivists in energy campaigns?*, four sub-questions are drawn:

How do the initiators make use of social media communication strategies in their energy campaign to target the ‘online slacktivists’?

It could be concluded from the qualitative case study that the energy campaign initiators make use of different strategies, for example PR strategies, marketing strategies, and etc. Social media communication strategies are incorporated in the overall strategies to achieve the communication objectives of the energy campaigns, regardless of different types of energy campaigns and different organizations.

How do the ‘online slacktivists’ participate in the social media energy campaigns?

It could be concluded from the qualitative case study that participation of online slacktivists in energy campaigns consists of different levels: receive, share, and contribute (interact and action). In the quantitative analysis, these participation levels are also observed and measured as the dependent variables to investigate the relationships between social media communication factors and participation.

Which factors in the social media strategies contribute to the participation of online slacktivists in the energy campaigns?

It could be concluded from the qualitative case study that social media communication factors are clustered into four concepts: pre-condition of social media, content in social media, social aspects enabled by social media, and individual opportunities provided by social media. In the quantitative analysis, the conceptual framework is reconstructed with factor analysis and literature review to prepare for the regression analysis, with four concepts: action barrier, comparison of social content, network opportunities, and the content of the communication message.

However, by comparing the factors in these two conceptual frameworks, it is discovered that some factors are clustered into different concepts, and some are excluded in the reconstructed conceptual framework. For example, presence of personal profile, personal and group achievement, competition, and visualization of the message, are grouped together in the reconstructed conceptual framework under the concept ‘comparison of social content’, while competition and visualization are grouped under the concept ‘content in social media’ in the previous conceptual framework. Some factors, such as accessibility

with cross-media and attitude objectives, are excluded in the reconstructed conceptual framework because the previous one is scored with a '1 (presence)' in almost every energy cases and the later one is more of a categorical variable. Therefore, they are not included in the regression analysis.

What are the relationships between these factors and the participation of online slacktivists in the energy campaigns?

From the multiple regression analysis based on the conceptual framework reconstructed in the quantitative analysis, it could be concluded that:

1. Factors presence of visualization of group achievements, competition, individual and group achievements, and personal profile in the concept 'comparison of social content' contributes negatively to participation.
2. Factors lower perceive ease of use, more effort to perform actions and behavior objectives which has higher relevance to real-world actions in the concept 'action barrier' has a negative effect on participation.
3. Factors presence of interaction through discussion, presence of online community, the possibility to collaborate, and share in the concept 'network opportunities' contribute positively to participation.
4. Factors rational arguments and presence of use suggestion/tips in the concept 'content of the communication message' contribute negatively to participation.

Last, to answer the main research question ***'To what extent do the factors in social media communication strategies contribute to the participation of online slacktivists in energy campaigns?'***, it could be concluded that:

The two conceptual frameworks in the qualitative case study and the quantitative analysis different results of social media communication factors. The conceptual framework constructed in the qualitative case study is based on case study from 10 energy campaigns, while the conceptual framework reconstructed in the quantitative analysis aims to investigate the relationships between the social media communication factors with participation, using multiple regression analysis on 55 energy cases.

It could be concluded from regression analysis that factors under the concepts 'action barrier', 'comparison of social content', and 'content of the communication message' with rational approach, contribute negatively to participation. Factors under the concept 'network opportunities' contribute positively to participation. For the factors identified in the qualitative case study but are excluded in the reconstructed conceptual framework for the regression analysis, this research could not conclude on the extent of their contributions on participation. However, it could be concluded that they are possible social media communication factors which might be of influence on participation. To investigate the extent of their effects, further research needs to be carried out.

Chapter 8: Discussions

In the first part of this chapter, the results of the research will be discussed. In 8.2, the quality of the research will be assessed. The third part of the chapter elaborates on implications of the research, and section 8.4 reflects on the science communication research. The final part of this chapter gives recommendations for future research.

8.1 Discussions of the research results

It could be observed in the research that the two conceptual frameworks in the qualitative case study and the quantitative analysis are different in presenting social media communication factors. There are some overlaps between the results but also differences. Some factors from the conceptual framework constructed from the qualitative cases study are not included in the reconstructed conceptual framework for the regression analysis.

One possible explanation could be that the qualitative case study focuses on identifying the social media communication factors from the energy campaign initiators' point of views, while in the quantitative analysis 55 energy cases are analyzed. The differences in the results could imply that there is a gap between what the campaign initiators perceive as social media communication factors which contribute to participation of online slacktivists, and the actual social media communication factors presence in the energy campaigns. For example, fun factors are perceived as an important social media communication factor in the qualitative case study, but after scoring the energy campaigns, it is discovered that very few energy campaigns make use of the fun factors in their social media communication strategies.

Regarding the concept 'action barrier', the results from the regression analysis shows the same results from the qualitative cases study. People are more willing to participate in the energy campaigns with lower action barrier: when it is easy and takes less effort to perform an action, and when the actions involve less real-world relevance (i.e. donating money to the sustainable projects or change purchase behaviors). These findings also confirm with the statement in the introduction chapter, that 'social media helps the online slacktivists overcome the barriers such as fatalism or busyness'.

Regarding the concept 'network opportunities', the results from the regression analysis shows that participation is increased when people can discuss, share, interact, or collaborate online. In the qualitative case study, these factors are clustered in the concept 'social aspects' and perceived as an important concept in achieving participation. These findings could imply that perhaps the online slacktivists are motivated to participate in the energy campaigns

because of the social aspects provided in the campaigns, and less of the context in the campaigns (the energy issues), which is not identified as one of the factors in social media communication strategies in both the qualitative case study and quantitative analysis.

Regarding the concept 'content of the communication message', the results from the regression analysis show that it contributes negatively to participation with rational message, which means that energy campaigns scored with higher cause for action with rational arguments, and the ones who use suggestion/tips, result in lower degree of participation. In the qualitative case study, the content of social media includes more factors, for example fun factors such as game and quiz, which are excluded from the regression analysis, and visualization of the message, which has been clustered in the concept 'comparison of social content' in the regression analysis. Regarding the factor message, in the qualitative case study, the results show that different types of messages are applied in different campaigns. Some make use of emotional approaches while some make use of multiple approaches. The quantitative analysis does not investigate the combination of different approaches since more advanced analytical analysis need to be carried out.

Regarding the concept 'comparison of social content', it shows the most surprising results. The factors in this concept: visualization of the message, competition, presence of individual and group achievements, and personal profile, are expected to have a positive contribution on participation, according to the results from the qualitative case study. However, the results in the regression analysis show that this concept contributes negatively to participation. This could imply that people are reluctant to participate in energy campaigns due to 'free-rider' effect. When they see that other people are already participating in the energy campaigns, they would feel that there is no need to participate because their contribution would not add to the campaign, and that they can already get the benefits from other participants' contributions.

8.2 Quality of the research methodology

Within limited time and resources, optimization of the choices is made in this research regarding the design of the research methodology and the quality of the research process. For example, to increase the reliability of the research results, different methods (factor analysis, literature review and qualitative results) are used to reconstruct the conceptual framework.

However, there are still spaces for improvements. In the following paragraphs, the quality of the qualitative case study and the quantitative analysis will be discussed, followed by discussions on the triangulation of the qualitative and quantitative research.

Table 8.1 and 8.2 summarizes the positive ('++') and negative ('--') points for the qualities of the qualitative case study and quantitative analysis research, regarding validity and reliability.

8.2.1 The quality of the qualitative case study

Items	Descriptions
Validity	++ Construct (theories) ++ Internal validity -- Generalizability (small sample)
Reliability	++ Multiple sources -- Researcher's bias; peer consultation

Table 8.1 Research quality of the qualitative case study

Regarding the validity of the qualitative case study, internal validity is constructed by approaching the central research question from grounded theories to establish the methods for the case study, for example, the interview design and the clustering method are established from the theoretical framework. Thus, the internal validity among the cases studied is achieved. But due to the small sample of the cases studied in the qualitative research, the results are not generalizable externally.

Regarding the reliability of the qualitative case study, applying multiple sources (interviews, observations, other documents) strengthens the reliability of the research results. However, the subjectivity and bias of the researcher's interpretation of the results and the lack of peer review for constructing the conceptual framework might reduce the reliability of the research results.

8.2.2 The quality of the quantitative analysis

Items	Descriptions
Validity	++ Construct (based on theories and results from the qualitative case study) ++ Use of statistical methods (dimension reduction) for constructing the conceptual framework -- Generalizability (small sample) -- Dependent variables
Reliability	++ Homogeneity of the measured variables ++ Instrument development -- Peer consultation

Table 8.2 Research quality of the quantitative analysis

Regarding the validity of the quantitative analysis, internal validity is constructed from the conceptual framework constructed from the qualitative case study for the development of the quantitative measurement. With factor analysis, the conceptual framework is

reconstructed, which again improves the validity of the research.

However, due to limitations of the research, the number of cases is too small to generalize the results to the external energy cases. The cases are dependent on their contexts (different energy issues, different causes, organizations, etc.), which makes it difficult to eliminate all the 'external noises' of the research. For example, the use of other strategies (i.e. marketing strategies, legal actions) in combination with social media strategies, the timing of the campaign, the characteristics of the online slacktivists, and etc., might be of influence on the results.

Regarding the dependent variables, some can't be measured directly and therefore has to be measured indirectly. For example the level of 'share' is measured from 'buzz', 'number of tweets', and 'tweeter followers', while in reality there are more share options than via twitters.

Regarding the reliability of the results, homogeneity of the measured variables is checked with the Cronbach's alpha to ensure the inner reliability of the constructs. Developing the instrument development can help future research to be carried out by following similar research protocols. However, the coding process is only conducted by the researcher and not by other researchers. This might weakens the reliability of the quantitative analysis.

8.2.3 The quality of the research with a triangulation of qualitative case study and quantitative analysis

Items	Descriptions
Validity	++ Methodology
	++ Generalizability (larger sample)
	-- Different conceptual frameworks
Reliability	++ Instrument development
	-- Peer consultation

Table 8.3 Research quality with a triangulation of qualitative case study and quantitative analysis

Regarding the validity of the research, a combination of qualitative and quantitative research methods gives a broader scope of the research from different perspectives. Generalizability is increased by applying the quantitative analysis with 55 energy cases. However, the two conceptual frameworks in the qualitative case study and the quantitative analysis make it difficult to draw conclusions for the research.

Regarding reliability of the research, the methods applied in the qualitative case study and the quantitative analysis (literature survey, interviews and observations, cluster method, conceptual framework, operationalization, factor analysis, reconstructed conceptual framework, multiple regression) follow coherent and logical steps. However, the research protocol is developed and went through by one researcher, which might weaken the reliability of the research.

8.3 Implications of the research

In this section several implications of the research will be discussed: a helicopter view of social media communication strategies, the implications for relevant stakeholders and also on the development of sustainable energy.

8.3.1 A helicopter view on social media communication strategies

Due to the convergence of the media, the boundaries between media overlap and intertwine (Jenkins, 2006), providing people with more opportunities, resources and revenues to participate in various forms of activities online. However, is social media communication strategy only causing buzzes and hypes in the media, or does it lead to tremendous consequences? In which ways are social media communication factors generic among different kinds of issues? And moreover, what is so 'specific' about social media which makes it different and more powerful when it is compared with traditional media in contributing to participation of people in energy campaigns? In the following paragraphs a helicopter view on social media will be discussed to explore these questions.

In *Management methods for the social era* (2008), it is stated that the five E's (Enrichment, Enticement, Enablement, Engagement and Empowerment) are factors which could be used to build up social media strategies.

In this research, regarding social media communication factors which contribute to participation of online slacktivists in energy campaigns, 3 E's could best give a helicopter view: enticement, enablement, and empowerment. Table 8.4 summarizes the related social media factors, communication functions, level of online participation, and characteristics of social media.

3 E's	Social Media Factors	Communication Functions	Level of online participation	Characteristics of social media
Enticement	Integrated strategies (i.e. cross-media) Message content	Consumption of information Interpretation of information Dissemination of information	Individual participation (Receive, Share)	Multimediality Virtuality Intermediality
Enablement	Social	Generation of	Collective	Interactivity

	content Social identity	information Co-creation of information	intelligence (Share, Interact)	Connectivity
Empowerment	Social opportunities	Construction of information	Collaborative intelligence (Action)	

Table 8.4 The 3 E's of social media communication strategies and their contributes to online participation

Richer enticement opportunities

Like traditional media, enticement is one of the pre-requisites for social media communication strategies, in which the communication strategies integrate various forms of strategies to attract participants, for example visual design, persuasion, marketing strategies, cross media, and etc. in order to increase the consumption of information, enhance interpretation of information, and facilitate dissemination of information. Related to Arnstein's participation ladder, enticement is the first entry step in which individuals are triggered and motivated. Associated with social media, multimediality, virtuality, and intermediality are three features in which the communication strategies could be built on in social media to create enticement.

With the combination of messages, graphics, and sounds in the virtual environment, social media offers richer opportunities to combine different communication strategies than traditional media because different forms of media could be linked together to attract a larger audience. For example, via cross media strategies, different medias refer to one another and people have easy access to them with mobiles, apps, and etc. The built-ins of interactive infographics, online fun options, and etc., are also new way of creating enticements using social media.

Related to this study, for the energy campaign initiators who make use of social media strategies, creating enticement is the first step in attracting the online slacktivists to the online campaigns.

Social enablement

Social media provides networking platforms, using both traditional and internet based tools to engage people (Mangold & Faulds, 2009), since people might not participate in a certain behavior due to lack of opportunities and constrains. (Tanner, 1999).

Enablement of social aspects is the second step next to new enticements created by social media. It could be observed in this study that social media enables people with opportunities to generate and co-create content real-time, regardless of time and space, which is something that couldn't be achieved easily with traditional media. For example, people can post comments to the energy projects presented on the energy campaigns, respond to other

participants, or create personal profiles on the websites. By enabling the online slacktivists to generate or co-create contents, social media creates the opportunities for people to connect and interact with each other online.

Empowerment

According to Ross Mayfield's Power law of participation¹⁴, there is a difference between collective intelligence and collaborative intelligence, in which the former one holds a lower threshold but the later one represents the real connecting and working together of people.

To achieve real-life relevance impacts, besides creating enticements and social enablement via social media, empowerment is added, for example online collaborations for people to contribute to the sustainable projects in the communities, signing petitions to protest against building coal factories, and etc.

But in discussing the extent of impact of social media on real-life issues, the following questions could also be raised: to which extent does social media actually gives people the power to perform certain actions? And under which circumstances does it trigger high or low involvement, and in which issues?

In stakeholder analysis (Mitchell et al., 1997), the three elements: power, legitimacy, urgency are mentioned to identify the level of involvements for stakeholders. Power refers to the influence a stakeholder has on the organization, urgency refers to the sensitivity of the demand of the stakeholder, and legitimacy refers to the relationship between the stakeholder and the organization. Perhaps this stakeholder analysis could best explain the ways in organizing social media strategies to increase online participation in energy campaigns with three aspects: i)resources for actions have to be allocated, ii)causes for actions have to be designed, and iii)communication messages to persuade actions have to be conveyed. For example, participants of the online energy campaigns have to be given concrete information and options to participate online. Arguments for action have to trigger and amplify recognition of the energy problem by making the energy problems relevant to them and increase participant's perceived urgency to act.

Coming back to the questions proposed in the beginning of this section: *In which ways are social media communication factors generic among different kinds of issues? And moreover, what is so 'specific' about social media which makes it different and more powerful when it is compared with traditional media in contributing to participation of people in energy campaigns?* It could be summarized from the paragraphs above that social media communication factors are powerful and generic in the respect that it provides opportunities for 'built-in' strategies (i.e. cross media) and 'add-ons' (i.e. social interactions, collaborations), which entice, enable, and empower participation regardless of time and space.

However, for different issues, the extent to which each of these factors contribute to

¹⁴ http://ross.typepad.com/blog/2006/04/power_law_of_pa.html

participation might vary. For example, political campaigns might focus on reputation building of a candidate, marketing campaigns about products might be more focused on design and fun factors to increase enticements, and protest campaigns might use emotional approach to trigger people to sign up petitions. Further research on participation in different types of campaigns should be conducted to answer this question.

8.3.2 Implications for relevant stakeholders

One of the added values of this study is that it offers different implications for different stakeholders, as summarized in Table 8.5.

Stakeholders	Implications
Energy campaign initiators	<p>Understand how social media communication strategies are positioned in the overall strategies</p> <p>Understand which concepts in social media communication strategies contribute to online participation</p> <p>Insights into developing success factors for evaluating energy campaigns</p>
Energy companies	<p>Understand how social media communication strategies work in triggering participation</p>
Policy makers	<p>Sentiment tracking: understand public perception on energy issues</p> <p>Decision making: design strategies and policies in the energy arena</p>
General public	<p>Understand the opportunities offered by social media</p>

Table 8.5 Implications for relevant stakeholders

For energy campaign initiators, the most challenging part is to incorporate and position the strategies within limited resources and time pressure to carry out executive tasks. Therefore a better understanding of what kind of pre-requisites there are in designing social media campaigns would be very helpful. With different objectives (i.e. proactive campaigns or attack campaigns), for different purposes (marketing, mobilizing people, creating awareness, etc.), and different energy issues, the landscape of social media factors also changes. So perhaps the question which should be asked for future research on social media communication strategies is: *to which extend could these factors be comparable?* A further inquiry into the impacts of these factors could be used as criteria for evaluations of a

campaign to measure success.

For energy companies, understanding the impacts of social media on energy issues would be helpful for designing strategies (marketing, corporate, or coping strategies) for proactive approaches such as promoting the image of the companies, designing consumer campaigns, or for managing crisis in case of being attacked by protest campaigns.

For policy makers, understanding social media could be helpful for monitoring trends and making strategies. For example, understanding public perceptions of energy issues could help building strategies to increase social acceptance on new infrastructures and technologies.

For the general public, understanding different opportunities offered by social media can be helpful in several respects. “Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes.”(UN Conference on Environment and Development Principle 10, 1992). Thus, as consumers, making use of the resources provided on the social media platforms such as blogs and forums to participate in energy issues is one of the ways of citizen participation. Social media creates additional opportunities for participation where people can connect with others who share similar interests, collaborate with other stakeholders for proactive purposes (i.e. creating a sustainable society) from bottom-up approach, or protest against unsustainable actions, and etc.

8.3.3 Discussions on sustainable development

In 2.3, several discussion points are proposed with regards to the added value of this communication research on the domain of sustainable development:

1. Which energy issues are communicated in the energy campaigns and in which respects?
2. To which extend could social media have impact on the facilitation, adoption, and transition of sustainable development?
3. What is the added value of the study of social media communication strategies in the domain of sustainable development?

The following paragraphs discuss these research questions based on the findings and insights gathered from the research.

Energy issues in energy campaigns

In this research, 55 energy campaigns are collected for analysis, including corporate,

proactive and attack campaigns. Table 8.6 summarizes the main energy issues and aspects addressed in these campaigns.

Energy issues	Aspects
Sustainability	Create a sustainable environment with simple and collective actions
Climate change/global warming	CO ₂ footprint and reduction
Energy saving	Reduce the amount of energy consumption with behavioral change
Protest campaigns	Against coal factories Against nuclear power plant Against biomass
Corporate campaigns	Corporate social responsibilities of companies to create positive image and reputation for stakeholders

Table 8.6 Energy issues and aspects in energy campaigns

There are four major energy issues observed in these campaigns: sustainability, climate change/global warming, energy saving, and protest against unsustainable energy.

With regards to sustainability issues, most of the campaigns aim at creating a sustainable environment with simple and collective actions. Reducing the amount of CO₂ consumption is the major focus when addressing climate change and global warming problems. In energy saving campaigns, behavioral change is the main objective. As for protest campaigns, there are campaigns against coal factories, nuclear power and biomass.

Due to limited amount of energy cases collected in the communication research, the results could not be generalized to external energy campaigns. However, the results do provide some insights in answering the question: *Which energy issues are communicated in the energy campaigns and in which respects?*

It could be concluded that some of the energy campaigns reflect existing energy and sustainable issues most relevant and concerned by this generation (Table 8.7) for example natural energy sources, energy conservations and climate change issues.

Energy Topic
Natural energy sources (48%)
Air pollution (34%)
Energy conservation (34%)
Stewardship (33%)
Climate change (31%).

Table 8.7 Survey on the most important themes in energy. (Source: GfK Panel Services Benelux (2009))

Some energy campaigns focus on sustainability with proactive approaches which aim at creating sustainable future via collective actions. Solutions are provided to tackle these

issues, for example, in proactive campaigns people can contribute to creating a sustainable future with individual actions which will add up into a powerful, collective force; in protest campaigns people can stop unsustainable energy projects with collective force.

In corporate campaigns, the aim is more focused on creating positive image and reputation for the organization by showing its sustainable and green actions incorporated in corporate social responsibility.

The impacts of social ICT

On a broader level, this research also raises the questions: *to which extend could social media have impact on the facilitation, adoption, and transition of sustainable development?*

The effects of environmental policy instruments on innovations and their diffusion are one of their most important features, especially in the long term (Mickwitz et al., 2008). Understanding of the predictors of the attitudes and behaviors of internet users would be interesting for various stakeholders, such as environmental groups, policy makers, and decision makers (Mobley et al, 2010). Thus, with a communication research on the 'online slacktivists', it could help establish understanding of the drivers of social media on their participation behaviors in energy related issues.

Although it is not yet certain to which extend social media can facilitate different patterns of innovation, it is without doubt that information and communication technologies integrate and enable technologies to converge, provide avenues for knowledge acquisition, facilitate knowledge exchange and distribution in various aspects. For example, in the domain of user-driven innovation, social media could be one of the tools to influence and enhance communication, facilitate and accelerate network and communities for consumers who share similar interests in health care, agriculture, and other issues which fall into the areas of sustainable development.

The added value of communication research on sustainable development

Observing communication problems which appear in the development of a sustainable technology could help understand the underlying mechanisms which drives sustainable development from a micro-level approach. A communication research gives insights on how to bridge the gaps between public awareness, perception, and behavior. For example, it is obvious that the general public think that sustainable development issues are important and that energy issues should be addressed, but it does not necessary mean that they are contributing to the environment. Therefore, in this research, by observing the participation behaviors of online slacktivists in energy campaigns and identifying the most essential social media factors which contribute to their participation, it could give insights to how people react to energy issues and which drivers work best in creating awareness of sustainable development related issues, motivating behavior change, and etc.

8.4 Reflections on science communication

In this section reflections on the science communication discipline will be discussed. In 8.4.1 the added value of this research to the academic field of science communication will be discussed. In 8.4.2 the practical applications for the practice of science communication will be elaborated.

8.4.1 Academic contributions to the science communication discipline

By identifying the social media communication factors and the extent to which they contribute to the participation of online slacktivists in energy campaigns, this research adds insights and values to the domain of science communication in several aspects:

The discipline of science communication

Science communication is still a new and emerging discipline where more research is needed to identify and establish the key domains. By researching several sub-disciplines in science communication with research questions formulated from a real problem, it would be interesting for science communication researchers to investigate how research framework could be established from existing communication theories and related literatures, with different research methodologies applied on a cross-domain study. This study is an example of such a research, with a multidisciplinary approach of study which combines the cross domains of communication and energy issues as the scientific context.

Research methodology

A combination of qualitative case study and quantitative analysis provides multiple perspectives to the research with richer information, insights and extend the generalization of the research. The research also establishes a research framework of social media communication factors in energy campaigns which could be applied as starting points for further study in developing better methodologies to conduct analysis on social media, for example improve the operationalization process of factors to measure the effects quantitatively, or carrying out extensive, in-depth studies on a specific social media communication factor.

The subjects of study

Social media is becoming an important and popular media, where various information, knowledge and activities are distributed, exchanged and organized through this fast growing media. Therefore, investigating related subjects such as social media strategies, user-aspects, and online behaviors will help establish a better understanding of the online communication phenomenon and emerging issues. For example, it would be very interesting for science communication researchers to investigate how scientific context is communicated similarly

and differently through traditional media and social media, the effects and consequences result from different media forms, under which circumstances is communication more effective, what are the possibilities and risks, and etc.

8.4.2 Practical applications for the practice of science communication

As stated in the discussion for the implications for relevant stakeholders in 8.3.2, this study provides science communication experts a better understanding of the underlying mechanisms of social media communication strategies in energy campaigns with the following aspects:

Designing social media communication strategies in energy campaigns

For communication experts who design strategies for energy campaigns, this study provides an overview of the social media communication strategies applied, a conceptual framework showing different concepts which contribute to online participation, and also possible explanations to the research findings. In designing social media communication strategies the campaign designers could use the results in this research as a starting point for formulating strategies, for example, by taking into account on reducing the action barrier for participants with user-friendly designs, interaction built-ins, etc.

Evaluation tools for social media communication strategies

A further study on subjects related to this study would be helpful in providing campaign designers with a more understanding in evaluating their social media communication strategies. For example, by conducting a further research to investigate the impacts of the social media communication strategies on one of the success factors in the campaign goals (i.e. change of behavior), the campaign initiators could compare the strategies and see which strategies work and which ones won't, under which circumstances.

8.5 Recommendations for future research

In this section, recommendations for future research will be given from three respects: research methods, a further study on social media communication factors, and topics relevant to this research.

Research methods

In this study, the energy cases explored in the qualitative case study contain different types of organizations and energy issues. Future research could focus on a specific type of organization (i.e. NGOs) or a specific energy issue (i.e. solar energy) to investigate which social media communication factors are applied in the campaigns and how they contribute to the participation of online slacktivists. Different case study methods could also be applied, for example, a longitudinal case study on how social media communication strategies are

developed and implemented in a campaign with time, and investigate how the strategies contribute to the participation of online slacktivists.

In this study, 55 energy cases are collected for the quantitative analysis. For future research, more cases with similar characteristics (i.e. types of initiators, energy issues) could be collected to improve the validity of the research. Instead of conducting quantitative analysis with scoring the social media communication factors in the energy cases by the researcher, designing surveys is another way to conduct the quantitative research.

A further study on social media communication factors

In this study, it could be observed that the qualitative case study and the quantitative analysis give two different conceptual frameworks in describing the social media communication factors. For future research, further studies on the factors which are not measured in the regression analysis could give insights to how they contribute to participation. For example, regarding the factor 'attitude objective', which might contribute to participation with moderator effect, more advanced quantitative analysis could be carried out to investigate its contribution.

It would be also interesting to go for a more in-depth study with one of the factors in the concepts which already contribute to participation. For example, regarding 'network opportunities' which contribute positively to participation, further research could be conducted to investigate which forms of communities (i.e. forums, blogs), or which kinds of share options (i.e. Facebook, Twitter), best contribute to participation.

Topics relevant to this research

For future research, investigating the characteristics of the online slacktivists in more depth could provide a better understanding of why certain social media communication factors contribute positively while others contribute negatively to participation.

Future research could also investigate the factors identified in the research framework in figure 1.1, which are not included in this study, but could have influence on social media communication strategies. For example, traditional media strategies in the energy campaigns could be studied to investigate how they are applied differently from social media strategies, or compare the extend of social media strategies to investigate which kinds of strategies are social media specific and which ones are less specific.

In this research, a descriptive, explorative study is carried out to investigate the factors of social media communication strategies which contribute to the participation of online slacktivists in energy campaigns. For future research, it would be interesting to carry out a more normative study to investigate how to implement the social media communication strategies to increase participation for a specific type of energy campaign.

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