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Faculty of Behavioral, Management and  
Social Sciences (BMS)

## The influence of Facebook on one's Attitudes towards Wind Energy

Running head: INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

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B.Sc. Thesis

June 2017

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## Abstract

In this study an experiment was conducted focusing on whether Facebook-posts would influence the attitude and behavioral intention of participants towards wind energy. Literature showed that noise exposure, visual impact and environmental impact of wind turbines are important factors predicting one's attitude towards wind energy. The theory of reasoned action (Madden, Ellen, & Ajzen, 1992) and the theory of planned behavior (Ajzen, 1991) stated that attitudes are formed by beliefs and lead to behavioral intentions. Kelman (1958) and Wood (2009) argued that internalization, identification and compliance are processes that can influence these beliefs and, therefore, the attitude of a person. Additionally, research showed advertising for brands on Facebook has a positive influence on the purchase behavior of users and their attitudes showing an influence of affective information on the attitudes of users (Muntinga, Moorman, & Smit, 2011). From these studies, it was expected to find that the attitudes of the participants, which influence behavioral intention, could be influenced by fictitious Facebook-posts and comments. The research question of this study was: What is the effect of positive, negative and neutral opinions that are shared by other people on social media on the attitudes and the behavioral intention of North-West-European people in regards to wind energy?

To answer the research question, an online experiment with four conditions (positive, negative, neutral and control condition) was conducted. The experimental conditions contained a neutral formulated fictitious Facebook-post about wind energy with a positive, negative or neutral comment. Furthermore, statements had to be answered on a seven-point-Likert-scale which contained facts about wind energy and indicated opinions on an attitude-scale and a behavioral intention-scale. The behavioral intention-scale indicated whether participants would use wind energy and if they would support wind energy.

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Participants that did not fit the requirements of understanding the posts or questions properly were excluded from the analysis. The analysis of the descriptive statistics showed that the participants of the study are not representative for North-West-European people.

The results showed no significant differences between the scores of the participants in the different groups. This indicated that there is no effect of the Facebook-comment on the attitude and behavioral intention of the participants towards wind energy.

The mean scores showed that the overall attitude of the participants was positive, therefore, an influence was difficult to reach. Future research could study whether people can be influenced towards the other extreme of their own opinion by using Facebook-posts. In addition to that, it should be researched whether people are more influenced by facts or affect regarding sustainable energies. There are findings by Bang, Ellinger, Hadjimarcou and Traichal (2000) that indicated that facts are irrelevant for building an attitude towards an object while Ajzen and Fishbein (2000) indicated that facts can be used to consciously change one's attitude towards something.

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### **Acknowledgements**

My gratitude goes to everyone that participated in my study and everyone who shared the link with their friends. Furthermore, I want to thank my tutors, dr. Margôt W. M. Kutttschreuter and dr. Sven Zebel, for the support during the process from the first idea to this thesis.

Additionally, I am grateful for the support of my University, University of Twente, for giving me the opportunity to study. Finally, I want to thank my friends and family for supporting me during the time of my Bachelor thesis.

## Introduction

The following thesis concentrated on the question whether fictitious Facebook-comments have an influence on attitudes towards wind energy in a way that the behavioral intention to use wind power increases. It was concentrated on wind energy because it has, in comparison to the other sustainable energies, the most upsides and downsides that have to be considered when informing people about wind energy. First, an introduction about wind energy will be given with its functionalities and the downsides connected to it. Afterwards, factors that are at play when forming an individual's attitude about wind energy will be extracted from earlier research. Furthermore, factors that are of influence during the attitude forming process and a possible approach to influence the attitudes will be discussed and the research question including sub-questions and hypothesis will be formulated. Finally, the methods and results will be discussed and a conclusion, as well as discussion points will be formulated.

## Wind energy

An international concern of the current time is global warming: How can we stop it and regenerate the resources that we need to live? Next to other sectors cars and energy production, such as fossil burning, produce gases (CO<sub>2</sub>) which in turn cause the greenhouse effect. This effect is responsible for global warming (Jacobson, 2009). Its consequences are heatwaves, droughts, tropical storms, and rising of sea levels through melting of glaciers and ice with fatal consequences for society (Solomon et al., 2007; Bose, 2010). Because the leading production of greenhouse gases is dedicated to the energy production sector, there are different alternatives developed over time, including energy through geothermal energy, water energy, solar power and wind power. These advanced technologies of energy production are less harmful to the environment and are part of the solution to minimize global warming (Jacobson, 2009).

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Wind energy has the most up- and downsides of these sustainable energies and is therefore the focus of this study. Wind power is gained through placing wind turbines in different heights above the ground connected to a gearbox (Jacobson, 2009). The gearbox turns the big movements of the rotors into smaller, fast turning gears and collects the energy in a generator (Jacobson, 2009). But there are also some wind turbines which are gearless and directly connected to a generator. There are different constructions of the foundation, the tower and stake, the machinery house, and the rotor; these are dependent on the landscape circumstances that they are built in (BundesverbandWindEnergie e.V., n.d.). Besides the different constructions, the same materials are used. The fundament usually contains reinforced concrete and steel, while the tower and stake are mostly either from steel or from reinforced concrete (Jacobson, 2009; Aeolos Wind Turbine Company, n.d.). The machinery house is mostly constructed of composite fiberglass material or aluminum (Jacobson, 2009; Aeolos Wind Turbine Company, n.d.) and the rotor can consist of either composite fiberglass material, carbon-fiber-reinforced plastic, aluminum or wood (Aeolos Wind Turbine Company, n.d.).

### Downsides

However, wind energy also has some downsides. These negative aspects can have a great influence on the attitude that is formed about the subject (Ajzen, 1991).

First, the energy produced by wind is proportional to wind speed. A minimum wind speed of 7 m/s is necessary for the turbine to be economical (Jacobson, 2009). Wind is usually slower on the ground and gets faster the higher above the ground (Aeolos Wind Turbine Company, n.d.). Therefore, the higher the turbine is placed the faster the wind and, consequently, the more energy is produced (Jacobson, 2009). This means, turbines are mostly placed in mountain passes because the wind blows harder there (Jacobson, 2009) or on sea shores (Devine-Wright & Howes, 2010). This is a downside because it has a negative

influence on the view. According to Wolsink (2007b) the visual aspect of turbines is of great impact for the attitudes of people towards wind energy, meaning that the more visual impact there is the less positive is the attitude of people towards wind energy (Jacobson, 2009; Wolsink, 2007b). Additionally, turbines have a footprint of 13-20m<sup>2</sup> and there are temporary dirt roads needed to place the turbines. Furthermore, transmission roads are needed to get the energy to the households where needed. These transmission roads are underground for short ways and otherwise over ground and mostly already exist from other energy production farms. However, if new transmission ways are needed the nature is destroyed to build these (Jacobson, 2009).

In addition to that, wind turbines have a high noise exposure that can be disturbing (Wolsink, 2007b; Bang, Ellinger, Hadjimarcou, & Traichal, 2000; Kellner, 2014). On the other hand, Kellner (2014) argues that wind turbines are not placed nearer than 300m next to a city and then the noise of the turbines is about 38 decibels, whereas, the background noise of everyday life is around 40-45 decibels. Nevertheless, Pedersen, van den Berg, Bakker, and Bouma (2009) found that wind turbine noise is more disrupting than industrial noise. Furthermore, there have been accidents when rotors of wind turbines got loose and fell down, which results in damages and even fatal accidents in surrounding areas (Malnick & Mendick, 2011; Caithness Windfarm Information Forum, 2017).

These downsides of wind power are also of influence while forming an attitude about sustainable energies of an individual. In the following section the factors most important for forming an attitude about wind energy will be analyzed.

### **Factors that are at play in forming the attitude towards wind energy**

There are different studies that indicated which aspects about wind energy have an influence on the attitudes of people regarding wind energy. In the following paragraphs, some of these factors will be summarized.

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Research showed that noise exposure (Wolsink, 2007b; Pedersen, van den Berg, Bakker, & Bouma, 2009), visual impact (Wolsink, 2007b; Jobert, Lange & Mimler, 2007; Pedersen, van den Berg, Bakker, & Bouma, 2009) and environmental issues (Wolsink, 2007b; Bang, Ellinger, Hadjimarcou & Traichal, 2000) are significant factors that influence the attitude of people towards wind energy. Within these, the visual impact and the noise exposure had a negative influence on the attitudes while the environmental issues have a positive influence on the attitudes (Wolsink, 2007b). Additionally, it showed that the visual impact that wind power has is the most dominant factor in forming an attitude about wind energy (Wolsink, 2007).

These factors are to be seen more based on affect than on knowledge which would support the theory that the attitude about an object is not influenced by the individuals' knowledge about it (Bang, Ellinger, Hadjimarcou & Traichal, 2000). Instead, it was found that the attitude about renewable energy is more driven by affect than by conscious deliberating of information. This means, in collaboration with the theory provided above, that providing specific information, such as 'wind turbines will save your children', can have an influence on the attitude of individuals because it has more influence on affect than on knowledge (Bang, Ellinger, Hadjimarcou & Traichal, 2000).

From these studies, the factors visual impact, environmental issues and noise exposure were used to increase the intentional behavior of individuals to use wind energy and concentrate more on the effect of the information than on the information itself because they seem to have the most influence on the attitude of people.

On the other hand, Ajzen and Fishbein (2000) stated that sometimes also facts are used to consciously change the attitude towards an object as described in the following section.

### **Possible approach – How to influence attitudes about wind energy?**

There were various attempts to explain the processes that lead to a performed behavior; two of them are the theory of reasoned action and the theory of planned behavior which will

be explained in the following section. Furthermore, theories about how to influence attitudes will be explained.

Ajzen and Fishbein (2000) found that in connection to attitude-behavior correspondence the theory of reasoned action can be used in connection with the theory of behavior.

The theory of reasoned action states that the intention of behavior is influenced by the belief of the individual that the intended behavior will lead to a desired outcome (Madden, Ellen, & Ajzen, 1992). These beliefs are divided into two kinds: behavioral and normative beliefs. The behavioral beliefs form the attitude about the behavior and the normative beliefs influence the subjective norm the individual believes in. In this process, external influences can only affect the attitudes towards the behavior or the subjective norm and these then influence the behavioral intention (Madden, Ellen, & Ajzen, 1992).

The theory of planned behavior by Ajzen (1991) states that there are three concepts which influence the human behavior: attitude, subjective norm, and perceived behavior control. These three concepts influence the behavioral intention which finally predicts the behavior of an individual. An attitude means the opinion of the individual towards an external stimulus. The subjective norm describes what the individual thinks the opinion of the surrounding society is and the perceived behavior control links to the estimation of the individual about the consequences that will follow the behavior and how much control the individual estimates to have about these consequences (Ajzen, 1991). Ajzen (1991) stated that these three kinds of beliefs have a strong influence on the intended and therefore performed behavior.

In a later research Ajzen, together with Fishbein, (2000) concluded about attitudes that these are not necessarily constant and that they can shift dependent on the circumstances they are expressed in. Attitudes are strong opinions about a thing or a person that are mixed with an emotional feeling (Ajzen & Fishbein, 2000). These attitudes can be formed consciously, by collecting information and facts and deliberating the positive and negative aspects, or

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automatically, by affect. Either way, once an attitude is formed it can be activated without considering the information that the attitude is based on (Ajzen & Fishbein, 2000).

Furthermore, it was found that attitudes do not need to be based on plenty different beliefs but can also be based on a few beliefs available when the motivation or the cognitive capacity is low (Ajzen & Fishbein, 2000). On the other hand, research also showed that deliberating new available information carefully can change attitudes consciously and reasonably form a new attitude if the motivation is high (Ajzen & Fishbein, 2000).

These theories showed how attitudes are formed and how they lead to a performance of behavior. But how can attitudes be influenced? Research by Kelman (1958) showed that attitudes of an individual can be changed by the influence of others through three different manners: compliance, identification, and internalization. Compliance occurs if an individual changes the attitude because the individual admires the reward he or she will get or fears the sanctions that will come if he or she does not share the same attitude (Kelman, 1958).

Identification is when an individual wants to establish or maintain relationships with others and therefore adapts their attitude. When identification or compliance occur, it is not certain if the individual actually changed the attitude or is only pretending to do so, meaning that the content is more or less irrelevant (Kelman, 1958). Internalization, on the other hand, occurs if the attitude of others is congruent with one's own values and, therefore, the content is of most importance. To influence the attitudes of others, the manner in which the attitude change is provoked, how powerful the source of the new attitude is and what the nature of its effect will be, play an important role (Kelman, 1958).

Wood (2009) agreed with Kelman but named the three motivations differently: understanding of the issue featured with influence appeals (compliance), relation with others (identification) and coherence of the self (internalization). Furthermore, Wood (2009) added that there are two different kinds of attitude change: informational and normative. The

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informational change of attitudes includes that the individual sees the positive and negative aspects of the subject in question and decides consciously and well informed. The normative way of changing attitudes includes that an individual is less influenced by facts and more influenced by their social surroundings (Wood, 2009).

These social surroundings include social media, such as Facebook. The attendance and use of social media increased over the last years (Romero, Galuba, Asur, & Huberman, 2011). The more users there are, the more information flows through these networks and influences their users. Romero and his colleagues (2011) pointed out that especially on Twitter most of the users are passive and that therefore the influence of Twitter is limited to the passivity of the users. On Twitter as well as Facebook, users upload photos that gain other users' attention and by that texts are written in which emoticons and feelings are used to bring the message to the other users (Ahkter & Soria, 2010). These emoticons and photos trigger an affective response (Zajonc, 1980) in the users and influence them emotionally. This emotional influence has, according to Wood (2009), an effect on the attitude towards the subject. Once the attitude of the subject is formed the behavioral intention is formed and a behavior is performed (Ajzen and Fishbein, 2000; Ajzen, 1991). Therefore, when the attitude towards wind energy is influenced positively the behavioral intention to support and use wind energy is positively influenced.

The focus in this study lied on Facebook and not on Twitter because on Twitter there is a limit of 140 characters per message (Ahkter & Soria, 2010) and this was considered as not enough space, by the researcher, to formulate a statement about wind energy.

From an article on the importance of social media in the communication of food risks it was shown that social media, such as Facebook, in addition to articles of newspapers and studies, can serve, as an additional platform for people to gather information on food risks (Kuttschreuter, Rutsaert, Hilverda, Regan, Barnett, & Verbeke, 2014). Furthermore, it was

mentioned that people are careful about that information and also gather information through other channels. In addition to that, research by Muntinga, Moorman, and Smit (2011) showed that advertising for brands on Facebook has a positive influence on the attitudes and purchase behavior of users. This shows that affective information can have an influence on the attitude of users.

These theories are important in connection to wind energy because of the spreading of information on Facebook. While Facebook is an online network which is used to share information it is also a network to influence other opinions (Romero, Galuba, Asur, & Huberman, 2011). In this study, the focus lied on influencing peoples' attitude towards wind energy through Facebook-posts to study if it would be possible to make wind energy more acceptable through online advertising.

To sum up, these theories showed that individual's attitudes can be influenced by others. The channel that this study used to influence the attitudes towards wind energy is Facebook.

However, the following also needs to be discussed: Impressionability. Impressionability is a state of mind that is defined as to be easily influenced (Impressionability, n.d.). In this state people are open to suggestions and are more likely to conform with social norms (Cialdini, & Trost, 1998). These social norms can be presented through behavior, by speech or written text by people in the social surroundings of the individual. Due to different factors, it is favorable to save the planet and therefore the social norm requires having a positive attitude towards sustainable energies. Due to this, it is important to know whether the participants in this study are likely to be impressed and influenced by other people.

### **Research Questions and Hypothesis of this study**

To research if a fictitious Facebook-post with fictitious comments have an influence on the attitudes and behavioral intention towards wind energy the research question of this study was: What is the effect of positive, negative and neutral opinions that are shared by other

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people on social media on the attitudes and the behavioral intention of North-West-European people in regards to wind energy?

To answer this research question, an experiment was conducted with four conditions. There were three experimental conditions (neutral Facebook-post and positive, negative or neutral Facebook-comment) and a control condition in which participants were not exposed to any Facebook-post and comment. This design was used because there are two variables that differ between the control condition and the experimental conditions: the Facebook-post and the comment. Therefore, the neutral condition was compared with the control condition to see whether there is an effect of the Facebook-post and comment in general. The neutral condition was then compared with the other two conditions to see whether the experiment had an effect or not.

To narrow the research question down and to form a framework for the described analysis the following sub-questions and hypotheses were formulated:

1: Is there an effect of a neutral Facebook-post with a neutral comment providing information about wind energy on the attitudes and the behavioral intention of the participants?

H: Participants in the neutral condition will score significant different than participants in the control condition.

2: Will a Facebook-post providing information about wind energy influence the participants' attitude and their behavioral intention towards wind power, meaning that participants in the positive condition will score higher and participants in the negative condition will lower on the attitude- scale and the behavioral intention-scale compared to participants in the neutral condition?

H: Participants in the positive condition will score higher and participants in the negative condition will score lower on the attitude- scale and the behavioral intention-scale compared to participants in the neutral condition.

3: Does the impressionability of a participant influence the attitude and behavioral intention of participants and does it play a moderator role in the relation between the dependent and the independent variable?

H: The impressionability of a participant influences the attitude and the behavioral intention positively and plays a moderator role in the relation between the dependent and the independent variable. If the participant is in the positive condition and scores high on the impressionability-scale then the participant scores high on the attitude- and the behavioral intention-scale.

### **Methods**

The content of this study as well as its intention and procedure was accepted by the ethics committee of the University of Twente.

#### **Participants**

The participants of this study consisted of a convenient sample. The requirements that a participant had to fulfill to be included in the data analysis included that participants needed to be at the age of 18 or older, they had to live in North-Western- Europe (including Scandinavia, Germany, Belgium, the Netherlands, Luxemburg, Austria, Switzerland, United Kingdom and Ireland) and understood the questions, therefore, English well. To test if the questions and statements of the questionnaire, the English language, were understood properly the participants were asked to score their understanding on a scale from one to seven, with one as understood well. Participants that scored higher than or equal to four on that question were excluded because their understanding of the English language was not sufficient. Furthermore, participants who did not understand the content of the fictitious Facebook-post properly were also excluded from the analysis. To test this, three comprehension questions were asked about the content of the Facebook-post and the attitude (positive, neutral or

negative) of the comment. If these three comprehension questions were not answered congruent with the condition they were in, they were excluded from the analysis.

There were 272 participants that took part in this study. Of these participants 65 were excluded from the analysis to answer the research questions because they did not finish the survey. Of the remaining 207 participants 49 were excluded because they did not fit the requirements, they were either living in a different area, too young, did not understand the Facebook-post and comment or their English skills were not sufficient. The data of the remaining 158 participants was included in the data analysis.

Of these participants were 82 women and 76 men. The participants lived in the Netherlands (101), Germany (43), Ireland (11), Denmark (3), Belgium (3), the United Kingdom (3), Austria (2), Finland (1) and Switzerland (1). They were Dutch (69), German (67), Finnish (2), Belgian (2), Indian (2), Danish (2), American (1), Australia (1), Canadian (1), Chinese (1), Hungarian (1), Indonesian (1), Irish (1), Italian (1), Polish (1), Rumanian (1), Russian (1), Scottish (1), South-African (1) and Swiss (1).

The age of the participants ranged from 18 to 66 years with a mean age of 29.32 years ( $SD = 10.39$ ). Most of the participants had a higher education level. There were 24 participants with an educational status of high school, while 121 had a higher education (BA or MA), 8 had a PHD and five participants had another educational status. Of the participants 49 had a wind park near the city they are living in and 69 either used renewable energies or their parents did. The mean usage of Facebook among the participants was 5.05 days per week ( $SD = 2.57$ ).

There were 44 participants in the control condition, 39 in the negative condition, 32 in the positive condition and 43 participants in the neutral condition. The participants were randomly assigned to one out of four conditions equally (gender  $X^2(3) = 4.04$ ;  $p = .26$  n.s.; education  $X^2(9) = 7.10$ ;  $p = .62$  n.s.; nationality  $X^2(57) = 59.39$ ;  $p = .39$  n.s.; residence  $X^2(24)$

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= 31.98;  $p = .13$ ; age  $F(3,154) = 1.66$ ;  $p = .18$  n.s.; wind park  $X^2(6) = 8.66$ ;  $p = .19$  n.s.; renewable energies  $X^2(9) = 8.70$ ;  $p = .47$  n.s.; Facebook  $F(3,151) = .42$ ,  $p = .74$  n.s.).

### Design

The design of this research was a one-factorial design with four conditions. The independent variable was the content of the Facebook-comments (negative, positive, neutral or no Facebook-comment) and the dependent variables were attitude and behavioral intention. Participants were randomly assigned into four different conditions: three experimental and one control condition. The participants in the experimental conditions were given a fictitious Facebook-post with one of three fictitious comments that were positive, negative or neutral formulated towards wind energy. Participants in the control condition were not exposed to any Facebook-comment.

The fictitious Facebook-post was the same for the three experimental groups. Its content included information which contained positive and negative aspects about wind energy. It stated that wind energy is a clean energy which is provided by turbines in mountain passes and sea shores and that it helps minimize global warming. Furthermore, it stated that mountain passes and sea shores bring more money with tourism when there are no turbines in it as well as that the turbines are noisy and disrupting (Attachment 1). The Facebook-comments on the other hand were formulated in either positive, negative, or neutral ways. The positive comment focused on the clean energy and that background noise is louder than the turbines. The negative comment focused on the importance of tourism and the noise of the turbines. The neutral comment stated that there are many positive and negative effects of wind energy and did not show a clear attitude about it.

### Instruments

The research consisted of an online survey using Qualtrics (Attachment 1). The questions of the survey were formulated based on surveys of Jobert, Laborgne and Mimler (2007),

Wolsink (2007b) and Bang, Ellinger, Hadjimarcou and Traichal (2000). The mentioned researchers did qualitative research and their questions were open questions. Therefore, those questions were transformed into closed statements to be answered on a seven-point-Likert-scale ranging from strongly disagree to strongly agree. The researches of Jobert, Laborgne and Mimler (2007), Wolsink (2007b) and Bang, Ellinger, Hadjimarcou and Traichal (2000) were used because their focus lies on wind energy and on the attitude and the behavioral intention of people, which are the variables focused on in this study. Therefore, there was a higher chance that the statements of these experiments are reliable.

The survey consisted of 34 questions and statements of which eight were demographic questions. If the participants were in one of the experimental conditions, there were three additional questions, concerning the content and understanding of the fictitious Facebook-posts.

### **Attitude-scale.**

The attitude-scale consisted of 17 statements that were to be answered on a seven-point-Likert-scale ranging from strongly disagree to strongly agree (Attachment 1). The statements on the attitude-scale were leaned on the survey of Wolsink (2007b), Bang, Ellinger, Hadjimarcou and Traichal (2000) and Jobert, Laborgne and Mimler (2007). These statements asked for the participants' agreement on statements that indicated whether they had a good or bad opinion about wind energy, such as "Wind energy reduces the air pollution". The statements were formulated with "I think...", "Wind energy..." and "I do not want to..." to indicate the participants' opinion. A high score on this scale indicated that the participant had a positive attitude towards wind energy. The reliability of the scale was  $\alpha = .81$ , which indicated that the scale is trustworthy and the items were consistently measuring the same construct. Furthermore, a factor analysis showed that only one construct was measured in this scale (Figure 1).

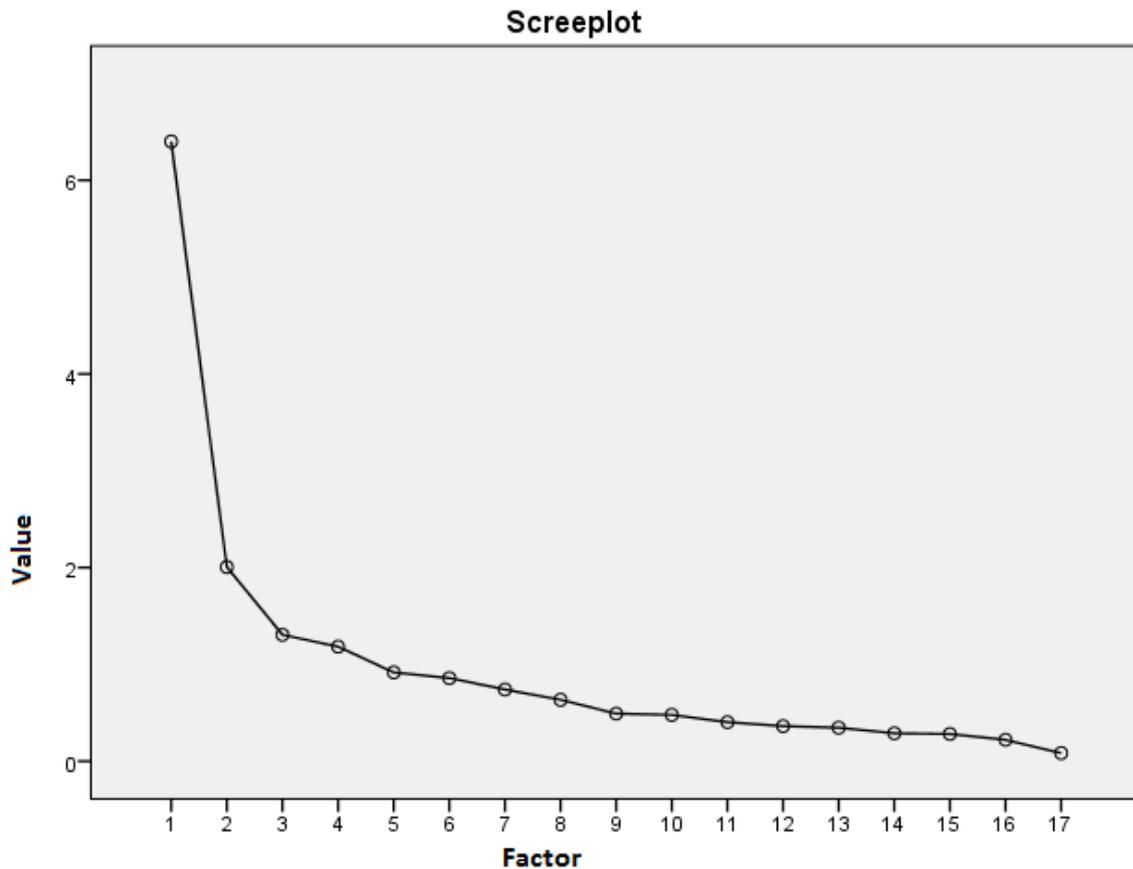


Figure 1. Screeplot of the factor analysis of the items of the attitude-scale indicating that only one factor was measured.

### Behavioral intention-scale.

The behavioral intention-scale consisted of eight statements (Attachment 1). The statements on the behavioral intention-scale indicated whether the participants would support and use wind energy. The statements were leaned on questions of a survey of Bang, Ellinger, Hadjimarcou and Traichal (2000) and Jobert, Laborgne and Mimler (2007). The statements were formulated with “I support...” or “I would support...” and the agreement with these statements was asked. A high score on this scale indicated that the participant had the intention to use wind energy. The Cronbach alpha of this scale was  $\alpha = .79$ , indicating a high reliability.

### **Impressionability-scale.**

The impressionability-scale measured whether the participants were to be influenced by their neighbors regarding their attitude towards wind energy. This scale consisted of four questions: the sixth, seventh and eighth statement in the second block and the first statement of the fifth block (Attachment 1). These questions asked the participants if they would support and use wind energy because their neighbors and their city did so. These questions were asked to measure whether the participants were to be influenced by others and were formulated by the researcher. A high score on this scale meant that the participant was to be influenced by others. The Cronbach's alpha of this scale ( $\alpha = .68$ ) indicated a high reliability.

In the before mentioned scales the subjects described in the introduction (environment, visual impact and noise exposure) were included by including them in the statements the participants had to answer on. For example, the statement 'Wind energy reduces the air pollution' was used in which the reduction of air pollution is an environmental issue. There were eight statements concerning the environment, eight concerning the visual impact of wind parks/turbines, four questions/statements concerning the noise exposure, two indicated a moral duty and two measured the economic importance.

### **Comprehension-scale.**

In the experimental conditions, two questions were added that asked for the content of the fictitious Facebook-post and its comment (Attachment 1) and one asked for the agreement of the participants with the comment. These questions were asked in the experimental conditions directly after the exposure to the posts to see if the texts were read and understood properly. Furthermore, there was one statement to be answered on a seven-point-Likert-scale at the end of the survey, of all four conditions, which indicated the understanding of English of the participants. A high score ( $\Rightarrow 4$ ) indicated a not sufficient understanding of the English language.

### **Demographics.**

There were eight questions concerning the demographics of the participants, including: age, gender, nationality, country of residence, whether there is a wind park near the city they live, whether they or their parents use renewable energies and how often they use Facebook per week. The demographic questions included four open questions and four multiple choice questions with 3 to 4 possibilities. Furthermore, one of the multiple choice questions had the option to add text to specify the answer (Attachment 1).

### **Procedure**

The fictitious Facebook posts were created by the researcher on the website <http://simulator.com/generator/facebook/status> and were formulated based on the facts introduced in the introduction part of this study.

The link of the online survey was shared through three social media: Facebook, WhatsApp and LinkedIn. Per social media, the researcher shared the URL-link with a descriptive text that explained the requirements and content of the study; these texts are to be found in Attachment 2, Attachment 3, and Attachment 4. Additionally, the researcher re-posted the link with the additional text everyday as a reminder. Using WhatsApp and Facebook the researcher sent the link and the additional text to various groups and to various individuals on the basis that the requirements being met.

After the survey was stopped, the researcher posted a Thank-you message on Facebook to inform everyone that the survey was offline and to thank for their sharing and participation. There was no additional debriefing except for the debriefing on the last side of the survey (Attachment 1). The survey was online from 7<sup>th</sup> April 2017 to 3<sup>th</sup> May 2017.

When the participants opened the link of the survey, the first page showed a text that gave a short introduction to the study and fulfilled the requirements of an informed consent.

Following the informed consent, there were five demographic questions asked on the next

page. Then the participants were randomly assigned to one out of four conditions. Condition 4 was the control condition in which there was no fictitious Facebook post shown to the participants. Conditions 1 to 3 were experimental conditions in which there was a fictitious Facebook post shown to the participants. The post contained information about wind energy and was commented by a fictitious person. These comments were either positively (Condition 2), negatively (Condition 1) or neutrally (Condition 3) formulated in their attitude towards wind energy (Attachment 1).

In the first block of statements there were three statements to be answered on the Attitude-scale. In the next block two statements on the Attitude-scale had to be answered, afterwards there were two statements to be answered on the Behavioral intention-scale, then one statement on the Attitude-scale was to be answered and three statements were asked to be answered to measure the degree in which the participants are influenced by others. The next block consisted of six questions of the Attitude-scale. The fourth block consisted of five statements belonging to the Attitude-scale. The fifth block consisted of one statement of the degree they are influenced by others and five statements belonging to the Behavioral intention-scale.

After the statements, there were three more demographic questions ('Is there a wind park near your city?', 'Do you or your parents use renewable energy?' and 'How many days per week do you use Facebook?') asked and the last question asked for the participants' understanding of the questions asked and their understanding of the English language.

On the last page, a short debriefing was placed, including gratitude for the participation, the real goal of the study and that the participants were in different groups which included Facebook-posts and comments with different attitudes in the experimental groups and no Facebook-post and comment in the control group. Furthermore, the researcher's e-mail address was given for questions and requests.

### Analysis

Before the data of the participants was analyzed the values of the statements, where necessary, were turned around and a variable was constructed that indicated the participants' condition. Additionally, the demographic data was analyzed. For the variables attitude, behavioral intention and impressionability the mean item scores were calculated.

Furthermore, for the attitude scale a factor analysis was done to see how many factors the scale measured and indicated that the attitude scale measured only one factor. Furthermore, the reliability of the three scales was measured and indicated that the reliabilities were high (Attitude-scale:  $\alpha = .81$ ; Behavioral-intention-scale:  $\alpha = .79$ ; Impressionability-scale:  $\alpha = .68$ ). After those steps were done, the hypotheses were tested.

To test whether participants in the neutral condition score significantly different than participants in the control condition, which is the first hypothesis, an independent sample t-test was done. The independent variables were the neutral condition and the control condition while the dependent variables were the attitude-scale and the behavioral intention-scale.

The second hypothesis, which states that participants in the positive condition score higher and participants in the negative condition score lower than participants in the neutral condition on the attitude- and behavioral intention-scale, was tested with an ANOVA per dependent variable. The independent variables were the positive, negative, and neutral condition and the dependent variable in the first ANOVA was the attitude-scale and in the second ANOVA the behavioral intention-scale.

To test the third hypothesis - the impressionability of a participant influences the attitude and the behavioral intention positively and plays a moderator role in the relation between the dependent and the independent variable. If the participant is in the positive condition and scores high on the impressionability-scale then the participant scores high on the attitude- and the behavioral intention-scale - four ANOVAs were done, one per dependent variable for the

main effect and one per dependent variable for the interaction effect. The ANOVAs for the main effect used the impressionability as the independent variable and the attitude and the behavioral intention as the dependent variables. The ANOVAs for the interaction effect uses the impressionability-scale as covariate, the four conditions as independent variables and the behavioral intention-scale and the attitude-scale as dependent variables to test the interaction between the conditions.

### Results

The descriptive statistics showed that the mean scores per group on a seven-point-Likert-scale with a high score indicating a high attitude/behavioral intention were all above the average score of 4, which indicated that the overall attitude and behavioral intention of the participants was positive towards wind energy.

Table 1. Mean scores of the four conditions

	Positive Comment (N = 32)		Negative Comment (N = 39)		Neutral Comment (N = 43)		Control Condition (N = 44)	
Constructs	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Attitude	5.23	.73	4.99	.74	5.31	.69	5.29	.75
Behavioral intention	5.33	.99	5.10	1.05	5.42	.85	5.54	.86

Note: SD = standard deviation

### Hypothesis 1 – T-test

The first hypothesis, whether the neutral condition will score significantly different from participants in the control condition, was tested with a t-test and showed a non-significant result with  $T(85) = .08$  and a two-sided  $p = .94$  for the attitude and  $T(85) = .68$  and a two-

sided  $p = .50$  for the behavioral intention. This means that there were no significant difference between the scores of the neutral condition and the control condition. This on the other hand indicated that there was no effect of the neutral formulated Facebook-post with the neutral formulated comment in comparison with no comment meaning that the hypothesis was rejected.

### Hypothesis 2 – ANOVA

The second hypothesis - participants in the positive condition will score higher and participants in the negative condition will lower on the attitude- scale and the behavioral intention-scale compared to participants in the neutral condition – was tested with an ANOVA for each dependent variable. The results of both ANOVAs were non-significant. The first ANOVA (attitude) showed  $F(2;111) = 2.05$  and a one-sided  $p = .13$ . The second ANOVA (behavioral intention) showed  $F(2;111) = 1.17$  and a one-sided  $p = .31$ . This means that there were no significant differences between the scores of the participants in the different condition. Therefore, the hypothesis was rejected.

### Hypothesis 3 – ANOVA

The last hypothesis – the impressionability of a participant influences the attitude and the behavioral intention positively and plays a moderator role in the relation between the dependent and the independent variable - was tested with an ANOVA and showed significant results for both dependent variables on the main effect. The impressionability of participants effects the attitude [ $F(1,153) = 9.57, p < .01$ ] and behavioral intention [ $F(1,153) = 17.79, p < .01$ ] of the participants positively. This means that a high impressionability indicates a positive attitude and behavioral intention towards wind energy. There was no moderator effect shown in the results: Attitude:  $F(3;150) = .25; p = .86$  and Behavioral intention:  $F(3;150) = .75; p = .52$ . This means that the impressionability of the participants was not of influence on the relation between the dependent and independent variable and, therefore, the third

hypothesis was partly accepted and partly rejected. This means that the impressionability of participants affects the attitude and the behavioral intention while it does not play a moderator role in the relation between the Facebook-posts and the attitude and behavioral intention.

### **Discussion and Conclusion**

#### **The study**

This study was conducted to research what the effect of positive, negative and neutral opinions is that are shared by other people on social media on the attitudes and the behavioral intention of North-West-European people in regards to wind energy. This is relevant to know because wind energy is a big discussion point in many communal areas where the citizens are against wind energy (Devine-Wright & Howes, 2010). If their attitude could be influenced by Facebook-posts it would be easier to build wind parks and to get the support that is needed to do further research about wind energy and its consequences.

To answer the research question an online experiment was conducted. The questionnaire consisted of multiple questions about attitudes and behavioral intention of the participants and consisted of four conditions which the participants were randomly assigned to. The participants in the three experimental conditions were presented a fictitious Facebook-post and a corresponding comment which had either a positive, a negative or a neutral attitude towards wind energy. The dependent variables in this experiment were the attitude and the behavioral intention of the participants and the independent variable was the condition they were assigned to, meaning the exposure to one of the Facebook-comments or no exposure at all.

#### **Results**

The results showed that there were no significant differences between the scores of the participants in the control condition and the neutral condition and no difference between the scores of the participants in the neutral, positive and negative condition; this means that there

was no influence of the Facebook-post and the comment on the attitude and the behavioral intention of the participants.

Furthermore, it can be concluded that there was no moderator effect found between the impressionability of the participants and the relation between the dependent and the independent variable. On the other hand, it was shown that the impressionability of the participants influenced the attitudes and behavioral intentions of the participants positively. This means that participants that scored high on the impressionability-scale scored high on the attitude- and behavioral intention-scale, meaning a high impressionability indicated a positive attitude and behavioral intention towards wind energy.

From the mean scores of the participants per group (Table 1), it can be concluded that the participants were overall positively layed towards wind energy. This means that the scores of the participants in the four conditions indicated a positive attitude and behavioral intention towards wind energy and this could explain the non-significant results. If participants had a positive attitude towards wind energy from the beginning it was unlikely to influence them to a more positive, neutral, or negative attitude or behavioral intention towards wind energy.

The answer on the research question is that there was no effect of fictitious Facebook-posts and comments on the attitude and behavioral intention of North-West-Europeans in regards to wind energy.

### **Strong points and Limitations**

There were multiple strong points and limitations of the study that had to be mentioned. The first strong point was that there were no significant differences in age [ $T(255) = -1.61 ; p = .11$ ], education [ $X^2(3) = .62 ; p = .89$ ] and gender [ $X^2(2) = 4.42 ; p = .11$ ] between the people included in and excluded from the analysis. Furthermore, there were no significant differences in the demographics of the participants in the different conditions; this means that the randomization was successful. This includes that if there had been significant differences in

the scores of the participants in the different groups that those would not be produced by already existing differences between the groups but by the manipulation. On the other hand, there was a high mortality rate of the participants that started the experiment because there were five requirements (sufficient English understanding, living in North-West Europe, being 18 or older, and the correct understanding of the fictitious Facebook-post and comment) that not everyone fulfilled.

The second limitation was that the researcher was not a native English speaker, which means that sentences could have been less clear or formulated too simply. On the other hand, there were only a few native English people participating in the study and, therefore, simple sentences were a strong point of this study, too. Furthermore, a limitation was that only participants with a sufficient knowledge of the English language (N=201) were included in the analysis which indicates that the sample is not representative for the mean North-Western Europeans. In addition to that, there were mostly Dutch and German residences participating in the study. This is another indicator that the sample is not generalizable for people in North-West Europe.

Another limitation of this study is that the values of the seven-point-Likert-scale were switched multiple times: the "Disagree" and "Agree" were placed in different orders, "strongly disagree" to "strongly agree" and sometimes vice versa. The respondents found that confusing. On the other hand, this is also a strong point: The switching of the values was intentional because the participants had to read the instructions every time and therefore pay more attention to the survey.

In addition to that, there was a mistake in the values in the fourth block: "I think wind energy should not be used because..." was to be answered with "Strongly disagree", "Disagree", "Neither disagree nor agree", "Agree" and then "Strongly disagree" instead of "Strongly agree". This was only seen after the first 100 participants had already filled in the

survey and it was not changed to not falsify the results. These items were not excluded from the analysis because a factor analysis showed that there was only one factor measured (Figure 1). This means, that the wrong values had no influence on the reliability of the scale, which is also a strong point.

The last limitation to be mentioned is that 121 participants of this study (out of 158) which were included in the analysis had a higher education and 8 had a PHD, this indicates that the sample is biased towards a high education. This also indicates that the sample was not representative for North-West European citizens. Furthermore, it could have had an influence on the results of this study because it is shown from research (Swofford & Slattery, 2010) that people who are more educated about global warming and sustainable energies are more likely to have a positive attitude towards it. It can be said that people who have a higher educational status are more likely to strive for lifelong education and knowledge (Afgan, Al Gobaisi, Carvalho, & Cumo, 1998) and are, therefore, probably more informed about sustainable energies, which leads to a more positive attitude towards sustainable energies (Swofford & Slattery, 2010). An important question is, if higher educated people are to be influenced more or less easily than other people. This would be a question for further research.

On the other hand, Bang, Ellinger, Hadjimarcou and Traichal (2000) stated that an attitude is not formed by the knowledge about the object but on basis of affect. This could be an explanation for the missing effect in this study: the affect response of the Facebook-comment was not strong enough. If that is the case, in further research a pilot-study should be done to test whether the Facebook-post or Facebook-comment has an affective influence on the peoples' emotions.

Moderators that could have been of influence in this study could be the high educational status, for reasons given above, and the language skills. Furthermore, the mean age of the participants was 29.32 (SD = 10.39) within a range of 18 to 66 years, which means there were

mainly younger people taking part in this study. This could have a moderator effect because from research it is shown that older people are less supportive towards wind energy because they are more likely to stick with the old energies and are less easily influenced by new information (Ek, 2005). Furthermore, social media could be a moderator because the study also shows that people who publicly communicate their attitude towards wind energy are also the people who support wind energy (Ek, 2005). This could therefore explain that people who volunteer to participate in the study have a more positive attitude from the beginning.

### Comparison to literature

This study showed that people's attitude and behavioral intention cannot be influenced in any way by Facebook-posts and their comments. This is in accordance with the theory of Kelman (1958) and Wood (2009) who stated that people are mostly influenced if the person is in a powerful position or they identify with the person. In this study, the persons of the fictitious Facebook-post and corresponding comment were fictitious and there was no more information about the people than a name, therefore, the person was a stranger and they could not identify with the person. Therefore, it is in accordance with the theory. On the other hand, theories state that the emoticons on Facebook and Twitter trigger affective responses that affect the attitude of people (Ahkter & Soria, 2010; Zajonc, 1980; Wood, 2009). These theories cannot be supported by the findings of this study.

It was also so shown that participants with a high score on the attitude-scale had a high score on the behavioral intention-score which supports the theory of planned behavior who says that the attitude of people influences the behavioral intention (Ajzen, 1991). On the other hand, the theory of reasoned action (Madden, Ellen, & Ajzen, 1992) could not be supported because the questionnaire did not specialize on the beliefs of the participants but on their attitude and behavioral intention.

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The overall positive attitude of the participants towards wind energy goes to confirm with the theory of Cialdini and Trost (1998) who state that people are likely to agree to group norms when they are impressionable, such as supporting wind energy in times of global warming.

### Further research

In future research, it could be asked whether fictitious Facebook-posts can influence the attitude of participants towards the other extreme of their own. This means if people that have a negative attitude can be assigned to the positive condition, while people with a positive attitude towards wind energy are assigned to the negative condition. As mentioned earlier, this is important to know because of the opportunities it would give to wind energy. If people can be influenced via Facebook-posts to get a more positive attitude towards wind energy, less money would have to be put into the promotion of wind energy and more money could flow into the research of wind power. The research could be done by asking participants first how they think about wind energy and then assign them to the opposite condition and expose them to Facebook-posts that were tested in a pilot test on their influence.

Furthermore, qualitative research could be done to figure out which of the factors, noise exposure (Wolsink, 2007b; Pedersen, van den Berg, Bakker, & Bouma, 2009), environmental influence (Wolsink, 2007b; Bang, Ellinger, Hadjimarcou and Traichal, 2000), and visual impact (Wolsink, 2007b; Jobert, Lange and Mimler, 2007; Pedersen, van den Berg, Bakker, & Bouma, 2009), of wind energy have the most influence on people and how these factors have to change to support only positive attitudes.

Furthermore, it should be researched if there is a difference in attitudes towards wind energy between people with high and low educational status and if there is a relation between the knowledge about sustainable energies and the attitude towards it. This is an important research because it is thought that education about sustainable energies helps to increase the

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acceptance of it and, therefore, resources are used to educate people (Afgan, Al Gobaisi, Carvalho, & Cumo, 1998; Swofford & Slattery, 2010). If that education will have no effect as stated by Bang and colleagues (2000) resources should be used to influence the attitude of people through affect.

To sum up, in this study it could not be proven whether Facebook-posts and comments can have an influence the attitude of an individual. This, however, does not mean that there is no such effect because the sample was not randomized and it was not representative for North-Western Europeans. Therefore, research should be done to find out whether other Facebook-posts with, for example, other topics do have such an influence and if it has, this should be used to make wind energy more popular and to build more wind farms to gather clean energy and reduce global warming.

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### **Attachments:**

#### **1. Survey: Attitudes towards wind energy**

Thank you for participating in my research. I am a third year student at the University of Twente (Netherlands) and I am writing my Bachelor thesis about attitudes towards wind energy. In the following research you will be given statements about wind energy and I would like to ask you to answer them as honestly as possible. The survey will take around 10 minutes but you can take all the time you need. If you do not want to continue you are free to close this window without giving any further reason. Your data will be treated anonymously and therefore it is not possible to give you your exact results. However, if you are interested in the results please write me an e-mail to: [m.walther@student.utwente.nl](mailto:m.walther@student.utwente.nl) With pressing the 'next'-button in the right corner you agree with the terms mentioned above and declare that you understood the purpose of this research.

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What is your gender?

Male (1)

Female (2)

Neither (3)

How old are you?

What is your educational status?

University, Higher education (BA or MA) (1)

PHD (2)

High school (3)

Other, specify (4) \_\_\_\_\_

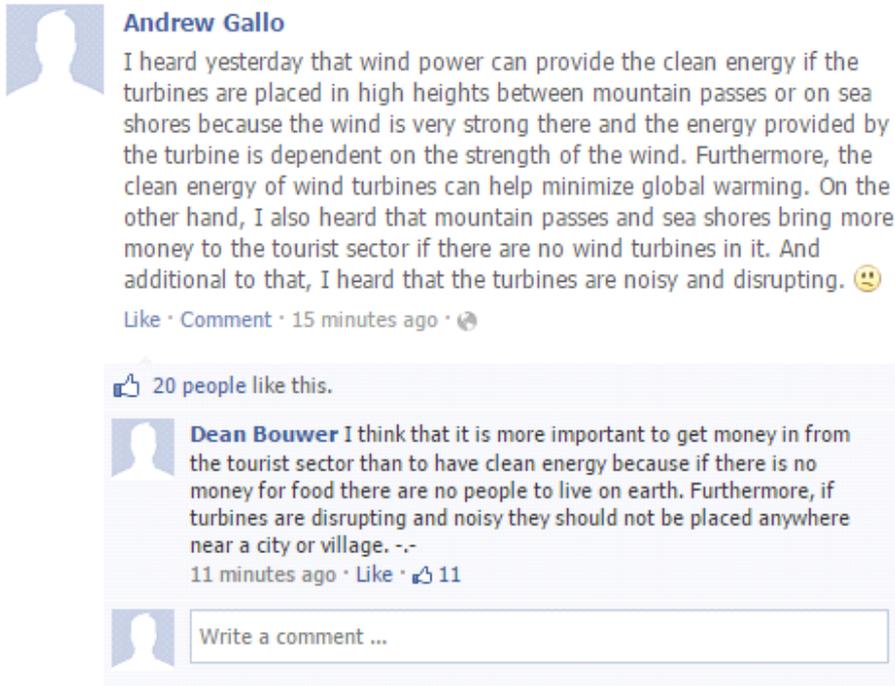
What is your nationality?

What is your country of residence?

And then either:

Please read the following Facebook-post and the comment.

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What was the subject of the Facebook-Post?

Hiking in the mountains (1)

Vacation activity (2)

Wind energy (3)

What kind of attitude had the comment of Dean Bouwer?

Positive (1)

Negative (2)

Neutral (3)

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Do you agree with the comment?

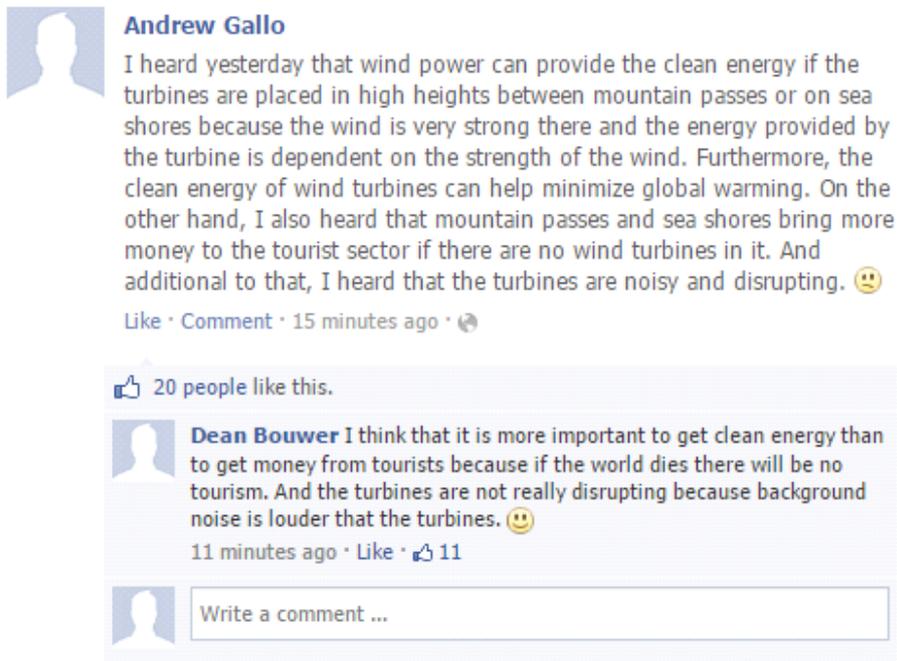
Yes (1)

Partly, explain (2) \_\_\_\_\_

No (3)

Or:

Please read the following Facebook-post and the comment.



The image shows a screenshot of a Facebook post and a comment. The post is by Andrew Gallo, who discusses the benefits of wind energy in high-altitude areas and the drawbacks of noise and disruption. A comment by Dean Bouwer responds, arguing that clean energy is more important than tourism revenue and that background noise is louder than turbine noise.

**Andrew Gallo**  
I heard yesterday that wind power can provide the clean energy if the turbines are placed in high heights between mountain passes or on sea shores because the wind is very strong there and the energy provided by the turbine is dependent on the strength of the wind. Furthermore, the clean energy of wind turbines can help minimize global warming. On the other hand, I also heard that mountain passes and sea shores bring more money to the tourist sector if there are no wind turbines in it. And additional to that, I heard that the turbines are noisy and disrupting. 😞  
Like · Comment · 15 minutes ago · 🌐

👍 20 people like this.

**Dean Bouwer** I think that it is more important to get clean energy than to get money from tourists because if the world dies there will be no tourism. And the turbines are not really disrupting because background noise is louder than the turbines. 😊  
11 minutes ago · Like · 👍 11

Write a comment ...

What was the subject of the Facebook-Post?

Hiking in the mountains (1)

Vacation activity (2)

Wind energy (3)

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What kind of attitude had the comment of Dean Bouwer?

Positive (1)

Negative (2)

Neutral (3)

Do you agree with the comment?

Yes (1)

Partly, explain (2) \_\_\_\_\_

No (3)

Or:

Please read the following Facebook-post and the comment.

☐☐☐

What was the subject of the Facebook-Post?

Hiking in the mountains (1)

Vacation activity (2)

Wind energy (3)

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What kind of attitude had the comment of Dean Bouwer?

Positive (1)

Negative (2)

Neutral (3)

Do you agree with the comment?

Yes (1)

Partly, explain (2) \_\_\_\_\_

No (3)

Or: No Fictitious Facebook-Post

Please give your agreement to the following statements

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
I think wind turbines are noisy and disrupting. (1)							

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<p>I think wind energy should be used to minimize global warming. (2)</p>						
<p>I think sea shores and mountain passes should be free from turbines for the sake of tourism. (3)</p>						

To what extent do you agree with the following statements?

	<p>Strongly disagree</p>	<p>Disagree (2)</p>	<p>Somewhat disagree</p>	<p>Neither agree</p>	<p>Somewhat agree (5)</p>	<p>Agree (6)</p>	<p>Strongly agree</p>
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	(1)		(3)	nor disagree (4)			(7)
Wind energy reduces the air pollution. (1)							
Wind energy is clean energy. (2)							
I support wind energy because it helps reducing global warming. (3)							
I support Wind energy because it is energy given by natural resources. (4)							

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<p>Wind energy helps protecting the environment. (5)</p>							
<p>I support wind energy because I live in a city where renewable energies get support. (6)</p>							
<p>I support wind energy because my neighbors use wind energy. (7)</p>							
<p>I support wind energy because there is a</p>							

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wind park near the city that I live in. (8)							
------------------------------------------------------	--	--	--	--	--	--	--

How much do you agree to the following statements that people sometimes use?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I do not want to have a wind park in my city because wind turbines are noisy. (1)							
I do not want to have a wind park in my city because							

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<p>the construction of the wind park would be noisy. (2)</p>						
<p>I do not want to have a wind park in my city because the roads would be covered with dirt during the construction phase of the wind park. (3)</p>						
<p>I do not want to have a wind park in my</p>						

INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

<p>city because the view would be taken by the wind park. (4)</p>						
<p>I do not want to have a wind park in my city because a wind park would not look nice. (5)</p>						
<p>I do not want to have a wind park in my city because the wind park would take away space for</p>						

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parks. (6)							
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The following statements are used by some people who oppose wind energy. To what extent do you agree?

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree or disagree (4)	Somewhat agree (5)	Agree (6)	Strongly disagree (7)
I think wind energy should not be used because it is expensive to build the turbines. (1)							
I think wind energy							

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<p>should not be used because the turbines do not look nice. (2)</p>							
<p>I think wind energy should not be used because the energy provided is expensive to buy. (3)</p>							
<p>I think</p>							

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<p>wind energy should not be used because the wind turbines take away big spaces. (4)</p>							
<p>I think wind energy should not be used because the wind turbines are loud. (5)</p>							

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The following statements are used by some people to support wind energy. To what extent do you agree?

	Strongly agree (1)	Agree (2)	Somewhat agree (3)	Neither agree nor disagree (4)	Somewhat disagree (5)	Disagree (6)	Strongly disagree (7)
I would support a wind park in my city because my neighbors would support it too. (1)							
I would support a wind park in my city because is I think it is the right thing to							

INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

do. (2)							
I would support a wind park in my city because it is important to protect the environment. (3)							
I would support a wind park in my city because it helps reducing global warming. (4)							
I would support a wind park in my city because the							

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wind turbines look nice. (5)							
I would support a wind park in my city because the wind would be used for something, in my opinion, good. (6)							

Is there a wind park near your city?

Yes (1)

I don't know (2)

No (3)

# INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

Do you or your parents use renewable energy?

Yes (1)

I don't know (2)

No (3)

How many days per week do you use Facebook?

Wind energy is a difficult topic and therefore some questions might have been difficult to understand.

Do you feel like you understood the questions properly? (1)							

Thank you for your participation. The question of my research is 'How do opinions that are shared by other people on social media influence the attitude of North-West-European people

## INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

in regards to wind energy?', which means that I want to know if people get influenced by positive or negative statements about wind energy. You were randomized in one of four conditions. If you saw a Facebook-Post (which was a fake) you were in one of the experiment conditions. If you did not see a fake Facebook-Post you were in the control condition. In the experiment condition your attitude and intentional behavior was manipulated through the fake Facebook-Post. If you want to have the results sent to you or if you have any further questions, please send me an e-mail to [M.walther@student.utwente.nl](mailto:M.walther@student.utwente.nl)

### 2. Additional text on Facebook

Hey guys,

I am currently trying to write my Bachelor thesis about attitudes about wind energy ;)

And I need a bunch of participants that are willing to spend 10 min for me to fill out the survey and share the link.

There are 3 things you need to fulfill... You have to be 18 years old, live in North-West Europe and you have to understand English well (if you are unsure just try it out, you can always stop it). Oh, and it is anonymously, so I cannot track your responses. :)

The description fits on you? Please fill the survey in and SHARE ;)

The survey will take about 10 minutes for you to fill in and you can pause it to continue later :)

And SHARE!! :)

Please! :)

Thank you in advance!

Greetings,

Your Michelle!

[https://utwentebbs.eu.qualtrics.com/jfe/form/SV\\_8w5ay8GyFKY9oBT](https://utwentebbs.eu.qualtrics.com/jfe/form/SV_8w5ay8GyFKY9oBT)

### 3. Additional text on LinkedIn

Hello,

I am currently writing my Bachelor thesis about attitudes about wind energy.

And I need some more participants that are willing to spend 10 min for me to fill out the online survey.

There are three things you need to full fill: You have to be 18 years old, live in North-West Europe and you have to understand English well (if you are unsure just try it. You can always stop your participation without giving any reason). The participation is anonymously, so I cannot track your responses and therefore cannot give information about individual responses. The survey will take about 10 minutes for you to fill in and you can pause it to continue later if you want to.

Thank you in advance!

Greetings,

Your Michelle!

[https://utwentebbs.eu.qualtrics.com/jfe/form/SV\\_8w5ay8GyFKY9oBT](https://utwentebbs.eu.qualtrics.com/jfe/form/SV_8w5ay8GyFKY9oBT)

### 4. Additional texts in WhatsApp

#### Dutch

Hey :)

Ik ben op het moment met mijn Bachelorthese bezig (wind energie) en heb een online vragenlijst die ingevullt mag worden :) het is anoniem en je kunt oo elk moment afbreken en/of later verder gaan. Als je hem niet wilt invullen is dat helemaal oke maar ik zou wel blij zijn als je het doet en de link misschien doorstuurt aan anderen :)

Voorwaarden zijn: 18 jaar en woonend in europa en goede taal kennis van engels :)

Groetjes,

Michelle :)

## INFLUENCES ON ATTITUDES TOWARDS WIND ENERGY

[https://utwentebbs.eu.qualtrics.com/jfe/form/SV\\_8w5ay8GyFKY9oBT](https://utwentebbs.eu.qualtrics.com/jfe/form/SV_8w5ay8GyFKY9oBT)

### German

Hey du,

Ich mache im Moment meinen Bachelor über Wind Energie und brauche ein Paar Leute die meinen Fragenbogen anonym auf Englisch ausfüllen. Du kannst jederzeit abbrechen wenn du nicht mehr willst oder unterbrechen und später weitermachen. Der Fragebogen dauert ca. 10 Minuten. Wenn du ihn nicht einfüllen willst ist das völlig ok. Aber ich würde mich freuen und ich fände es lieb wenn du den link weiterschicken würdest :)

LG :)

[https://utwentebbs.eu.qualtrics.com/jfe/form/SV\\_8w5ay8GyFKY9oBT](https://utwentebbs.eu.qualtrics.com/jfe/form/SV_8w5ay8GyFKY9oBT)