“I know it is better for the environment but what about me?” Explaining the cognitive dissonance between attitude and environmental friendly behavior

Bart van Maar
Communication science
Master Marketing Communication

First supervisor: Prof. Dr. M.D.T. de Jong
Second supervisor: S.R. Jansma, Msc

Abstract

Purpose: The purpose of this study is to explain the gap between attitude and environmental friendly behavior. This research explores the possible motives that people use to justify the behavior that is inconsistent with their attitudes. This information could be valuable for policy makers and organizations that attempt to influence environmental friendly behavior.

Method: To determine the variables that affect environmental friendly behavior, a literature review is conducted. Based on this literature study a new model is constructed based on the Theory of Planned Behavior and the Cognitive Dissonance Theory. This model included presumed dissonance reduction strategies related to environmental friendliness. Based on the research results it can be concluded which constructs are distinguished dissonance reduction strategies. To determine which variables affected environmental friendly behavior a survey among 275 Dutch participants was conducted.

Results: The results of the survey provided insights into the relationship between attitude, social influence and perceived behavioral control; these were significant predictors of intention that explained 34% of the variance. Between the relationship of dissonance and dissonance reduction strategies, the significant dissonance reduction strategies were anti-political correctness, avoidance of responsibility and procrastination; these constructs were also important determinants of intention. Moreover, by including these constructs in the Theory of Planned Behavior the predictive value of the model increased to 62%.

Conclusions: The outcome of this research provides new perspectives on predicting environmental friendly behavior. In addition to the variables of Theory of Planned Behavior, the determinants: anti-political correctness, responsibility and procrastination have a considerably negative effect on environmental friendly intentions. Therefore, in both theory and practice, these variables need to be considered when predicting or influencing environmental friendly behavior.

Keywords: Theory of Planned Behavior, Environmental friendliness, Cognitive Dissonance, Dissonance Reduction Strategies

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1. Introduction

The effects of climate change are becoming more problematic each year; these environmental problems are caused by human behavior (Steg & Vlek, 2009). Consumption behavior affects CO2 emissions that induce temperature rise, and therefore climate change. Moreover, household consumption worldwide causes 72% of all CO2 emissions (Hertwich & Peters, 2009; Klöckner, 2013). To avoid irreversible climate, the temperature rise needs to be reduced to 2° Celsius (Peters et al., 2012). Therefore, to cease further environmental damage, a transition towards environmental friendly behavior is necessary; environmental friendly behavior is described as behavior that is least destructive for the environment (Steg & Vlek, 2009). There are environmental friendly options for consumers, such as using solar power instead of fossil fuels or consume meat substitutes instead of meat. These alternatives are less harmful to the environment, however, the acceptance of those alternatives by consumers is not evident. Prothero et al. (2011) argue that there is a gap between environmental attitudes and actual environmental behavior; a positive attitude does not indicate environmental friendly behavior. However, Minton et al. (2018) state that attitude and environmental friendly behavior are related, although there are other factors, such as subjective norm, to be considered influencers of behavior.

The transition to environmental friendly behavior in the Netherlands progresses slowly; people are aware of the impact of their behavior, though behavioral change does not occur (I&O Research, 2019). Moreover, the public opinion is divided about the climate goals that are set for 2020 ("Eurobarometer," 2015). De Bakker and Dagevos (2011) also suggest that there is a gap between attitude and behavior in regards to reducing meat consumption in the Netherlands. De Bakker and Dagevos (2011) state that consumers should be approached with strategies that emphasize the ethical aspects of consumerism to evoke behavioral change. Kemp, Rotmans, and Loorbach (2007) researched the organizational and societal factors of the transition to environmental friendly behavior in the Netherlands. According to Kemp et al. (2007), the adequately studying development of pro-environmental behavior requires frameworks that include doubt and uncertainty.

The current study aims to explore the gap between attitude and environmental friendly behavior. Cleveland, Kalamas and Laroche (2012) state that by changing attitudes and intentions environmental friendly behavior can be induced. The Theory of Planned Behavior is a systematic model that includes attitude and intention, this framework is also used in multiple studies on pro-environmental behavior (e.g. De Leeuw, Valois, Ajzen & Schmidt, 2015; Han, Hsu, & Sheu, 2010). The Theory of Planned Behavior consists of the following constructs attitude, social norm and perceived behavioral control; these constructs are predictors of behavioral intention and therefore behavior (Ajzen, 1991). However, a limitation of this framework is that it describes the decision-making process of for various kinds of behavior and is not primarily focussed on environmental friendly behavior. Moreover, Kollmuss and Agyeman (2010) question the assumption of the Theory of Planned Behavior on rational behavior in relation to environmental friendliness. Also stated by Kemp et al. (2007), researches on environmental friendly behavior should also include constructs of uncertainty and doubt. Therefore, it is considered to include the Cognitive Dissonance Theory in this research; cognitive dissonance is described as a feeling of discomfort that occurs when an individual behaves in a way that is inconsistent with his attitudinal beliefs (Festinger, 1957). This theory is relevant for environmental friendly behavior because with dissonance, the gap between attitude and behavior could be explained. Additionally, people reduce their feelings dissonance by using dissonance reduction strategies, notions that justify their inconsistent behavior. In relation to environmental friendly behavior these dissonance reduction strategies could provide insights on the reasons why people refrain from environmental friendliness.

The theoretical contribution of this research is the application of the Cognitive Dissonance Theory and the Theory of Planned Behavior in explaining the gap between attitude and environmental friendly behavior. This research provides new insights into the cognitive process that people go through concerning environmental friendliness. Additionally, exploring the predictive value of dissonance reduction strategies on environmental friendly behavior extends the perspective of predicting environmental friendliness. In practice, the conclusions from this research will benefit governmental institutions, environmental organizations and other corporations that seek guidance for strategies on communicating and promoting environmental friendly behavior.

The purpose of the first research question is to explain the dissonance between attitude and environmental friendly behavior. The second research question focuses on the predictive value of the dissonance reduction strategies concerning environmental friendly behavior:

Research Question 1: "How can consumers' discrepancies between attitude and environmental friendly behavior be explained?"

Research Question 2: "What is the added value of including dissonance reduction strategies in explaining environmental friendly behavior?"

2. Theoretical framework

This chapter explains the theories and variables that are relevant for researching and predicting behavior and explaining the attitudinal gap. First, environmental friendly behavior is defined. After that, the Theory of Planned Behavior is explained. Then, the concept of cognitive dissonance is described including dissonance reduction strategies. Finally, the research model is presented.

2.1 Theory of Planned Behavior

To explain the discrepancy between attitude and environmental friendly behavior it is relevant to determine the influencers of these constructs. A model that offers insights in determinants of behavior is the Theory of Planned Behavior. This model was created by Ajzen (1991) and is an often-used framework in relation to predicting behavior; a visualization of the model is presented in figure 1. The Theory of Planned Behavior consists of three independent variables: attitude, social norm and perceived behavioral control. These three independent variables predict behavioral intention, which leads to behavior. Ajzen (1991) argues that the more positive the intention, the more likely that behavior will occur. So, the more positive the attitude towards environmental behavior the more likely that the intention to perform this behavior increases. Furthermore, the constructs of the Theory of Planned Behavior are used for measuring behavior in general; it was concluded that the framework could be expanded to provide a clearer view on specific behavior (Ajzen, 1991; Montano & Kasprzyk, 2015).

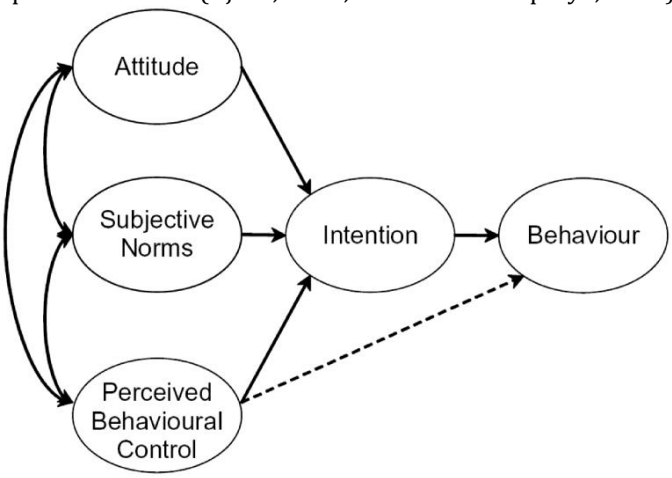

Figure 1. Theory of planned behavior (Ajzen, 1991)

Finally, predicting environmental friendly behavior is difficult while only using the traditional Theory of Planned Behavior model, by including additional variables the predictive value of the model increases. In the next paragraphs the variables of the Theory of Planned Behavior are operationalized.

Environmental friendly behavior

Environmental friendly behavior is defined as types of behavior that are the least harmful to the natural environment (Steg & Vlek, 2009). Environmental friendly activities such as reducing water consumption, separating waste, using public transport instead of the car. The negative consequences of consuming behavior on the environment are a result of human desires for example comfort, transport and pleasure (Stern, 2000). For example, air travel is a form of transportation that has an impact on air cleanliness, though this is a customary way of traveling that people use regardless (Hares, Dickinson & Wilkes, 2010).

The efforts to reduce the negative impact of human behavior seem relatively simple sacrifices to serve the greater good. However, people are less interested in changing to environmental friendly behavior, because it detracts from their perceived comfort (Peattie, 2010). Additionally, in relation to environmental friendliness, people need to sacrifice and conform to rules that are not in their direct best interest. Dolnicar and Grün (2009) argue that people need to sacrifice their hedonic needs to behave environmental friendly, therefore people act more egocentric and not environmental friendly.

Moreover, the attitude-behavior gap regarding environmental friendliness is addressed in various studies (Gupta & Ogden, 2006; Terlau & Hirsch, 2015; Tracy & Oskamp, 1983). The Theory of Planned Behavior is a known framework that has predictive value for behavior in general. For this

research it is interesting to focus on predicting environmental friendly behavior with the variables of the Theory of Planned Behavior.

Intention
In this research, intention is the dependent variable intention is a determinant of actual behavior (Schouten, 2013). It is influenced by attitude, social norm and perceived behavioral control. Customers with a positive attitude towards environmental friendly behavior intend to choose the for pro-environmental alternative (Laroche, Bergeron, & Barbaro-Forleo, 2001; Baker, Davis, & Weaver, 2013). However, Arkesteijn and Oerlemans (2005) argue that other variables can enhance the predictive value for behavior, intention is not the sole predictor of environmental friendly behavior.

Attitude
One of the main determinants of behavioral intention is attitude (Ajzen, 1991; Baker et al., 2013). Therefore, when an individual has a positive attitude towards environmental friendly behavior, this has a positive effect on the intention to perform this type of behavior. Attitude is explained as a set of beliefs and evaluations, whether positive or negative, towards a subject (Ajzen, 2001). Baker et al. (2013) state that attitude is affected by awareness of environmental problem, this suggests that the perceived urgency of environmental friendliness influences attitude towards environmental friendliness. Bekker et al. (2017) stated that, when informed about the effects of pro-environmental behavior, the attitude towards the subject positively changed.

Hypothesis 1: Attitude is positively related to environmental friendly behavioral intentions.

Social influence
Social influence relates to the influence of the individual's social environment. The social norm indicates what is acceptable, and people generally make an effort to meet that norm (Ajzen, 1991). The study by (Bernedo, Ferraro, & Price, 2014) concluded that social influence affects the intention and even behavior of an individual in the environmental context. Moreover, the individual evaluates what is expected of him. So, if the people around the individual are behaving environmental friendly, it has a positive influence on the intention to behave environmental friendly (Hafner, Elmes & Read, 2019). In the study by Schultz, Nolan, Cialdini, Goldstein, and Griskevicius (2007) social influence was used to influence energy consumption. Households adjusted their energy consumption towards the norm when confronted with the descriptive norm of their neighborhood.

Hypothesis 2: Social influence is positively related to environmental friendly behavioral intentions.

Perceived behavioral control
The perceived behavioral control refers to the perceived ability to perform the behavior (Ajzen, 1991). If an individual perceives himself incapable of performing the behavior it negatively affects the intention of environmental friendly behavior (Pelenur & Cruickshank, 2012). Perceived behavioral control in relation to environmental friendly behavior also includes financial ability (Laroche et al., 2001; Roe, Teisl, Levy, & Russell, 2001). Additionally, perceived behavioral control relates to the perceived accessibility and ability to perform the type of behavior, this affects behavior directly (Ajzen, 1991).

Hypothesis 3: Perceived behavioral control is positively related to environmental friendly behavioral intentions.

2.2 Shortcomings of the Theory of Planned Behavior concerning environmental friendliness

The Theory of Planned Behavior is used in previous studies on predicting environmental friendly behavior (e.g. De Leeuw et al., 2015; Han et al., 2010; Mannetti, Pierro, & Livi, 2004). However, the Theory of Planned Behavior does not accurately predict environmental friendly behavior solely with the variables of this framework, because these constructs are not specifically measuring environmental friendly behavior (Derckx, 2015; Kollmuss & Agyeman, 2010). Moreover, Kollmuss and Agyeman (2010) argue that there is a gap between attitude and environmental friendly behavior and that the Theory of Planned Behavior falls short in explaining this gap because of the presumption that people act rationally. Therefore, additional variables contribute to the predictive

value of the model. In the research by Paul, Modi, and Patel (2016), an extended version of the Theory of Planned Behavior was applied in researching green consumerism, in this research the construct of environmental concern was included. Including additional variables in the framework of the Theory of Planned Behavior increases the predictive value of the model when applied to environmental friendly behavior (De Leeuw et al., 2015; Paul et al., 2016). Therefore, it is relevant for this research to include additional variables in the framework of the Theory of Planned Behavior.

2.3 Cognitive dissonance

On the one hand, people have a positive attitude towards environmental friendliness, though on the other hand people are not willing to change their behavior, a gap remains between attitude and behavior. Odou, Darke, and Voisin (2018) state that the inconsistency between attitude and environmental friendly behavior is a form of hypocrisy that induces cognitive dissonance. Cognitive dissonance refers to the unpleasant feeling that occurs when the behavior is inconsistent with the attitude and beliefs of an individual (Festinger, 1957). Within the Theory of Planned Behavior there is no explanation for the inconsistency between attitude and behavior or cognitive dissonance (Stone, Jawahar, & Kisamore, 2009).

Because there is a gap between attitude and environmental friendly behavior it is interesting to explore the influence of cognitive dissonance in the context of the Theory of Planned Behavior. Dowsett, Semmler, Bray, Ankeny, and Chur-Hansen (2018) state that individuals search for a justification of their behavior when it differs from their attitude. When there is an attitudinal gap, it is assumed that the individual experiences a feeling of dissonance. In the research by Osbaldiston and Schott (2011) cognitive dissonance is mentioned as an influencing variable for pro-environmental behavior. Cognitive dissonance was used as a method to address the beliefs and attitudes to evoke environmental friendly behavior because the beliefs and attitudes were positive towards this type of behavior. This proves that dissonance is a relevant variable in the context of influencing environmental friendly behavior.

Dissonance reduction strategies

When dissonance occurs people try to reduce the feeling of discomfort by using dissonance reduction strategies (Shultz & Lepper, 1996). Dissonance reduction strategies are motives that an individual uses to justify the behavior that is inconsistent with their attitude and beliefs (Dowsett et al., 2018; Elliot & Devine, 1994). In relation to environmental friendly behavior, Hafner et al. (2019) mentioned multiple motives that can be explained as dissonance reduction strategies: action inertia (why do I have to change?), delay discounting (when will I get my reward?) and habit (what do I usually do?). Hafner et al. (2019) also addressed the constructs of the Theory of Planned Behavior as determinants of environmental friendly behavior: attitude (how does it make me feel?), social norms (what do my friends and neighbors do?) and perceived behavioral control (can I do it?). It is presumed that there are other dissonance reduction strategies that are applicable to environmental friendly behavior.

In this research it is determined which dissonance reduction strategies are related to the intention to perform environmental friendly behavior. Additionally, the strategies could function as attitudinal beliefs; moreover, the dissonance reduction strategies could have predictive value for both intention and attitude. The outcome of this research provides insights into how people justify their behavior that is inconsistent with their attitude in relation to environmental friendliness and on additional determinants of intention. The following constructs are proposed cognitive dissonance reduction strategies: autonomy, anti-political correctness, preserving personal comfort, resisting lifestyle change, social comparison, avoidance of responsibility, trust in technology, habit, lack of urgency, procrastination and defeatism. These constructs justify non-environmental behavior that contradicts the initial positive attitude towards pro-environmental behavior. Although, it is suspected that these constructs function as dissonance reduction strategies, these strategies may also affect behavioral intention or attitude.

Autonomy
Autonomy relates to the resistance against rules and regulations formulated by authority, although the individual somewhat agrees with these rules and regulations. For individuals it is a basic need to have a sense of autonomy or self-determination and to be satisfied with their motivations and decisions (Ryan & Deci, 2000). In the study by Gagné (2003) autonomy is researched in relation to prosocial behavior which relates to actions that are beneficial for other people and the environment (Weinstein & Ryan, 2010). Gagné (2003) concluded that prosocial behavior is perceived negative when forced upon people. In the context of freedom of choice and autonomy, an individual could perceive pro-environmental actions as forced upon and therefore negative. Also, De Groot and Steg (2009) argued that egoistic values are negative in relation to environmental friendliness. Therefore, when an individual has a higher need for autonomy when he is less inclined to conform to rules and regulations.

Anti-political correctness
Anti-political correctness refers to the idea that people do not have to do "the right thing" just because scientists or politicians say so. In the article by McCright, Dentzman, Charters, and Dietz (2013) it is mentioned that certain environmental studies, that address the impact of global warming, are dismissed as a hoax to harm industries. Also, people who hold hierarchical values tend to care less about environmental issues than people who hold more cooperative values (Carlton, Perry-Hill, Huber, & Prokopy, 2015). Gauchat (2008) stated that the anti-science sentiment among American citizens sprouts from the lack of scientific knowledge, religious beliefs and the social in-group and out-group. Thus, people who have a sense of anti-political correctness perceive environmentalism as an unnecessary issue.

Preserving personal comfort
This variable relates to the way an individual prioritizes behavior to meet his comfort standards. By changing his behavior, the individual experiences deduction of his perceived comfort. Baker et al. (2013) state that people are less willing to partake in environmental friendly behavior if that behavior interferes with their comfort. Comfort, amongst others relates to the use of water, warmth, but also food (Peattie, 2010; Shove, 2003). These are more self-centered or hedonic values; Hüttel, Ziesemer, Peyer, and Balderjahn (2018) state in their research that non-environmental friendly consumerism is induced by hedonic values.

Resisting lifestyle change
Environmental friendly behavior can have a great impact on an individual's life, resisting this lifestyle change is a strategy to justify behavior that is inconsistent with the individual's attitudes and beliefs. Brown and Kasser (2005) argue that environmental friendly behavior and lifestyle are difficult to optimize on the same level. An individual needs to change or sacrifice his lifestyle in order to behave in a more environmental friendly manner. In some cases the lifestyle change is too dramatic, a sacrifice that the individual cannot make. Also, Schweizer et al. (2016) state that there is often a resistance towards change. In relation to environmental friendly behavior here is a general feeling that this limits the current lifestyle.

Social comparison
Hafner et al. (2019) state that individuals compare their behavior often with friends, family and neighbors, to determine what the normative behavior is. In this research social comparison refers to how people compare themselves with the people in their social environment to justify their own reluctance on environmental friendly behavior. An individual justifies his actions by comparing his behavior with others (McMakin, Malone, & Lundgren, 2002). Festinger (1954) also refers to social comparison as a method to reduce the uncertainty that comes with cognitive dissonance and sets the standard for future behavior.

Avoidance of responsibility
Avoidance of responsibility is a relevant variable in relation to environmental friendly behavior. According to Arkesteijn and Oerlemans (2005) people are willing to invest in a solution when they feel responsible for the problem. When this is not the case people can turn their back to the issue without remorse. Fielding and Head (2012) stated that in relation to environmental friendly behavior, shifting responsibility could have a negative effect on intention. Moreover, when the individual does not perceive the problem as his responsibility his intention to act environmentally friendly decreases.

Trust in technology
This construct relates to the belief that technological innovations foster the transition to a sustainable industry and that minimal effort is required of the individual (Gifford, 2011). Trust in technology is defined by Huesemann (2003) as the agreement between industrial and trust in technology, economic and societal growth. Also, Pacala and Socolow (2004) argue that with the technological progress from that time the climate problem would be solved within the next 50 years (starting from 2004). However, Huesemann (2003) argues that technological progress is not realistic since the current society is based on non-renewable energy and that the energy transition is an ethical issue instead of a technological one.

Habit
The habit of behavior also affects the likability of changing behavior. Routine needs to change to attain behavioral change (Stern, 2000). Habit is described as past behavior that becomes more automated over time (Conner & Abraham, 2001; Hafner et al., 2019). Habit is a repetition of actions that are difficult to break. When an individual acts out of habit he is more reluctant to change this behavior.

Lack of urgency
With this dissonance reduction strategy the individual feels that the problem is not relevant in his or her lifetime. Eyal, Sagristano, Trope, Liberman, and Chaiken (2009) state in their study that the distant future can be too abstract for an individual to form an attitude or intention. Also, Derckx (2015) refers to urgency as prioritizing; the lack of urgency means that environmental friendly behavior is relatively low on the list of activities.

Procrastination
Procrastination relates to avoiding or postponing behavior, mostly unpleasant or boring, even though it is important. This is most applicable to actions that are regulated by the individual (e.g. study, work-out, cleaning) (Tuckman, 1991). In the study by Hafner et al. (2019) a similar construct is addressed: action inertia. This refers to the inaction of an individual in relation to pro-environmental behavior. The research by Lillemo (2014) focused on procrastination in relation to environmental friendliness; the main finding was that procrastination correlates with a lower involvement in pro-environmental behavior.

Defeatism
In this research, defeatism is defined as the feeling of giving up. This notion refers to the thought that environmental friendly behavior does not solve the problem of climate change. In the research by Kenis and Mathijs (2012) this variable is also described as a sense of powerlessness. Within defeatism the notion of social dilemma can be defined. Social dilemma is based on the uncertainty that revolves around societal behavior. For instance the notion “nobody is doing it so why should I?” This uncertainty revolves around trust in societal behavior and therefore a sense of defeatism. The decision to purchase non-environmental products versus environmental friendly alternatives is a dilemma (Gupta & Ogden, 2009). When an individual decides to invest in environmental friendly behavior, it is not a guarantee that society follows, hence the sense of defeatism.

It is expected that the strategies that are described above add predictive value to the framework of the Theory of Planned Behavior; however, it is uncertain which strategies. An explorative hypothesis is therefore constructed concerning the relationship between the dissonance reduction strategies and environmental friendly behavior. The results of this research confirm which constructs proof to be dissonance reduction strategies.

> *Hypothesis 4: Dissonance reduction strategies add predictive value to the prediction of intention.*

2.4 Research model

The model for this study combines the elements of the Theory of Planned Behavior and the Cognitive Dissonance Theory, emphasizing on the reduction strategies. This model is presented in figure 2.

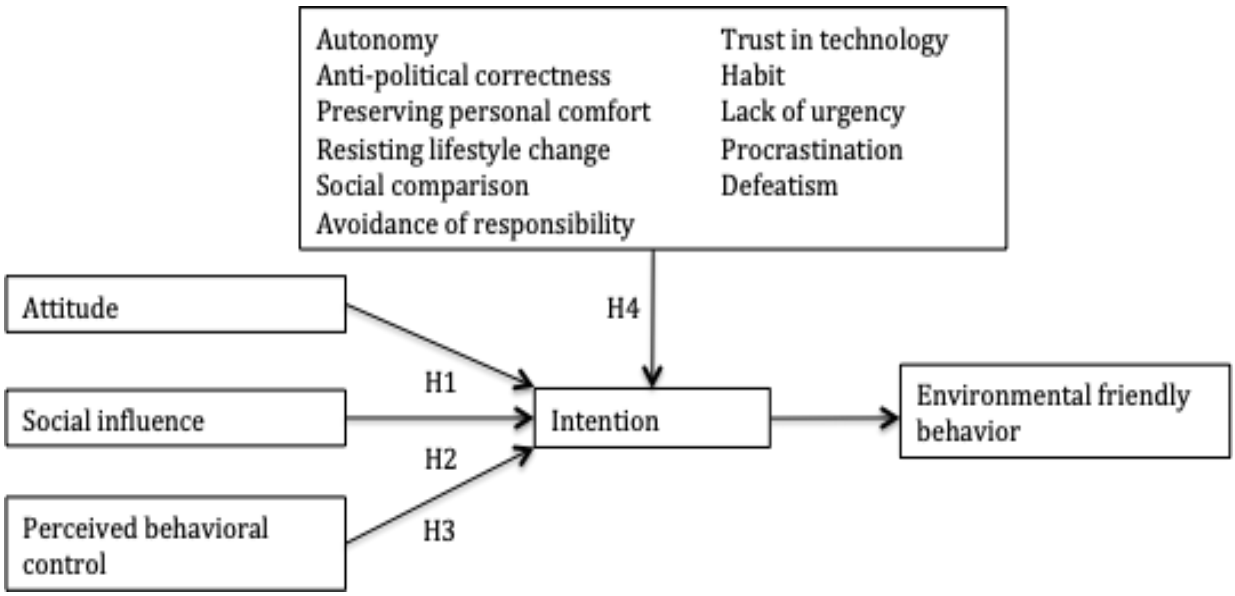

Figure 2 Predicting environmental friendly behavior and the effect of dissonance reduction strategies

In summary, the following hypotheses are tested in this study:

Hypothesis 1: Attitude is positively related to environmental friendly behavioral intentions.
Hypothesis 2: Social influence is positively related to environmental friendly behavioral intentions.
Hypothesis 3: Perceived behavioral control is positively related to environmental friendly behavioral intentions.
Hypothesis 4: Dissonance reduction strategies add predictive value to the prediction of intention.

3. Method

A quantitative research was conducted to test the model in figure 2. In this section the method of the research is further described. The research design, procedure, participants and the measurement instrument will be explained.

3.1 Design

The aim of this research is to explore the gap between attitude and environmental friendly behavior in the Netherlands. This was researched by conducting a survey consisting of three parts. In the first part of the survey the variables from the Theory of Planned Behavior were tested; attitude, social influence, perceived behavioral control, intention and behavior. The second part of the questionnaire measured cognitive dissonance and assumed dissonance reduction strategies or barriers not to perform environmental friendly behavior. The variables that were tested were cognitive dissonance, autonomy, anti-political correctness, preserving personal comfort, resisting lifestyle change, social comparison, avoidance of responsibility, trust in technology, habit, lack of urgency, procrastination, and defeatism. The survey concluded with a set of questions that considered the demographics of the participant.

To determine the relevance of the dissonance reduction strategies in the Netherlands interviews were conducted among ten Dutch students at the University of Twente. The motives that were mentioned were autonomy, comfort, dramatic lifestyle change, social comparison, lack of responsibility, trust in technology, habit, urgency, procrastination and defeatism. A table with a summary of the interview statements can be found in Appendix A.

3.2 Measurement

The survey was designed with online survey tool Qualtrics. In this survey the constructs of the previous chapter were tested on a sample of participants. The survey consisted of an introduction and a short explanation on environmental friendly behavior. This was done in order to inform participant about the intended types of behavior. Furthermore, the participant was presented with seventeen questions each with four items to measure the variable on a seven-point Likert scale where "one" was "fully disagree" and "seven" was "fully agree". At the end of the survey, the respondents answered four demographic questions (gender, age, education, province).

3.2.1 Items

Attitude was described as 'the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question' (Ajzen, 1991, p. 188). The items used to measure this construct are derived from the studies by Derckx (2015) and Schouten (2013). Example item: "I am positive about environmental friendly behavior".

Social influence or subjective norm is defined by (Ajzen, 1991, p. 188) as 'the perceived social pressure to perform or not to perform the behavior'. The items that are being used to measure social influence are based on the research by Derckx (2015). Example item: "My friends and family care about environmental friendly behavior."

Perceived behavioral control is referred to as 'the perceived ease or difficulty of performing the behavior' (Ajzen, 1991, p. 188). Items to measure perceived behavioral control are derived from Michalos, Creech, McDonald, and Kahlke (2009) and Schouten (2013). Example item: "I am able to perform in an environmental friendly manner."

Intention is described as an 'indicator of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior' (Ajzen, 1991, p. 181). Items for measuring this construct are derived from previous measurements (Derckx, 2015; Schouten, 2013). Example item: "I intent to purchase environmental friendly products."

Environmental friendly behavior is described as 'behavior that harms the environment as little as possible, or even benefits the environment' (Steg & Vlek, 2009). Items are based on the study by Derckx (2015). Example item: "I always behave in an environmental friendly manner".

Cognitive dissonance is referred to as the psychological discomfort when there is a discrepancy between attitudinal beliefs and behavior (Elliot & Devine, 1994; Festinger, 1957). Example item: "I find it unpleasant that I do not behave as environmental as I would like."

Autonomy is described as the perceived freedom of choice or self-determination (Ryan & Deci, 2000). Items to test the sense of autonomy are based on the General Need Satisfaction Scale (Ilardi, Leone, Kasser, & Ryan, 1993). Example item: "I want to decide for myself how to live my life, even though it could harm the environment."

Anti-political correctness relates to the anti-science and anti-establishment opinions of an individual (McCright et al., 2013). Example item: "I will not partake in the hype of environmental friendly behavior."

Preserving personal comfort relates to the preservation of the individual's own luxuries even at the expense of environmental friendliness (Baker et al., 2013). Example item: "I do not behave environmental friendly because I like that better."

Resisting lifestyle change refers to the resistance to change behavior because of the change in lifestyle (Schweizer et al., 2016). Example item: "I need to change my life too drastically to contribute to environmental friendly society."

Social comparison refers to the strategy to reduce uncertainty of the behavior of the individual (Festinger, 1954). Example item: "Compared to other people I am doing already environmental friendly."

Avoidance of responsibility refers to the lack of responsibility to improve the world and shifting the responsibility to others (Derckx, 2015). The items are derived from Derckx (2015); Example item: "I think I am not responsible for behaving environmental friendly."

Trust in technology refers to the belief that future innovations will solve the climate problem (Gifford, 2011). Example item: "In the end technological innovations will solve the climate problem."

Habit refers to behavior that became routine over time, which is difficult to change. Possible items to research this construct are derived from (Derckx, 2015): "For years I do the same things, therefore I am not going to change."

Lack of urgency is referred to as the low prioritizing of environmental friendly behavior (Derckx, 2015). Example item: "There will not be any noticeable damage in the next 100 years."

Procrastination relates to the inaction of people in regards to environmental friendly behavior (Hafner et al., 2019). Items for measuring procrastination are based on the items from the research by Tuckman (1991). Example item: "When it concerns environmental friendly behavior, I procrastinate."

Defeatism refers to the notion that environmental friendly behavior does not help to solve the problem of climate change. Items to measure this construct are based on the research by Derckx (2015). Example item: "Whatever we do to try and solve the climate problem, it will not have any use".

3.2.2 Pre-test Survey

First, the survey was pre-tested with five people to determine any errors or mistakes in the first version. There were a few changes made on the functionality of the survey and on the formulation of some statements. For instance, a statement about trust in technology was changed from: "In the end technology will solve everything" to "Thanks to trust in technology a solution will be found to solve the climate problem." The survey was amended according to the feedback from the pre-test; after this, the survey was distributed.

3.2.3 Scale construction

A factor analysis (varimax rotation) was executed to determine the constructs based on the items that correlated. These analyses were done in two parts: First, an analysis was done concerning the items that were intended to measure constructs from the Theory of Planned Behavior, including the items that were intended to measure dissonance. The second analysis consisted of the items that were intended to measure dissonance reduction strategies (Appendix B). In table 1 the newly formulated variables, based on the factor analysis, are presented. In this table, the Cronbach's alpha is specified as α; the values in table 1 are all above .70 and below .90, these constructs are reliable (Tavakol & Dennick, 2011).

Intention and environmental friendly behavior were combined to form a new construct. Although this construct consisted of more items that were intended to measure behavior, the new construct is labeled behavioral intention since actual behavior is difficult to measure based on a self-reported questionnaire. Anti-political correctness was measured with all the intended constructs of anti-political correctness and one item that was presumed to measure autonomy. Procrastination was measured with all constructs of procrastination and two habit items.

Additionally, some constructs were excluded from the next analyses because the items did not load on this construct e.g. urgency and social comparison.

Table 1

Reliability of the new constructs after factor analysis

	Number of items that measured this construct	α
Attitude	3	.74
Social influence	3	.74
Perceived behavioral control	4	.75
Intention	6	.88
Cognitive dissonance	3	.78
Anti-political correctness	5	.75
Preserving personal comfort	3	.71
Resisting lifestyle change	4	.83
Avoidance of responsibility	3	.71
Trust in technology	4	.84
Procrastination	6	.89
Defeatism	4	.86

Note: α = reliability

3.3 Participants

The distribution methods of the survey were convenience sampling and snowball sampling. Participants were approached via social media (Facebook, LinkedIn, Twitter) with a short post that announced the subject of the survey, the estimated completion time and the survey link. Additionally, a known Dutch writer was approached to participate in the research. After her participation she shared the link with her 10.000 Twitter followers, this link was retweeted, which resulted in a snowball sample.

A sample group of 275 respondents completed the anonymous recorded survey. The people that completed the survey were all based in the Netherlands and aged between 16 and 72. The sample was acquired by convenience sampling. Additionally, there was no age restriction or demographic barrier that caused exclusion from participating; individuals that made their own choices in relation to behavior were eligible to participate.

This section presents the demographic statistics of respondents of this study; this includes, gender, age and education level. The total sample contained 275 participants, and there was an equal distribution of gender: 54% male and 46% female participants.

The mean age of the sample was 38 with a standard deviation of 16. The majority of the sample, 49% of the participants, was aged between 21 and 30. Also, 4% of the participants were aged between 16 and 20 and 11% of the participants that filled out the survey aged 61 or higher. The other 34% of the participants were aged between 31 up to 60. It can be stated that the majority of the sample had higher education, 77% of the sample had either higher vocational or university education. The other educational levels are less represented in the sample.

3.4 Procedure

The link that was distributed online gave the respondents access to the survey. First, the respondents were presented with a short text that introduced the survey, the topic and additional information on data anonymity. Moreover, this text emphasized the fact that there was no right or wrong answer to the questions in the survey. Lastly, an email address was provided for any questions or remarks about the research. Then the respondents answered the questions about the constructs of this research and the demographic questions. By clicking next on the last page, the survey was processed.

4. Results

In this chapter the results of the research are presented. In the first paragraph, the descriptive statistics for each variable are visualized for a better understanding of the overall responses. Second, the correlation and multiple regression analysis of the Theory of Planned Behavior are presented. The results of the correlation between the dissonance reduction strategies and the relationship between dissonance and the dissonance reduction strategies are presented in the third paragraph. Then, the relationship between intention and the dissonance reduction strategies is presented. In the fifth paragraph a mediation analysis on attitude is conducted. Finally, the new model is presented.

Before conducting the multiple regression analysis, a number of assumptions were tested on outliers, normality, multicollinearity and homoscedasticity. Based on the outcome of these tests, it was concluded that the regression analyses can be executed with the dataset. An overview of the results can be found in Appendix D.

4.1 Descriptive statistics

The descriptive statistics are presented in table 2. The constructs were measured at a seven-point Likert scale (1 was "fully disagree" and 7 was "fully agree). According to the results, the average score on attitude was high compared to the other constructs. Moreover, the sample agreed more with the items concerning attitude than intention. Thus, there is a visible gap between the mean score on attitude and the mean score on intention.

Table 2

Descriptive statistics

	M	**SD**
Attitude	6.2	.8
Social influence	4.8	1.0
Perceived behavioral control	5.5	.8
Intention	4.5	1.1
Cognitive dissonance	4.4	1.2
Anti-political correctness	3.4	1.1
Preserving personal comfort	3.8	1.2
Resisting lifestyle change	3.1	1.1
Avoidance of responsibility	2.6	1.0
Trust in technology	4.5	1.2
Procrastination	3.1	1.2
Defeatism	2.6	1.2

N = 275. M= mean SD = standard deviation.
Note: Theory of Planned Behavior: Mean close to 1: negative towards environmental friendliness - Mean close to 7: positive towards environmental friendly behavior
Dissonance and the reduction strategies: Mean close to 1: dissonance or the reduction strategy is not experienced by participants - Mean close to 7: dissonance or the reduction strategy is experienced by participants

According to the results, the higher the mean score for dissonance and dissonance reduction strategies, the more present the feeling of dissonance or the dissonance reduction strategy. Additionally, the average score on trust in technology was high compared to the other constructs. The mean scores for defeatism and avoidance of responsibility were relatively low, on average participants felt experience these constructs the least.

4.2 Theory of Planned Behavior model testing

In this section the correlations and regression analysis regarding the Theory of Planned Behavior are presented.

Correlations between the Theory of Planned Behavior variables

The relationships between the variables were determined using Pearson correlation coefficients. In table 3 the correlations between the constructs from the Theory of Planned Behavior are presented. Based on the results, the attitude, perceived behavioral control and social influence had a significant positive relationship with intention.

Table 3

Correlations table Theory of Planned Behavior

	Intention	Attitude	Perceived behavioral control	Social influence
Intention	-			
Attitude	.40**	-		
Perceived behavioral control	.43**	.14*	-	
Social influence	.46**	.45**	.32**	-

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Predicting behavioral intention with Theory of Planned Behavior

In this section, the results of the multiple regression analysis for the constructs of the Theory of Planned Behavior are presented. Before conducting a regression analysis the constructs were tested on multicollinearity; According to Mansfield and Helms (1982) there is no multicollinearity with a VIF statistic between 1 and 10, the highest VIF statistic in this analysis was 1.3, therefore there is no multicollinearity.

In table 5 the results for the regression analysis of the Theory of Planned Behavior are presented. With this analysis the predictive value of the constructs of the Theory of Planned Behavior was tested. When attitude, social influence and perceived behavioral control are positive the behavioral intention can be predicted (Ajzen, 1991).

Based on the outcome of this analysis, 34% of the variance can be explained with the constructs attitude, social influence and perceived behavioral control.

Table 4

Multiple regression Theory of Planned Behavior

Variable	R^2	β	t
Attitude		.24	4.4**
Social influence		.25	4.3**
Perceived behavioral control		.31	6.0**
R^2	.34		

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance.
**. Significant at the 0.01 level (2-tailed).
*. Significant at the 0.05 level (2-tailed).

4.3 The effect of the dissonance reduction strategies on cognitive dissonance

This section presents the effect of dissonance reduction strategies on cognitive dissonance. It is not certain if the strategies that were constructed based on the literature and the interviews are dissonance reduction strategies. Therefore, a multiple regression analysis was executed to verify which strategies were related to cognitive dissonance and therefore proved to be dissonance reduction strategies.

In the next paragraph the correlations between the different constructs are presented. Then the multiple regression analyses are presented, this includes a regression analysis with dissonance as a dependent variable to determine the importance of this construct.

Correlations between dissonance reduction strategies and cognitive dissonance

This section elaborates more on the correlations between dissonance and dissonance reductions strategies, in table 5 the correlations are presented. According to these statistics, dissonance had a significant correlation with anti-political correctness, avoidance of responsibility, procrastination and defeatism. The correlations with preserving personal comfort, resisting lifestyle change and trust in technology were low; it was assumed that those constructs are not relevant in the context of reducing cognitive dissonance.

Table 5

Correlations between cognitive dissonance and dissonance reduction strategies

	Cognitive dissonance	Anti-political correctness	Preserving personal comfort	Resisting lifestyle change	Avoidance of responsibility	Trust in technology	Procrastination	Defeatism
Cognitive dissonance	-							
Anti-political correctness	-.26**	-						
Preserving personal comfort	-.02	.39**	-					
Resisting lifestyle change	.09	.37**	.48**	-				
Avoidance of responsibility	-.31**	.49**	.32**	.35**	-			
Trust in technology	.00	.15*	.29**	.15*	.17*	-		
Procrastination	.22**	.37**	.49**	.67**	.31**	.14*	-	
Defeatism	-.20**	.38**	.19**	.26**	.42 **	-.10 **	.24**	-

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Relationship between dissonance reduction strategies and cognitive dissonance

A multiple regression analysis was conducted to determine the relationship between dissonance and dissonance reduction strategies. Furthermore, with the outcome of this analysis it can be stated which strategies reduce dissonance and which strategies do not. The dependent variable in this analysis was cognitive dissonance, and the predictive value of the dissonance reduction strategies was analyzed.

Before executing the regression analysis the variables were assessed on multicollinearity; based on this analysis on collinearity the highest VIF statistic is 2.2, this confirms that there is no multicollinearity between the constructs (Mansfield & Helms, 1982).

Table 6

Relationship between dissonance reduction strategies and cognitive dissonance

Variable	R^2	β	t
Anti-political correctness		-.24	-3,61**
Preserving personal Comfort		-.05	-.77
Resisting lifestyle change		.06	.77
Avoidance of responsibility		-.30	-4.57**
Trust in technology		.03	.51
Procrastination		.40	5.35**
Defeatism		-.08	-1.27
R^2	.24		

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

According to the analysis, anti-political correctness, avoidance of responsibility and procrastination have predictive value for dissonance. Procrastination had a positive effect on dissonance and anti-political correctness and avoidance of responsibility had a negative effect. So, procrastination increases dissonance and anti-political correctness and avoidance of responsibility reduce dissonance. Based on the outcome of this analysis it is concluded that avoidance of responsibility and anti-political correctness qualified as dissonance reduction strategies and that procrastination had an increasing effect on dissonance.

4.4 Relationship between dissonance reduction strategies and intention

It was analyzed if the dissonance reduction strategies could add predictive value to the model of the Theory of Planned Behavior in relation to environmental friendly behavior. Only the dissonance reduction strategies that were significant in the analysis in 4.3 are analyzed, anti-political correctness, avoidance of responsibility and procrastination. The variables preserving comfort, resisting lifestyle change, trust in technology and defeatism were excluded from the mediation analysis since these variables were not significant dissonance reduction strategies according to the results.

Table 7

Relationship between intention and dissonance reduction strategies

Variable	R^2	β	t
Anti-political correctness		-.16	-3.35**
Avoidance of responsibility		-.25	-5.32**
Procrastination		-.54	-12.39**
R^2	.56		

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance.
**. Significant at the 0.01 level (2-tailed).
*. Significant at the 0.05 level (2-tailed).

Based on the outcome of this regression analysis all the dissonance reduction strategies had a negative effect on intention. With these constructs 56% of the variance can be explained. Therefore, anti-political correctness, avoidance of responsibility and procrastination affect the intention of environmental friendly behavior.

4.5 Mediating effect of attitude

This section presents the mediator analysis of attitude in relation to the significant dissonance reduction strategies. With this analysis it is determined which dissonance reduction strategies are direct influencers of intention and which strategies are beliefs that influence the attitude towards environmental friendly behavior. A mediation analysis offers insights into the relationship between the dissonance reduction strategies and attitude and the relationship between dissonance reduction strategies and intention and which strategies are mediated by attitude.

This mediation analysis consists of three steps; first, the relationship between intention and the independent variables is tested, this is done by separate regression analyses to determine the individual effect. The same is done for the relationship between the attitude and the independent variables. Then the relationship between attitude and intention is analyzed.

In table 8 the relationship between intention and the dissonance reduction strategies is presented. Based on the results, anti-political correctness, avoidance of responsibility and procrastination had a negative effect on intention. The variance that can be explained with procrastination is 46%; avoidance of responsibility the explained variance is 25% and anti-political correctness the explained variance is 23%.

Table 8

Relationship between dissonance reduction strategies and intention

Variable	R^2	β	t
Anti-political correctness	.23	-.48	-9.016**
Avoidance of responsibility	.25	-.50	-9.41**
Procrastination	.46	-.68	-15.18**

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

In table 9 the relationship between attitude and the independent variables is presented. According to the results, anti-political correctness, responsibility and procrastination had a negative effect on attitude. Anti-political correctness explains 18% of the variance and affects attitude the most, compared to the other two variables in table 9.

Table 9

Relationship between dissonance reduction strategies and attitude

Variable	R^2	β	t
Anti-political correctness	.18	-.42	-7.66**
Avoidance of responsibility	.12	-.35	-6.22**
Procrastination	.06	-.25	-4.23**

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)

The relationship between attitude and intention was also analyzed. Attitude is known as a predictor of intention; also in this research it is statistically significant and has 16% of the variance can be explained with β=.40 and t=7.19.

In table 10 the relationship between intention and the independent variables mediated by attitude is presented, with behavioral intention as dependent variable. Based on the results of this analysis it was determined that there was no mediation effect of attitude with these constructs since all variables are significant. According to the results presented in table 10, the attitude and the dissonance reduction strategies explain 58% of the variance in predicting intention to perform environmental friendly behavior.

Table 10

The relationship between dissonance reductions strategies and intention mediated by attitude

Variable		β	t
Attitude		.14	3.16**
Anti-political correctness		-.18	-2.40**
Avoidance of responsibility		-.22	-4.80**
Procrastination		-.53	-12.29**
R^2	.58		

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

4.6 New model predicting environmental friendly behavior

This section presents the new model that is composed based on the results of the survey. In table 11 the statistics and the explained variance of the elaborated Theory of Planned Behavior is presented.

Table 11

Statistics predicting the intention of environmental friendly behavior

Variable		β	t
Attitude		.24	4.43**
Social influence		.25	4.26**
Perceived Behavioral Control		.31	6.0**
R^2	.34		
Attitude		.09	1.95*
Social influence		.13	2.97**
Perceived Behavioral Control		.16	3.98**
Anti-political correctness		-.12	-2.49**
Avoidance of responsibility		-.19	-4.13**
Procrastination		-.46	-10.89**
R^2	.62		
ΔR^2	.28		

N =275. β = Standardized beta. t = Obtained t-value. R^2 = Level of variance
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

According to the results, the constructs anti-political correctness, avoidance of responsibility and procrastination cause an increase in explained variance. The variables of the

Theory of Planned Behavior had a predictive value of 34%, this value increased to 62% with the dissonance reduction strategies included.

Attitude, social influence and perceived behavioral control had a positive effect on intention, whereas anti-political correctness, avoidance of responsibility and procrastination affect intention negatively. There is a fluctuation in the significance levels of attitude and anti-political correctness; however, based on the predictive value that anti-political correctness has on attitude it is stated that anti-political correctness is partially mediated by attitude. Thus, anti-political correctness is a belief of attitude and a direct determinant of intention.

Based on the results of this study a new model is constructed, this model is presented in figure 3. This model is the Theory of Planned Behavior combined with dissonance reduction strategies anti-political correctness, responsibility and procrastination, whereas anti-political correctness is partially mediated by attitude. In figure 3 the β values are presented, the negative effects of the dissonance reduction strategies have a substantial effect on intention to behave environmental friendly.

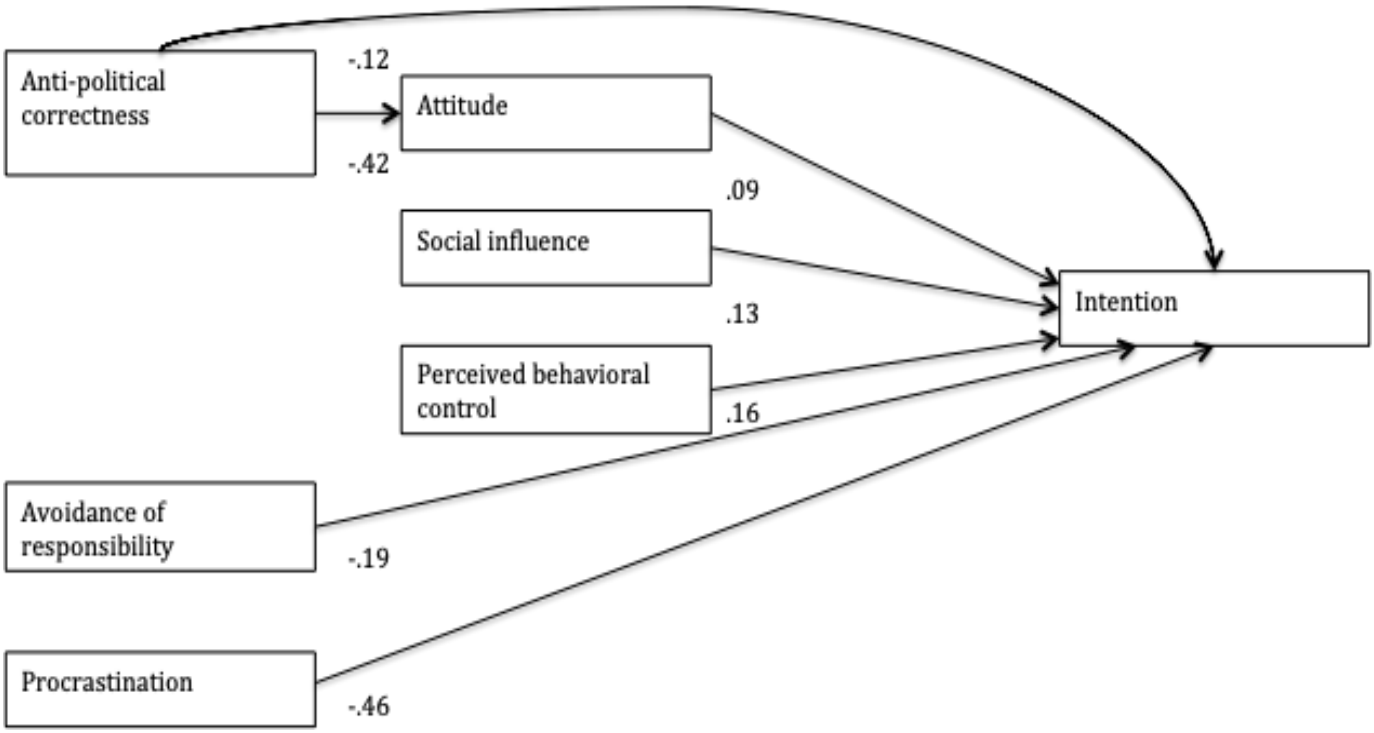

Figure 3 Predicting the intention of environmental friendly behavior

5. Discussion

In this chapter the results are interpreted. This chapter consists of main findings of based on the results, along with implications, limitations and recommendations for future research.

5.1 Main findings

The aim of this research was to explain the dissonance between attitude and environmental friendly behavior. First, the relationship between attitude, social influence and perceived behavioral control and intention was analyzed. Based on the outcome of this analysis, hypotheses 1, 2 and 3 can be confirmed; the constructs attitude, social norm and perceived behavioral control positively affect environmental friendly intentions.

The relationship between dissonance and the dissonance reduction strategies was analyzed. According to the results, anti-political correctness, avoidance of responsibility and procrastination were significant determinants of dissonance. Moreover, procrastination had an increasing effect on dissonance. The dissonance reduction strategies are related to cognitive dissonance, anti-political correctness and avoidance of responsibility have a reducing effect on dissonance, by applying these motives people reduce their feelings of dissonance. Anti-political correctness refers to the need for autonomy and the rejection of regulations and theories imposed by politicians and scientists, even though regulations and theories are needed to avoid climate disasters. Avoidance of responsibility refers to the individual's reluctance to take responsibility for their behavioral change in the context of environmental behavior. However, the effect of procrastination increases the feeling of cognitive dissonance, the discomfort increases when an individual procrastinates. A reason for this increase could be that procrastination is not perceived as a very strong justification for behavior that is inconsistent with the attitude. Thus, in relation to environmental friendly behavior people use anti-political correctness and the avoidance of responsibility to decrease the discomfort of dissonance. The dissonance increases when people feel they are procrastinating environmental friendly actions.

By implementing the significant dissonance reduction strategies in the framework of the Theory of Planned Behavior the discrepancy in consumer behavior concerning attitude and intention of environmental friendly behavior can be explained. Source of the discrepancy between attitude and behavior is procrastination; this is a determinant has a strong negative influence on intention. Moreover, the negative effect of procrastination is five times stronger than the positive influence of attitude on intention. Moreover, both anti-political correctness and avoidance of responsibility negatively affect intention that is stronger than the positive determinants of intention. Thus, the dissonance between attitude and environmental friendly behavior can be explained with the negative influence of anti-political correctness, avoidance of responsibility and especially procrastination.

The second research question concerned the added value of the dissonance reduction strategies in explaining environmental friendly behavior. First, the explained variance of the Theory of Planned Behavior was tested in the context of environmental friendliness. Attitude, social influence, perceived behavioral control were significant predictors of intention. However, the prediction of intention by the dissonance reduction strategies was more accurate; therefore, hypothesis 4 can be confirmed by expanding the Theory of Planned Behavior with the dissonance reduction strategies the predictive value of intention is enhanced. The inclusion of the dissonance reduction strategies almost doubled the predictive value of the Theory of Planned Behavior. Additionally, the construct anti-political correctness has a noteworthy position in the model, this construct appeared to be a negative determinant of both attitude and intention.

According to the results, the remaining constructs that were presumed to be dissonance reduction strategies were not significant determinants of cognitive dissonance. Based on the results it cannot be confirmed that preserving personal comfort, resisting lifestyle change, trust in technology and defeatism are related to dissonance. An explanation could be that these constructs are related differently to environmental friendly behavior and not through reducing cognitive dissonance. Although, trust in technology was not a significant dissonance reduction strategy, a possible explanation for this is that trust in technology is a method of avoiding responsibility. It is presumed that the influence of preserving personal comfort, resisting lifestyle change and defeatism is directed towards attitude and does not affect intention directly, these constructs are possible beliefs for attitude.

The main findings of this research were that, concerning environmental friendly behavior, anti-political correctness, responsibility and procrastination are notable determinants of intention that add predictive value to the framework of the Theory of Planned Behavior, whereas anti-political correctness influences attitude. That being the case, positive environmental friendly

intentions suffer under these negative influences and that explains the dissonance between attitude towards environmental friendliness and intentions of environmental friendly behavior.

5.2 Theoretical contribution

The current study is a theoretical contribution to the field of environmentalism and behavioral science. The Theory of Planned Behavior is an established framework that is of great importance in behavioral research and often-used in several contexts among which environmental friendly behavior. Though, in the context of environmental friendliness it is difficult to accurately predict behavior, for a more accurate prediction additional variables are required (Arkesteijn & Oerlemans, 2005; De Leeuw et al., 2015; Kollmuss & Agyeman, 2010; Paul et al., 2016). However, the cognitive dissonance theory is not often included in studies concerning the attitude-behavior gap; even though an inconsistency between attitude and behavior implies that there is a sense of cognitive dissonance. Moreover, the inclusion of dissonance reduction strategies resulted in a significant increase in predictive value, anti-political correctness, avoidance of responsibility and procrastination.

McCright, Dentzman, Charters, and Dietz (2013) referred to the increasing controversy concerning environmental science, though it was not determined how anti-political correctness affected attitude nor intention. In the current research anti-political correctness surfaced as a belief that negatively influences attitude and as a direct determinant of intention. This construct is possibly applicable in other circumstances for example, studies on attitudes towards government or attitudes towards political statements.

The importance of responsibility in predicting environmental intentions was mentioned in the study by Cleveland et al. (2012), it was stated that acknowledgement of personal responsibility is crucial to avoid the self-fulfilling prophecy in relation to environmental problems. In order to positively affect the environmental friendly intentions, personal responsibility is necessary. However, Cleveland et al. (2012), did not evaluate this in the context of predicting or influencing behavior. In research on ethical issues such as charity donations, responsibility is verified as a mediating variable for anticipated guilt (Basil, Ridgway & Basil, 2006). Thus, the variable avoidance of responsibility is relevant in studies on ethical subjects.

Hafner et al. (2019) argue that procrastination is a barrier for people to act environmental friendly. In the current study, the influence of procrastination on environmental friendly intentions was determined, the conclusion of Hafner et al. (2019) is confirmed; moreover procrastination had a strong negative effect on intention. The construct procrastination is applicable in various areas since procrastination relates postponing relatively boring activities such as chores, administrative tasks. Especially in the context of predicting and influencing behavior this construct should be considered.

5.3 Practical implications

In practice, the outcome of this research provides an overall understanding of the cognitive progress concerning environmental friendly behavior. This research confirms that behavioral change towards environmental friendliness requires a reduced sense of anti-political correctness, avoidance of responsibility and procrastination.

The findings of this research offer commercial opportunities, when an organization wishes to influence the environmental intentions of the target group, it is beneficial to target consumers on the determinants that affect the environmental friendly decision-making process; this increases the effectiveness of the approach towards consumers. Based on the outcome of this study the gap between attitude and environmental friendly behavior in the Netherlands can be explained by the experienced sense of anti-political correctness, the avoidance of responsibility and the sense of procrastination. Future strategies on influencing environmental friendly intentions should certainly address these determinants. Environmental organizations and government agencies need to consider these constructs when influencing environmental friendly behavior.

A practical suggestion for bigger companies, such as Unilever and Shell, is to communicate their environmental friendly efforts to set a good example, this could affect the dissonance reduction strategy avoidance of responsibility. It is presumed that this inspires consumers to take personal responsibility which influences their environmental friendly intentions. The same applies for politicians and public figures that advocate environmental friendly behavior, setting the good example motivate people to change their intentions towards environmental friendliness.

Based on the outcome of this research, anti-political correctness is an attitudinal belief, in practice this means that the extent to which people feel anti-political correct negatively affects

their attitude towards environmental friendly behavior. To influence attitude the sense of anti-political correctness should be considered in the communication strategy.

5.4 Limitations

The first limitation of this research was the sample's comprehension of environmental friendly behavior in this research. The introduction of the survey presented a general definition and examples of environmental friendly behavior that were derived from literature. However, it is unclear if the participants' responses would change if the questions concerned specific types of environmental friendly behavior. Though, the participants answered the survey questions with their perception of environmental friendly behavior in mind. Therefore, the measurements of the constructs are still valid since the constructs were answered in a context of environmental friendliness.

This research was limited to the effect of dissonance reduction strategies therefore, the constructs preserving personal comfort, resisting lifestyle change, trust in technology and defeatism were excluded from further analysis since these constructs were not significant as dissonance reduction strategies. However, these constructs could be differently related to environmental friendly behavior.

Another limitation was the diversity in the research sample. In relation to age and education level the sample is biased; 49% the participants were aged between 20 and 31 and 75% of the sample had higher education. Thus, this sample of the Dutch population is not representative for individuals who are in a different age group or had a different level of education. It can be stated that due to this bias, there is a lower external validity. The outcome of this research is generalizable for the groups that are represented in the sample, before generalizing this for the rest of the population this biases concerning age and education have to be considered.

5.5 Future research

For future research it is interesting to consider anti-political correctness, responsibility and procrastination to implement in the framework. In the context of the Theory of Planned Behavior these constructs are proven to influence environmental friendly intention, therefore these new variables should always be included and tested alongside other determinants to enhance the predictive value of an extended model on environmental friendly behavior. This framework should be tested on specific types of behavior e.g. water consumption, meat consumption and recycling. Furthermore, future research should apply this framework to more diverse groups in the Netherlands. This provides insight into the generalizability of the findings of this study.

The attitudinal beliefs in the context of environmental friendly behavior can be explored more. Although, anti-political correctness is one of those beliefs according to the outcome of this research, it is suspected that there are more beliefs that affect the attitude toward environmental friendliness.

Due to the boundaries of this study, the constructs that did not qualify as dissonance reduction strategies were excluded from further analysis. Although, it is suspected that these constructs related to environmental friendliness in different conditions. Future research could explore the relevance of preserving personal comfort, resisting lifestyle change, trust in technology and defeatism in relation to environmental friendliness.

The intention of performing environmental friendly behavior is negatively affected by anti-political correctness, responsibility and procrastination. It is relevant to define strategies to discourage these feelings. A suggestion is using the commitment principle (Cialdini & Goldstein, 2004), people are motivated to change their behavior when they are subjected to the commitment principle. The research by (Terrier & Marfaing, 2015) confirms this in a practical setting. Moreover, a persuasive technique that is based on the commitment principle, the foot-in-the-door technique, is connected with cognitive dissonance (Osbaldiston and Schott, 2014).

Additionally, it was not possible to measure actual environmental friendly behavior with the questionnaire; moreover, the questionnaire was a self-report a social desirability bias can be considered. By conducting an observation or an experiment, actual behavior could be observed. The question arises if environmental friendly behavior remains standard behavior for the participant, then these observations should be repeated over a longer period of time.

Finally, it is suggested that in future research the attitude-behavior gap is examined from the perspective of cognitive dissonance, especially when previous research has not been successful in explaining the discrepancy between these variables. This approach allows the researcher to discover negative determinants of intention, which aid in explaining the gap between attitude and behavior.

5.6 Conclusions

Based on the results of this quantitative research it can be concluded that attitude, social influence and perceived behavioral control are positive predictors of the intention to perform environmental friendly behavior. The dissonance between attitude and environmental friendly behavior can be explained with anti-political correctness and responsibility; people use these strategies to reduce their cognitive dissonance when their behavior is inconsistent with their environmental friendly attitude. However, dissonance increases when people experience a sense of procrastination. The predictive value of the Theory of Planned Behavior in the context of environmental friendly behavior increases when anti-political correctness, avoidance of responsibility and procrastination are included. These new determinants had a negative effect on intention and also on attitude in the case of anti-political correctness.

To conclude, this study provided an extended Theory of Planned Behavior model that incorporates the negative determinants anti-political correctness, responsibility and procrastinations; insights from this research could applied in practice to influence environmental friendly intentions. The findings of this research benefit future research on exploring the attitude-behavior gap and predicting environmental friendly intentions.

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Appendices

Appendix A – Overview dissonance reduction strategies based on interviews among students

1. Comfort: I like my current behavior too much to change it. This behavior is now convenient for me and I do not want to change it. (Like it too much, it is too easy not to change)	10
2. Effect: I do not know what the impact of my consumption is on the environment. Also, I do not know what the impact would be if I change my behavior. Therefore I will not change	4
3. Responsibility: Governmental organizations should provide an incentive or a tax - therefore it is not my responsibility (not in my backyard). Industrial companies are more responsible.	1
4. Technological advances: scientists will come up with good solutions so I do not have to change my behavior.	2
5. Autonomy: I want to decide about my consumptions. I also let other people decide what they want to do with theirs.	1
6. Social comparison: It only works if everybody changes. Compared to others I am doing well, no one else/everyone else does it so why should I. I do not want to sacrifice if it is unsure if other people do the same If we want to make a change it has to be everything or nothing.	5
7. Procrastination: I will change my behavior later. I will be more environmental friendly when I am older.	3
8. Urgency: I do not care. By the time environmental problems are visible I am probably dead, so I do not care that much. there are other things that are also important it is safer to travel long distances by plane than by car.	2
9. Giving up: whatever we will do it will not work. In countries like China and the US the pollution is too much.	3
10. Lifestyle change: I have to change my lifestyle too much; do not want to give up so much. Also I do not want to change my routines Because of my allergies I cannot eat soy or nut based meat.	1

Appendix B - Factor analysis

Theory of planned behavior + Dissonance

	Variables				
Items	1	2	3	4	5
Behavior (1)	.82				
Behavior (2)	.80				
Behavior (3)	.75				
Behavior (4)	.74				
Intention (1)	.69				
Intention (2)	.69				
Perceived behavioral control (1)		.82			
Perceived behavioral control (4)		.77			
Perceived behavioral control (3)		.75			
Perceived behavioral control (2)		.64			
Attitude (1)			.83		
Attitude (2)			.77		
Attitude (4)			.66		
Dissonance (1)				.86	
Dissonance (3)				.80	
Dissonance (2)				.79	
Social influence (1)					.74
Social influence (2)			.45		.72
Social influence recoded (3)					.62
Social influence (4)	.45				.58

1 = Intention
2 = Perceived behavioral control
3 = Attitude
4 = Dissonance
5 = Social influence

Factor analysis – Dissonance reduction strategies

	Variables						
Items	1	2	3	4	5	6	7
Procrastination (1)	.86						
Procrastination (3)	.85						
Procrastination (2)	.83						
Procrastination (4)	.75						
Habit (2)	.58						
Habit (3)	.53						
Defeatism (2)		.87					
Defeatism (4)		.81					
Defeatism (1)		.81					
Defeatism (3)		.71					
Anti-political correctness (3)			.80				
Anti-political correctness (2)			.74				
Anti-political correctness (1)			.64				
Autonomy (2)			.53				
Anti-political correctness (5)			.50				
Trust in technology (4)				.88			
Trust in technology (1)				.85			
Trust in technology (2)				.82			
Trust in technology (3)				.67			
Dramatic lifestyle change (4)					.77		
Dramatic lifestyle change (3)					.76		
Dramatic lifestyle change (1)	.43				.69		
Dramatic lifestyle change recoded (2)					.57		
Responsibility recoded (2)						.79	
Responsibility (3)						.60	
Responsibility (1)						.59	
Responsibility recoded (4)						.59	
Comfort (1)							.74
Comfort (2)							.68

1 = Procrastination
2 = Defeatism
3 = Anti-political correctness
4 = Trust in technology
5 = Dramatic lifestyle change
6 = Responsibility
7 = Comfort

Appendix C – Questionnaire Environmental friendly behavior

Milieuvriendelijk gedrag:

Introduction:Bedankt voor uw deelname aan dit onderzoek naar milieuvriendelijk gedrag. Dit onderzoek wordt uitgevoerd in het kader van mijn masterthesis. Het doel van deze vragenlijst is het vaststellen van de mening van Nederlanders over milieuvriendelijk gedrag.Kies bij elke vraag het antwoord dat het meest overeenkomt met uw mening of gevoel, er zijn geen goede of foute antwoorden. De enquête zal circa 10 minuten duren. De gegevens worden anoniem verwerkt.
Op de volgende pagina wordt het onderwerp nader geïntroduceerd.
Nogmaals bedankt voor uw deelname.

Groeten,
Bart
Contact: onderzoek.milieubewustgedrag@gmail.com

Intro vervolg Lees onderstaande tekst goed door voordat u begint aan de vragenlijst:
Deze vragenlijst gaat over milieuvriendelijk gedrag, maar wat wordt daarmee bedoeld? Met milieuvriendelijk gedrag wordt het gedrag bedoeld dat het milieu zo min mogelijk schade toebrengt. Het milieu wordt bijvoorbeeld beschadigd door de uitlaatgassen in de atmosfeer of plastic in de oceanen.In ons dagelijks leven hebben wij met ons gedrag invloed op het milieu. Door energie te besparen of door minder schadelijke producten te gebruiken, wordt het milieu minder beschadigd.Er zijn verschillende manieren om milieubewust te leven, bijvoorbeeld:
- Korter douchen;
- Zet apparaten standby of uit;
- Gebruik het openbaar vervoer in plaats van de auto;
- Minder vaak vliegreizen maken;
- Verwarming zachter zetten;
- Minder vlees eten;
- Afval scheiden/recyclen.

Deze voorbeelden kunt u in gedachten houden wanneer u de enquête invult.

Attitude

Vraag 1

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik sta positief tegenover milieuvriendelijk gedrag	○	○	○	○	○	○	○
Ik wil graag bijdragen aan een beter milieu	○	○	○	○	○	○	○
Ik vind milieubewust gedrag niet belangrijk	○	○	○	○	○	○	○
Milieuvriendelijk gedrag is beter voor de wereld	○	○	○	○	○	○	○

Social influence

Vraag 2

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Mijn vrienden en familie vinden milieuvriendelijk gedrag belangrijk	○	○	○	○	○	○	○
Mijn vrienden en familie zullen mijn milieuvriendelijke gedrag waarderen	○	○	○	○	○	○	○
Mijn omgeving gedraagt zich niet milieubewust	○	○	○	○	○	○	○
De mensen in mijn omgeving verwachten van mij dat ik mij milieuvriendelijk gedraag	○	○	○	○	○	○	○

Perceived behavioral control

Vraag 3

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik heb de kennis en vaardigheden om mij milieuvriendelijk te kunnen gedragen	○	○	○	○	○	○	○
Ik heb de juiste middelen (zoals tijd en geld) om mij milieuvriendelijk te gedragen	○	○	○	○	○	○	○
Ik ben in staat om beslissingen te nemen die bijdragen aan het milieu	○	○	○	○	○	○	○
Ik weet welke stappen ik moet zetten om mij milieuvriendelijk te gedragen	○	○	○	○	○	○	○

Intention

Vraag 4

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik ben van plan om altijd milieuvriendelijk te leven	○	○	○	○	○	○	○
Ik heb de intentie om steeds zo veel mogelijk voor milieuvriendelijke producten te kiezen	○	○	○	○	○	○	○
Ik ben niet van plan om mij milieuvriendelijk te gedragen	○	○	○	○	○	○	○
Ik zal mijn best doen om mij milieuvriendelijk te gedragen	○	○	○	○	○	○	○

Environmental friendly behavior

Vraag 5

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik beschouw mijn gedrag als milieuvriendelijk	○	○	○	○	○	○	○
In de winkel kies ik steevast voor milieubewuste producten	○	○	○	○	○	○	○
Ik gedraag mij altijd milieuvriendelijk	○	○	○	○	○	○	○
Ik let op mijn gedrag als het gaat om milieuvriendelijkheid	○	○	○	○	○	○	○

Cognitive dissonance

Vraag 6

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik vind het vervelend dat ik niet zo milieuvriendelijk ben als ik zou willen	○	○	○	○	○	○	○
Ik zou mij eigenlijk milieubewuster moeten gedragen dan ik nu doe	○	○	○	○	○	○	○
Omdat ik mij niet altijd milieuvriendelijk gedraag voel ik mij schuldig	○	○	○	○	○	○	○
Het is beter om rekening te houden met het milieu, maar toch gedraag ik mij vaak milieuonvriendelijk	○	○	○	○	○	○	○

Autonomy

Vraag 7

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik wil voor mijzelf beslissen hoe ik moet leven, ook al schaadt dat het milieu	○	○	○	○	○	○	○
Ik wil graag keuzevrijheid hebben, als het gaat om milieuvriendelijk gedrag	○	○	○	○	○	○	○
Ik vind het normaal dat de overheid regels voorschrijft om milieuvriendelijk gedrag te bevorderen	○	○	○	○	○	○	○
Als ik mij milieuvriendelijk moet gedragen voel ik mij te veel beperkt	○	○	○	○	○	○	○

Anti-political correctness

Vraag 7

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik wil voor mijzelf beslissen hoe ik moet leven, ook al schaadt dat het milieu	○	○	○	○	○	○	○
Ik wil graag keuzevrijheid hebben, als het gaat om milieuvriendelijk gedrag	○	○	○	○	○	○	○
Ik vind het normaal dat de overheid regels voorschrijft om milieuvriendelijk gedrag te bevorderen	○	○	○	○	○	○	○
Als ik mij milieuvriendelijk moet gedragen voel ik mij te veel beperkt	○	○	○	○	○	○	○

Social comparison

Vraag 9

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Vergeleken met anderen gedraag ik mij al heel milieubewust	○	○	○	○	○	○	○
Ik kijk niet zoveel naar het gedrag van anderen als het gaat om milieuvriendelijk gedrag	○	○	○	○	○	○	○
Anderen om mij heen gedragen zich ook niet altijd milieubewust, daarom doe ik dat ook niet	○	○	○	○	○	○	○
Ik vergelijk mij vaak met anderen als het gaat om milieuvriendelijk gedrag	○	○	○	○	○	○	○

Defeatism
Vraag 10

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Wat we ook doen om het klimaatprobleem op te lossen, het zal niet werken	○	○	○	○	○	○	○
De mensheid kan het milieu niet redden	○	○	○	○	○	○	○
Ik kan weinig tot niks bedenken wat de klimaatverandering kan tegenhouden	○	○	○	○	○	○	○
De milieuproblemen zijn te groot om aan te pakken	○	○	○	○	○	○	○

Trust in technology
Vraag 11

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Uiteindelijk zullen technologische innovaties het klimaatprobleem oplossen	○	○	○	○	○	○	○
Ik vertrouw erop dat wetenschappers een oplossing zullen vinden voor het klimaatprobleem	○	○	○	○	○	○	○
Technologische vooruitgang zorgt voor meer milieuvriendelijke alternatieven	○	○	○	○	○	○	○
Dankzij technologische vooruitgang wordt een oplossing gevonden voor het klimaatprobleem	○	○	○	○	○	○	○

Preserving personal comfort
Vraag 12

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik gedraag mij niet altijd milieuvriendelijk omdat dat ten koste gaat van mijn comfort	○	○	○	○	○	○	○
Ik gedraag mij niet altijd milieuvriendelijk omdat mij dat beter bevalt	○	○	○	○	○	○	○
De milieuvriendelijke alternatieven vind ik vaak niet zo goed als de milieuonvriendelijke opties	○	○	○	○	○	○	○
Ik ben in principe bereid om leuke dingen op te geven omwille van het milieu	○	○	○	○	○	○	○

Habit

Vraag 13

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik ben mij onbewust van mijn milieuonvriendelijke gedrag	○	○	○	○	○	○	○
Ik vind het moeilijk om mij ineens milieuvriendelijker te gedragen	○	○	○	○	○	○	○
Ik doe al jaren hetzelfde, daarom ga ik mij niet milieubewust gedragen	○	○	○	○	○	○	○
Vanuit gewenning gedraag ik mij milieubewust	○	○	○	○	○	○	○

Lack of urgency

Vraag 14

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Er is nog genoeg tijd om milieuvriendelijk te worden	○	○	○	○	○	○	○
De komende 100 jaar zal er geen merkbare schade zijn aan het milieu	○	○	○	○	○	○	○
Er zijn nu veel grotere problemen dan het milieu	○	○	○	○	○	○	○
Als het gaat om het verbeteren van het milieu is het een kwestie van nu of nooit	○	○	○	○	○	○	○

Procrastination

Vraag 15

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Ik wil mij wel milieuvriendelijk gedragen, maar ik stel het nu nog even uit	○	○	○	○	○	○	○
Dat ik mij milieuvriendelijk ga gedragen komt later wel	○	○	○	○	○	○	○
Ik vertoon uitstelgedrag als het gaat om milieubewust gedrag	○	○	○	○	○	○	○
Ik wil mij wel op termijn milieuvriendelijk gedragen, maar ik heb er nu geen zin in	○	○	○	○	○	○	○

Resisting lifestyle change

Vraag 16

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
Als ik milieuvriendelijker wil gaan leven moet ik mijn levensstijl te veel veranderen	○	○	○	○	○	○	○
Milieuvriendelijk gedrag past goed binnen mijn levensstijl	○	○	○	○	○	○	○
Ik word erg belemmerd in mijn levensstijl als ik mij milieubewuster moet gedragen	○	○	○	○	○	○	○
Ik zou mijn levensstijl helemaal moeten omgooien om mij milieuvriendelijk te gedragen	○	○	○	○	○	○	○

Avoidance of responsibility

Vraag 17

	Volledig mee oneens	Oneens	Enigszins oneens	Neutraal	Enigszins eens	Eens	Volledig eens
De verantwoordelijkheid voor milieuvriendelijk gedrag ligt bij andere partijen (overheid, industrie, anderen)	○	○	○	○	○	○	○
Milieuvriendelijk gedrag begint bij jezelf, daarom ligt de verantwoordelijkheid ook bij mij	○	○	○	○	○	○	○
Ik voel mij niet verantwoordelijk voor het klimaatprobleem	○	○	○	○	○	○	○
Het is mijn plicht om milieuvriendelijker te leven	○	○	○	○	○	○	○

Q22 Wat is uw geslacht?

0 Man (1)

0 Vrouw (2)

Q23 Wat is uw leeftijd?_____

Q24 Wat is uw hoogst genoten onderwijsniveau?

0 Geen opleiding (1)

0 Basisonderwijs (2)

0 Voortgezet praktisch onderwijs (MAVO, VMBO) (3)

0 Voortgezet onderwijs (HAVO, Atheneum, Gymnasium) (4)

0 Middelbaar beroepsonderwijs (MBO) (5)

0 Hoger beroepsonderwijs (HBO) (6)

0 Wetenschappelijk onderwijs (Universiteit) (7)

Q25 In welke provincie woont u?

Friesland (1)

Groningen (2)

Drenthe (3)

Overijssel (4)

Flevoland (5)

Gelderland (6)

Utrecht (7)

Noord-Holland (8)

Zuid-Holland (9)

Zeeland (10)

Noord-Brabant (11)

Limburg (12)

Appendix D – Pre-multiple regression analyses

In this appendix all statistical checks prior to the multiple regression analyses are presented.

Outliers

First the outliers analysis, Hoaglin and Iglewicz (1987) argued that for detecting outliers with a multiplier of 1,5 is inaccurate half of the time. The multiplier of 3,0 is more reliable but still not ideal, according to the research 2,2 is ideal however SPSS does not give that option. So, while analyzing for outliers the starred outliers are more convincingly labeled as outliers. Based on this study there was one outlier in the attitude variable that could be excluded.

Normal distribution

The normal distribution was researched by analysing the Kolmogorov & Smirnov statistic. Looking at the values of each variable, all variables have a Kolmogorov-smirnov statistic below .05, which means that there is no statistical proof of normal distribution for any of the variables. However, when this was verified with the histograms the variables were normal distributed.

Table 13

Normal distribution statistics

	Kolmogorov-Smirnov sig.	Shapiro-Wilk sig.
Intention	.011	.001
Perceived behavioral control	.000	.000
Attitude	.000	.000
Dissonance	.000	.000
Social Influence	.000	.000
Procrastination	.000	.000
Defeatism	.000	.000
Anti-political correctness	.000	.013
Trust in technology	.000	.000
Resisting lifestyle change	.000	.000
Avoidance of responsibility	.000	.000
Preserving of personal comfort	.000	.000

Homoscedasticity

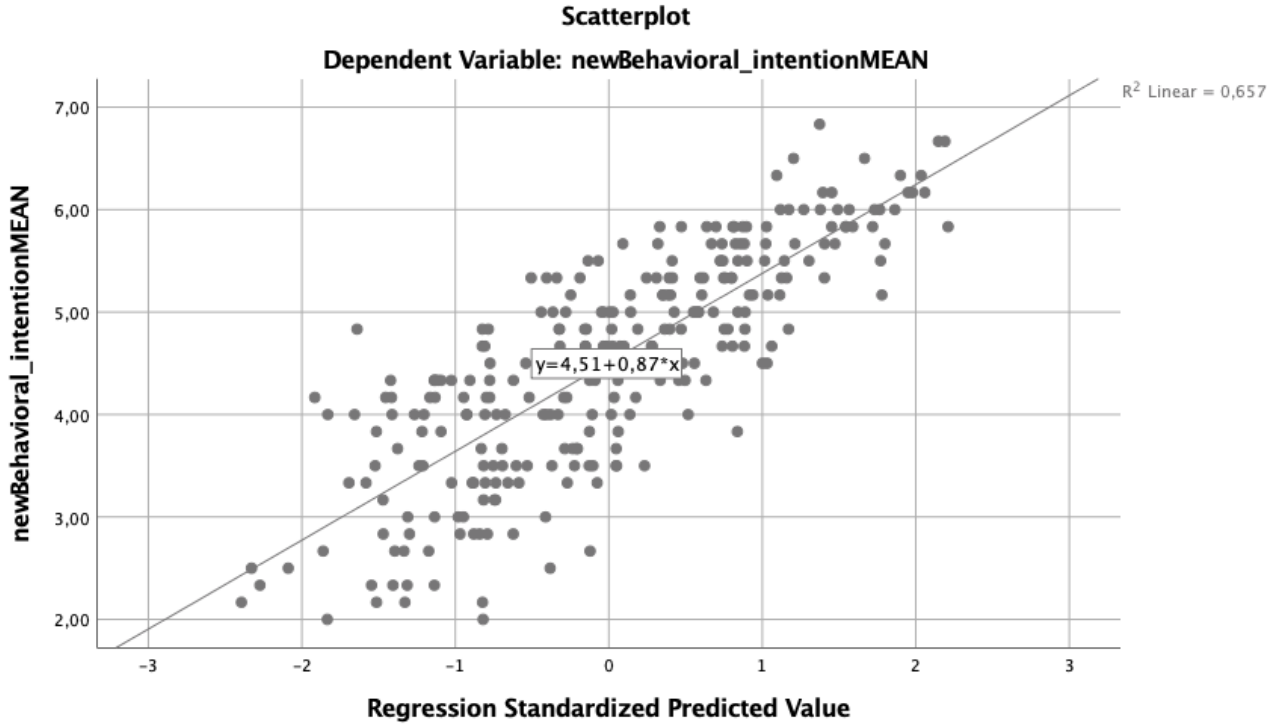
The P-value in the Levene's test shows there is no significant difference from the equality of variance among the variables of the Theory of Planned behavior.

When the same test is done for the remaining variables, dissonance and the dissonance reduction strategies, the outcome does not give a P-value. Furthermore the new variable, behavioral intention, with residuals from the first test (TPB) a normality check is done. This gave the following results: The variances are not significantly different because P = .894.

Table 14

Levene's test

F	df1	df2	Sig.
.788	208	66	.894



Normality

As can be seen in table 15 the skewness is negative, lower than the standard error. Though kurtosis is higher than the standard error.

Table 15

Normality

			Statistic	Std. Error
Standardized Residual for newBehavioral_intentionMEAN	Mean		.0000	.05525
	95% Confidence Interval for Mean	Lower Bound	-.1088	
		Upper Bound	.1088	
	5% Trimmed Mean		.0339	
	Median		.0898	
	Variance		.839	
	Std. Deviation		.91620	
	Minimum		-3.18	
	Maximum		1.95	
	Range		5.13	
	Interquartile Range		1.07	
	Skewness		-.614	.147
	Kurtosis		.694	.293

In table 16 the normality statistics are given.

Table 16

Kolmogorov-Smirnov and Shapiro-Wilk statistics

	Kolmogorov-Smirnov		Shapiro-Wilk	
Intention	Statistic	Sig.	Statistic	Sig.
	.073	.001	.976	.000

Multicolinearity

The highest VIF statistic is 2.2 this means that there is no multicolinearity (Mansfield & Helms, 1982). In table 17 the VIF statistics for cognitive dissonance and dissonance reduction strategies are presented.

Table 17

VIF statistics - Cognitive dissonance and dissonance reduction strategies

	VIF
Dissonance	1.4
Anti-political correctness	1.6
Preserving personal comfort	1.6
Resisting lifestyle change	2.0
Trust in technology	1.2
Avoidance of responsibility	1.7
Procrastination	2.2
Defeatism	1.4