

LONG LIVE SUSTAINABLE CLOTHING

**A STUDY ON NUDGING THE SWEDISH CONSUMER TOWARDS
INCREASING GARMENT RECYCLING INTENTION**

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Long Live Sustainable Clothing: A Study on Nudging the Swedish Consumer Towards Increasing Garment Recycling Intention

Abstract:

The fashion industry is the second most polluting industry in the world, accounting for 10% of all global carbon emissions. Previous research has shown that a great majority (80%) of the climate impact stems from the production phase and that the most efficient way to soften the impact is to prolong the garments' life through different means of recycling. This paper investigates if nudging messages on the clothing label of a garment can have a positive effect on the consumer's attitude towards recycling clothing and increase their intention to do so, and if cultural orientation acts as a moderator of this effect. A scenario-experiment (n = 273) conducted through an online questionnaire exposed respondents to different clothing labels on the same sweater. The clothing label either conveyed a collectivistic/social norm message urging the respondent to recycle, an individualistic message urging the respondent to recycle or no message at all. Findings indicate that the individualistic message had a positive effect on the attitude towards recycling clothing and resulted in an increased intention to recycle the shown garment. Neither the nudge's effect on an individual's intention to recycle a garment nor the individual's attitude towards recycling clothes was moderated by cultural orientation.

Keywords:

Sustainable consumer behaviour, Clothing disposal, Nudging, Social proof, Cultural orientation

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1. Introduction

There is an iconic saying by Yves Saint Laurent, which many still hold to be true: “Fashion fades, style is eternal”. Whereas this quote also encompasses the non-tangible attributes of “style”, its literal meaning may no longer be correct, especially considering the rise of fast fashion. Plunging costs, streamlined operations and increased consumer spending has resulted in clothing production doubling from 2000 to 2014. In addition, the number of garments annually purchased by the average consumer saw an increase of 60% (Remy, Speelman & Swartz, 2016). Since more than 60% of fabric fibres are synthetic and derived from fossil fuels, the clothing will not decay once it ends up in landfills, which it often does (Thomas, 2019). All of this has led the fashion industry to become the second most polluting industry in the world, contributing to a staggering 10% of all global carbon emissions (United Nations, 2018). In that sense, fashion does not fade. Its remains and direct consequences on the climate will be visible for many years to come.

In fact, consumers are generally aware of the negative impact that stems from their consumption - there is no shortage of information. Many acknowledge the importance of consuming sustainably (White, Hardisty & Habib, 2019). Despite this, they do not behave accordingly. This is known as the green gap - the gap between what people know is sustainable and how they de facto act in accordance to what they know (The Nordic Swan Ecolabel, 2018).

With a Swedish market perspective, this study aims to test if nudging can induce pro-environmental behaviour in people, and possibly provide the fashion industry with a proposed nudge that successfully does so. Focusing on the disposal of a consumed garment, the study aims to investigate if different messages on the clothing label can have a positive effect on the consumer’s attitude towards and intention to recycle¹ clothing and increase the longevity of the garment.

1.1. Background

To gain a deeper understanding of the study, it is important to grasp its context. Therefore, this section provides an overview of the current situation of Swedish clothing disposal and is followed by how it connects to the overarching purpose of the study, a holistic review of relevant literature and demarcations drawn in this study.

¹ Hereafter, throughout this entire paper if not further specified, the term “recycling” encompasses leaving the garment at a recycling station, selling the garment, giving the garment away or handing the garment to a second-hand store.

1.1.1. Clothing disposal in Sweden

80% of the total climate impact from Swedish clothing consumption stems from the production phase, and since there currently exists no effective solution for recycling clothes (as in converting old garments into usable textile) on a larger scale, the most efficient way to decrease carbon emissions is to prolong the garments' life (Sandin, Roos, Spark, Zamani & Peters, 2019). This can be done either through selling it, giving it away or handing it to a second hand-store/recycling station which decreases demand for new production and ultimately results in softened impact on the climate. As a matter of fact, increasing the garments' longevity has proved to be a significantly effective measure – using the garment twice as many times per life cycle reduces impact by almost 50% (Sandin et al., 2019). For instance, the average t-shirt is worn 30 times and washed 15. If the same t-shirt would be used 60 times instead, its impact on the climate would cut by half (Sandin et al., 2019).

Recent numbers indicate that the average Swede consumes approximately 15kg of clothes annually. Of these, at least 8kg are carelessly disposed as waste and merely 3kg are reused. It is estimated that 60% of the textiles thrown away are either unworn or still in close to perfect condition (Mistra Future Fashion, n.d.; Naturvårdsverket, 2019). On a global level, this leads to a USD 500 billion loss in value, underlining the fact that it is not only an environmental issue, but an economic issue as well (Ellen MacArthur Foundation, 2017).

In a bid to sustain the high tempo of consumption currently prevailing, a few fashion companies are starting to collect garments through in-store recycling programs, feeding the idea of a circular economy where the consumer can hand in a used garment upon consumption in exchange for a voucher, encouraging them to consume more from the store (H&M, n.d.; & Other Stories, n.d.). However, an insignificant amount, if any, of the collected clothes become new ones (Watson et al., 2016).

Many garments are composed of different materials; for instance, polyester and cotton is a common combination. This complicates the conversion process as the mixed textiles must be separated mechanically, which causes the fabrics' quality to deteriorate at the same time (Mistra Future Fashion, n.d.). Therefore, textiles are either “down-cycled” (torn apart and turned into cloth or padding) or fibre-to-fibre recycled (turned into new thread). The great majority of non-reusable textiles, however, ends up in incineration plants and becomes energy to our households (Mistra Future Fashion, n.d.).

Although progress is being made within the domestic research field of efficient textile recycling, with companies like Re:newcell leading the way, large scale recycling (as in converting old garments into usable textile) will not be the status quo of sustainable fashion for another few years at least. Until then, increasing longevity might be Sweden's best shot at decreasing the sector's carbon emissions. A study from 2017, conducted by Yougov on behalf of Myrorna (Sweden's 120-year-old second hand-chain

and biggest actor in collecting reusable textiles and items) showed that 1.2 million Swedes are willing to reuse more clothes, suggesting that there might be an opportunity to succeed.

1.2. Purpose

As antecedently presented, the clothing consumption of today poses one of the greatest threats to our climate. Unbelievable amounts of reusable clothes are carelessly disposed as trash in favour of new purchases, yet a profound change as simple as recycling the garment instead of throwing it away can cut its impact on the climate by more than half. Because of these facts, the Swedish (let alone the global) fashion industry is not sustainable enough. This study wants to change this and therefore sets out to investigate if a nudge can have a positive effect on consumers' attitude towards and increase their intention to recycle clothing. Furthermore, this study aims to examine how cultural orientation affects the desired outcome of the nudge.

Considering that this study investigates the effects of salient messages on clothing labels, an uncharted form of communication, the results will be especially interesting to retailers and designers within the field who could incorporate the result into their garments.

1.3. Literature review

This section presents the ongoing discourse within this academic field of research. It begins with a broad perspective, encompassing sustainable consumer behaviour at large, and finishes with narrowing it down to sustainable consumer behaviour within clothing consumption. Several databases and search engines including SSE Library and Google Scholar have been utilised in the preparation of this section².

1.3.1. Sustainable consumer behaviour, a broad picture

The rise in climate awareness of recent years has entailed an increased interest in what part consumer behaviour plays in sustainability and thus, resulted in an upswing in conducted studies on the field. Although, studies on the topic have already been around for years. Early research from the 1970's concentrated on measuring significant socio-psychological and situational factors of environmental and sustainable behaviour and correlating them with measures of social consciousness and environmental concern. These factors included age, gender, economic and cultural background, attitudes and motivation (Trudel, 2019).

² Keywords such as sustainability, sustainable clothing consumption, nudging sustainability, pro-environmental consumer behaviour etc. were used.

Questions revolving around sustainable consumer behaviour has baffled a great number of researchers throughout the last decade. Antonides (2017) presented a summary and concluded that research on consumer behaviour is often a mixture of various theories and methodologies, each contributing with different frames to the entire picture that is the explanation of consumer behaviour. These contributions include social dilemma theory and collective effort, providing some explanation for a particular aspect of sustainable behaviour—namely, social influence (Antonides, 2017). Research has also touched upon the effects of cultural orientation on consumer behaviour but lacks contributions on the effects on consumers' intention.

1.3.2. The effect of cultural orientation on consumer psychology

Although culture can be studied both between different countries/regions and within specific societies, the focus in this area of research has greatly lied on cross-cultural studies, i.e. investigating differences between different cultures or countries (Shavitt & Barnes, 2020). Further, a great majority of these studies have focused on the traditional view of culture, that is, the characteristics of individualism and collectivism (Shavitt, Johnson & Zhang, 2011). However, with a rising interest in cultural orientation as an explanatory factor in marketing, it has expanded to encompass new dimensions which include vertical and horizontal aspects. This framework divides the traditional view of culture into four categories, namely horizontal collectivism/individualism and vertical collectivism/individualism (Singelis, Triandis, Bhawuk & Gelfand, 1995). Several studies have underlined the vast differences in how marketing is used and how it affects people depending on their cultural orientation, even within the different types of individualism/collectivism. (Shavitt, Johnson & Zhang, 2011)

Studies investigating how cultural orientation affects consumer behaviour based on the framework with four cultural dimensions mentioned above are rare, but some contributions exist. For example, Lee and Choi (2006) found that people's general attitude towards web advertising was affected by their cultural orientation. A more recent study conducted by Torelli, Özsumer, Cavalho, Keh and Maehle (2012) showed that the liking of a brand's concept is a function of people's cultural orientation. In 2017, Han found that the traditional view of cultural orientation, i.e. individualism-collectivism, can moderate the effect of a consumer's animosity towards a brand on their purchase intention.

Shavitt and colleagues as well as Meyers-Levi (2006) indicate that more research should be conducted using the framework with four cultural dimensions, in order to expand the understanding of culture's effect on consumer psychology and behaviour (Shavitt, Lalwani, Zhang & Torelli, 2006; Shavitt et al., 2011).

1.3.3. “Green nudges”

Several different techniques of nudging exist and naturally this has led to a variety of studies examining alternative ways to influence people towards pro-environmental behaviour. A common nudge is social influence, which by example was illustrated in a study where two relatively simple and discrete nudges, namely reducing plate size and providing social cues, resulted in an approximately 20% decrease of food waste in hotel restaurants (Kallbekken & Sælen, 2013). Another study highlighted the power of social influence in eliciting pro-environmental behaviours in consumption, showing that exposing online shoppers to the message that other customers were buying eco-friendly products entailed a 65% increase in making at least one sustainable purchase (Demarque, Charalambides, Hilton & Waroquier, 2015). Further, Goldstein, Cialdini and Griskevicius (2008) found that the use of social norms was superior to the traditional environmental appeal normally used by hotels when trying to encourage the reuse of towels. A sign that read “*Join your fellow guests in helping to save the environment...*” yielded a significantly higher towel reuse rate than the sign showing “*Help save the environment...*” (Goldstein et al., 2008, p. 473-474).

Facilitating sustainable behaviour has also been pointed out as an effective nudge within the field. For instance, a straightforward measure as simple as placing recycling receptacles in classrooms where beverages were consumed instead of at central locations on university campus resulted in a significant increase (more than 20%) in recycled cans (Ludwig, Gray & Rowell, 1998).

Most decisions in life offer a status quo alternative, that is to say, doing nothing or maintaining a current or previous decision. An array of decision-making experiments have concluded that individuals disproportionately adhere to the status quo (Samuelson & Zeckhauser, 1988), thus resulting in a frequently tested nudge technique where the default option is manipulated to align with the desired outcome. For instance, research in Germany found that when green electricity was set as the default option in residential buildings, 94% of individuals kept it, cementing the idea that changing default options can be used to promote pro-environmental behaviour (Pichert & Katsikopoulos, 2008). The same conclusion on the impact of choice architecture was drawn by Theotokis and Manganari in 2014 who added that the reason that individuals often refrain from “opting out” from a sustainable default option is guilt.

These are all examples that in one way or another show that nudges can be effective in achieving the desired outcome. However, the theory has faced criticism as well. For instance, Gigerenzer (2015) declares that nudging people into healthy behaviour has limited chances of success considering that competing commercial firms with larger budgets use the same methods to nudge people into unhealthy behaviour. In other words, it is a polarised discussion.

1.3.4. Understanding sustainable clothing consumption

Consumption as a result of fast fashion is rising *pari passu* with the increased awareness of the harm that it brings. Naturally, this dilemma has earned the interest of countless researchers over the last few years, with the total number of studies soaring.

Focus has often lied in understanding the consumer's purchasing decision, linking purchased products back to purchasing criteria and personal values such as *self-expression, self-esteem, responsibility, protecting the planet and sense of accomplishment* (Lundblad & Davies, 2015) and even identifying associated barriers for choosing to consume sustainable clothing (Harris, Roby & Dibb, 2016). On this specific matter, it has also been shown that it can be more effective to alter attitudes and opinions rather than aiming at changing behaviour directly (Gwozdz, Nielsen & Müller, 2017).

Furthermore, a Swedish study by Ekström, Gustafsson, Hjelmgren and Salomonson (2012) proved that there was a value-action gap in Swedes' consumption of clothes. In other words, there was a gap between the consumers' expressed concern for the environment and the daily actions in accordance to their beliefs. This indicates that consumers do not necessarily need more information about the negative effects of their clothing consumption, but rather different types of measures that make it easier for the consumers to act sustainably (Ekström et al., 2012).

As introduced by John Dewey (1910), there are several stages of consumer decision making:

- 1) Problem recognition
- 2) Information search
- 3) Evaluation of alternatives
- 4) Purchase decision
- 5) Post purchase behaviour

Simplified into 3 stages, this describes the *obtaining, consuming* and *disposing* of products and services (Tsotsou & Wirtz, 2015). The present authors found that a majority of studies within sustainable clothing consumption behaviour focused on the obtaining and consuming stages and therefore decided to focus on the *disposing* stage, aiming to find and share new, valuable insights.

However, even though existing research seemed relatively scarce in comparison to the primary two stages of consumer decision making, it was far from non-existent.

In her study "*Consumers' clothing disposal behaviour – a synthesis of research results*", Kirsi Laitala (2014) from the Norwegian National Institute for Consumer Research in Oslo summarises 30 years of empirical literature on consumers' clothing disposal behaviour. In it, she states:

“It was striking that none of the studies used consumer experiments. Experiments are not uncommon in studies of sustainable clothing acquisition behaviour, where studying willingness to pay for more sustainable options is a common research topic (e.g. Gam et al., 2010). Experiments may answer questions related to user’s perceptions, intentions, beliefs and habits concerning the material aspects such as quality and design. Such insights might also be useful when studying the discarding of clothes, e.g. when studying the relationship between the actual condition of the clothing, and what the owners say about the clothing, or to see how consumers would sort various used clothing items for reuse, recycling or waste disposal.” (Laitala, 2014, p. 451)

In other words, a research gap has been identified. With it follows an opportunity to complement existing research on the field with experiments which, as stated above, may answer questions related to intentions. Recent research from Amsterdam experimentally tested whether it is possible to encourage people to adopt environmentally friendly behaviour (for instance recycling more clothes). The experiments featured visual impact metaphors conveying the message that old clothes deserve a new life and found that messages with visual impact metaphors resulted in more positive attitudes towards recycling and stronger intentions to recycle (Meijers, Remmelswaal & Wonneberger, 2019).

1.4. Demarcations

In order to harmonise the study’s ambition with its scope, several important demarcations were made. The issue of clothes not being recycled or reused comprises a number of garments, however, this study solely focuses on sweaters. The nudges’ effect on other garments and the differences between these will therefore not be analysed. Due to the time frame of this study, the possibility of measuring the behavioural effect, that is, if the nudge actually resulted in more consumers recycling their garments, was deemed as non-existent. As a result, this study measures the intention to recycle, which will serve as an indicator of behaviour.

2. Theoretical framework and hypotheses

The theoretical chapter presents the study's academical outline as well as how the hypotheses presented are built upon it, and includes theories on nudging, social proof/norms and cultural dimensions.

2.1. Nudge

The idea of altering people's behaviour in a predictable way without removing the freedom of choice was developed into the Nobel Prize awarded "Nudging" theory by Thaler and Sunstein in 2008, who highlighted that choice environments can be designed that make it easier for people to choose what is best for themselves, their families, and their society without using economic incentives. As Thaler and Sunstein (2008) declared, humans are not rational like *homo economicus*, but rather like Homer Simpson. That is, people will often act against their own self-interest. Nudging therefore aims to alter the environment in such a way that when fast, intuitive decision-making occurs, the resulting decision will be the desired outcome (Thaler & Sunstein, 2008). Gigerenzer (2015) stated that such interventions aim at overcoming people's cognitive biases by exploiting them in a way that steers their decisions towards the choices they would make if they were rational.

The nudging theory includes a multitude of different techniques e.g. changing the default option, social proof heuristics and increasing the salience of the desired choice. A nudge counts as properly performed if it is easy and cheap to avoid. To clarify, putting fruit at eye level counts as a nudge, banning junk food does not. (Thaler & Sunstein, 2008). Since its initial development, the nudge theory has been refined and built upon in different ways, resulting in broader definitions of the theory. Hausman and Welch (2010, p. 126) presented one such definition as:

"Nudges are ways of influencing choice without limiting the choice set or making alternatives appreciably more costly in terms of time, trouble, social sanctions, and so forth."

2.2. Social proof and social norms

In 2001, Robert B. Cialdini developed a theory on *social proof*, which states that people follow the lead of similar others and look for cues on how to think, feel and act. This was also proposed by Burnkrant and Cousineau (1975) through various examples of experimentally conducted studies that enhance the phenomenon of informational social influence. Baines, Fill and Rosengren (2017) strengthened the perspective and

developed *how* people are affected by social contexts, indicating that individuals copy certain behaviour patterns from the group.

A similar theory is that of social norms, which encompasses the normal behaviour of a reference group in a specific context, also known as a *descriptive norm*. These represent the actual common behaviour of the majority and should be distinguished from what is known as an *injunctive norm*, and also counts as a social norm. Formed by common opinions of society, these represent the view of what one ought to do (Cialdini, Reno & Kallgren, 1990). To illustrate the difference with hypothetical examples, a message conveying that “70% of Swedish citizens have switched to green electricity” presents a *descriptive norm* whereas a message conveying that “70% of Swedish citizens believe that switching to green electricity is the right thing to do” presents an *injunctive norm*. Even though both types are used frequently and the *descriptive norm* was presented as successful in Goldstein, Cialdini and Griskevicius’ study on the towel reuse program (2008), research has concluded that *injunctive norms* are more favourable when it comes to producing desired behaviour (Cialdini, Kallgren & Reno, 1991; Reno, Cialdini & Kallgren, 1993).

2.3. Cultural dimensions

Cultural differences affect psychological processes and is therefore a way to distinguish behaviour, traits and values between people (Hofstede, 1984). Prominent research has identified systematic differences between cultures on the basis of several dimensions, among them the continuum “collectivism-individualism” (Hofstede, 1984).

Collectivistic people tend to pursue the common interest of the group whereas the individualistic guiding principle is the interest of the individual (Triandis, 2001).

Similarly, people who are more individualistic tend to respond less to group influence, and individual attitudes have the ability to overwin norms in society (Cialdini, Wosinska, Barrett, Butner & Gornik-Durose, 1999). Therefore, individuals with collectivistic or individualistic traits are likely to think and act differently. Depending on how cultural variability is reflected in a persuasion, and which cultural dimension the perceiver belongs to, the effect of the communication will differ (Han & Shavitt, 1994; Shavitt, Lalwani, Zhang & Torelli, 2006).

Certain variations of the collectivist-individualist dimension have been presented, for instance the framework with four cultural dimensions briefly mentioned in the literature section of this paper. This is defined by Singelis et al. (1995, p. 244-245) as follows:

“**Horizontal collectivism (H-C)** is a cultural pattern in which the individual sees the self as an aspect of an in-group. That is, the self is merged with the members of the in-group, all of whom are extremely similar to each other.”

“**Vertical collectivism (V-C)** is a cultural pattern in which the individual sees the self as an aspect of an in-group, but the members of the in-group are different from each other, some having more status than others.”

“**Horizontal individualism (H-I)** is a cultural pattern where an autonomous self is postulated, but the individual is more or less equal in status with others.”

“**Vertical individualism (V-I)** is a cultural pattern in which an autonomous self is postulated, but individuals see each other as different, and inequality is expected.”

Sweden has repeatedly been identified as a horizontal individualistic culture (Triandis & Gelfand, 1998; Singelis et al. 1995; Shavitt et al. 2006). However, Singelis et al. (1995) stated that no culture is purely individualistic or collectivistic, nor do individuals solely represent and reproduce the culture they supposedly belong to. That is, even though countries account for certain predictable tendencies in behaviour that can be categorised into attributes that count as either collectivistic or individualistic, people will never be defined by a set of polar opposites. Life is not black or white (Singelis et al. 1995).

2.4. Hypotheses

With the above presented theories and previous literature in mind, six hypotheses have been formed and are presented in more detail below.

Nudge theory encompasses an array of techniques, including social proof and increasing the salience of the desired choice. For instance, Demarque et al. (2015) found that exposing online shoppers to a message indicating that other customers had bought eco-friendly products resulted in a 65% increase in making at least one sustainable purchase themselves. Goldstein, Cialdini and Griskevicius (2008) also suggested that the use of social norms was an effective approach to encourage reuse-behaviour. Furthermore, behavioural intentions have frequently been associated with both attitudes and actual behaviour (Lavidge & Steiner, 1961; Barry & Howard, 1990). Lastly, according to Singelis et al. (1995) among others, Sweden is generally perceived as a horizontal individualistic culture, although individual differences occur (Triandis & Gelfand, 1998; Shavitt et al., 2006). These insights lie as the basis to the following hypotheses:

H1a: A nudge in the form of a salient message on a garment will have a positive effect on the consumer's *attitude* towards recycling the garment.

H1b: An individualistic focus on the message will have a greater effect on the consumer's *attitude* towards recycling the garment than a collectivistic focus on the message.

H2a: A nudge in the form of a salient message on a garment will increase the consumer's *intention* to recycle the garment.

H2b: An individualistic focus on the message will have a greater effect on the consumer's *intention* to recycle the garment than a collectivistic focus on the message.

Cultural differences affect psychological processes (Hofstede, 1984) and the effects of communicative persuasions have shown to differ depending on how cultural variability is reflected in the persuasion, and which cultural dimension the perceiver belongs to (Han & Shavitt, 1994). Based on these findings, the following hypotheses have been phrased:

H3: The nudge's effect on an individual's *attitude* towards recycling a garment is moderated in accordance with the individual's cultural orientation.

H4: The nudge's effect on an individual's *intention* to recycle a garment is moderated in accordance with the individual's cultural orientation.

To clarify, people with high values of individualism should have a more positive attitude towards or greater intention to recycle if exposed to an individualistic nudge, than people with a low value of individualism, and vice versa for collectivism.

3. Methodology

This section provides information on the methods used to investigate if a nudge in the form of a salient message on a garment (independent variable) positively affects consumers' recycling attitude or increases their intention to recycle clothing (dependent variables). It includes a thorough presentation of the choice of methodology, research design and data quality.

3.1. Choice of research approach

This study applies a deductive approach, meaning that the previously presented hypotheses were created on the basis of pre-existing theories within the area of this study (Bryman & Bell, 2015). This approach was chosen in order to analyse whether the theoretical framework presented earlier can be used in a real-life setting and help in making the fashion industry more sustainable.

3.2. Choice of method

In agreement with literary recommendations, this study used a quantitative method, which is more commonly used when applying a deductive approach (Bryman & Bell, 2015). Conversely, qualitative methods are often used when trying to generate new theories (Bryman & Bell, 2015). A qualitative method could have given an interesting and perhaps deeper understanding of why consumers behave in a certain way. However, this study aims to investigate if already existing theories could be applied in practice. Further, a quantitative method is preferable when trying to generalise findings, which is the aim of this study (Eliasson, 2018; Bryman & Bell, 2015). Data was collected through a self-completion questionnaire with an experimental design, created with an online survey tool by the name of Qualtrics. All questions were asked in Swedish but have been translated into English in this paper for the sake of more convenient reading. The original version in Swedish can be found in Appendix II.

3.2.1. Experiment design

The experimental design was chosen as it is a method used in research when trying to find causal connections between variables (Olsson & Sörensen, 2011; Bryman & Bell, 2015; Söderlund, 2010). More specifically, this study conducted a so called "role play experiment", meaning that respondents were placed into a scenario and then asked several questions regarding the given scenario (Söderlund, 2010). A real-life experiment could have been conducted to examine individuals' real behaviour but was not chosen as it would have been more difficult to measure cultural orientation without combining

the experiment with qualitatively interviews. The authors found that such a method would simply have been too extensive for this project.

In the experiment, respondents were randomly divided into one out of three possible groups. Having multiple groups, i.e. one or several control and experiment groups, is one of the main pillars in the definition of an experiment (Söderlund, 2010; Olsson & Sörensen, 2011). Each group was exposed to the same survey, the only difference being one small intervention in a picture that preceded the scenario around which the succeeding questions revolved. Intervention is synonym to manipulation in this context and is another main pillar of an experiment (Bryman & Bell, 2015; Söderlund, 2010).

The picture that introduced the scenario portrayed an image of a grey sweater from a fictional clothing brand, “A-SHIRT”, chosen to be perceived as unisex and hence removing potential gender biases. The control group was exposed to a picture of a sweater with a neutral clothing label in the neck that solely portrayed the “A-SHIRT” logo, i.e. with no nudge. In other words, no intervention. The other two groups were exposed to pictures of the same sweater, each with a subtle intervention in the form of a specific message on the clothing label in the neck. One message used a collectivistic persuasion and the other message an individualistic. Having this structure made it possible to see if the manipulation of the independent variable (in this case the nudging message) had any effect on the dependent variables (in this case the consumers’ attitude towards and intention to recycle clothing), minimising the effect of other variables (Söderlund, 2010). Both of the messages were inspired by Goldstein et al.’s (2008) study, that investigated if social norms could increase hotel guests’ intention to reuse towels. A summary of the different groups has been illustrated in figure 1.

Control group: No nudge Sweater with a neutral clothing label in the neck only showing the logo.	Experiment group 1: Collectivistic nudge Sweater with a clothing label in the neck showing the logo and the following message with a collectivistic/social norm persuasion: <i>“87% of our customers either sell, recycle or give their sweaters away once they feel done using it.”</i>	Experiment group 2: Individualistic nudge Sweater with a clothing label in the neck showing the logo and the following message with an individualistic persuasion: <i>“Be a hero and extend the life of this sweater once you are done using it. Sell, recycle or give it away.”</i>
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Figure 1. A summary of the three different groups in the experiment, which respondents were randomly assigned to. For visualisations from the experiment, see Appendix I and II.

3.3. Research design

The authors of this paper conducted a minor pilot study and a main study. Both of these studies used a quantitative method, collecting data through a self-completion questionnaire created in Qualtrics. Below, in figure 2, a small description and illustration of the studies can be seen. A more thorough presentation of both studies can be found in following sections.

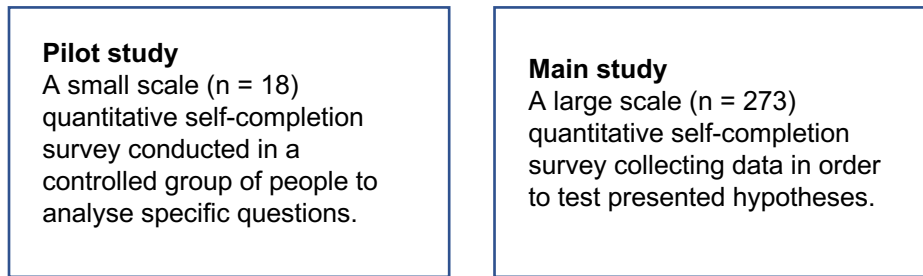


Figure 2. Illustration and description of the two conducted studies.

3.4. Pilot study

To increase the quality of the study and ensure that both the questionnaire and data-export worked as planned, a pilot study was conducted (Olsson & Sörensen, 2011). Bryman and Bell (2015) argued that pilots are important whenever a study is carried out, and especially important in cases when self-completion surveys are used. This paper's pilot study was only distributed to a controlled group of people in order to easily follow up on potential feedback. The main purpose behind the pilot study was to ensure that the intervention was noticed by the respondents, which according to Söderlund (2010) is a way to increase the quality of the intervention. To see whether the intervention was noticed or not the respondents were faced with the following question:

“Did you notice anything special about the product in the image? If yes, please specify. If no, please write no.”

Respondents answered this question in an open-ended format. From this data, it could be concluded that respondents focused too much on the brand logo and not on the intervention itself (i.e. the message). In total, 18 people participated in the pilot study of which twelve were in groups who were exposed to the manipulated picture. Only six people (50%) had noticed the manipulation. With this insight in mind, changes were made to the design³ of the intervention prior to the main study, which resulted in a small improvement in people noticing the manipulation. This time, 55% of all people in the two groups exposed to the manipulation in the main study noticed it. In hindsight, a

³ Note: Both the initial and the improved designs of the interventions are shown in Appendix I and II.

limitation is seen in how the question was formulated, which is elaborated further upon later in this paper under the limitations and future research section.

3.5. Main study

The main study was an updated and larger version of the pilot study, with the dependent variables being attitude towards recycling clothing and intention to recycle clothing. The independent variable is the message on the clothing label. A potential moderating variable is also measured, namely an individual’s cultural orientation value. An overview of the parameters in this study can be seen below in figure 3.

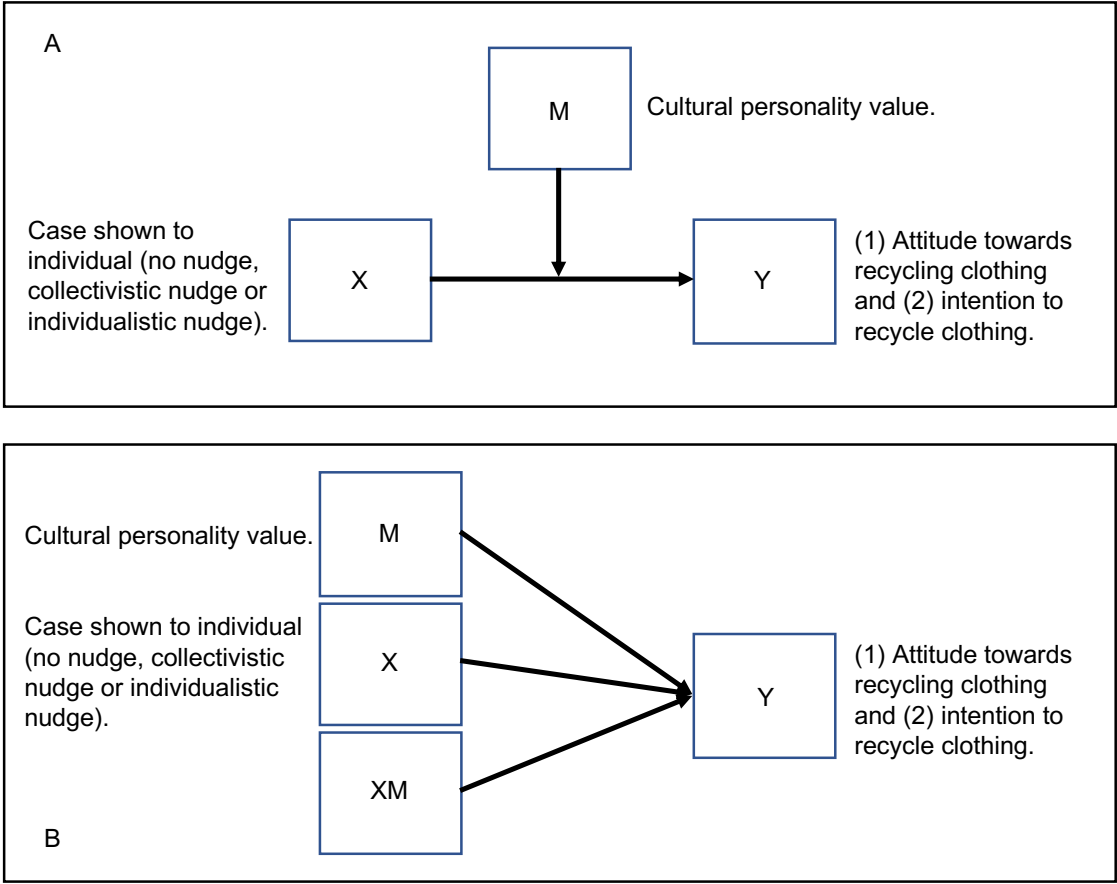


Figure 3. Illustration of the test of moderation, depicted as a conceptual diagram (panel A) and statistical diagram (panel B), with inspiration from Hayes (2013).

Note that other questions than the ones discussed in this section were asked in the main study, see Appendix II for the full questionnaire.

3.5.1. Parameters of the main study

This section describes the parameters that were measured in the main study and how they were measured. All statements and questions presented below were originally in Swedish but have been translated into English in this paper.

Answers were given on a Likert scale stretching from 1-7, where 1 is the first presented alternative and 7 the last. A Likert scale is known as a multi-indicator measure of concept where the middle number, in this case number four, indicates a neutral response (Bryman & Bell, 2015). The same authors declare that both five- and seven-point scales are used by researchers, but no definitive answer of which scale is best is given.

3.5.1.1 Attitude towards recycling clothing

To measure the attitude towards recycling clothing, a similar method to the one Mannetti, Pierro and Livi (2004) used was implemented in this study. The respondents were faced by the following statement and response scales:

“To recycle (hand in, sell or give away) a piece of clothing within the coming 3 months would feel:”

(boring to fun, unimportant to important, negative to positive, worthless to valuable)

3.5.1.2 Intention to recycle clothing

The intention this study aimed to measure is the likelihood of respondents to recycle clothing. A method discussed by Söderlund and Öhman (2003) was used, where “intentions-as-expectation” or “IE” was measured. This means that respondents were to assess the subjective likeliness of a certain scenario to occur. Since recycling can be interpreted in various ways, it was decided to divide different ways of recycling into separate questions, in order to grasp the entire spectra:

“How likely is it that you will submit this sweater to a recycle station?”

(very unlikely to very likely)

“How likely is it that you will sell this sweater?”

(very unlikely to very likely)

“How likely is it that you will give this sweater away?”

(very unlikely to very likely)

“How likely is it that you will give this sweater away to a second-hand store?”

(very unlikely to very likely)

3.5.1.3 Cultural orientation

Singelis et al. (1995) and Triandis (2001) argue that measuring culture based on the two rather traditional concepts individualism and collectivism might be too vague and abstract. Instead, it is proposed that the horizontal and vertical aspects of culture would paint a more dynamic picture. Giving in to this idea results in four different continuous variables, all of which were measured in this study:

- 1) **HI:** Horizontal individualism
- 2) **VI:** Vertical individualism
- 3) **HC:** Horizontal collectivism
- 4) **VC:** Vertical collectivism

Singelis et al. (1995) discuss a total of five different methods to measure these four variables, all of which are quantitative. Triandis and Gelfand (1998) modified one of these methods presented by Singelis et al. (1995) and made it less extensive but still relatively reliable. A quantitative method using a questionnaire containing 27 items was exposed to 366 students in order to find questions with the highest internal correlations. This resulted in 16 items, four per cultural construct.

Interpreting the results of Triandis and Gelfand (1998) as a quality indicator, the 16 items were chosen to be used to measure cultural orientation in this study, where answers were measured on a 7-point scale ranging from 1 = never or definitely no to 7 = always or definitely yes. All statements were translated into Swedish in the survey (see Appendix II) but can be seen in its original in English below. These were randomised in the survey.

HI: Horizontal individualism

“I’d rather depend on myself than others.”

“I rely on myself most of the time; I rarely rely on others.”

“I often do ‘my own thing’.”

“My personal identity, independent of others, is very important to me.”

VI: Vertical individualism

“It is important that I do my job better than others.”

“Winning is everything.”

“Competition is the law of nature.”

“When another person does better than I do, I get tense and aroused.”

HC: Horizontal collectivism

“If a co-worker gets a prize, I would feel proud.”

“The well-being of my co-workers is important to me.”

“To me, pleasure is spending time with others.”

“I feel good when I cooperate with others.”

VC: Vertical collectivism

“Parents and children must stay together as much as possible.”

“It is my duty to take care of my family, even when I have to sacrifice what I want.”

“Family members should stick together, no matter what sacrifices are required.”

“It is important to me that I respect the decisions made by my groups.”

In order not to extenuate the traditional individualism-collectivism view of culture, a new index variable has been created from the above four cultural patterns. Both horizontal and vertical collectivism still count as collectivism, both horizontal and vertical individualism still count as individualism as the dimensions should be seen as subgroups or varieties of the two traditional ones (Triandis, 2001). This variable is hereafter called individualism-collectivism, where 1 = very individualistic and 7 = very collectivistic.

3.5.2. Respondents

Since the self-completion questionnaire was distributed digitally through Facebook and LinkedIn, as well as directly to friends and colleagues of the authors, the sample should be interpreted as a convenience sample (Bryman & Bell, 2015). To simplify the process for the respondents, the study was created in Swedish as opposed to English, in order to minimise the risk of misinterpretation from the reader.

A total of 468 people set off to answer the survey, but due to various human factors such as lacking attention span or unpredictable events disrupting the answering process, only 273 completed the survey in full. All of the 273 final respondents were included in the analysis. First and foremost, the respondents were faced with a control question in the middle of the survey, which all 273 answered correctly. The question asked to ensure satisfactory attention was:

“What did you see in the picture in the beginning of the survey?”

- Alternative 1: A car
- Alternative 2: A tomato
- Alternative 3: A sweater

Furthermore, whether or not to exclude respondents who had spent too little or too long time completing the survey is debatable. One might argue that someone who spent unreasonably short time answering the survey might not have put any effort into their answers. Although, someone who spent unreasonably long time completing a survey might have forgotten important information along the way, perhaps even the manipulation. What is too little or too long is ambiguous, however the authors of this specific study resonated that four minutes could be perceived as too short, and 40 minutes too long. In order to validate if the choice not to remove any respondents was viable, three different groups were created on the basis of respondents' response time and their answers were controlled against the dependent variables, i.e. intention to recycle and attitude towards recycling clothing. Apart from minor differences in the tests' p-values, no remarkable differences were found. From this data⁴, the present authors stay confident in that no respondents were to be excluded based on their

⁴ Data from all these tests can be found in Appendix II.

response time. It should however be noted that there were no significant differences between groups if respondents that completed the survey in more than 40 minutes were excluded, as $p = .06 > .05$ (see Appendix II).

No other demarcations, e.g. sex, age or beliefs, in terms of this study's sample were made. Of the 273 valid responses, 132 were identified as males, 138 as females, two as other and one individual preferred not to answer the question. 117 of the respondents were 15-24 of age, 105 were 25-39 years old, 32 people were 40-54, 16 were 55-65 years old and three people were older than 65 years old. Illustration of this data in form of graphs can be found in Appendix II.

3.6. Data quality and tests

Data was collected between the 15th of March and the 2nd of April using Qualtrics and the data analysis was performed using SPSS version 26. In line with recommendations, every test conducted in this study used a significance level of 5% (Bryman & Bell, 2015). One-way ANOVA tests were used to analyse respondents' attitudes towards and intention to recycle clothing. In order to give the analysis more depth and find between which groups possible differences in means existed, Scheffe post hoc tests were applied to every ANOVA test.

PROCESS Macro version 3.4.1 by Hayes was used to test if an individual's cultural orientation functioned as a moderator of the nudging message's effect on their attitudes towards and intention to recycle clothing.

3.6.1. Reliability

Reliability is to what extent several measurements of a single variable provide the same result (Söderlund, 2010). In the study, a multi-indicator measure, i.e. a Likert scale, was used on a majority of all questions. To ensure that answers were consistent (having internal reliability) Cronbach's alpha was measured. Söderlund (2010) claims this to be the most used method to measure the reliability of a data set. It is an interval measurement giving a value from 0 to 1, where 0 means no internal reliability and 1 means perfect internal reliability. .8 is commonly used as a minimum acceptable level of Cronbach's alpha, but .7 is also justified (Bryman & Bell, 2015). Olsson and Sörensen (2011) state that a value of .9 indicates a high internal reliability and values between .7 and .9 are acceptable. Seemingly, the higher the value, the smaller the risk of lacking internal reliability.

When measuring individualism and collectivism, alphas rarely exceed .7 when the number of questions is low according to Singelis et al. (1995). It can be argued that the present authors' study consists of few questions in relation to other studies, exemplified by Singelis et al. (1995) as well as Triandis and Gelfand (1998). However, the latter two

researchers argue that this is not necessarily a major issue. In this study, the alpha values of the cultural orientation variables fell below .7, while the variable measuring attitude exceeded this value (see table 11, Appendix II). This is more thoroughly discussed under the limitations and future research section.

Since the lack of inter-observer consistency may harm a study's reliability (Bryman & Bell, 2015), both authors of this study have been present in the interpretation and analysis of respondents' answers to minimise the risk of a lacking inter-observer consistency.

3.6.2. Validity

Validity is the extent to which a concept actually measures what it is aimed to measure (Bryman & Bell, 2015; Söderlund, 2010). There are several types of validity, some of which are discussed in this section.

Measurement validity, also called construct validity, questions if a measurement of concept truly reflects that particular concept (Bryman & Bell, 2015). One method of doing this is to consult experts in the field (Bryman & Bell, 2015). No experts or professionals have been involved in making this study's questions. However, every question was formed to align with questions from studies made by experts in respective field.

Internal and external validity is commonly discussed when it comes to experiments (Söderlund, 2010). Internal validity is the extent to which evidence supports an authentic cause-and-effect relationship between a treatment and an outcome (Bryman & Bell, 2015). As mentioned, respondents in this study were randomly allocated to one out of three groups. This significantly increases the probability that the intervention *de facto* resulted in differences between the outcomes of the study's groups rather than any other factors (Söderlund, 2010). Further, the experiment was only conducted once, eliminating the possibility of liable differences in individuals (i.e. that they have developed or changed their minds) or in the instruments used. According to Söderlund (2010), this improves the internal validity.

External validity is the extent to which a result can be generalised to and across other research contexts and with other respondents (Söderlund, 2010; Bryman & Bell, 2015). An important factor in gaining external validity is the internal validity presented above. As the experiment only encompassed one manipulation, that particular manipulation should be responsible for any cause-and-effect relationship and thus, the result can be generalised to a greater extent than if the experiment would have consisted of more than one manipulation (Söderlund, 2010).

4. Result

This section presents the results derived from the study. It commences with the result of how different nudging messages affect an individual's attitude towards and intention to recycle clothing and ends with presenting the potential moderating effect of the individual's cultural orientation. All hypotheses were statistically tested using an alpha level of 5%.

4.1. Attitude towards recycling clothing

H1a: A nudge in the form of a salient message on a garment will have a positive effect on the consumer's *attitude* towards recycling the garment.

H1b: An individualistic focus on the message will have a greater effect on the consumer's *attitude* towards recycling the garment than a collectivistic focus on the message.

Data provides partial empirical support for H1a, but not for H1b. Descriptive data from the test can be seen in table 1 below.

Table 1. Descriptive statistics of respondents' attitude towards recycling clothing.

	Total n = 273	No nudge n = 96	Collectivistic nudge n = 90	Individualistic nudge n = 87
Mean	5.81	5.52	5.88	6.07
Min	5.67	5.26	5.62	5.85
Max	5.96	5.79	6.14	6.28
SD	1.21	1.31	1.24	1.00

Note: Means significantly differ between individualistic nudge and no nudge. No other significant differences were found between the groups.

Using a between-groups ANOVA test to examine if any of the treatments had a positive effect on an individual's attitude towards recycling clothing shows a statistically significant result, $F(2, 270) = 4.96, p = .01 < .05$.

Developing the analysis by comparing the three groups with each other using a Scheffe post hoc test shows that the group who was exposed to the individualistic nudge ($M = 6.07, SD = 1.00$) showed a significantly more positive attitude towards recycling clothing than the control group who received no nudge ($M = 5.52, SD = 1.31$) at $p = .01$. No other significant results were found in this test.

Figure 8 in Appendix II shows a boxplot diagram which indicates that respondents within each group tend to have a relatively high level of agreement with each other

regarding their attitude towards recycling clothing. Some outliers exist, but no further tests (e.g. removing the outlying responses) were conducted.

4.2. Intention to recycle clothing

H2a: A nudge in the form of a salient message on a garment will increase the consumer's *intention* to recycle the garment.

H2b: An individualistic focus on the message will have a greater effect on the consumer's *intention* to recycle the garment than a collectivistic focus on the message.

Two kinds of tests were carried out, one for each individual type of recycling and one for the mean of all types of recycling.

4.2.1. Each individual type of recycling

Data provides empirical support for H2a in two out of four cases, namely intention to hand in the garment to a recycling station and intention to give away the garment. Hence, H2a is partly supported. There is no empirical support for H2b. Descriptive data from all four tests can be seen in table 2 below.

Table 2. Descriptive statistics of respondents' intention to recycle clothing – each individual type of recycling.

	No nudge n = 96		Collectivistic nudge n = 90		Individualistic nudge n = 87		Total n = 273	
	μ	σ	μ	σ	μ	σ	μ	σ
Recycle station	4.10	2.14	4.24	1.84	4.92	1.91	4.41	1.99
Sell	2.53	1.75	3.06	1.95	2.98	2.03	2.85	1.92
Give away	4.90	1.87	5.26	1.58	5.62	1.70	5.25	1.75
Second-hand store	3.83	2.26	4.08	1.93	4.28	2.29	4.05	2.17

Note: Means significantly differ between individualistic nudge and no nudge in the cases of recycling station and give away. No other significant differences were found between the groups in any of the four cases.

Four between-groups ANOVA tests were carried out, one for each type of recycling. In the case of handing the garment to a recycling station, the analysis showed a significant result, $F(2, 270) = 4.38, p = .01 < .05$. Further, in the case of giving it away it also showed a significant result, $F(2, 270) = 4.03, p = .02 < .05$. No other significant results were found in the cases of selling the garment ($F(2, 270) = 2.06, p = .13 > .05$) or handing the garment to a second-hand shop ($F(2, 270) = .96, p = .39 > .05$).

A Scheffe post hoc test was applied to find between which groups statistically significant differences existed. The test showed a statistically significant result in the case of recycling clothes at a recycle station between the group who was exposed to an individualistic nudge ($M = 4.92$, $SD = 1.91$) and the control group who was not exposed to any nudge ($M = 4.10$, $SD = 2.14$) at $p = .02 < .05$. Furthermore, it showed a statistically significant result in the case of recycling clothes by giving them away between the group who was exposed to an individualistic nudge ($M = 5.62$, $SD = 1.70$) and the control group who was not exposed to any nudge ($M = 4.90$, $SD = 1.87$) at $p = .02 < .05$. No other significant differences were found.

When looking at the boxplot diagrams in these cases (see figure 9, 10, 11 and 12 in Appendix II), some differences can be seen between them. For example, when looking at cases with no outliers, the maximum value is seven and the minimum value is one. In cases where outliers exist, the maximum value is six and the minimum two. Differences within the cases are limited to the height of the quartile range and the mean level. However, something that is true in all cases is that there are large variances in the responses.

4.2.2. Overall clothing recycling

By aggregating the means of each individual type of recycling, an overall value of the intention to recycle clothing was measured. In this case, empirical data partly supports H2a, but not H2b. Descriptive data from the test can be seen in table 3 below.

Table 3. Descriptive statistics of respondents' overall intention to recycle clothing.

	Total n = 273	No nudge n = 96	Collectivistic nudge n = 90	Individualistic nudge n = 87
Mean	4.14	3.84	4.16	4.45
Min	3.99	3.60	3.91	4.18
Max	4.29	4.09	4.41	4.72
SD	1.24	1.21	1.18	1.28

Note: Means significantly differ between individualistic nudge and no nudge. No other significant differences were found between the groups.

A between-groups ANOVA test was used to test if any of the treatments showed a statistically significant difference in the individual's intention to recycle clothing. The test was statistically significant, $F(2, 270) = 5.64$, $p = .00 < .05$, which suggests that differences in the means of the groups exist.

In addition, a Scheffe post hoc test was employed to see between which groups statistically significant differences in the mean exist. The group who was exposed to an individualistic nudge ($M = 4.45$, $SD = 1.28$) displayed a greater intention to recycle

clothing than the group who was not exposed to any nudge ($M = 3.84$, $SD = 1.21$) at $p = .00 < .05$.

The boxplot diagram seen in figure 13, Appendix II shows no major differences between the groups' responses. However, responses from the group who received no nudge generally has lower values, and an outlier exists in the group that received a collectivistic nudge. No further tests were conducted.

4.3. Cultural orientation as a moderator

All tests to investigate if an individual's cultural orientation could function as a moderator were conducted using PROCESS Macro model 1 in SPSS. The independent variable (X) is categorical with three different groups and was divided into two dummy variables. The first dummy variable (hereafter referred to as D1) was coded so that 0 = no nudge and 1 = collectivistic nudge. Respondents who received the individualistic nudge were excluded in this dummy variable. Instead, they were included in the second dummy variable (hereafter referred to as D2), which was coded 0 = no nudge and 1 = individualistic nudge. Hence, respondents who received a collectivistic nudge were excluded from D2.

Five different moderating (M) variables were tested, namely individualism-collectivism, horizontal individualism, vertical individualism, horizontal collectivism and vertical collectivism. The dependent variables (Y) in the tests were attitude towards recycling clothing and intention to recycle clothing.

In order to test all possible combinations, a total of 20 tests were conducted. All possible tests are illustrated in figure 4.

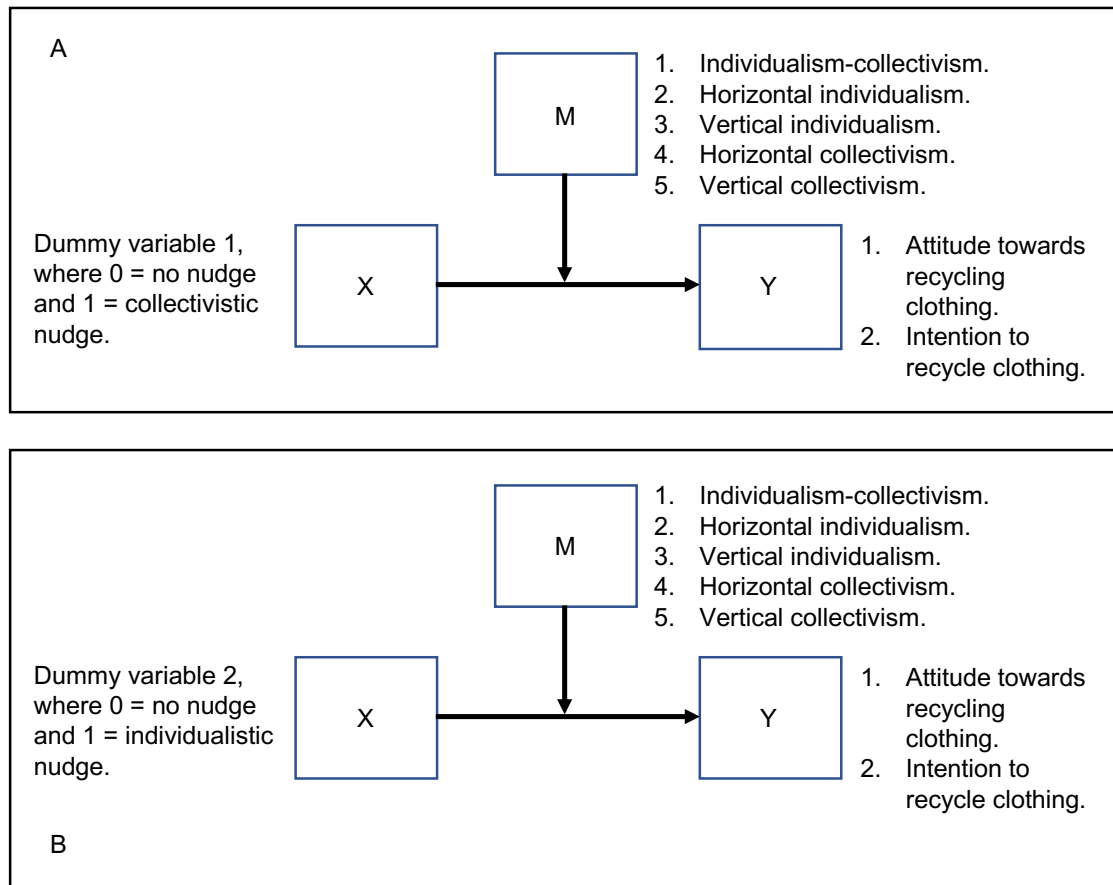


Figure 4. Panel A illustrates the ten tests using D1 as the independent variable, while panel B illustrates the ten tests using D2 as the independent variable.

Descriptive statistics can be found in table 4.

Table 4. Descriptive statistics of respondents' cultural orientation.

Variable	<i>M</i>	<i>SD</i>
Individualism-collectivism	4.54	.49
Horizontal individualism	3.02	.81
Vertical individualism	3.88	1.05
Horizontal collectivism	5.83	.79
Vertical collectivism	5.45	.91

Note: For individualism-collectivism, 1 = very individualistic and 7 = very collectivistic. The same goes for the other variables, i.e. a high value means a high value of that specific cultural orientation variable.
N = 273.

4.3.1. Effect on attitude towards recycling clothing

H3: The nudge's effect on an individual's *attitude* towards recycling a garment is moderated in accordance with the individual's cultural orientation.

Data does not provide empirical support for H3.

Only two out of 20 possible interactions were significant. The first was the interaction between D2 and the value of an individual's horizontal individualism, where $b = -.58$, $SE = .22$; 95% confidence interval (CI) = [-1.00, -.15], $t(179) = -2.69$, $p = .01 < .05$. This result suggests that, in general, the higher an individual's value of horizontal individualism is, the more negative their attitude towards recycling clothing will be when exposed to the individual nudge. Further, the interactions in this test implies a significant change in $R^2(.04)$, $F(1, 179) = 7.21$, $p = .01 < .05$ in the overall regression model.

The second significant interaction was between D2 and the value of an individual's vertical collectivism. This interaction holds a positive correlation, where $b = .50$, $SE = .18$; 95% confidence interval (CI) = [.14, .87], $t(179) = 2.72$, $p = .01 < .05$. This result suggests that, in general, the higher an individual's value of vertical individualism is, the more positive their attitude towards recycling clothing will be when exposed to the individual nudge. A significant change in $R^2(.04)$ was also found, $F(1, 179) = 7.40$, $p = .01 < .05$. Data from all interaction tests with attitude towards recycling clothes as the dependent variable can be found below in table 5.

Table 5. Regression interaction coefficients for an individual's attitude towards recycling clothing.

Predictor	<i>Coefficient</i>	<i>SE</i>	<i>t</i> (179)	<i>p</i>
Individualism-collectivism				
D1 x individualism-collectivism value	.12	.38	.30	.76
D2 x individualism-collectivism value	.15	.35	.43	.67
Horizontal individualism				
D1 x HI value	-.15	.23	-.64	.52
D2 x HI value	-.58	.21	-2.69	.01*
Vertical individualism				
D1 x VI value	-.03	.17	-.17	.87
D2 x VI value	-.19	.17	-1.11	.27
Horizontal collectivism				
D1 x HC value	.34	.25	1.37	.17
D2 x HC value	.31	.21	1.47	.14
Vertical collectivism				
D1 x VC value	-.00	.21	-.01	.99
D2 x VC value	.50	.19	2.72	.01*

Note: * signals a significant interaction

4.3.2. Effect on intention to recycle clothing

H4: The nudge's effect on an individual's *intention* to recycle a garment is moderated in accordance with the individual's cultural orientation.

Data does not provide any support for H4.

In these tests, the dependent variable was the individual's intention to recycle clothing. No interactions in any of the tests were significant, meaning that data does not provide any empirical support that an individual's cultural orientation works as a moderating variable on their intention to recycle clothing. Table 6 below presents data from all interactions.

Table 6. Regression interaction coefficients for an individual's intention to recycle clothing.

Predictor	<i>Coefficient</i>	<i>SE</i>	<i>t</i> (182)	<i>p</i>
Individualism-collectivism				
D1 x individualism-collectivism value	.21	.36	.58	.56
D2 x individualism-collectivism value	.14	.38	.38	.71
Horizontal individualism				
D1 x HI value	.09	.22	.42	.67
D2 x HI value	-.22	.23	-.97	.33
Vertical individualism				
D1 x VI value	.06	.16	.39	.69
D2 x VI value	.00	.18	.01	.99
Horizontal collectivism				
D1 x HC value	-.04	.23	-.17	.87
D2 x HC value	-.16	.23	-.71	.48
Vertical collectivism				
D1 x VC value	.02	.19	.08	.94
D2 x VC value	.33	.20	1.64	.10

Note: There are no significant interactions.

4.4. Summarising the results

H1a	A nudge in the form of a salient message on a garment will have a positive effect on the consumer's <i>attitude</i> towards recycling the garment.	Partial empirical support*
H1b	An individualistic focus on the message will have a greater effect on the consumer's <i>attitude</i> towards recycling the garment than a collectivistic focus on the message.	No empirical support
H2a	A nudge in the form of a salient message on a garment will increase the consumer's <i>intention</i> to recycle the garment.	Partial empirical support**
H2b	An individualistic focus on the message will have a greater effect on the consumer's <i>intention</i> to recycle the garment than a collectivistic focus on the message.	No empirical support
H3	The nudge's effect on an individual's <i>attitude</i> towards recycling a garment is moderated in accordance with the individual's cultural orientation.	No empirical support
H4	The nudge's effect on an individual's <i>intention</i> to recycle a garment is moderated in accordance with the individual's cultural orientation.	No empirical support

Note:

* Empirical data supports that the individualistic message has a significant positive effect on the consumer's attitude towards recycling clothing but does not support the same regarding the collectivistic message.

** Empirical support exists for two out of four cases, namely for recycling at a recycling station or to giving clothes away and hence not for selling them or handing them to a second-hand store. Empirical support also exists for the overall intention to recycle clothing.

5. Discussion

This study aimed to investigate if different types of nudging messages on clothing can increase consumers' attitude towards and intention to recycle clothing when they feel done using it. Empirical data supports that an individualistic nudge (versus no nudge) might result in a more positive attitude towards recycling clothing. No support was found in the case of a collectivistic nudge.

Further, empirical data partly supports that nudging messages on clothing might increase intention to recycle. Given that recycling can be defined in various ways, this study chose to define recycling clothing to encompass:

- 1) Handing it to a recycle station.
- 2) Selling it.
- 3) Giving it away.
- 4) Handing it to a second-hand store.

With that in mind, this study presents empirical support that nudging messages might increase intention to recycle in the cases of (1) and (3). Two different types of messages were used, and empirical data shows that only the individualistic nudge versus the control group (no nudge) increases consumers' intention to recycle clothing. Further, an overall index was measured of all four cases. In this case, empirical data supports an increased overall intention to recycle when exposed to an individualistic nudge (versus no nudge). Data does not support that a collectivistic nudge significantly increases a consumer's intention to recycle more than in the cases of an individualistic nudge or no nudge.

With the aim of enhancing the study's explanatory value, cultural orientation was measured in five variables (individualism-collectivism, horizontal/vertical individualism and horizontal/vertical collectivism) and tested as moderating variables. No strong support for these hypotheses were found. Significant interactions were only present in two out of 20 cases, of which none had a correlation in accordance with theory.

5.1. Affecting clothing recycling attitudes and intentions

Conforming to the nudge theory, the study provides empirical support that a nudge in the form of a salient message might have a positive effect on the consumer's attitude towards and intention to recycle clothing, as opposed to showing no message at all. This complements the research conducted by Meijers et al. (2019). Their study showed that consumers gained a more positive attitude towards recycling clothing and an increased

recycling intention when exposed to a message in the form of a visual impact metaphor. Similarly, this study proposes that nudging can affect attitude and increase intention but with a novel alternative – presenting the message on the clothing label. However, the results of this study only provide empirical support for the nudge that included the individualistic message, not the collectivistic/social norm message.

Connecting back to similar studies presented in the literature review, where the use of social norm nudges positively affected towel reuse (Goldstein et al., 2008) and purchase of sustainable products (Demarque et al., 2015), it would be expected that the results of this study provided empirical support for the theories of social proof and social norms. However, this was not the case, raising the question of how important context and perceived effort is, when it comes to the effect of social proof or social norms. In this study, respondents were given a scenario in a questionnaire and not experimented on in real life. This potentially explains why the theory of social proof did not hold, since the respondents might have had difficulties examining the behaviour of others (Cialdini et al., 1999). Once again comparing to the towel reuse experiment, the amount of effort needed to reuse a towel is close to none, whereas recycling a garment in any way demands both time and effort. In that sense, perhaps the lower the perceived effort needed, the greater the effect of social norms. This is also in line with the nudging definition presented by Hausman and Welch (2010), who argue that nudging messages should present non-costly alternatives in terms of time, for instance. Perhaps the effect from the social norm nudge would have been clearer if the message would have been differently phrased. It is also believed that injunctive norms can have a greater effect than descriptive norms (Cialdini et al., 1991; Reno et al., 1993), which suggests that the outcome of this study could have differed if instead an injunctive norm would have been used in the experiment.

One theory that was not presented in this study's theoretical section, as it did not lie as a foundation of the hypotheses, is the Social Impact Theory. However, it could perhaps explain why the nudge conforming to the theory of social proof did not have any significant effect on an individual's attitude or intention. Created by Latané in 1981, it proposes that a group's effect on an individual's thoughts, feelings or behaviour is influenced by three different factors. The first factor is the experienced authority coming from the group, the second how close one is to the group in terms of space or time and the last is the group's size (Latané & Wolf, 1981). The social proof nudge from this study might not have been sufficient in meeting these factors, which would thus weaken the effect from the group on the individual.

5.2. Understanding cultural orientation

Contradictory to the presented theories, data did not provide any support for the hypotheses that cultural orientation would work as a moderating variable. Only two out

of 20 possible interactions in the tests conducted turned out to be significant. The first significant interaction was between D2 and HI, which was negatively correlated. According to theory, people with high values of HI strive to become unique (Shavitt et al., 2006; Triandis & Gelfand, 1998). Therefore, the authors of the present study found it reasonable to believe that those individuals would be positively affected by the individualistic nudge, which makes the result contradictory. The other significant interaction occurred between D2 and VC, which was positively correlated. People with high values of VC emphasize the will of authorities and put large focus on their in-group (Shavitt et al., 2006; Triandis & Gelfand, 1998). Given the fact that neither nudge in this study had any focus on authorities, families or other in-groups, the present authors argue that this result is neither in line with, nor contradictory to theory.

Moreover, this study's result suggests that people in Sweden generally seem to be more collectivistic than individualistic as seen in table 4, which completely contradicts the idea of Sweden being a horizontally individualistic nation as proposed by Triandis and Gelfand (1998), Singelis et al. (1995) and Shavitt et al. (2006). Although respondents tend to be more collectivistic on average (see Appendix II), they seem to be more affected by individualistic persuasions than collectivistic. Note that there existed no significant differences between these groups, however the effect between an individualistic nudge and no nudge is significant whereas the effect between a collectivistic nudge and no nudge is not significant.

Nonetheless, the presented theories on culture are not necessarily bad or untrue. There could be various possible explanations as to why data did not support the hypotheses presented in this area of research. First and foremost, culture is a very broadly defined subject. Secondly, several different methods of measurement exist, some of which have been discussed by Singelis et al. (1995) as well as Triandis and Gelfand (1998). Culture also includes different dimensions, other than those used in this study, and it tends to be profoundly difficult to measure it in a satisfactory way (Triandis, 1995; Triandis, 2001). The authors of this paper found it necessary to limit the number of questions asked even though a high number of questions can aid in maintaining validity and reliability when measuring culture. Especially when measuring the four dimensions (HI, VI, HC & VC) in relation to another variable (Singelis et al., 1995). In hindsight, this specific decision that was made in order to avoid the study from becoming too extensive, might have been done on the expense of a seemingly more valid and reliable measurement of this parameter.

Last but not least, although all three presented studies in the literature section have used the same measurement method as this present study, data was collected and analysed outside the Swedish market. Hence, they have used similar hypotheses and methods but different kinds of samples than this paper. Two were conducted cross-nations or cross-nationalities, and one in Korea. This could potentially be an explanatory factor to this study's somewhat abnormal result in relation to theories and other studies.

6. Conclusion

This study investigated if a nudge in the form of a salient message on the clothing label of a garment could have a positive effect on the consumer's attitude towards recycling clothing and increase their intention to recycle clothing. In conclusion, this study finds that to some extent, it could. A nudge with an individualistic persuasion, as opposed to having no nudge at all, significantly increased intention to recycle clothing and positively affected attitude as well. The authors propose that further research should be conducted focusing on behaviour instead of intention. This, because even though intentions are necessary to increase sustainable consumption, in the end, it is the behaviour that truly has an impact.

6.1. Theoretical contribution

This study became an addition to the collection of thousands of research papers that in one way or another show possible effects of using nudges to influence people toward pro-environmental behaviour. More importantly however, it added to the narrow field of research within consumers' clothing disposal behaviour and filled the identified research gap by offering an experimental examination which provides insights on attitude and intention. Something that had not been touched upon until recently, where research from Amsterdam found that the use of visual impact metaphors could induce a more positive attitude towards recycling clothing and an increased recycling intention in consumers (Meijers et al., 2019).

In the case of the nudge with a collectivistic/social norm persuasion, there was no significant difference to the group with no nudge, thus not conforming to the theory of social norms. Therefore, this study could be interpreted as an example that concludes that the use of social norms does not unquestionably result in the desired outcome.

Lastly, this study – somewhat contradicting the results of the studies conducted by Lee and Choi (2006), Torelli et al. (2012) and Han (2017) – did not support cultural orientation to work as a moderating variable with an explanatory value. Further, it did not strengthen the idea that the effect from different communicative persuasions work as a function of cultural variability, as presented by Han and Shavitt (1994) as well as Hofstede (1984). Possible explanations have been discussed, but none have been concluded as evident enough which result in the contributions to this field of research being rather limited.

6.2. Practical implications

For retailers and designers in the fashion industry, the findings presented in this paper should spark interest for creative use of communication on garments. In recent times,

clothing chains like H&M and “& Other Stories” have established in-store recycling programs where the consumer can hand in a used garment upon consumption in exchange for a voucher (H&M, n.d.; & Other Stories, n.d.). Using communication on the clothing label to remind the consumer of the possibility to hand in the garment at the same store/chain from which the garment was acquired could aid in “locking in” the consumer into the sphere of the brand and result in increased loyalty. Sustainable fashion brands that do not have the capacity to provide such an expansive recycling or reuse program could still communicate with similar messages to the individualistic one presented in this study, encouraging pro-environmental behaviour. In addition to contributing to a more sustainable industry, it could also speak to the conscious consumer and therefore might result in a positive effect on brand perception. Hopefully, the message on the clothing label should act as a catalyst for sustainable clothing disposal behaviour and contribute to reduced carbon emissions.

6.3. Limitations and future research

Although expanding the current scope of research within sustainable clothing disposal behaviour, when put in perspective, this study has merely scratched the surface. There are countless opportunities for further research *pari passu* with the ongoing development of sustainable fashion enabled by new technology (i.e. better recycling methods, more sustainable fibres and materials etc.). Important to keep in mind, is that regardless of how new technology aids sustainable development, real change will be dependent on the consumers’ habits and consumption patterns.

6.3.1. Generalising the result

Bryman and Bell (2015) argue that a well-represented sample is important in order to draw generalised conclusions from a study’s result. The survey in this study was distributed through social media (i.e. Facebook and LinkedIn) and could therefore be regarded as a “convenience sample”. Although this might result in a less representable sample, it has become a norm to use this method in the field of consumer behaviour (Bryman & Bell, 2015). The method was chosen for its convenience but might hinder making too generalised conclusions. However, since this study was conducted on Swedish individuals, one could argue that generalised conclusions are relatively more reliable on the Swedish market than in other countries. In addition to replicating the result of this study in Sweden to verify its result, future research could test similar hypotheses in other countries and cultures, since the environmental and economic issues it tackles are global, not national. The hypotheses could also be tested on more kinds of garments, to ensure that the result is not merely valid for sweaters.

The questions aimed at measuring intention were also phrased in a way that can hinder the verification of reliability. In order not to make the study too extensive, it was decided not to ask for more than one answer per question, removing the possibility to measure Cronbach's alpha. The intention variable was only one out of many variables measured, and with its four questions it might have resulted in a too comprehensive questionnaire. Future research looking at intention or behaviour should have a greater focus on this variable above others, by making sure to measure its reliability.

Furthermore, there is a risk that the result of this study would differ if responses deemed as outliers would have been removed from the data samples. No such tests were conducted in this study.

6.3.2. The cultural orientation variables

Measuring an individual's cultural orientation is difficult. Singelis et al. (1995) stated that the most common limitation when measuring this cultural orientation is low reliability, especially when measuring on individual levels. Normally, the more items, i.e. questions asked, the higher the alpha becomes in studies where this variable is measured. It becomes even more complex when measuring individualism and collectivism in relation to other variables as this may require up to more than 100 items according to Singelis et al. (1995). This is simply not realistic in a study of this nature, especially considering that cultural orientation only accounts for one part of the study, not the entirety. It would have been too extensive for respondents to finish.

The present authors also want to mention that Singelis et al. (1995) as well as Triandis and Gelfand (1998) appear to have used a 9-point scale in their method, while a 7-point scale has been used throughout this study. Triandis and Gelfand (1998) discuss the use of a 9-point scale to be a possible issue, as it can be too narrow in its range which in the case of individual cultural orientation most often results in low alphas. However, they also state that low alphas can be reliable when studying culturally homogeneous samples. It can be argued that a sample with respondents from only one country is more culturally homogeneous than a sample with respondents from several countries as culture tends to differ more between countries than inside countries. Further, they propose that smaller scales tend to give relatively reliable results as well. A 7-point scale was used in this study for the sake of making the survey feel more user-friendly, especially considering that respondents could access the survey using a mobile device with smaller screens.

6.3.3. The experiment and its manipulation

The manipulation in this study exposed respondents to different kinds of information. Whether or not this counts as a nudge or merely a form of behavioural influence is debatable. According to Gigerenzer (2015), the term "nudge" has become too vague and

is used to describe anything that affects behaviour in any way. In that sense, defining this study's manipulation as a nudge could seem slightly generous. Regardless, this does not affect the actual result of this study, but rather which theory it eventually aids to strengthen. Furthermore, this study might have used a manipulation check that was too vague. In hindsight, it would have been beneficial to phrase it as below in order to be able to present a more reliable result:

“What message did the clothing label on the picture present?”

- **Alternative 1:** A-SHIRT logo and 100% cotton.
- **Alternative 2:** A-SHIRT logo, 100% cotton and a message saying “87% of our customers either sell, recycle or give their sweaters away once they feel done using it”.
- **Alternative 3:** A-SHIRT logo, 100% cotton and a message saying “Be a hero and extend the life of this sweater once you are done using it. Sell, recycle or give it away”.

Role play scenarios might not have the same strength in the manipulation effect relative to real-life field experiments (Söderlund, 2010). However, a study conducted by Bateson and Hui (1992) shows that reactions in different types of experiments can provide similar results in respondents' psychological and behavioural answers. Nonetheless, future research should look into real behaviour, using nudging theory at the disposal stage of clothing consumption. To clarify, this does not necessarily mean that the manipulation itself needs to focus on changing behaviour. As a matter of fact, it can even be more effective to alter attitudes and opinions rather than aiming at changing behaviour directly (Gwozdz et al., 2017). It is rather proposed that behaviour is *measured* in order to ensure that the alteration of attitude and intention de facto results in a behavioural change and decreased impact on the environment. Only then can fashion fade like Yves Saint Laurent expressed, in a literal sense.

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8. Appendix

8.1. Appendix I: Pilot study

8.1.1. The pilot study intervention



Föreställ dig att du håller på att rensa din klädgarderob. Precis som vanligt är det ett antal plagg som du antingen inte gillar längre, inte passar dig längre eller är trasiga på något sätt. Kläderna som du vill ha kvar är ihopvikta och inlagda i garderoben igen. De andra kläderna ligger utspridda på din säng. Bland de kläderna som du inte vill ha kvar längre ser du följande tröja:



Visualisation of the scenario in the experiment (in the pilot study) to the left and the sweater with no nudge (control group) to the right.



Visualisation of the collectivistic nudge (experiment group 1) to the left, and the individualistic nudge (experiment group 2) to the right.

8.2. Appendix II: Main study

8.2.1. Introduction to survey



Hej och varmt välkommen till denna enkätundersökning!

Först och främst, stort stort tack för att du har valt att ägna del av din tid till att medverka i vår enkätundersökning. Ovärderligt. Enkäten tar ca 7-10 minuter att besvara och kommer att användas som underlag för vår kandidatuppsats, med andra ord - du hjälper oss ta vår examen.

Förutom att du hjälper oss ta examen, så kommer vi att donera 350kr till en välgörenhetsorganisation. En av alla som deltar i enkäten kommer få möjligheten att välja vilken organisation det blir!

Vid eventuella frågor om enkäten, hör av dig till 24220@student.hhs.se.

Tack för din medverkan!

/ Felix Nilsson & Sebastian Stüben



8.2.2. The main study intervention and the scenario

Föreställ dig följande:

Det är en lugn lördag och du har bestämt dig för att det är dags att rensa din klädgarderob, då du insett att det finns en hel del plagg som inte kommer till användning. Vissa faller dig helt enkelt inte i smaken längre, andra har du vuxit ur och en liten andel har även slitits ut. Du tömmer hela garderoben, viker prydligt ihop de plagg som du vill behålla och lägger tillbaka dem i din garderob igen. Kläderna som du vill bli av med ligger nu utspridda på din säng och du går igenom dem, en efter en, för att bestämma vad du ska göra av dem. Bland dessa plagg hittar du följande tröja från det svenska varumärket "A-shirt".

Ta en noggrann titt på tröjan och svara sedan på frågorna nedan.



Visualisation of the scenario in the experiment to the left and the sweater with no nudge (control group) to the right.



Visualisation of the collectivistic nudge (experiment group 1) to the left, and the individualistic nudge (experiment group 2) to the right.

8.2.3. The main study questions in the survey

Min inställning till produkten på bilden är:

Negativ	☐	☐	☐	☐	☐	☐	☐	Positiv
Dålig	☐	☐	☐	☐	☐	☐	☐	Bra
Tycker inte om	☐	☐	☐	☐	☐	☐	☐	Tycker om

Produkten på bilden har:

Dålig kvalitet	☐	☐	☐	☐	☐	☐	☐	Bra kvalitet
Kort livslängd	☐	☐	☐	☐	☐	☐	☐	Lång livslängd
Kort hållbarhet	☐	☐	☐	☐	☐	☐	☐	Lång hållbarhet

Hur sannolikt är det att du kommer att sälja denna tröja?

Väldigt osannolikt

Väldigt sannolikt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur sannolikt är det att du kommer att skänka denna tröja?

Väldigt osannolikt

Väldigt sannolikt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur sannolikt är det att du kommer att lämna in denna tröja till en second hand-butik?

Väldigt osannolikt

Väldigt sannolikt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Hur sannolikt är det att du kommer att slänga denna tröja?

Väldigt osannolikt

Väldigt sannolikt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Jag anser att skänka tröjan skulle vara:

	1	2	3	4	5	6	7	
Svårt	☐	☐	☐	☐	☐	☐	☐	Lätt
Komplicerat	☐	☐	☐	☐	☐	☐	☐	Okomplicerat
Krångligt	☐	☐	☐	☐	☐	☐	☐	Smidigt

Jag anser att lämna in tröjan på en second hand-butik skulle vara:

	1	2	3	4	5	6	7	
Svårt	☐	☐	☐	☐	☐	☐	☐	Lätt
Komplicerat	☐	☐	☐	☐	☐	☐	☐	Okomplicerat
Krångligt	☐	☐	☐	☐	☐	☐	☐	Smidigt

Jag anser att slänga tröjan skulle vara:

	1	2	3	4	5	6	7	
Svårt	☐	☐	☐	☐	☐	☐	☐	Lätt
Komplicerat	☐	☐	☐	☐	☐	☐	☐	Okomplicerat
Krångligt	☐	☐	☐	☐	☐	☐	☐	Smidigt

Att återvinna (lämna in, sälja eller skänka) ett plagg inom de kommande 3 månaderna skulle kännas:

Tråkigt	☐	☐	☐	☐	☐	☐	☐	Kul
Oviktigt	☐	☐	☐	☐	☐	☐	☐	Viktigt
Negativt	☐	☐	☐	☐	☐	☐	☐	Positivt
Värdelöst	☐	☐	☐	☐	☐	☐	☐	Värdefullt

De flesta som är betydelsefulla för mig skulle anse att jag borde återvinna (sälja, skänka eller lämna in) kläder snarare än att slänga dem.

Instämmer inte

Instämmer helt

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Questions on attitude and intention as well as questions not analysed.

Hur skulle du beskriva en person som
återvinner (lämnar in till
återvinningsstation/second hand, säljer
eller skänker) kläder?

	Instämmer inte				Instämmer helt		
	1	2	3	4	5	6	7
Driven	☐	☐	☐	☐	☐	☐	☐
Ordentlig	☐	☐	☐	☐	☐	☐	☐
Påläst	☐	☐	☐	☐	☐	☐	☐
Framtidsorienterad	☐	☐	☐	☐	☐	☐	☐
Utbildad	☐	☐	☐	☐	☐	☐	☐
Osjälvisk	☐	☐	☐	☐	☐	☐	☐
Ansvarsfull	☐	☐	☐	☐	☐	☐	☐
Medveten	☐	☐	☐	☐	☐	☐	☐
Omtänksam	☐	☐	☐	☐	☐	☐	☐
Trendig	☐	☐	☐	☐	☐	☐	☐
Modern	☐	☐	☐	☐	☐	☐	☐
Långsiktig	☐	☐	☐	☐	☐	☐	☐
Motiverad	☐	☐	☐	☐	☐	☐	☐
Upplyst	☐	☐	☐	☐	☐	☐	☐

Questions about the respondent's view of a consumer that recycles (were not analysed).

Hur många nya klädesplagg köper du, i snitt, per månad?

0
☐

1-3
☐

4-7
☐

8-10
☐

11+
☐

Hur många begagnade klädesplagg köper du, i snitt, per månad?

0
☐

1-3
☐

4-7
☐

8-10
☐

11+
☐

Questions on clothing purchase behaviour (were not analysed).

Du kommer nedan att ställas inför ett antal påståenden. Hur ställer du dig till dem?

När andra personer presterar bättre än mig, blir jag nervös och uppgjagad.

Aldrig eller absolut inte

Alltid eller absolut

1
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7
☐

Det är viktigt för mig att jag respekterar andra gruppmedlemmars beslut.

Aldrig eller absolut inte

Alltid eller absolut

1
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7
☐

Föräldrar och barn bör tillbringa så mycket tid med varandra som möjligt.

Aldrig eller absolut inte

Alltid eller absolut

1
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7
☐

Familjemedlemmar borde hålla ihop, oavsett vilka uppoffringar som krävs.

Aldrig eller absolut inte

Alltid eller absolut

1
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7
☐

Det är viktigt att jag gör mitt jobb bättre än andra.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Jag mår bra av att samarbeta med andra personer.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Om en medarbetare får ett pris, skulle jag känna mig stolt.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Att vinna är allt.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Det är mitt ansvar att ta hand om min familj, även när jag behöver göra uppoffringar.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Vad såg du på bilden i början av enkäten?

- ☐ En bil
 - ☐ En tomat
 - ☐ En tröja
-

Jag förlitar mig på mig själv mestadels; Det är sällan jag förlitar mig på andra.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

För mig är glädje att tillbringa tid med andra personer.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Mina medarbetares välmående är viktigt för mig.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Jag förlitar mig hellre på mig själv än på andra.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Konkurrens är naturens lag.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Min personliga identitet, oberoende av andra, är väldigt viktig för mig.

Aldrig eller absolut inte

Alltid eller absolut

1	2	3	4	5	6	7
☐	☐	☐	☐	☐	☐	☐

Jag går ofta "min egen väg".

Aldrig eller absolut inte

Alltid eller absolut

1
☐

2
☐

3
☐

4
☐

5
☐

6
☐

7
☐

Questions on cultural orientation.

Hur skulle du beskriva dig som person?

	1	2	3	4	5	6	7
Driven	☐	☐	☐	☐	☐	☐	☐
Ordentlig	☐	☐	☐	☐	☐	☐	☐
Påläst	☐	☐	☐	☐	☐	☐	☐
Framtidsorienterad	☐	☐	☐	☐	☐	☐	☐
Utbildad	☐	☐	☐	☐	☐	☐	☐
Osjälvisk	☐	☐	☐	☐	☐	☐	☐
Ansvarsfull	☐	☐	☐	☐	☐	☐	☐
Medveten	☐	☐	☐	☐	☐	☐	☐
Omtänksam	☐	☐	☐	☐	☐	☐	☐
Trendig	☐	☐	☐	☐	☐	☐	☐
Modern	☐	☐	☐	☐	☐	☐	☐
Långsiktig	☐	☐	☐	☐	☐	☐	☐
Motiverad	☐	☐	☐	☐	☐	☐	☐
Upplyst	☐	☐	☐	☐	☐	☐	☐

Questions about the respondent's view of themselves (were not analysed).

Hur väl känner du igen dig i scenariot som du läste i början av enkäten?

Inte alls väl

Mycket väl

1

☐

2

☐

3

☐

4

☐

5

☐

6

☐

7

☐

Var det något som stack ut på produkten i bilden? Om ja, vad? Om nej, skriv nej.

Jag identifierar mig själv som:

☐ Man

☐ Kvinna

☐ Annat

☐ Jag föredrar att inte svara

Hur gammal är du?

☐ 15-24

☐ 25-39

☐ 40-54

☐ 55-65

☐ 65+

Descriptive questions.



Fyll i din e-postadress nedan om du vill vara med och tävla om att vara den som väljer till vilken välgörenhetsorganisation vi ska donera 350kr till.

OBS: Detta är valfritt!

Optional contact question

8.2.4. Respondents

Descriptive statistics of all respondents

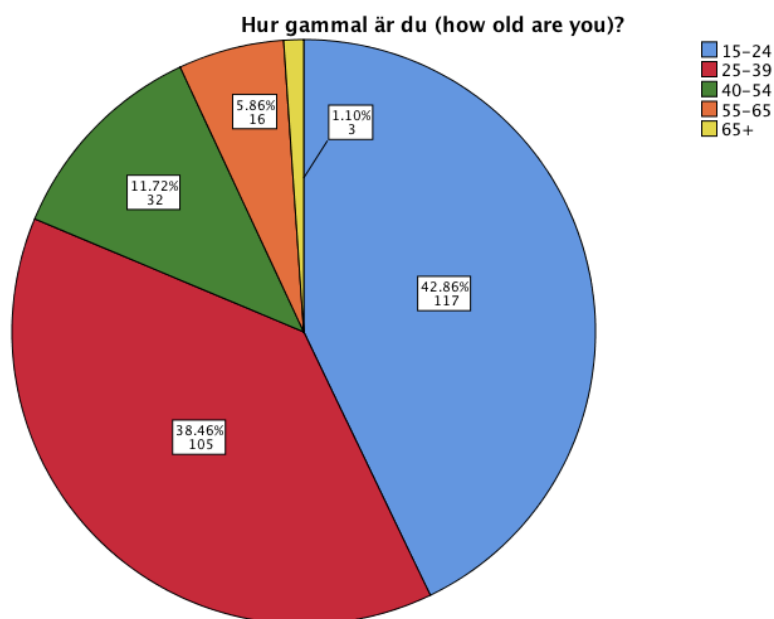


Figure 5. Pie chart illustrating the age of all respondents.

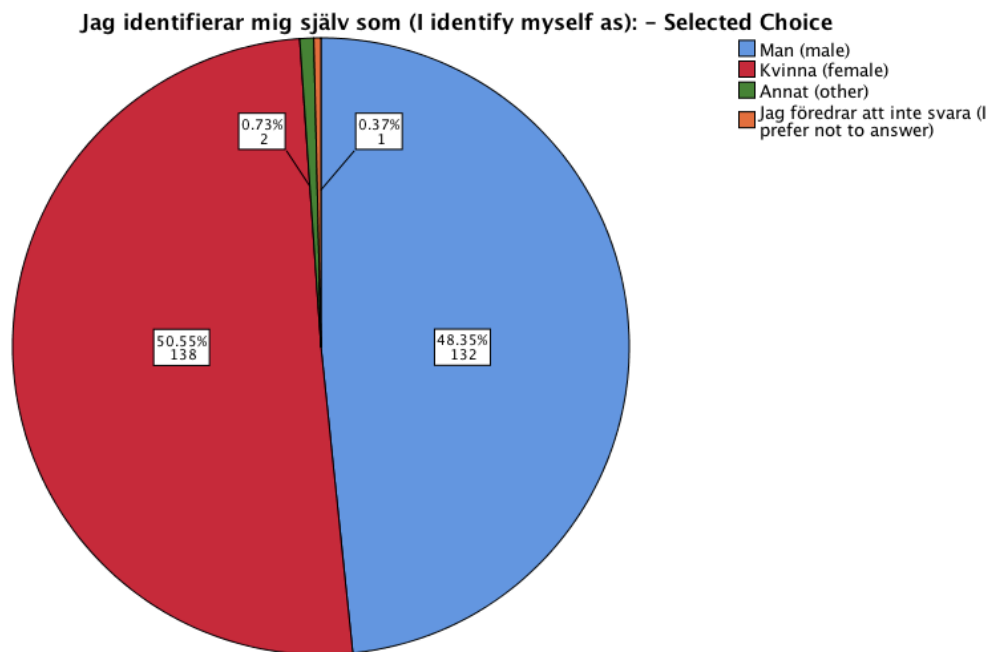


Figure 6. Pie chart illustrating the sex of all respondents.

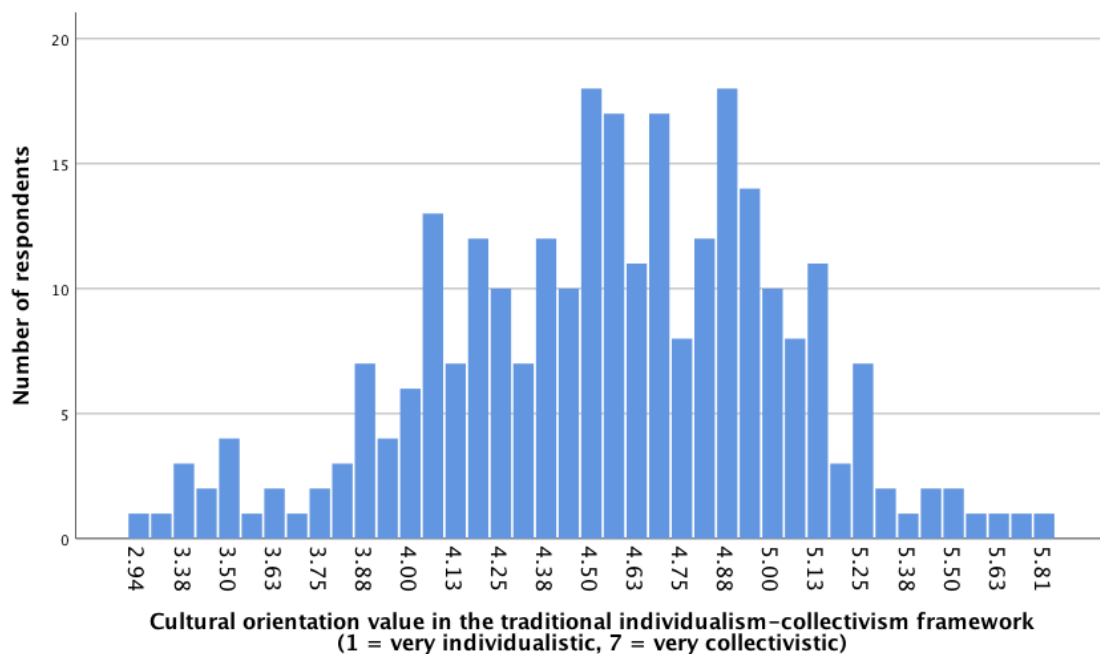


Figure 7. Bar graph showing all respondents cultural orientation value in the traditional individualism-collectivism framework, where 1 = very individualistic and 7 = very collectivistic.

Descriptive data from tests depending on respondents' response time

Table 7. Descriptive statistics of all respondents' (n = 273) attitude towards recycling clothing and intention to recycle clothing, regardless of response time.

	No nudge		Collectivistic		Individualistic		Total	
	n = 96		nudge n = 90		nudge n = 87		n = 273	
	μ	σ	μ	σ	μ	σ	μ	σ
Attitude towards recycling clothing	5.52	1.31	5.88	1.24	6.07	1.00	5.81	1.21
Intention to recycle clothing	3.84	1.21	4.16	1.18	4.45	1.28	4.14	1.24

Note: ANOVA tests result in a significant difference between groups regarding attitude, $F(2, 270) = 4.96$, $p = .01 < .05$, and intention, $F(2, 270) = 5.64$, $p = .00 < .05$.

Table 8. Descriptive statistics of respondents who completed the survey in more than 4 minutes but less than 40 minutes (n = 248) and their attitude towards recycling clothing and intention to recycle clothing.

	No nudge		Collectivistic		Individualistic		Total	
	n = 85		nudge n = 85		nudge n = 78		n = 248	
	μ	σ	μ	σ	μ	σ	μ	σ
Attitude towards recycling clothing	5.56	1.31	5.91	1.20	6.09	0.97	5.85	1.19
Intention to recycle clothing	3.94	1.12	4.16	1.21	4.45	1.31	4.18	1.22

Note: ANOVA tests result in a significant difference between groups regarding attitude, $F(2, 245) = 4.37$, $p = .01 < .05$, and intention, $F(2, 245) = 3.67$, $p = .03 < .05$.

Table 9. Descriptive statistics of respondents who completed the survey in less than 40 minutes (n = 252) and their attitude towards recycling clothing and intention to recycle clothing.

	No nudge		Collectivistic		Individualistic		Total	
	n = 88		nudge n = 85		nudge n = 79		n = 252	
	μ	σ	μ	σ	μ	σ	μ	σ
Attitude towards recycling clothing	5.56	1.31	5.91	1.20	6.06	1.01	5.84	1.20
Intention to recycle clothing	3.97	1.12	4.16	1.21	4.42	1.32	4.18	1.23

Note: ANOVA tests result in a significant difference between groups regarding attitude, $F(2, 249) = 3.91$, $p = .02 < .05$, and a non-significant difference in intention, $F(2, 249) = 2.85$, $p = .06 > .05$.

Table 10. Descriptive statistics of respondents who completed the survey in more than 4 minutes ($n = 269$) and their attitude towards recycling clothing and intention to recycle clothing.

	No nudge n = 93		Collectivistic nudge n = 90		Individualistic nudge n = 86		Total n = 269	
	μ	σ	μ	σ	μ	σ	μ	σ
Attitude towards recycling clothing	5.52	1.31	5.88	1.24	6.10	0.97	5.82	1.21
Intention to recycle clothing	3.80	1.20	4.16	1.18	4.47	1.26	4.14	1.24

Note: ANOVA tests result in a significant difference between groups regarding attitude, $F(2, 266) = 5.49$, $p = .01 < .05$, and intention, $F(2, 266) = 6.80$, $p = .00 < .05$.

8.2.5. Boxplot diagrams

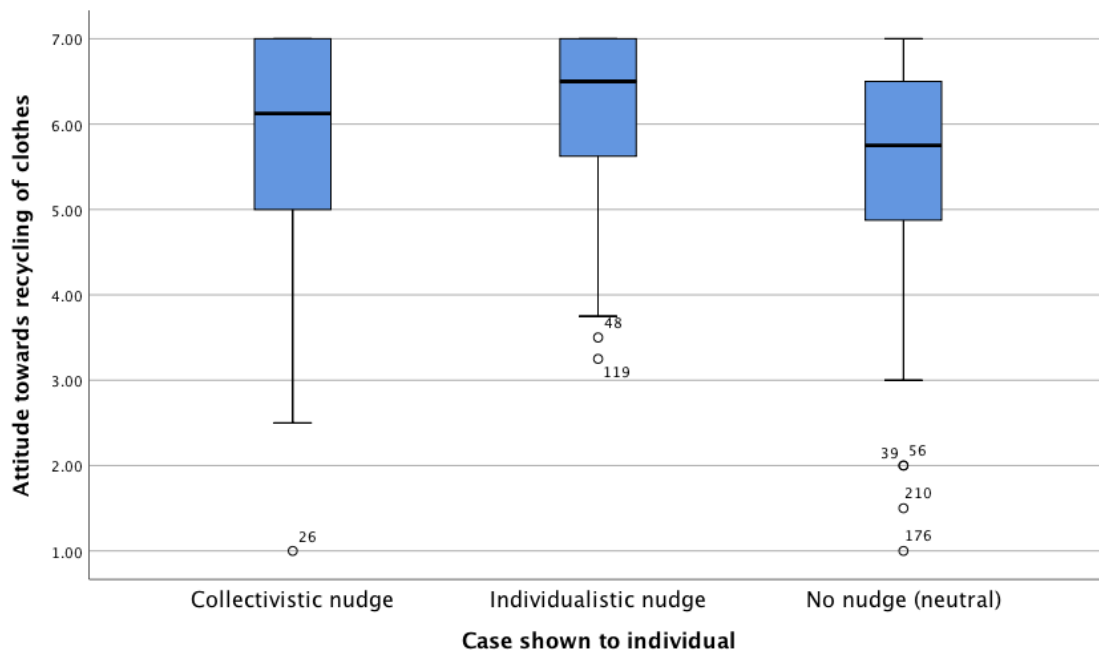


Figure 8. Boxplot diagram showing answers from respondents on their attitude towards recycling clothing, depending on which group they were randomly assigned to.

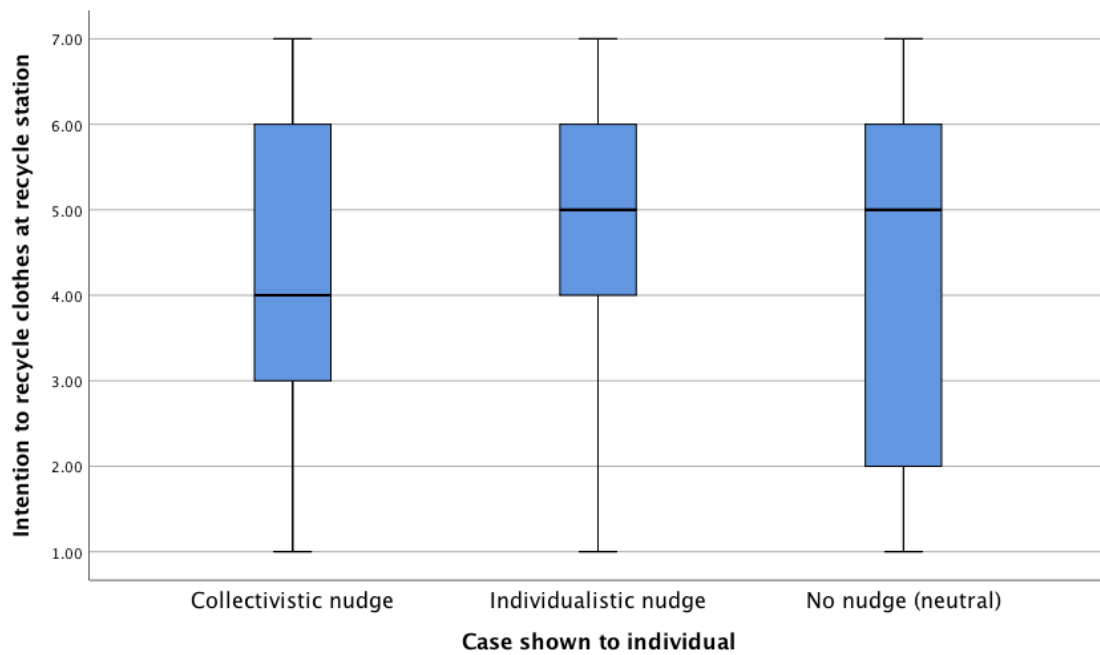


Figure 9. Boxplot diagram showing answers from respondents on their intention to recycle clothing at a recycle station, depending on which group they were randomly assigned to.

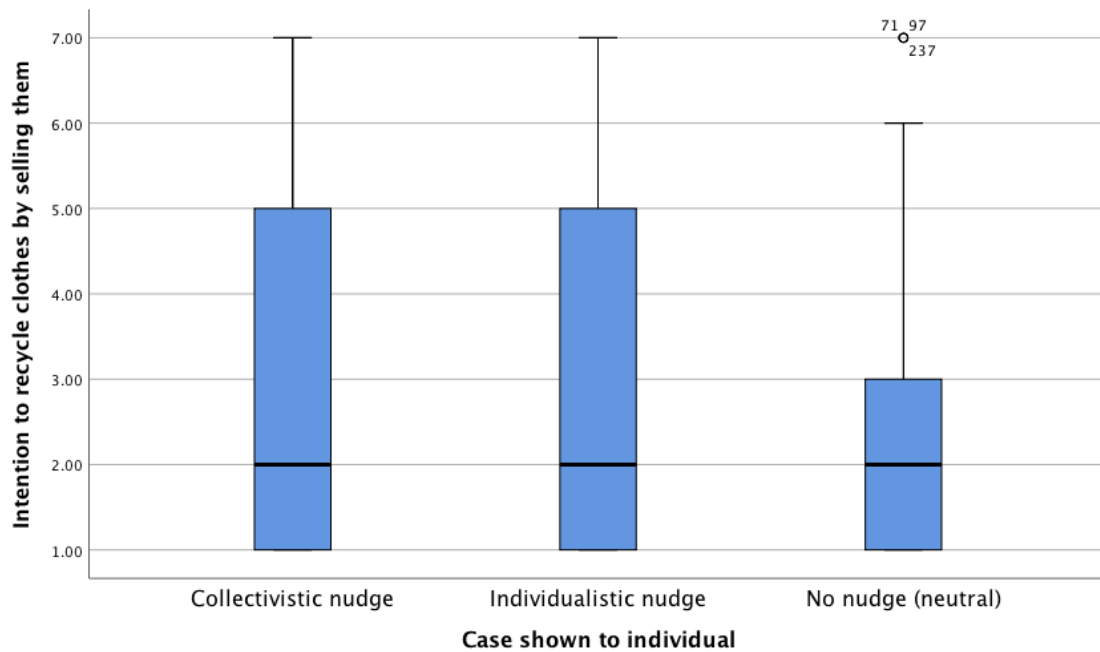


Figure 10. Boxplot diagram showing answers from respondents on their intention to recycle clothing by selling them, depending on which group they were randomly assigned to.

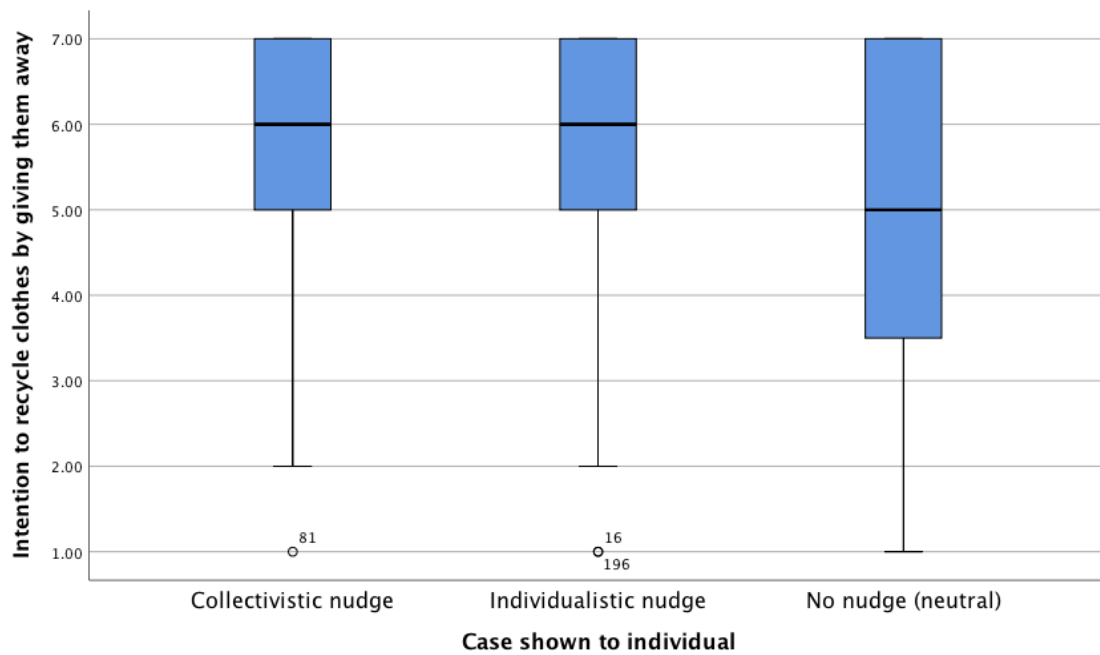


Figure 11. Boxplot diagram showing answers from respondents on their intention to recycle clothing by giving them away, depending on which group they were randomly assigned to.

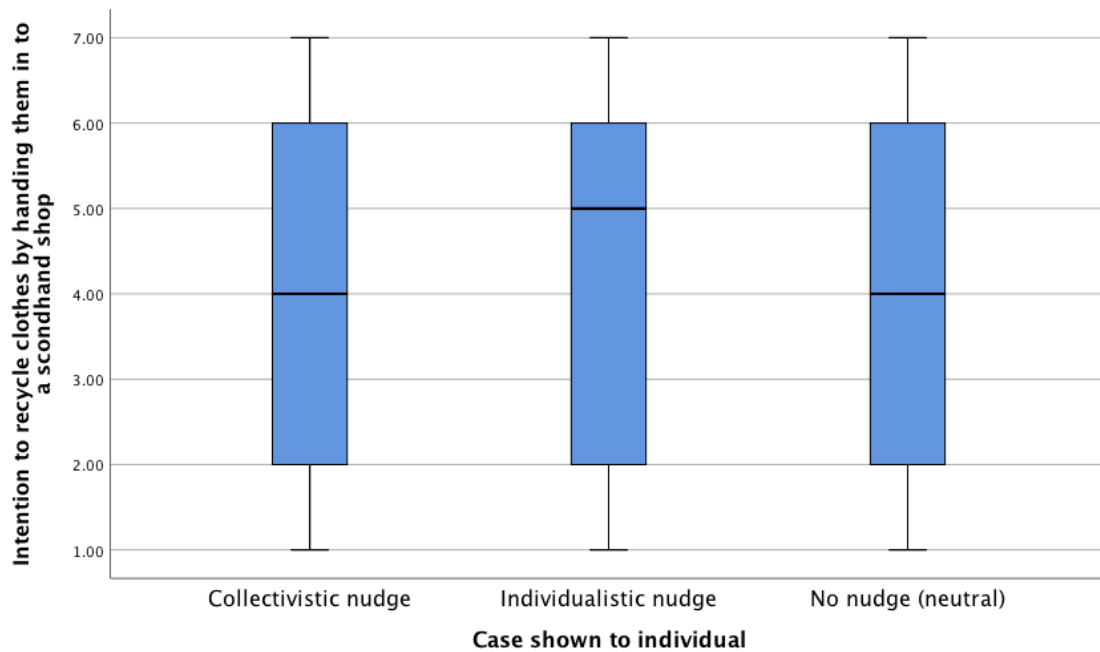


Figure 12. Boxplot diagram showing answers from respondents on their intention to recycle clothing by handing them in to a second-hand shop, depending on which group they were randomly assigned to.

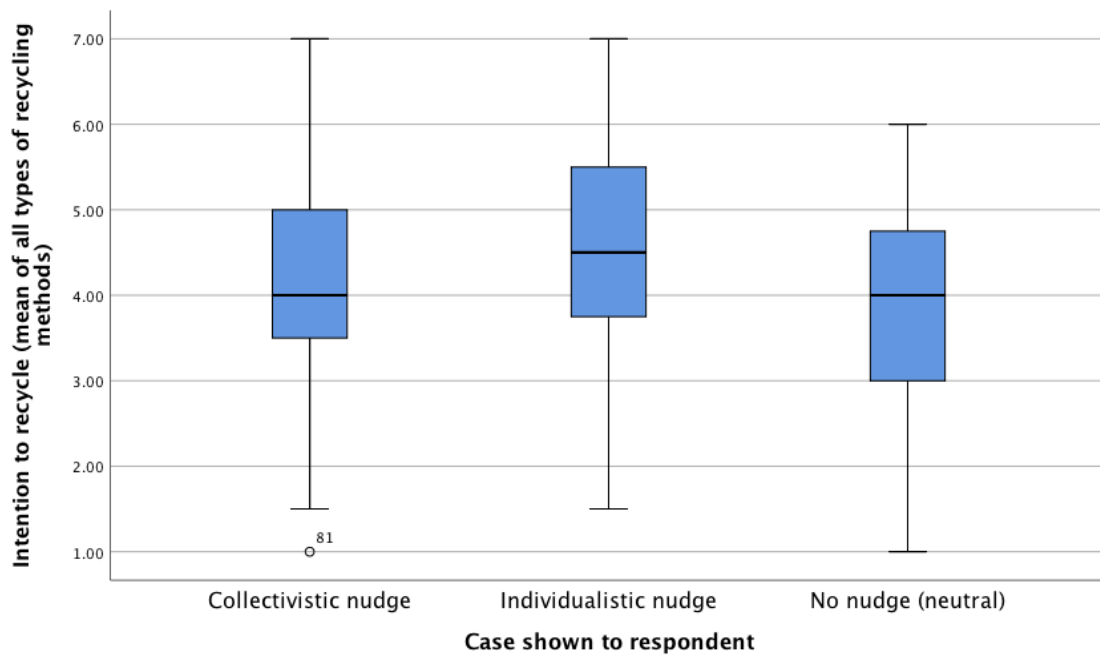


Figure 13. Boxplot diagram showing answers from respondents on their overall intention to recycle clothing, depending on which group they were randomly assigned to.

8.2.6. Cronbach's alpha values

Table 11. Cronbach's alpha values of this study's variables.

Variable	Cronbach's alpha
Attitude towards recycling clothing	.88
Horizontal individualism	.55
Vertical individualism	.58
Horizontal collectivism	.69
Vertical collectivism	.64

Note: See the limitation section for a discussion of the low alpha values for the cultural orientation variables.