



Radboud Universiteit Nijmegen

CIRCULAR DISPOSITION OF PRODUCTS WE NO LONGER USE

The Deciding Social Triggers in changing Consumers' Disposition Intention

MASTER THESIS

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Preface

Presented is the thesis “Circular Disposition of Products we No Longer Use: The Deciding Social Triggers in changing Consumers’ Disposition Intention”, which focuses on circularity and neglected products in particular. Circularity has appealed to me ever since I first came into contact with the concept when I was writing my Bachelor thesis concerning circular production in the fashion industry. This thesis has allowed me to explore a new dimension of circularity, which to me and many others is an important concept for the future of our planet. This thesis has been written to fulfill the graduation requirements of the Master Marketing Program at Radboud University Nijmegen School of Management. I was engaged in researching and writing this thesis from December to June 2021.

The research brought with it some difficulties, however, all of the obstacles I faced helped me learn, grow, and prepared me for life after university.

I would like to thank my supervisor dr. Herm Joosten for their excellent guidance and support during this process. I also would like to thank the people closest to me for their support and encouragement during this journey. Life in the Netherlands turned out different than I imagined but I would do it all again if it meant I would have the privilege to graduate with a Master of science in Marketing.

Lysienne Maduro

3-June-2021

Abstract

As the world's consumption rises and raw materials become scarcer, overconsumption and throw-away culture is wreaking havoc on biodiversity, on resources and water, and leads to higher carbon emission and contamination. Products that are still usable or that could be reused or repurposed by someone else are being kept and neglected, which disrupts the disposition process, and in turn leads to an unnecessary loss of value. This research aimed to create a more comprehensive understanding of the product neglect phenomenon by proposing that messages aimed at behavioural change focusing on a combination of decreasing the perceived loss for the utilisation of the perceived functional value and increasing the perceived gain for the consumer is the most effective in changing the disposition intention of a consumer. Through a scenario-based experiment, 132 respondents expressed their opinion on what type of social factor most triggers them into changing their disposition intention in favor of circular alternatives. The results concluded that marketing efforts should be focused on incorporate messages that broadcasts the essence that "Someone else really needs it" and messages that broadcast the essence that "the product could provide the same or more value / enjoyment to someone else" in their marketing campaigns and advertisements.

Furthermore, it has been established that consumers prefer satisfaction or an alternative product for their cooperation with marketing campaigns aimed at encouraging them to sell/ donate/ or give away their neglected product instead of receiving nothing in return.

Overall, this research provided an initial quantitative overview concerning the deciding social triggers in changing consumers' disposition intention in favor of circular alternatives.

An experimental study focusing on consumer's actual disposition behavior in relations to the social triggers is deemed necessary to establish if the triggers have the intended effect.

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1. Introduction

Since 2004 more than 1.7 billion people worldwide make part of the 'Consumer Class' which can be characterized by a lifestyle dedicated to the accumulation of non-essential goods. The consumption of consumer goods is linked to major environmental and social impacts. It is becoming even harder for poorer people to meet their basic needs while richer countries enjoy a throw-away and overconsumption culture (Cooper, 2005). According to National Geographic (2004), developing countries are rapidly catching up to Western Europe and Americas' unsustainable overconsumption, to the detriment of the environment. The Organisation for Economic Cooperation and Development (OECD 2019) estimates the world's consumption of raw materials to double by the year 2060 to a staggering 167 Gigatons as the world population is set to surpass 10 billion people. Twice as much pressure will be placed on the environment as the economy expands and living standards rise.

This overconsumption and throw-away culture have a devastating impact on biodiversity, on resources and water, and leads to higher carbon emission and contamination. In 1987 the World Commission on Environment and Development wrote in "Our Common Future" about the worldwide negative social and environmental impact of non-sustainable production and consumption. The report implored for change and a way for people, planet, and profit to co-exist. The current linear 'take, make, waste' production technique, where raw materials are produced for production, then used for producing the goods, and lastly, the product is disposed of as waste, is not sustainable.

In contrast, circularity was introduced as a viable solution and aims to significantly reduce the production and consumption of raw materials in combination with a strategy to recover and reuse resources from waste. It aims for the creation of value in terms of the environment, economy, and socially. As the world's consumption rises and raw materials become scarcer, consumers are not only showing rising concerns but also consuming ethically produced products and rewarding companies that produced their products in such a way that benefits society and the environment (Doane 2001).

However, a contrary phenomenon is simultaneously taking place, where acquired durable products are failing to reach the last stage of the disposition process disrupting the consumer behaviour cycle and the circular cycle (Jacoby, Berning, & Dietvorst, 1977).

The consumer behaviour cycle is often characterized by the acquisition, use, and disposition of goods and services by consumers that occur over time and may involve different periods from one process and consumer to another (Jacoby, Szybillo, & Berning, 1976).

On the contrary, the 'product neglect' (Belk 1988) phenomenon encompasses keeping products that are still usable or that could be reused or repurposed by someone else, which disrupts the disposition process, and in turn leads to an unnecessary loss of value seeing as the perceived residual value of a product decreases with its age (Brough & Isaac, 2010). The perceived residual value of a product is the value a product conserves after the value creation phase and the value consumption phase (usage) (Gobbi, 2011, p. 772). The residual value is dependent on the condition in which the product is in at the time of disposition. This value can be influenced by many factors such as age, the intensity of usage, and the quality of the product that is being disposed of.

This resistance consumers have towards the disposition of neglected products is unlike general retention and hoarding tendencies. While the emotional and functional value of a product can be seen as significant predictors of consumers' resistance to disposition (Sikorska, 2020), the main barrier to disposition is a product's perceived value. The higher the perceived product value, the more resistant consumers are to dispose of their neglected products through the redistribution methods of donating, giving away or selling (Van 't Ende, 2018).

This disruption of the disposition process, in turn, could lead to a society that stows-away perfectly good and usable products (Boyd & McConocha, 1996) and increases the probability of these products eventually being thrown out the moment their perceived value has worn out (Evans, 2012; Van 't Ende, 2018; Sikorska, 2020). The product neglect phenomenon is not restricted to specific consumer characteristics or lifestyles nor 'special' possessions. A product's potential functionality in the future or its connections to the past are the main factors leading to ordinary, durable products also being a victim of long-lasting neglect (Sikorska, 2020).

Therefore, the strategy to recover and reuse resources from waste/ or secondhand products is not being met and disrupts the circularity. This resistance to the disposition of products that are being neglected has been seen as a "potential waste of resources that could be utilized by secondary owners" (Harrell & McConocha, 1992, p.400) and has been further linked to consumerism and even devaluation of the object (Türe, 2014).

1.1 Research relevance

While previous research has been conducted into consumers' disposition and non-disposition behaviours and the barriers that impede the disposition of products we no longer use, existing knowledge on how to trigger consumers to dispose of their neglected products is surprisingly scarce. For instance, research has found that the main barrier to disposition is a product's perceived value. As mentioned, the higher the value is, the more resistant consumers are to dispose of their neglected products through the redistribution methods of donating, giving away, or selling (Van 't Ende, 2018).

Furthermore, disposition behaviour is a concomitant of disposition intention, situational factors, and social factors (Hanson, 1980, p.54). Meaning that if consumers have no intention to dispose of the product, because it is being neglected, that situational factors and social factors external to the consumer could be employed to influence consumer disposition behaviour. Previous research has concluded that consumer extrinsic factors, to which situational factors and social factors belong, are most likely to trigger disposal. Situational factors are changes in a consumer's lifestyle that triggers consumers to reevaluate the product's perceived value, which might lead to disposition behaviour. Such factors are health-related changes, moving, changing jobs, marriage, and becoming a parent (Van 't Ende, 2018). Social factors, in contrast, are marketing or non-marketing triggers external to the consumer that can be communicated personally or via mass-media, that may influence the disposition decision (Hanson, 1980). Such a factor could be an advertisement that broadcasts the message that someone else could find a better use for the product (Sikorska, 2020). While it has been established that situational factors are most likely to influence the disposal of neglected products, marketing efforts cannot be used to influence or change situational factors in a consumer's life. For this reason, marketing efforts should be focused on influencing social factors.

However, existing research has yet to actually study implementation of social triggers and their outcome on consumers disposition behaviour concerning products that are being neglected. Therefore, further research to understand the social triggers, that can influence product neglect, to be able to influence consumers behaviour in favor of circularity is important.

1.2 Problem statement

The problem statement that can be derived is that there is a gap in the literature concerning practical knowledge on how to influence consumer behaviour in favor of the disposition of neglected products. The objective of this research, therefore, is to contribute to understanding and influencing consumer behaviour in favor of the disposition of neglected products by means of developing practical knowledge about the deciding social factors that could tip the scale from negligence to circular disposition.

This research expands on Van 't Ende's (2018) verdict that products are neglected as a result of the perceived value consumers attach to them and Sikorska's (2020) findings that emotional connections to one's past, as well as potential future functionalities, are barriers to disposition. Altogether, a more comprehensive understanding of the product neglect phenomenon and the potential triggers to disposition is sought, which leads to the subsequent research question:

What are the deciding social factors in changing consumers' disposition intention in favor of circular alternatives?

1.3 Research structure

This research starts by outlining the societal relevance of this study by introducing the problem of resource scarcity and proposes circularity as a method for the sustainable acquisition, usage, and disposition of products. While consumers are now more aware than ever about the importance of sustainability and being responsible for their own actions, a contrary phenomenon is taking place at the same time. This proposed phenomenon encompasses keeping products that are still usable or that could be reused or repurposed by someone else and could lead to a society that stows-away perfectly good and usable products (Boyd & McConocha, 1996) instead of contributing to the circularity of the products while decreasing waste. Thus, the research links the phenomenon of 'neglected products' to disruption in circularity. The research also structures the literature on consumers' disposition behaviours in relation to products that are neglected as a result of the perceived value consumers attach to them, their emotional connections to one's past, and the potential future functionalities. Furthermore, a deeper look is taken at Prospect Theory to explain consumers' decision-making process. The potential factors that can trigger disposition are also assessed.

The hypotheses that emerge from these theoretical deliberations lay the groundwork for the decision-making process and measurements concerning the methodological approach, which is presented and discussed in the methodology chapter. In the methodology chapter the scenario-based experiment will be set up and the data analysis strategy will be discussed. Subsequently, the data collected is presented and analysed by way of One-way repeated measures ANOVAs, conclusions are drawn, and the research question is answered.

Afterward, the following chapters will encompass the discussion, implications of the result on theory and practice, as well as the recommendations. Lastly, in the final chapter the limitations of the research will be discussed as well as recommendations and suggestions for future research are provided.

2. Literature Review

In this section, a literature review will be conducted on how circularity is a viable solution to the growing environmental concerns and how consumers are increasingly becoming aware of the need to change. However, a contrary phenomenon concerning neglected products is simultaneously taking place and disrupting circularity and contributing to waste of resources. For this reason, this literature review will also examine the disposition and non-disposition behavior of consumers and take prospect theory into consideration to better understand consumers decision making process in real life as opposed to objective oriented. Additionally, disposal triggers will also be taken into account to develop testable hypotheses to substantiate campaign efforts (focused on the possible potential benefits for the perceived functional value of a product) on steering consumers' disposition behaviour in the direction of a variety of circular options in which a product can be disposed of rather than being stored away until they lose value and are thrown away. These marketing efforts will be solely focused on the functional value of a product and influencing social factors.

2.1 Circularity

Circularity and sustainable consumption have become important topics of discussion and policies in recent years. However, circular consumption and circular economy are not a recent discovery. The term was first conceptualized in 1990 by Pearce and Turner when they created the first-ever fully closed circular model.

The circular economy concept is based on differing sustainability principles and concepts involving waste and resource management that "aims to offer an alternative to prevalent linear take-make-dispose practices by promoting the notion of waste and resource cycling" (Blomsma & Brennan, 2017, p. 603). The main principle of the circular economy and consumption is to significantly reduce the production and consumption of raw materials, in combination with a strategy to reuse resources from waste. Circularity is trying to combat the linear 'take, make, waste' production technique where raw materials are produced for production, then produced for making of the product, and lastly, the product is disposed of as waste (Maduro, 2019). Circularity proposes different advantages. A couple of advantages of circularity in accordance with Van der Heijden, Coenen, & Van Riel (2017) are reduction in the environmental impact, less sensitivity to growing scarcity issues, less dependency on

producing countries, more innovation opportunities, more employment opportunities, and potential to shift back outsourced activities.

Cramer (2014) proposes nine different options, the 9R's, to combat the prevalent linear take-make-dispose practice (Pavel, 2018, p. 586). The first option is to refuse the usage of raw materials altogether. However, a second, more realistic option is the reduction in the use of raw materials. The third option involves product reuse, where products can be shared or can be bought second-hand. The fourth option involves maintenance and repair of the product to lengthen the lifetime of the product. Refurbishing is option number five. The sixth option is remanufacturing, where parts of old products are used to create new products. Option seven involves the repurposing of products, where the product is reused but not for its intended purpose. The eighth option is recycling and involves products being processed and the materials being reused. Lastly, the ninth option is recovering energy where residual flows will be incinerated (Maduro, 2019).

A successful empirical case, incorporating the strategy of reduce, reuse, and recycle, can be observed in China. China successfully introduced a circular economy at the turn of the century as a national strategy where Chinese scholars, for the most part, focused on keeping materials in the cycle (Zhu, Fan, Shi, & Shi, 2018). However, the promising benefits of a more sustainable development with regards to environmental, social, and economic aspects of society, often appear insufficient for a large-scale transition from a linear economy towards a circular economy (Van der Heijden et al., 2017). A study done by Kirchherr, Piscicelli, Bour, Kostense-Smit, Muller, Huibrechtse-Truijens, & Hekkert (2018) established that insufficient economic triggers, awareness, interest, knowledge, or sense of urgency from consumers could be barriers to changing their behaviour in favour of circularity.

2.2 Product neglect

In recent years consumers have become more aware, knowledgeable, and concerned about their consumption and its impact on the world's resources. As raw materials become scarcer, consumers start acknowledging the urgency and turn to companies that produce their products ethically and in a way that benefits the environment and society (Doane 2001). However, consumers are seemingly only focusing their efforts on the first stage of the consumer behaviour cycle. They are so intently focused on ethical and sustainable acquisition of products that they seemingly have forgotten about sustainable disposition. Thus, the

phenomenon that is currently being observed is where acquired durable products are failing to reach the last stage of the disposition process disrupting the consumer behaviour cycle and the circular cycle (Jacoby, Berning, & Dietvorst, 1977).

This phenomenon has been referred to as 'product neglect' by Belk (1988) and 'abandoned products' by Wansink, Brasel & Amjad, (2000) and encompasses keeping products that are still usable or that could be reused or repurposed by someone else, which disrupts the disposition process. These 'neglected products' are still perceived as valuable in some way to consumers even though consumers no longer actively use the product or have any intention of disposition because disposition only takes place when the product has lost its value to the consumer. 'Neglected products' reach the stage of negligence when the usage of the product requires too much effort from the consumer or the product requires a specific situation to arise for the product to be used (Van 't Ende, 2018). Further reasons for neglect include lack of enthusiasm, unmet expectations, disappointing results, maintenance difficulties, usage difficulties, or another product displaced the current product (Troccia & Janda, 2002). Product neglect can range from a few weeks to more than 7 years (Van 't Ende, 2018). In a study done by Brough & Isaac (2010) it was established that "when disposing of a product, consumers often judge its value". Thus, the perceived (residual) value of a product not only drives acquisition but also explains consumers' non-disposal behaviour (Van 't Ende, 2018).

2.3 Waste of resources

Resistance to disposition and negligence leads to a society that stows-away perfectly good and usable products and is seen as a "potential waste of resources that could be utilized by secondary owners" (Harrell & McConocha, 1992, p.400). This waste of resources leads to more mining of raw materials to create more products for the market. This overconsumption and stow-away culture have a devastating impact on biodiversity, on resources and water, and leads to higher carbon emission and contamination. For this reason, this research focuses on the disposition and non-disposition behaviour and therefore the potential triggers to overcome these barriers to increase products' chances of disposition and following circularity rather than being stored away until they lose value and are thrown away.

2.4 Disposition & non-disposition

The disposition process consists of getting rid of a product by intentionally or unintentionally transferring the ownership to another person or entity (Boyd & McConocha, 1996, p.236). When analysing consumer disposal behaviour three factors appear to be of influence. These consist of the psychological characteristics of the consumer, the product-related factors, and the situational factors (Jacoby et al., 1977). From previous studies, it was established that psychological characteristics, such as hoarding, purging, and packratting, cannot solely explain consumers' non-disposal behaviour (Van 't Ende, 2018). However, product-related factors and situational factors are able to trigger the disposal behaviour. As previously mentioned, disposition only takes place when a product has lost its value to the consumer.

Product disposition can be considered a process that requires decision-making. Consumers first need to show disposition intentions before the next two steps can be taken. Thus, if disposition intention is present consumers' first step is to stop using a durable product that still has value. This can be achieved by storing away the product to deliberately physically detach oneself from the product. This is one of the crucial detachments practices those consumers can partake in before disposition can occur (Belk, 1988; Hanson, 1980). The goal of these divestment rituals is to empty goods of personal and emotional meaning which allows consumers to let go of a product (Lastovicka & Fernandez, 2005; Roster, 2001). The second step is then to choose a disposition method. When consumers show disposition intentions, they have three disposal methods to consider. The first option is to permanently dispose of the product which consists of throwing away, selling, and giving away. The second option is to temporarily dispose of the product by way of renting or loaning it. The last option is to keep the product (Jacoby et al., 1977). With circularity the aim is to steer disposition behaviour in the direction of a variety of circular methods in which a product can be disposed of; selling, trading, renting, loaning, or giving away through which the product can reach another user. For this reason, when disposition is mentioned, we are solely referring to circular options and not throwing the product away.

'Non-disposition' is one of the disposal methods mentioned and encompasses consumers' decision to keep the product. When a product is kept it can be used for its intended purpose, a new purpose, or get neglected. Product neglect is a form of resistance to disposition and reflects the difficulty in disposing of a product one is committed to. Resistance

to disposition occurs because the product has not lost its value to the consumer and can still be utilized or is of emotional importance.

In a study done by Sweeney and Soutar (2001) on the perceived value of durable goods, it was established that the value can be measured based on four dimensions; functional value (performance/ quality), functional value (price/ value for money), social value, and emotional value. When researched most products were, to a certain extent, associated with both functional as well as emotional values. Both the emotional and the functional value can be seen as significant predictors of consumers' resistance to disposition. The emotional value such as happiness, love, and memories, which are unique to the consumer, proved to form a stronger barrier to disposition than the functional value. The reason for this is because consumers perceive throwing away their valued possessions as a threat to their memories and security. A strong attachment can co-exist with low involvement, such as in the case of neglected products because attachment is conceptually different from involvement. Attachment commonly concerns memories and previous self-definitional experiences as well as current or anticipated ones while involvement only concerns the present. Furthermore, emotions, in regard to attachment products, can range from very positive to very negative, and negative valence is not associated with low involvement. On the contrary, negative valence is associated with weak attachment (Schultz, Kleine, and Kernan's, 1989). Additionally, functional products are more likely than emotionally valued products to be kept and neglected. This could be because of the money consumers spent on it or because they would not receive any economic value in return for disposing of the product. Videlicet, the motivation that drove respondents to acquire the neglected products plays a role in their non-disposal intentions. This leads to products with high future functionality potential becoming neglected, strengthening the importance of timely disposal for their circulation. This resistance to disposition is a risk-avoidance mechanism to either circumvent losing one's memories/ or past identities or put a stop to consumers losing a product's future utility (Sikorska, 2020).

In a study done by Boyd & McConocha (1996), it was established that the manner by which a consumer acquires a product influences its usage, maintenance, and storage. Moreover, some disposition choices are more able to protect a product's emotional value than others (Roster's, 2014). However, there were no significant differences between the different circular disposition methods on the resistance to disposition (Sikorska, 2020). This

means that not one circular method was seen as better for disposition than the other that would lead to a decrease in the resistance to disposition.

2.5 Prospect theory

Aforementioned, product disposition can be considered a process that requires decision-making. This decision-making process can best be explained by the Prospect theory. Prospect theory endeavours to describe how an individual makes choices in real life rather than how it should be done to optimise some objective interest (Kaa, & Netherlands Research School for Transport, 2008). This entails choices being made to reflect individuals' own desires instead of choices that should be made to reach some goal. Decision-making can be considered an 'iterative, adaptive, highly contingent process of preference construction'.

Prospect theory postulates that each individual follows a choice behaviour strategy that is determined by previously existing choices and that interpersonal differences in choices (from an equal choice set) may be the result of differences in preferences. The theory also proposes that once a choice behaviour strategy is chosen and started that there are no sudden, random, or time-dependent changes. The extended prospect theory builds on the foundation laid out by prospect theory to consider that an individual's personal choices fit within a strategic-operational choice hierarchy. This entails individuals having a subjective consideration set by which they consider alternatives. This set only contains alternatives that may cope with the challenges posed by the actual choice process and comes about when previous strategic decisions, tactical and operational choices in similar contexts are recognized and taken into consideration.

Initially, prospect theory focused on the choices between two prospects with explicitly given probabilities of monetary outcomes. Alternatives were mapped out in terms of the expected change in assets rather than on the states. States would entail owning or not owning the neglected product and changes in assets would entail disposition or non-disposition. The evaluation of an alternative would be conducted with the help of a mental account where the advantages and disadvantages of the alternatives would be specified relative to the reference state. This reference state gets immediately adjusted when consumers experience changes in their circumstances. Consumers commonly base their choices on their evaluation of the trade-off between the opportunities for gains and the risk of losses. Thus, seeing as consumers are regarded as loss-averse, to an individual, losses are valued much higher than

gains of equivalent size. Individuals are therefore considered as 'self-interested, non-satiable utility or value maximisers' (Kaa, & Netherlands Research School for Transport, 2008 p. 35).

2.6 Disposal triggers

Aforementioned, disposition behaviour is a concomitant of disposition intention, situational factors, and social factors (Hanson, 1980, p.54). Disposition intention encompasses the decision to dispose of the neglected product. Previously it was mentioned that the emotional and functional value of a product can be seen as significant predictors of consumers' resistance to disposition. Emotionally valued products concern the past and are expected to be more difficult to influence because the value might be considered more fixed. In comparison, functionally valued products deal with the not yet fully 'used up' value in the future, which is expected to be easier to influence and thus could be seen as more replaceable. Therefore, this research will explicitly be focused on the possible potential benefits for the perceived (residual) functional value of a product when trying to trigger disposition.

At first, in a study conducted by Fortuna and Diyamandoglu (2017) about perceived value transferability, it was concluded that the preferred disposition method was dependant on the reuse potential after disposal. This encompassed the extent to which the owner of a product perceives the value attributed to a product could be preserved when passed on to someone else. However, a later study done by Sikorska (2020) concluded that there were no significant differences between the different circular disposition methods and value transferability did not have a moderating effect on the resistance to disposition. Thus, this study will not consider value transferability when trying to influence the disposition behaviour.

As previously mentioned, prospect theory endeavours to describe how an individual makes choices in real life rather than how it should be done to optimise some objective interest. Thus, according to prospect theory when the consumer has no internal disposition intention, the decision was made to not dispose of the neglected product regardless of the goal of circularity.

However, it has been inveterate that situational factors and social factors external to the consumer could be employed to influence consumer disposition intention. While it has been established that situational factors are most likely to trigger the re-evaluation of the

product's perceived value and influence the disposal of neglected products, marketing efforts cannot be used to influence or change situational factors in a consumer's life. For this reason, marketing efforts should be solely focused on influencing social factors.

Social factors encompass marketing or non-marketing triggers (message) external to the consumer that can be communicated personally or via mass-media, that may influence the disposition decision (Hanson, 1980; Van 't Ende, 2018). Predominantly, personal non-marketing sources are perceived as more credible by consumers. However, the wide-scale implementation of marketing advertisements, which is generally communicated via mass-media, is considered so as to reach more consumers. Consumers commonly base their disposition behaviour on their revaluation of the trade-off between the opportunities for gains and the risk of losses (Kahneman & Tversky, 1979). This revaluation of a product's value could trigger a realization of its non-usage. Thus, in accordance with prospect theory, it can therefore be hypothesised that campaigns aimed at behavioural change should be focused on the potential benefits for and utilisation of the perceived (residual) functional value of a product to decrease the perceived loss, increase gains, and in turn, enhance the circularity of products.

H1A: Messages aimed at behavioural change focusing on a combination of decreasing the perceived loss for the utilisation of the perceived functional value and increasing the perceived gain for the consumer is the most effective in changing the disposition intention of a consumer.

H1B: Messages aimed at behavioural change focusing on decreasing the perceived loss for the utilisation of the perceived functional value for the consumer is to a lesser degree effective in changing the disposition intention of a consumer.

H1C: Messages aimed at behavioural change focusing on increasing the perceived gain for the consumer is the least effective in changing the disposition intention of a consumer.

According to Sikorska (2020), the five most mentioned arguments (in hierarchical order) to enhance willingness to dispose of neglected products are: someone else could find a (better) use for the product, the simple confirmation or reminder that these products are being neglected, someone else really needs the product, the product could provide the same or more value / enjoyment to someone else, and sustainability reasons. There seems to be

different dimensions that these arguments could be categorized as that incorporate aspects of prospect theory. The first one is loss reduction of the perceived future functional value of the product. The second is one is increasing the perceived gain for the consumer by making them feel good about themselves because they did something good for others or the environment. The third is a combination of the first two. Therefore, these could be considered as triggers to disposition, subsequently resulting in a higher willingness to dispose of the product (Sikorska, 2020).

H2: Messages that broadcast the essence that “Someone else could find a (better) use for the product” makes respondents the most willing to dispose of their neglected product.

H3: Messages that broadcast the essence that “the product is really not used / not needed anymore” makes respondents willing to dispose of their neglected product.

H4: Messages that broadcast the essence that “Someone else really needs it” makes respondents to a lesser degree willing to dispose of their neglected product.

H5: Messages that broadcast the essence that “the product could provide the same or more value / enjoyment to someone else” makes respondents to an even lesser degree willing to dispose of their neglected product.

H6: Messages that broadcast the essence of “Sustainability reasons” makes respondents the least willing to dispose of their neglected product.

Moreover, when trying to balance the trade-off between the opportunities for gains and the risk of losses, consumers indicated being more willing to dispose of their product when receiving money, an alternative product with similar functionality, nothing, or simply satisfaction in return (Sikorska, 2020). Therefore, the following hypotheses are, in a hierarchical order, compared to each other.

H7: Messages that provided money as gained desired in return for disposition of neglected product makes respondents the most willing to dispose of their neglected product.

H8: Message that provided an alternative product / function (through trading) as gained desired in return for disposition of neglected product makes respondents a lesser degree willing to dispose of their neglected product.

H9: Messages that provided nothing as gained desired in return for disposition of neglected product makes respondents to an even lesser degree willing to dispose of their neglected product.

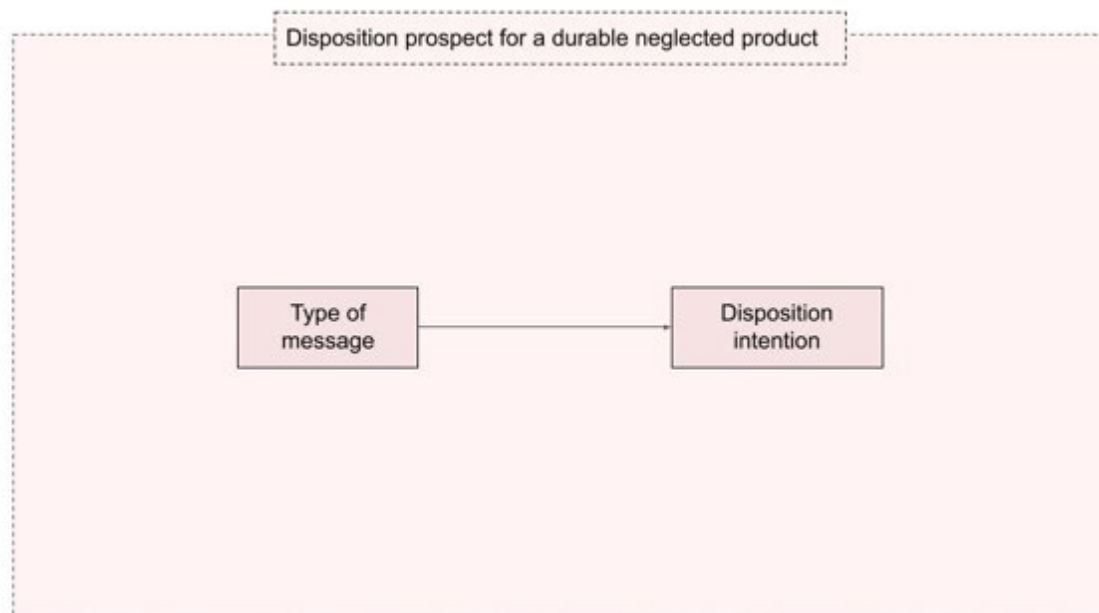
H10: Messages that provided satisfaction / fulfilment / a good feeling / a smile from the receiver as gained desired in return for disposition of neglected product makes respondents the least willing to dispose of their neglected product.

It's important to note that neglected products do not necessarily need to be permanently disposed of. Products can be sold, traded, rented out, loaned, or given away. Loaning or renting neglected products especially could form a solution for consumers to keep their product while sharing its perceived value with others. Moreover, consumers who really do not want to dispose of a neglected product, which is only a relatively small percentage, should be motivated to start using it again (Sikorska, 2020).

2.7 Conceptual model

Based on the hypotheses outlined in the previous sections, the following conceptual model was constructed (Figure 1).

Figure 1: Conceptual model



3. Methodology

The following section outlines the research design and methodological considerations, which were based on the aforementioned hypotheses, the data analysis strategy, as well as the research ethics that are taken into consideration.

3.1 Research Design

This research aimed to understand the consumers' decision-making behaviour and the social triggers (type of message) that can influence product neglect disposition so as to be able to influence consumers' disposition intention in favour of circularity. In order for this objective to be achieved a scenario-based experiment was employed. A scenario-based experiment is a quantitative usability study which "aims to find results that are statistically likely to generalize to the whole user population" by comparing two or more scenarios with each other (Budiu, 2018). These scenarios were made to test individual hypotheses which were formulated in the literature review section of the research.

Like in any scientific experiment in which causal relationships want to be tested, independent variables and dependent variables are needed. The independent variable (the type of message) is directly manipulated by the researcher while the dependent variable (disposition intention) is measured as a result of the independent variable manipulation. The disposition intention is expected to vary based on the manipulation of the type of message that is presented in each scenario. If the research produces statistically significant results, then it can be concluded that the change in disposition intention is caused by the change of message that is presented (Budiu, 2018).

The next step in the research design was to make a decision on whether the study design should be between-subjects or within-subjects. Between-subjects design (also known as independent groups design) allows participants to be exposed to only one scenario while the within-subject design allows a participant to be exposed to all the different scenarios designed by the hypotheses. The choice between the two designs was deliberated based on the pros and cons of each design. The choice for within-subject was made because this design makes certain that any real difference that exists between the different scenarios will be found and not covered by random noise.

Each respondent brings their history, knowledge, background, and context when participating in the experiment that could influence their response and the results. The researcher would need to find precisely the same type of person to participate in each scenario to be able to account for other factors specific to participants that could influence the results. However, with a within-subject design, the participants will participate in all scenarios meaning these random noises will have the same effect throughout the research. Another pro is that because often a fair number of data points is needed in each scenario, each participant will provide a data point for each scenario. In comparison, if the experiment is between-subjects twice as many respondents are needed to reach the same number of data points (Budi, 2018).

3.2 Manipulation

Researchers manipulate the independent variable (the type of message) while the dependent variable (disposition intention) is measured as a result of the independent variable manipulation. This manipulation takes place for the reason that it can provide a high degree of internal validity. By controlling variables and manipulating which type of message is presented, when, and how the research can test the precise predictions (hypotheses) derived from the theories (Kim & Jang, 2014). This research is able to compare the mean of each message (in their sections) against each other as a result of the manipulation of the type of message that was presented and can conclude which message is perceived as most convincing.

3.3 Pre-test

A small group of respondents was asked to review the experiment and provide feedback on its content, practicality, and its attractiveness to finish it. The respondents were also asked to assess whether the scenario presented is sufficient to immerse them enough in the situation. This pre-test was conducted to test the data collection instrument, as respondents' understandings and interpretations of the instrument can differ from the researcher's intentions (Sikorska, 2020). Pre-testing is a crucial step within social science research before conducting actual research. The pre-test brought about some small changes to the experiment. Firstly, the third question, that tests to what degree the combination of loss reduction and gain increase convinces people to dispose of their coffee machine,

was adapted to take out the redundant use of the word and. This was to increase the readability of the question. Secondly, word choice in the scenario was changed to less academic/ technical language so as to make the scenario more readable and understandable to all educational level. Lastly, changes were made to inform respondent how many questions they were going to have to answer in the different sections. Additionally, a progress bar was added to also let respondent know how far along they are in the experiment and if they are close to finishing answering all the questions. This was done so as to keep respondent informed and to not make them experience the feeling of wanting to abandon the experiment before finishing all the questions.

3.4 Recruitment procedure and sample

Data was collected on the type of message (social factor) that most influences consumers' disposition intention from the scenario-based experiments. The scenarios were carefully developed based on the literature review and the formulated hypotheses that were to be tested. The survey was distributed online (through personal network on social media), so as to not only adhere to the government's Covid-19 regulations and restrictions, but also to collect responses from a wide range of age, income, and educational levels to increase the generalisability and external validity of the research (Sikorska, 2020). The data collection was conducted by a non-probability convenience sampling technique as the participants are selected based on availability and willingness to take part (Methods of Sampling from a Population, 2018). This method's practical benefits encompass accessibility and allow for quick data collection (Elfil & Negida, 2017).

The research starts with informing the respondents about who is conducting the research, what the research topic is, and why the research is being conducted. The respondents are furthered informed that participation was fully voluntary, that they could withdraw from the experiment at any moment, that the answers provided would solely be used for this research, that there are no right or wrong answers, and that anonymity would be ensured throughout the whole research process. Based on the provided information, respondents were asked if they consented to partake in the scenario-based experiment.

Following, a story was presented that was formulated to immerse the respondent in the context of this research. The story sets up a situation where the respondent is asked to imagine himself in this position with the research chosen neglected product (traditional filter

coffee machine) that still has perceived future functional value. The respondents are then informed that there are campaigns going viral on social media and being shared by their friends/co-workers/family members that ask them to sell/donate/give away neglected products they no longer use that still works but are just sitting in their house collecting dust. Furthermore, the situation also includes the reasoning that because people they know and relate to are sharing these messages that their interest is piqued. The respondents are further informed that there will be three scenarios set up where they will be asked to indicate on a 5-point Likert scale the degree to which they find the message presented convincing. The first scenario encompasses messages to test hypotheses H1A to H1C. The second scenario asks respondents to indicate the degree to which the messages that test hypotheses H2 to H6 are convincing. Lastly, the third scenario asks respondents to indicate on the 5-point Likert scale the degree to which they find the four presented offers to be desirable in return for disposition of the neglected product. The third scenario tests the hypotheses H7 to H10. To finish off the survey, demographic questions were presented, including age, gender, educational level, as well as employment status. Additionally, the respondents were asked to indicate on a 5-point Likert scale how important environmental concerns (like climate, waste, natural resources, sustainability) are to them and also how important the political group's environmental policy was when choosing which political group to vote for. These two questions were used to research if there are any difference in answers for respondent that show environmental concerns and those that do not.

The sample size was taken into consideration so as to guarantee a high enough power for the statistical test. The researcher should be able to make sure that the sample size does not make the statistical test overly sensitive (where almost any effect is significant) or insensitive. This is accomplished by keeping the sample size between the parameters of 30 and less than 500 respondents. For this particular research, a lower limit of five respondents per variable was taken into consideration however, the aim was to meet the 10:1 ratio where the sample size should be 10 times larger than the number of independent variables to be tested. Taking this information into consideration and the fact that this research has only 1 independent variable, the number of respondents gathered (132 respondents) is an appropriate sample size for this research and will allow all hypotheses to be tested and conclusions to be drawn (Hair, Black, Babin, & Anderson, 2013).

3.5 Data analysis strategy

The data collected from the scenario-based experiment was analysed using Statistical Package for the Social Sciences (SPSS) version 27 (IBM Corp., 2017) and Qualtrics software. The analytical technique chosen for this research was Analysis of Variance (ANOVA), specifically one-way repeated measures ANOVA. ANOVA is a hypothesis-based test that makes the comparison between the difference in means across one variable with two or more groups (Research Guides: Quantitative Analysis Guide: Choose Statistical Test for 1 Dependent Variable, n.d.).

One-way repeated measures ANOVA more specifically considers 1 dependent variable and 1 independent variable that consists of three or more dependent groups. Dependent groups signal a within-subjects design where each respondent participated in three or more different conditions on the same dependent variable. For this research three separate one-way repeated measures ANOVA was run. The first was on three types of messages consisting of loss reduction, gain increase for the individual, and a combination of loss reduction and gain increase. The second was on the four most mentioned arguments to enhance willingness to dispose of neglected products. The last one-way repeated measures ANOVA was on the desirability of the gains presented for disposing of the coffee machine.

The goal of the one-way repeated measures ANOVA was to test for statistically significant differences between the means of the different types of messages of a within-subjects factor to establish what type of message is most effective in changing disposition intention. This leads to the following two hypotheses according to one-way repeated measures ANOVA. Firstly, the null hypothesis (H_0) states, that all population means are equal for the different types of messages. Secondly, the alternative hypothesis (H_a) states, that at least one population mean is different for the different types of messages presented.

The one-way repeated measures ANOVA will only establish that at least two groups were different seeing as ANOVA is an omnibus test statistic and cannot establish which specific groups were statistically significantly different from each other. To establish which specific groups were different from each other a post hoc test using a Bonferroni adjustment was also conducted seeing as this research is interested in investigating all possible pairwise comparisons. The Bonferroni post hoc test is useful because it not only provides the statistical significance level for each pairwise comparison but also provides confidence intervals for the mean difference for each comparison (Laerd Statistics, 2015). Furthermore, a priori to data

analysis this research hypothesized, based on the theoretical framework, which type of message would be most effective to which would be least effective. The posthoc test also establishes if the rank order is correct and if not, provides the statistics to assess which type of message does in fact have the most effect and which one has the least effect.

3.6 Research ethics

In accordance with ethical standards for conducting research, participants were properly informed about the purpose, context, and duration of the scenario-based experiment that was conducted. Respondents were also informed that participation was fully voluntary, that they could withdraw from the experiment at any moment, that the answers provided would solely be used for this research, that there are no right or wrong answers, and that anonymity would be ensured throughout the whole research process. Based on the provided information, respondents were asked if they consented to partake in the scenario-based experiment. The questions pertaining to demographics were asked and handled delicately so as to ensure the utmost privacy and consideration for the respondents. Furthermore, this scenario-based experiment was conducted and distributed online so as to adhere to the local government's rules and regulations concerning the ongoing pandemic and to reduce the spread of Covid-19.

4. Results

In this section the corresponding assumptions that needed to be met will be presented and discussed along with the results of the three separate one-way repeated measures ANOVA that will lead to rejection or acceptance of the formulated hypotheses. Descriptive statistics of the data will also be presented so as to have an overall understanding of the data.

4.1 Sample description

In total, 132 respondents were recorded, and no missing values were detected, which was expected as the experiment could not be continued without answering all questions. The final sample thus consisted of $N = 132$ valid cases. An overview of the sample is outlined in *Table 1*.

Table 1: Demographic overview of sample.

Gender		Age	Employment status		Educational level	
Male: 43	(32.6%)	Range: 20-60 M_{age} : 26.72	Student: 73	(55.3%)	High school: 5	(3.8%)
Female: 89	(67.4%)		Employed: 50	(37.9%)	MBO: 5	(3.8%)
			Unemployed: 3	(2.3%)	HBO: 42	(31.8%)
			Other: 6 ^a	(4.5%)	WO Bachelor: 19	(14.4%)
					WO Master: 59	(44.7%)
					PHD: 2	(1.5%)

a: Namely self-employed

Table 2: Overview environmental concerns.

How Important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? To what degree do you find environmental concerns important?					
	Not Important	Slightly Important	Moderately Important	Very Important	Extremely Important
N	1	14	35	60	22
%	0.8%	10.6%	26.5%	45.5%	16.7%

A look at table 1 shows that fewer males took part in the experiment than females with 32.6% and 67.4% respectively and that most of the respondents were higher educated.

Another noteworthy statistic (table 2) is that 88.7% of the respondents find environmental concerns such as climate, waste, natural resources, and sustainability moderately to extremely important.

4.2 Assumptions

One-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the different types of messages. However, before the hypotheses could be tested several assumptions had to be met first. The dependent variable had to be continuous and the independent variable categorical with 3 or more dependent groups. The data should contain no significant outliers and should also be approximately normally distributed. The assumption of sphericity, where the variances of differences are equal, should also be met.

4.3 Validity & Reliability

Validity was ensured by taking previous thesis and theoretical frameworks into consideration when designing the experiment and hypotheses. The questions were founded based on well-grounded theory and empirical data.

A reliability analysis was conducted to ensure the scale's internal consistency, for which the Cronbach's Alpha (α) is the most commonly used measure (Field, 2013). Generally, a scale can be considered very reliable with a value greater than .80, and insufficient with a value lower than .70 (Hair et al., 2013). For the 12 questions pertaining to disposition intention which were all measured on a 5-point Likert scale a Cronbach's Alpha of $\alpha = 0.835$ was established.

Table 3: Reliability Statistics

Reliability Statistics	
<i>Cronbach's alpha</i>	<i>N of items</i>
.835	12

4.4 Hypotheses testing

To test hypotheses 1A, 1B, and 1C a one-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the three different types of messages. There were outliers in the data, as assessed by the inspection of a box plot for values greater than 1.5 box-lengths from the edge of the box. However, two separate tests were conducted (one with the outliers and one without) and the two results did not differ sufficiently for different conclusions to be drawn from the data. The data was approximately normally distributed with a slight negative skewness of for the combination type of message by visual inspection of their histograms. All variables resulted in satisfactory kurtosis values and most variables did not result in any issues with regard to their skewness. Exception was combination type ($Z_{\text{Skewness}} = -4.18$).

This slight negative skewness and thus the non-normality of the data does not affect the type I error rate substantially seeing as ANOVA is pretty “robust” to violations of normality due to the Central Limit Theorem (Laerd Statistics, 2015). Furthermore, the dataset also contains groups with more than 30 participants which lead to the ANOVA still being conducted.

The assumption of sphericity was met, as assessed by Mauchly's test of sphericity, $\chi^2(2) = 3.21, p = 0.201$.

The different types of messages elicited statistically significant changes in disposition intention $F(2, 262) = 57.838, p < .001$, with disposition intention increasing from gain increasement ($M = 3.14, SE = 1.153$) to loss reduction ($M = 3.62, SE = 1.030$) to combination of gain increasement and loss reduction ($M = 4.05, SE = 0.980$).

Post hoc analysis with a Bonferroni adjustment revealed that disposition intention was statistically significantly increased from gain increasement to loss reduction ($M = 0.477, SE = 0.089, p < .001$), and from loss reduction to combination ($M = 0.424, SE = 0.78, p < .001$), also from gain increasement to combination ($M = 0.902, SE = 0.85, p < .001$). This leads to hypotheses 1A, 1B, and 1C being supported.

Table 4: Test of Within-Subjects Effects

Test of Within-Subjects Effects

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_1	Sphericity Assumed	53.702	2	26.851	57.838	<.001	.306
Error (Type_1)	Sphericity Assumed	121.631	262	.464			

Table 5: Descriptive statistics

Descriptive Statistics

	Mean	Std. Deviation	N
Q1: Gain Increase	3.14	1.153	132
Q2: Loss Reduction	3.62	1.030	132
Q3: Combination	4.05	.980	132

4.4.1 One-way repeated measures ANOVA of the five most mentioned arguments

To test the hypotheses concerning the five most mentioned arguments to enhance willingness to dispose of neglected products a one-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the different types of messages. The types of messages were ordered and analysed based on hypotheses ranking from least convincing to most convincing to dispose (see appendix 10.2.2). There were outliers in the data, as assessed by the inspection of a box plot for values greater than 1.5 box-lengths from the edge of the box. However, two separate tests were conducted (one with the outliers and one without) and the two results did not differ sufficiently for different conclusions to be drawn from the data. The data was approximately normally distributed with a slight negative skewness for messages that broadcasts the essence that “the product could provide the same or more value / enjoyment to someone

else” by visual inspection of their histograms. This slight negative skewness and thus the non-normality of the data does not affect the type I error rate substantially seeing as ANOVA is pretty “robust” to violations of normality due to the Central Limit Theorem (Laerd Statistics, 2015).

The assumption of sphericity was violated, as assessed by Mauchly's test of sphericity, $\chi^2(2) = 46.235$ $p < 0.001$. This means that the one-way repeated measures ANOVA is biased and will too easily return a statistically significant result. However, an epsilon (ϵ) correction can be made to correct for this bias by adjusting the degrees of freedom used in calculating the p -value. Maxwell and Delaney (2004) suggest using the Greenhouse-Geisser correction.

Epsilon (ϵ) was 0.844, as calculated according to Greenhouse and Geisser (1959) and was used to correct the one-way repeated measures ANOVA. Disposition intention was statistically significantly different for the different types of messages, $F(3.377, 442.339) = 26.792$, $p < .001$.

Disposition intention increased from messages that broadcasts the essence of “Sustainability reasons” ($M = 3.09$, $SE = 1.122$) to messages that broadcast the essence that “the product could provide the same or more value / enjoyment to someone else” ($M = 3.55$, $SE = 1.006$) to messages that broadcasts the essence that “Someone else really needs it” ($M = 3.58$, $SE = 1.113$). However, disposition intention decreased from messages that broadcasts the essence that “Someone else really needs it” ($M = 3.58$, $SE = 1.113$) to messages that broadcasts the essence that “the product is really not used / not needed anymore” ($M = 2.65$, $SE = 1.242$). Furthermore, disposition intention increased back from messages that broadcasts the essence that “the product is really not used / not needed anymore” ($M = 2.65$, $SE = 1.242$) to messages that broadcasts the essence that “Someone else could find a (better) use for the product” ($M = 3.18$, $SE = 1.054$) but did not increase back past messages that broadcasts the essence that “Someone else really needs it” ($M = 3.58$, $SE = 1.113$).

Post hoc analysis with a Bonferroni adjustment revealed that disposition intention was statistically significantly increased from “Sustainability reasons” to “the product could provide the same or more value / enjoyment to someone else” ($M = 0.462$, $SE = 0.99$ $p < .001$). The test also revealed that there was an increase in disposition intention from “the product could provide the same or more value / enjoyment to someone else” to “Someone else really needs it” ($M = 0.023$, $SE = 0.082$ $p = 1.000$), which was not statistically significant. However, the

decrease in disposition intention from “Someone else really needs it” to “the product is really not used / not needed anymore” is a statistically significant mean decrease of -0.924 , $SE = 0.120$, $P < 0.001$. Lastly the disposition intention mean increase from “the product is really not used / not needed anymore” to “Someone else could find a (better) use for the product” is a statistically significant mean increase of 0.530 $SE = 0.114$ $p < 0.001$.

All other pairwise comparison produced a statistically significant change in mean except for messages that broadcasts the essence of “Sustainability reasons” V.S “Someone else could find a (better) use for the product” which was not a statistically significant mean change, 0.091 , $SE = 0.101$, $p = 1.000$.

Based on the conducted one-way repeated measures ANOVA hypotheses H2, H3, H4, H5, and H6 could not be supported.

Table 6: Test of Within-Subjects Effects

Test of Within-Subjects Effects

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_2	Greenhouse-Geisser	73.339	3.377	22.608	26.792	<.001	.170
Error (Type_2)	Greenhouse-Geisser	373.261	442.339	.844			

Table 7: Descriptives

Descriptives

	Mean
Q5: Sustainability reasons	3.091
Q6: Same or more value/ enjoyment to someone else	3.553
Q7: Someone else could find a better use for it	3.182
Q8: Someone else really needs it	3.576
Q9: Product is really not used/ not needed anymore	2.652

4.4.2 One-way repeated measures ANOVA of the desired gains

A one-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the different gains presented for disposing of the coffee machine. The different gains were ordered and analysed based on hypotheses ranking from least convincing to most convincing to dispose (See appendix 10.2.3). There were outliers in the data, as assessed by the inspection of a box plot for values greater than 1.5 box-lengths from the edge of the box. Two separate tests were conducted (one with the outliers and one without) and the two results did differ sufficiently for different conclusions to be drawn from the data. The second test without outliers produced a statistically significant mean difference in one of the groups which previously was non-significant. For this reason, the decision was made to analyse and interpret the data without the outliers ($N = 128$). Disposition intention was normally distributed by visual inspection of their histograms. Thus, the assumption of normality was met.

The assumption of sphericity was met, as assessed by Mauchly's test of sphericity, $\chi^2(2) = 8.124, p = 0.150$.

The different types of gains elicited statistically significant changes in disposition intention $F(3, 381) = 13.138, p < .001$, with disposition intention decreasing from satisfaction as gained desired ($M = 3.54, SE = 0.995$) to nothing as gained desired ($M = 2.95, SE = 1.186$) to increasing for an alternative product as gained desired ($M = 3.68, SE = 1.094$) to decreasing again for money as gained desired ($M = 3.30, SE = 1.239$).

Post hoc analysis with a Bonferroni adjustment revealed that disposition intention was statistically significantly decreased from satisfaction as gained desired to nothing as gained desired ($M = -0.594, SE = 0.124, p < .001$), but statistically significantly increased from nothing as gained desired to alternative product as gained desired ($M = 0.734, SE = 0.137, p < .001$) just to statistically significantly decrease again from alternative product as gained desired to money as gained desired ($M = -0.375, SE = 0.116, p = 0.10$). Disposition intention was also statistically significantly increased from nothing as gained desired to money as gained desired ($M = 0.359, SE = 0.134, p = 0.049$).

Disposition intention however was not statistically significantly different for satisfaction as gained desired V.S alternative product as gained desired neither for satisfaction as gained desired V.S money as gained desired $p = 1.000$ and $p = 0.124$ respectively. Thus, hypotheses H7, H8, H9, and H10 cannot be supported.

Table 8: Test of Within-Subjects Effects**Test of Within-Subjects Effects**

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_X	Sphericity Assumed	39.563	3	13.188	13.138	<.001	.094
Error (Type_X)	Sphericity Assumed	382.438	381	1.004			

Table 9: Descriptive statistics**Descriptive Statistics**

	Mean	Std. Deviation	N
Q11: Satisfaction	3.54	.995	128
Q12: Alternative product	3.68	1.094	128
Q13: Nothing	2.95	1.186	128
Q14: Money	3.30	1.239	128

4.5 A deeper inspection of the role of environmental concerns

This research was also interested in discovering whether the degree of environmental concern had an effect on the disposition intention of the different types of messages. To research this several two-way mixed ANOVAs was conducted to determine whether there were statistically significant differences in disposition intention.

4.5.1 First Two-way mixed ANOVA

A two-way mixed ANOVA was conducted on the three different types of messages where it was concluded that there was one outlier, which had a studentized residual value of -3.35. However, it was decided that the outlier would be kept in the data because removing an outlier in a two-way mixed ANOVA can be particularly disastrous. A single missing data point removes that entire participant from the analysis.

The data was normally distributed as assessed by the Q-Q plots. There was also homogeneity of variances ($p > .05$) and covariances ($p = 0.074$), as assessed by Levene's test of homogeneity of variances and Box's M test, respectively. Mauchly's test of sphericity indicated that the assumption of sphericity was met for the two-way interaction, $\chi^2(2) = 4.569$, $p = 0.102$.

There was no statistically significant interaction between the level of environmental concern and the different types of messages on disposition intention, $F(8, 254) = 1.139$, $p = 0.337$, $\text{partial } \eta^2 = 0.035$. The main effect of different types of messages showed a statistically significant difference in mean of disposition intention, $F(2, 254) = 15.436$, $p < .0001$, $\text{partial } \eta^2 = 0.108$. The main effect of environmental concern showed that there was no statistically significant difference in mean of disposition intention between the different levels of concern $F(4, 127) = 0.351$, $p = 0.843$, $\text{partial } \eta^2 = 0.011$.

Table 10: Test of Within-Subjects Effects

Test of Within-Subjects Effects

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_1E*Q21_1	Sphericity Assumed	4.213	8	.527	1.139	.337	.035
Error (Type_1E)	Sphericity Assumed	117.418	254	.462			

4.5.2 Second Two-way mixed ANOVA

A two-way mixed ANOVA was conducted on the five most mentioned arguments to enhance willingness to dispose of neglected products. There were no outliers as assessed by the examination of the studentized residuals for values greater than $|.3|$. The data was normally distributed as assessed by the Q-Q plots. There was also homogeneity of variances ($p > .05$) and covariances ($p = 0.437$), as assessed by Levene's test of homogeneity of variances and Box's M test, respectively. Mauchly's test of sphericity indicated that the assumption of sphericity was violated for the two-way interaction, $\chi^2(2) = 44.889$, $p < 0.001$. Epsilon (ϵ) was 0.839, as calculated according to Greenhouse and Geisser (1959) and was used to correct the one-way repeated measures ANOVA.

There was no statistically significant interaction between the level of environmental concern and the five most mentioned arguments to enhance willingness to dispose of neglected products, $F(13.425, 426.255) = 1.162$, $p = 0.304$, $\text{partial } \eta^2 = 0.035$. The main effect of different arguments showed no statistically significant difference in mean of disposition intention, $F(3.356, 426.255) = 2.204$, $p = 0.080$, $\text{partial } \eta^2 = 0.017$. Furthermore, the main effect of environmental concern showed that there was no statistically significant difference in mean of disposition intention between the different levels of concern $F(4, 127) = 1.707$, $p = 0.152$, $\text{partial } \eta^2 = 0.059$.

Table 11: Test of Within-Subjects Effects

Test of Within-Subjects Effects

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_2E*Q21_1	Greenhouse-Geisser	13.174	13.425	.981	1.162	.304	.035
Error (Type_2E)	Greenhouse-Geisser	360.087	426.255	.845			

4.5.3 Third Two-way mixed ANOVA

A two-way mixed ANOVA was conducted on the different gains presented for disposing of the coffee machine. There were no outliers as assessed by the examination of the studentized residuals for values greater than $|.3|$. The data was normally distributed as assessed by the Q-Q plots. There was also homogeneity of variances ($p > .05$) and covariances ($p = 0.411$), as assessed by Levene's test of homogeneity of variances and Box's M test, respectively.

Mauchly's test of sphericity indicated that the assumption of sphericity was met for the two-way interaction, $\chi^2(2) = 4.963$, $p = 0.420$.

There was a statistically significant interaction effect between the level of environmental concern and the different desired gain on disposition intention, $F(12, 381) = 1.830$, $p = 0.042$, $\text{partial } \eta^2 = 0.054$.

Table 12: Test of Within-Subjects Effects

Test of Within-Subjects Effects

Source		Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E*Q21_1	Sphericity Assumed	21.995	12	1.833	1.830	.042	.054
Error (Type_3E)	Sphericity Assumed	381.618	381	1.002			

There was no simple main effect of environmental concern on disposition intention $F(4,127) = 0.260$, $p = 0.903$, *partial* $\eta^2 = 0.008$.

Disposition intention was statistically significantly greater for alternative product as gained desired compared to nothing as gained desired ($M = 0.971$, $SE = 0.244$ $p = 0.002$) and for money as gained desired compared to nothing as gained desired ($M = 0.886$, $SE = 0.208$ $p < 0.001$) for the moderately environmentally concerned group.

Disposition intention was also statistically significantly greater for alternative product as gained desired compared to money as gained desired ($M = 0.450$, $SE = 0.158$ $p = 0.37$) for the very environmentally concerned group.

Lastly, disposition intention was also statistically significantly greater for satisfaction as gained desired compared to nothing as gained desired ($M = 0.864$, $SE = 0.249$ $p = 0.014$) and for satisfaction as gained desired compared to money as gained desired ($M = 1.000$, $SE = 0.302$ $p = 0.020$) furthermore, for alternative product as gained desired compared to money as gained desired ($M = 1.045$, $SE = 0.389$ $p = 0.048$) for the extremely environmentally concerned group.

4.6 A deeper inspection of the role of gender

There were 43 male and 89 female participants. An independent-samples t-test was run to determine if there were differences in disposition intention between males and females. There was one outlier in the data, a studentized residual value of -3.35 which was decided to be left in. Disposition intention for each level of gender was normally distributed, as assessed by visual inspection of the normal Q-Q plots for all disposition intention questions. There was homogeneity of variances for all disposition intention questions except for the message that contained a combination of gain increasement and loss reduction as assessed

by Levene's test for equality of variances ($p = 0.037$). There was a statistically significance difference in mean for disposition intention between males and females for messages that broadcasts the essence of "Sustainability reasons" ($M = -0.480$, $SE = 0.205$), for messages that broadcasts the essence that "Someone else really needs it" ($M = -0.406$, $SE = 0.204$), and for satisfaction as gained desired ($M = -0.409$, $SE = 0.197$), $T(130) = -2.341$, $p = .021$, $T(130) = -1.984$, $p = .049$, and $T(130) = -2.081$, $p = 0.039$ respectively.

5. Conclusion

While previous research has been conducted into consumers' disposition and non-disposition behaviours and the barriers that impede the disposition of products we no longer use, existing knowledge on how to trigger consumers to dispose of their neglected products is surprisingly scarce. Previously it has been established that situational factors are most likely to influence the disposal of neglected products however, there was a gap in the literature concerning practical knowledge on how to influence consumer behaviour in favor of the disposition of neglected products. This research, therefore, aimed to address this gap by answering the following research question: ***“What are the deciding social factors in changing consumers' disposition intention in favor of circular alternatives?”***.

To achieve this several hypotheses were formulated, and an experiment was conducted that provided answers for this question with the data collected among Dutch respondents. The findings of this research extended Van 't Ende's (2019) and Sikorska's (2020) findings by broadening the understanding of neglected products and social triggers (type of message) that can influence product neglect disposition so as to be able to influence consumers' disposition intention in favour of circularity.

Firstly, in accordance with prospect theory, it was hypothesised that campaigns aimed at behavioural change should be focused on the potential benefits for and utilisation of the perceived (residual) functional value of a product to decrease the perceived loss, increase gains, and in turn, enhance the circularity of products. The data and results support this theory and therefore it can be concluded that messages aimed at behavioural change focusing on a combination of decreasing the perceived loss for the utilisation of the perceived functional value and increasing the perceived gain for the consumer is the most effective in changing the disposition intention of a consumer. When respondents were additionally asked if certain messages had more of an impact on their disposition intention than others, the argument that if disposition benefitted them personally and another at the same time that that type of message was the most convincing. A direct quote from one of the respondents was: *“If the message shows the benefits for me plus I can help others with it as well it's most*

convincing. There is something in it for me and I can do something good for someone else which makes me feel good”.

Secondly, consumers commonly base their choices on their evaluation of the trade-off between the opportunities for gains and the risk of losses. Consumers are regarded as loss-averse, to an individual, losses are valued much higher than gains of equivalent size (Kahneman & Tversky, 1979). Individuals are therefore considered as ‘self-interested’ and it could be concluded that messages aimed at behavioural change focusing on decreasing the perceived loss for the utilisation of the perceived functional value for the consumer is to a lesser degree effective in changing the disposition intention of a consumer (Kaa, & Netherlands Research School for Transport, 2008 p. 35). A direct quote from a respondent to support this conclusion is that: *“Own benefits are more important than making a specific person happy with it”.*

Lastly, seeing as consumers’ gains, of equivalent size of losses, are valued as less than losses it can be concluded based on the results that messages aimed at behavioural change focusing on increasing the perceived gain for the consumer is the least effective in changing the disposition intention of a consumer. A direct quote to substantiate this conclusion is: *“Just decluttering is not convincing because I know that already and if I wanted to declutter, I already would have”.* This quote shows empirical evidence that increasing the gain for the consumer by decluttering is not enough to counteract the perceived loss of the coffee machine.

Additionally, further research was conducted on Sikorska’s (2020) five most mentioned arguments (in hierarchical order) to enhance willingness to dispose of neglected products. These were: someone else could find a (better) use for the product, the simple confirmation or reminder that these products are being neglected, someone else really needs the product, the product could provide the same or more value / enjoyment to someone else, and sustainability reasons. Based on the one-way repeated measures ANOVA that was conducted this hierarchical order and empirical evidence could not be replicated. This research’s data concluded that both the message that broadcasts the essence that “Someone else really needs it” and message that broadcast the essence that “the product could provide the same or more value / enjoyment to someone else” makes respondents the most willing to dispose of their neglected product. This conclusion can be drawn because there was no statistically significant mean difference between these two answers. Conversely, messages

that broadcast the essence that “the product is really not used / not needed anymore” makes respondents the least willing to dispose of their neglected product.

An anecdote that can support this notion for the first two types of messages is: *“Helping others being happy was more convincing because why wouldn’t you want to help someone else. You make another person happy with something you don’t need any more that might end up in a trash or taking space where you don’t need it”*.

An anecdote for why messages that broadcast the essence that “the product is really not used / not needed anymore” makes respondents the least willing to dispose of their neglected product is: *“Comparing storage space and helping someone, I care more about people”*.

Furthermore, according to research done by Sikorska (2020) when trying to balance the trade-off between the opportunities for gains and the risk of losses, consumers indicated being more willing to dispose of their product when receiving money, an alternative product with similar functionality, nothing, or simply satisfaction in return. However, according to the data collected from the experiment this hierarchical order could not be replicated. This research’s one-way repeated measures ANOVA concluded that messages that present an alternative product as gained desired and messages that present satisfaction as gained desired both make people the most willing to dispose of their neglected product. This conclusion was drawn for the reason that there was no statistically significant mean increase between the answers.

Anecdote from one of the respondents in favor of alternative product as gained desired was: *“A free product in return can boost someone’s desire to donate”*.

Anecdote for satisfaction as gained desired was: *“The one about satisfaction was most convincing because it sounds more positive, and it is nice to make someone happy”*.

This research could also conclude, based on the data collected, that messages that present nothing as gained desired makes people the least willing to dispose of their neglected products. One respondent said: *“Not giving me a reason to do it is not convincing”*.

Additional analyses on the role of environmental concern on disposition intention concluded that there was only a statistically significant interaction effect between the level of environmental concern and the different desired gain on disposition intention. There was no statistically significant interaction between the level of environmental concern and the different types of messages on disposition intention and there was no statistically significant

interaction between the level of environmental concern and the five most mentioned arguments to enhance willingness to dispose of neglected products. The statistically significant interaction effect between the level of environmental concern and the different desired gain on disposition intention was only observable in the groups of moderately, very, and extremely high level of environmental concern.

Moreover, there was a statistically significance difference in mean for disposition intention between males and females for messages that broadcasts the essence of “Sustainability reasons”, for messages that broadcasts the essence that “Someone else really needs it”, and for satisfaction as gained desired.

In closing, the data of this research concluded that messages aimed at behavioural change focusing on a combination of decreasing the perceived loss for the utilisation of the perceived functional value and increasing the perceived gain for the consumer, messages that broadcasts the essence that “Someone else really needs it”, messages that broadcast the essence that “the product could provide the same or more value / enjoyment to someone else”, messages that present an alternative product as gained desired, and messages that present satisfaction as gained desired are the deciding social factors in changing consumers’ disposition intention in favor of circular alternatives.

6. Discussion

This research aimed to investigate whether disposition intention differed between the different types of messages presented to answer the question of what are the deciding social factors in changing consumers' disposition intention in favor of circular alternatives. Furthermore, the aim was also to build upon Van 't Ende's (2018) and Sikorska's (2020) previous studies that concluded that products are neglected as a result of the perceived value consumers attach to them and findings that emotional connections to one's past, as well as potential future functionalities, are barriers to disposition. This was to have an overall better understanding of the phenomenon of neglected products. This research concluded that not all the hypotheses were supported. For instance, it was expected that the five most mentioned arguments from Sikorska's (2020) research (in hierarchical order) to enhance willingness to dispose of neglected products would be replicable in this study. This appears to not be the case same as with the different gains presented for disposing of the coffee machine which was based on empirical data from Sikorska's (2020) research.

This research did find a statistically significant difference in the mean for disposition intention between males and females for some of the types of messages. However, remember, just because a result is statistically significant, it does not necessarily follow that it is practically important. A statistical significance really only indicates whether the result is not likely due to sampling error, which although important in its own right, does not indicate how "strong" the differences are (Laerd Statistics, 2015).

Furthermore, a statistically significant interaction effect between the level of environmental concern and the different desired gain on disposition intention was also established. However, the interaction effect was only observable in the groups of moderately, very, and extremely high level of environmental concern. This is in line with previous research where it was established that consumers are not only showing rising concerns but also consuming ethically (Doane 2001). Consumers who are more environmentally concerned are more willing to accept gratitude or an alternative product in exchange for giving away their coffee machine.

7. Implications & recommendations

Despite the discrepancies between this study's expectations and the obtained results, several important contributions can be drawn from both a theoretical and practical perspective. Theoretically, this research contributes to understanding consumer behaviour in favor of the disposition of neglected products by means of establishing the deciding social factors that tip the scale from negligence to circular disposition. This research also establishes what reward would most influence a consumer to sell/ donate/ or give away their neglected product which could be implemented by marketing managers in their campaigns in where they promote circularity and sustainability.

Additionally, this research also concluded and reinforced Prospect Theory as an explanation about how an individual makes choices in real life rather than how it should be done to optimise some objective interest (Kaa, & Netherlands Research School for Transport, 2008). Furthermore, this research contributes more empirical evidence that consumers commonly base their choices on their evaluation of the trade-off between the opportunities for gains and the risk of losses and that seeing as consumers are regarded as loss-averse, to an individual, losses are valued much higher than gains of equivalent size (Kahneman & Tversky, 1979).

From a practical perspective, this research provides marketing managers with a better understanding of consumers' (non-)disposition behaviours, and how to respond to them in order to enhance and influence the circularity of products by incorporating the social factors into their campaigns. Social factors, which encompass marketing or non-marketing triggers (messages) external to the consumer, that can be communicated personally or via mass-media, could be used to influence the disposition decision (Hanson, 1980; Van 't Ende, 2018). Recommendations are going to be based on steering consumers' disposition behavior in the direction of a variety of circular options in which a product can be disposed of. These options consist of selling, trading, renting, loaning, or giving away (Van 't Ende, 2019).

Firstly, while it has been established in previous research that situational factors are most likely to influence the disposal of neglected products, marketing efforts cannot be used to influence or change situational factors in a consumer's life. For this reason, marketing efforts should be focused on influencing social factors to recover and reuse resources from

waste/ or secondhand products to stimulate circularity. Marketing managers could incorporate messages that broadcast the essence that “Someone else really needs it” and messages that broadcast the essence that “the product could provide the same or more value / enjoyment to someone else” into their marketing campaigns to achieve this goal.

Secondly, marketing managers should try to incorporate the benefits for both the consumer personally and the environment or the other person who is benefiting from this campaign into the message presented. Consumers indicated that this type of message was the most convincing to them. Quote: “I liked the fact that something I no longer use can make someone happy. This would benefit me psychologically and at the same time since I get rid of the coffee machine, I can have more space in my storage. Which is another thing beneficial for me (something more physical than mental). That's why I think using both of the messages are more convincing”

Thirdly, it has been established that consumers prefer some type of reward for their cooperation with marketing campaigns aimed at encouraging them to sell/ donate/ or give away their neglected product instead of receiving nothing in return. Marketing managers can incorporate the established rewards of satisfaction or an alternative product into their campaigns to further stimulate consumers' disposition of neglected products.

Lastly, campaigns aimed at behavioural change should be focused on the potential benefits for and utilisation of the perceived (residual) functional value of a product to decrease the perceived loss, increase gains, and in turn, enhance the circularity of products.

8. Limitations & Future research

8.1 A deeper inspection into the limitations of this research

Several limitations can be identified within this study that should be taken into account when interpreting the results. Firstly, this research chose a within-subject design for the experiment to test the different types of messages on disposition intention instead of dividing the respondents into separate groups and testing them on only one type of message (between-subject design). The choice for within-subject was made because this design makes certain that any real difference that exists between the different scenarios will be found and not covered by random noise. However, a between-subjects design would have accounted for and minimized the learning and transfer across the different types of messages. Normally after a respondent has completed a question or experiment he or she is more knowledgeable about the topic and might compare the next question with their previous answer to weigh them against each other before answering how convincing the next type of message was on their disposition intention. This is something to take into consideration when interpreting the results of this research and might be a possible future research possibility to replicate this research.

Secondly, the research knows limitations concerning representativity. Caution should be applied when analysing the data and trying to generalize the findings to a bigger population. The sample collected was skewed in favor of more female respondents.

Thirdly, this research might know limitations concerning representativeness due to the way respondents were approached to take part in this experiment. The data collection was conducted by a non-probability convenience sampling technique as the participants are selected based on availability and willingness to take part in the experiment (Methods of Sampling from a Population, 2018). This technique might bring possibilities of bias and should be taken into consideration.

Furthermore, This research might know limitations concerning not having taken environmental concern level more into consideration when conducting the experiment. Future research might look into screening respondents based on the environmental concern level and taking this into consideration when doing research.

Moreover, the language used in the experiment might also lead to limitations in the research. The native language of the population being sampled was not used when conducting the experiment. The experiment was conducted in English and respondents might have construed the questions differently than intended.

Additionally, reliability cannot be established without a doubt. Trial runs were conducted with the experiment and feedback, with the help of the professor, was worked out. However, establishing a very sound experiment takes time and a lot of effort and expertise. A way to fix the reliability issue would be to test the experiment questions on a bigger scale, work out the feedback and run another experiment.

Lastly, this research measured disposition intention and not actual disposition action or conviction to disposition. However, this could not have realistically been measured in the limited time available. Researchers would have needed to do follow-up experiments at different time points so as to measure actual actions of disposition.

8.2 Recommendations for Future Research

Future research should further investigate the actual implementation of an advertising campaign that incorporates the deciding social factors in changing consumers' disposition intention in favor of circular alternatives that were established from this research. Two groups could be used for this research where one group is considered the control group and one the experiment group. The control group will be asked questions concerning their level of environmental concern, if they own a product that is being neglected, and how likely they are to dispose of this product by either selling/ donating/ or giving it away. The experimental group will be shown an advertisement campaign that incorporates the deciding social factors in changing consumers' disposition intention that was established from this research. Afterward, the experimental group will be asked the same set of questions as the control group so as to later analyse if there were differences in answers between the two groups.

A second future research possibility could be to incorporate the mentioned desired gains of satisfaction and an alternative product into an experiment to test if these two factors are statistically equal. The experiment will have two groups where the respondents of the first group will be asked to please sell/ donate/ give away their own chosen neglected product for satisfaction as gain and the other group will be asked to do this for an alternative product

as gain. The research will follow this up by asking the respondents of both groups at a later time point (chosen by the researcher) who actually disposed of their product. This is done to measure the difference in groups concerning actual disposition of their neglected product after the gain was presented as a reward.

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10. Appendices

APPENDIX 10.1

Questionnaire

Neglected product research

Dear respondent,

Thank you for taking the time to participate in this research! My name is Lysienne Maduro, and I'm a Marketing student at Radboud University Nijmegen. For my master thesis, in collaboration with my supervisor Dr. Herm Joosten, I am doing research to find out what would convince you to sell, give away, or donate products you no longer use for a new purpose. Participation in this research is voluntary, and you may withdraw at any time. Please read all questions carefully and answer them honestly. There are no right or wrong answers, since we ask for your opinion and point of view. Your answers will remain completely anonymous and will solely be used for research purposes within this project.

☐ I understand, let's continue.

You will now be asked to please imagine a situation and answer the presented questions based on the situation given. There will be 3 scenarios with their own set of questions.

Now please imagine that at home you have a traditional filter coffee machine. Your coffee machine is still functional (does its job and works fine) however, you have since decided to upgrade to a newer, fancier coffee machine (think about Senseo, Dolce Gusto, or an espresso machine). Because of this upgrade the old coffee machine gets neglected and is stored away in a cupboard, cellar, attic or just abandoned where it was set up. You are happy with your new coffee machine and can't imagine going back to your old one. You haven't even glanced at your old machine since! In the meantime, you've been seeing campaigns on your social medias asking for you to sell/donate/give away neglected products you no longer use that still works but are just sitting in your house collecting dust. These campaigns are going viral and are being shared among your friends, co-workers and family members. Because people you know and relate to are sharing these messages your interest is piqued.

☐ I have read the scenario

Please indicate on the 5-point Likert scale the degree to which you find the message presented convincing.

Q1

Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2 Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3 Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q4 Were some messages more convincing to you? Please explain why.

Please indicate on the 5-point Likert scale the degree to which you find the next 5 messages presented convincing.

Q5 By selling/donating/giving away your coffee machine you are helping to create a sustainable economy.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 By selling/donating/giving away your coffee machine, someone else may find a (better) use for it.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 By selling/donating/giving away your coffee machine you may help someone because he really needs it.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Sell/donate/give away your coffee machine because you no longer need it or use it.

	Not convincing (1)	Slightly convincing (2)	Moderately convincing (3)	Very convincing (4)	Extremely convincing (5)
To what degree do you find this message to be convincing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 Were some messages more convincing to you? Please explain why.

Messages on social media may try to convince you to sell/donate/give away/trade your coffee machine by offering something in return. How do these 4 offers appeal to you?

Q11 Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient.

	Extremely undesirable (1)	Somewhat undesirable (2)	Neither desirable nor undesirable (3)	Somewhat desirable (4)	Extremely desirable (5)
To what degree do you find this offer to be desirable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 Trade your coffee machine for something else! It will give you another product in return that is useful to you.

	Extremely undesirable (1)	Somewhat undesirable (2)	Neither desirable nor undesirable (3)	Somewhat desirable (4)	Extremely desirable (5)
To what degree do you find this offer to be desirable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13 Give away/donate your coffee machine!

	Extremely undesirable (1)	Somewhat undesirable (2)	Neither desirable nor undesirable (3)	Somewhat desirable (4)	Extremely desirable (5)
To what degree do you find this offer to be desirable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 Sell your coffee machine for money! The money is more useful than the coffee machine.

	Extremely undesirable (1)	Somewhat undesirable (2)	Neither desirable nor undesirable (3)	Somewhat desirable (4)	Extremely desirable (5)
To what degree do you find this offer to be desirable?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15 Were some messages more convincing to you? Please explain why.

Q16 The last 6 questions are demographic types of questions dealing with personal information concerning gender, age, educational level, employment status, as well as questions concerning the importance of the environment to you.

Q17 What's your gender?

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer not to say (4)

Q18 What's your age?

Q19 What is your highest level of education? (Achieved or currently pursuing)

- ☐ Primary education (1)
- ☐ High school (2)
- ☐ MBO (3)
- ☐ HBO (4)
- ☐ WO Bachelor (5)
- ☐ WO Master (6)
- ☐ PHD (7)

Q20 What is your current employment status?

- ☐ Student (1)
- ☐ Employed (2)
- ☐ Unemployed (3)
- ☐ Retired (4)
- ☐ Other/ Namely (5) _____

Q21 How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you?

	Not important (1)	Slightly important (2)	Moderately important (3)	Very important (4)	Extremely important (5)
To what degree do you find environmental concerns important?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22 How important was the political group's environmental policy when choosing which political group to vote for? Please elaborate

APPENDIX 10.2

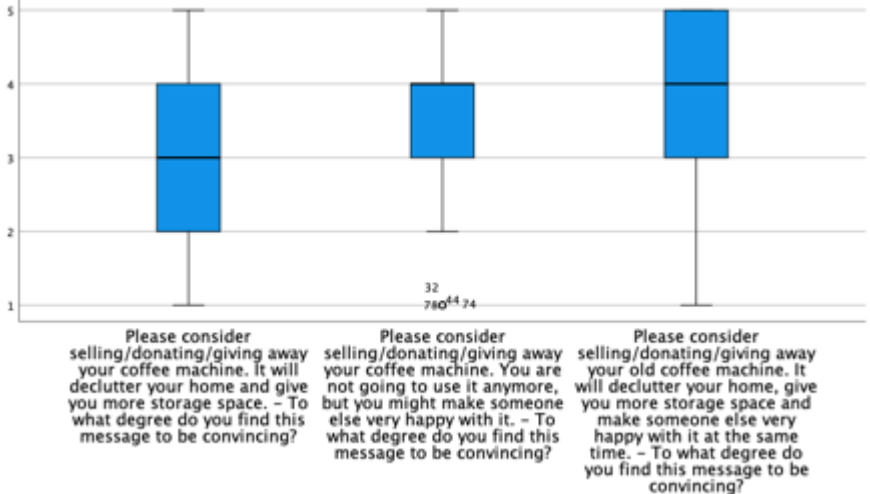
10.2.1 One-way repeated measures ANOVAs

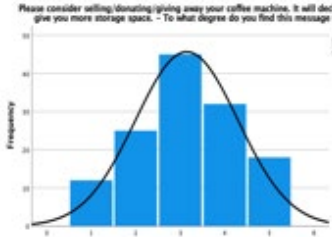
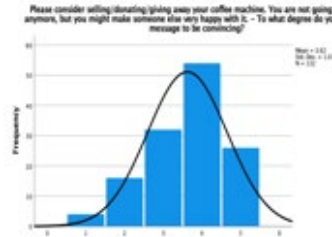
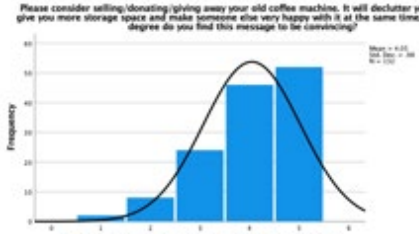
One-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the different types of messages.

Assumptions one-way repeated measures ANOVA

(Based on Hair et al. (2014) and Laerd Statistics (n.d.)).

1. The dependent variable is continuous;
2. The independent variable categorical with 3 or more dependent groups.
3. The data shows no significant outliers
4. The data should also be approximately normally distributed.
5. The variances of differences are equal.

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention (measured on a 5-point Likert scale)	✓
Independent variable	Categorical scale 3 dependent groups	Type of message: Increasing the perceived gain Type of message: Reducing the perceived loss Type of message: Combination	✓
No significant outliers	Boxplot,		(1)

Normal distribution	Histogram, Skewness, Kurtosis	<div><p>Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. - To what degree do you find this message to be convincing?</p><p>Mean = 3.24 Std. Dev. = 1.133 N = 120</p><p>Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. - To what degree do you find this message to be convincing?</p><p>Mean = 3.82 Std. Dev. = 1.03 N = 120</p><p>Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. - To what degree do you find this message to be convincing?</p><p>Mean = 4.25 Std. Dev. = .98 N = 120</p></div> <div><div>$\frac{Skewness}{SE\ Skewness} = -0.493$$\frac{Skewness}{SE\ Skewness} = -2.578$$\frac{Skewness}{SE\ Skewness} = -4.18$</div><div>$\frac{Kurtosis}{SE\ Kurtosis} = -1.64$$\frac{Kurtosis}{SE\ Kurtosis} = -0.570$$\frac{Kurtosis}{SE\ Kurtosis} = 0.516$</div></div>	(2)															
The variances of differences are equal	Maulchy's test of sphericity	<div><p>Mauchly's Test of Sphericity^a</p><p>Measure: Intention</p><table><thead><tr><th>Within Subjects Effect</th><th>Mauchly's W</th><th>Approx. Chi-Square</th><th>df</th><th>Sig.</th><th>Greenhouse-Geisser</th><th>Epsilon^b Huynh-Feldt</th><th>Lower-bound</th></tr></thead><tbody><tr><td>Type_1</td><td>.976</td><td>3.208</td><td>2</td><td>.201</td><td>.976</td><td>.991</td><td>.500</td></tr></tbody></table><p>Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.</p><p>a. Design: Intercept Within Subjects Design: Type_1</p><p>b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.</p></div> <div>✓</div>	Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound	Type_1	.976	3.208	2	.201	.976	.991	.500
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound											
Type_1	.976	3.208	2	.201	.976	.991	.500											

- There were outliers in the data, as assessed by the inspection of a box plot for values greater than 1.5 box-lengths from the edge of the box. However, two separates test were conducted (one with the outliers and one without) and the two results did not differ sufficiently for different conclusions to be drawn from the data.
- The data was approximately normally distributed with a slight negative skewness of for the combination type of message by visual inspection of their histograms. All variables resulted in satisfactory kurtosis values and most variables did not result in any issues with regard to their skewness |.3|. Exception was combination type ($ZSkewness = -4.18$).

Descriptive Statistics

	Mean	Std. Deviation	N
Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. - To what degree do you find this message to be convincing?	3.14	1.153	132
Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. - To what degree do you find this message to be convincing?	3.62	1.030	132
Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. - To what degree do you find this message to be convincing?	4.05	.980	132

Tests of Within-Subjects Effects

Measure: Intention		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_1	Sphericity Assumed	53.702	2	26.851	57.838	<.001	.306
	Greenhouse-Geisser	53.702	1.952	27.505	57.838	<.001	.306
	Huynh-Feldt	53.702	1.982	27.101	57.838	<.001	.306
	Lower-bound	53.702	1.000	53.702	57.838	<.001	.306
Error(Type_1)	Sphericity Assumed	121.631	262	.464			
	Greenhouse-Geisser	121.631	255.767	.476			
	Huynh-Feldt	121.631	259.588	.469			
	Lower-bound	121.631	131.000	.928			

Pairwise Comparisons

Measure: Intention		Mean Difference (I-J)		Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
(I) Type_1	(J) Type_1					Lower Bound	Upper Bound
1	2	-.477 [*]	.089	<.001		-.693	-.261
	3	-.902 [*]	.085	<.001		-1.107	-.696
2	1	.477 [*]	.089	<.001		.261	.693
	3	-.424 [*]	.078	<.001		-.613	-.236
3	1	.902 [*]	.085	<.001		.696	1.107
	2	.424 [*]	.078	<.001		.236	.613

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

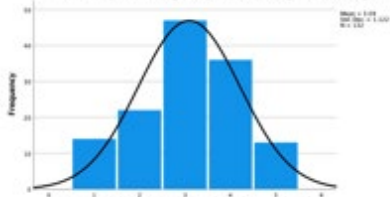
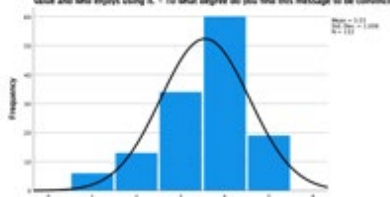
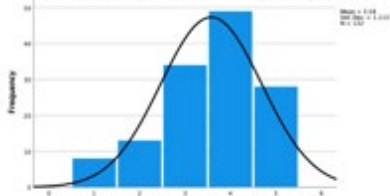
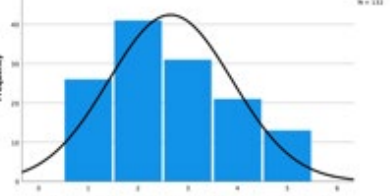
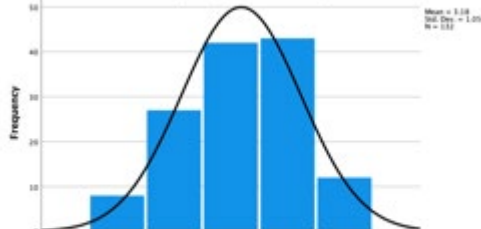
b. Adjustment for multiple comparisons: Bonferroni.

10.2.2 One-way repeated measures ANOVAs

One-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences between the five most mentioned arguments to enhance willingness to dispose of neglected products. The data was ordered and analysed based on hypotheses ranking from least convincing to dispose to most convincing to dispose. This ranking is as followed: Question 5, Question 6, Question 8, Question 9, and lastly Question 7.

Within-Subjects Factors	
Measure:	Intention_2
Type_2	Dependent Variable
1	Q5_1
2	Q6_1
3	Q8_1
4	Q9_1
5	Q7_1

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention_2 (measured on a 5-point Likert scale)	✓
Independent variable	Categorical scale 5 dependent groups	Type of message: "Sustainability reasons" Type of message: "The product could provide the same or more value / enjoyment to someone else" Type of message: "Someone else really needs it" Type of message: "The product is really not used / not needed anymore" Type of message: "Someone else could find a (better) use for the product" (Measured on a 5-point Likert scale)	✓
No significant outliers	Boxplot,		(1)

Normal distribution	Histogram, Skewness, Kurtosis	<div><div><div><div><div>By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. - To what degree do you find this message to be convincing?</div><div>Mean = 3.02 Std. Dev. = 1.002 N = 122</div></div><div>By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?</div><div>Mean = 3.07 Std. Dev. = 1.006 N = 122</div></div><div><div>By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?</div><div>Mean = 3.02 Std. Dev. = 1.002 N = 122</div><div>Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?</div><div>Mean = 3.01 Std. Dev. = 1.042 N = 122</div></div><div><div>By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. - To what degree do you find this message to be convincing?</div><div>Mean = 3.08 Std. Dev. = 1.014 N = 122</div></div></div><div><div><div><div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div></div><div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div></div></div><div><div><div><div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div><div><i>Skewness</i></div><div><i>SE Skewness</i></div></div><div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div><div><i>Kurtosis</i></div><div><i>SE Kurtosis</i></div></div></div></div></div><div><div><div><div><div>Mauchly's Test of Sphericity^a</div><div>Measure: Intention_2</div><table><tr><th>Within Subjects Effect</th><th>Mauchly's W</th><th>Approx. Chi-Square</th><th>df</th><th>Sig.</th><th>Greenhouse-Geisser</th><th>Epsilon^b Huynh-Feldt</th><th>Lower-bound</th></tr><tr><td>Type_2</td><td>.700</td><td>46.235</td><td>9</td><td><.001</td><td>.844</td><td>.869</td><td>.250</td></tr></table><div>Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.</div><div>a. Design: Intercept Within Subjects Design: Type_2</div><div>b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.</div></div></div></div></div></div></div><div>The variances of differences are equal</div><div>Maulchy's test of sphericity</div><div>(2)</div><div>(3)</div></div>	Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound	Type_2	.700	46.235	9	<.001	.844	.869	.250
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound											
Type_2	.700	46.235	9	<.001	.844	.869	.250											

1. There were outliers in the data, as assessed by the inspection of a box plot for values greater than 1.5 box-lengths from the edge of the box. However, two separates test were conducted (one with the outliers and one without) and the two results did not differ sufficiently for different conclusions to be drawn from the data.
2. The data was approximately normally distributed with a slight negative skewness of for messages that broadcasts the essence that “the product could provide the same or more value / enjoyment to someone else” by visual inspection of their histograms. All variables resulted in satisfactory kurtosis values and most variables did not result in any issues with regard to their skewness|.3|. Exception was ($Z_{Skewness} = -3.294$).

- The assumption of sphericity was violated, as assessed by Mauchly's test of sphericity. Maxwell and Delaney (2004) suggest using the Greenhouse-Geisser correction.

Estimates				
Measure: Intention_2				
Type_2	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1	3.091	.098	2.898	3.284
2	3.553	.088	3.380	3.726
3	3.576	.097	3.384	3.767
4	2.652	.108	2.438	2.865
5	3.182	.092	3.000	3.363

Tests of Within-Subjects Effects						
Measure: Intention_2						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_2						
Sphericity Assumed	76.339	4	19.085	26.792	<.001	.170
Greenhouse-Geisser	76.339	3.377	22.608	26.792	<.001	.170
Huynh-Feldt	76.339	3.477	21.957	26.792	<.001	.170
Lower-bound	76.339	1.000	76.339	26.792	<.001	.170
Error(Type_2)						
Sphericity Assumed	373.261	524	.712			
Greenhouse-Geisser	373.261	442.339	.844			
Huynh-Feldt	373.261	455.455	.820			
Lower-bound	373.261	131.000	2.849			

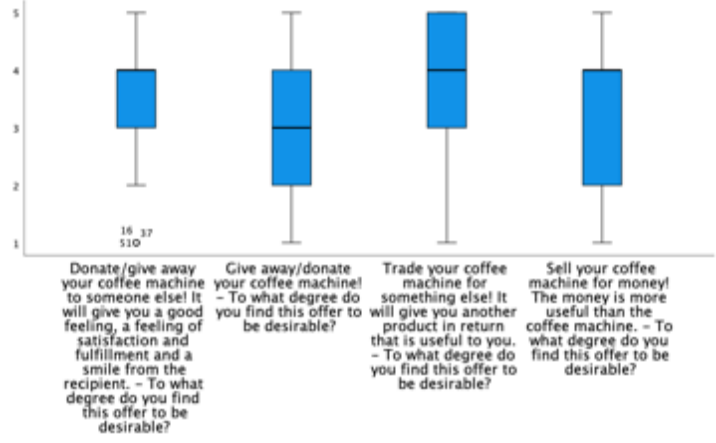
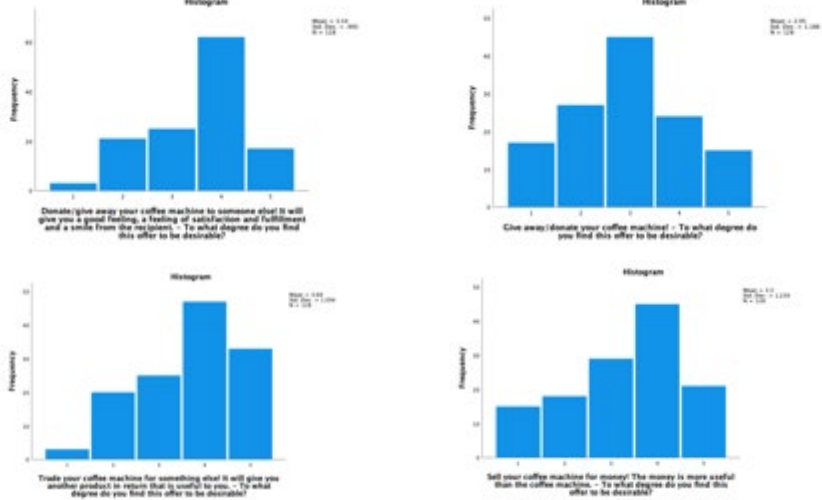
Pairwise Comparisons						
Measure: Intention_2						
(i) Type_2	(j) Type_2	Mean Difference (i-j)	Std. Error	Sig. ^a	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	-.462 [*]	.099	<.001	-.744	-.180
	3	-.485 [*]	.103	<.001	-.780	-.190
	4	.439 [*]	.131	.010	.065	.813
	5	-.091	.101	1.000	-.378	.196
2	1	.462 [*]	.099	<.001	.180	.744
	3	-.023	.082	1.000	-.258	.212
	4	.902 [*]	.110	<.001	.589	1.214
	5	.371 [*]	.079	<.001	.147	.596
3	1	.485 [*]	.103	<.001	.190	.780
	2	.023	.082	1.000	-.212	.258
	4	.924 [*]	.120	<.001	.583	1.266
	5	.394 [*]	.089	<.001	.139	.649
4	1	-.439 [*]	.131	.010	-.813	-.065
	2	-.902 [*]	.110	<.001	-1.214	-.589
	3	-.924 [*]	.120	<.001	-1.266	-.583
	5	-.530 [*]	.114	<.001	-.856	-.205
5	1	.091	.101	1.000	-.196	.378
	2	-.371 [*]	.079	<.001	-.596	-.147
	3	-.394 [*]	.089	<.001	-.649	-.139
	4	.530 [*]	.114	<.001	.205	.856

Based on estimated marginal means
^a. The mean difference is significant at the .05 level.
^b. Adjustment for multiple comparisons: Bonferroni.

10.2.3 One-way repeated measures ANOVAs

A one-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences in disposition intention between the different gains presented for disposing of the coffee machine. The different gains were ordered and analysed based on hypotheses ranking from least convincing to most convincing to dispose. This ranking is as followed: Question 11, Question 13, Question 12, and lastly Question 14. Two separates test were conducted (one with the outliers and one without) and the two results did differ sufficiently for different conclusions to be drawn from the data. The second test without outliers produced a statistically significant mean difference in one of the groups which previously was non-significant. For this reason, the decision was made to analyse and interpret the data without the outliers ($N= 128$)

Within-Subjects Factors	
Measure: Intention_3	
Type_3	Dependent Variable
1	Q11_1
2	Q13_1
3	Q12_1
4	Q14_1

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention_X (measured on a 5-point Likert scale)	✓
Independent variable	Categorical scale 4 dependent groups	Type of message: Messages that provided satisfaction / fulfilment / a good feeling / a smile from the receiver as gained desired Type of message: Messages that provided nothing as gained desired Type of message: Message that provided an alternative product / function (through trading) as gained desired Type of message: Messages that provided money as gained desired (Measured on a 5-point Likert scale)	✓
No significant outliers	Boxplot,	 <p>16 37 510</p> <p>Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?</p> <p>Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?</p> <p>Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?</p> <p>Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?</p>	(1)
Normal distribution	Histogram, Skewness, Kurtosis	 <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; width: 45%;"> $\frac{Skewness}{SE\ Skewness} = -2.673$ $\frac{Skewness}{SE\ Skewness} = 2.336$ $\frac{Skewness}{SE\ Skewness} = -2.369$ $\frac{Skewness}{SE\ Skewness} = -2.098$ </div> <div style="border: 1px solid black; padding: 5px; width: 45%;"> $\frac{Kurtosis}{SE\ Kurtosis} = -0.798$ $\frac{Kurtosis}{SE\ Kurtosis} = -1.711$ $\frac{Kurtosis}{SE\ Kurtosis} = -1.525$ $\frac{Kurtosis}{SE\ Kurtosis} = 1.800$ </div> </div>	✓

The variances of differences are equal

Mauchly's test of sphericity

Mauchly's Test of Sphericity^a

Measure: Intention_X

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound
Type_X	.937	8.124	5	.150	.958	.983	.333

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept

Within Subjects Design: Type_X

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

1. This is the test without outliers from the initial data sample of (n = 132). In this test you can still see outliers however, the

decision was made to use this data instead of removing any more data points because then you might lose very important information from your data.

Descriptive Statistics

	Mean	Std. Deviation	N
Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?	3.54	.995	128
Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?	2.95	1.186	128
Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?	3.68	1.094	128
Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?	3.30	1.239	128

Tests of Within-Subjects Effects

Measure: Intention_X

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_X	Sphericity Assumed	39.563	3	13.188	13.138	<.001	.094
	Greenhouse-Geisser	39.563	2.875	13.763	13.138	<.001	.094
	Huynh-Feldt	39.563	2.948	13.419	13.138	<.001	.094
	Lower-bound	39.563	1.000	39.563	13.138	<.001	.094
Error(Type_X)	Sphericity Assumed	382.438	381	1.004			
	Greenhouse-Geisser	382.438	365.080	1.048			
	Huynh-Feldt	382.438	374.430	1.021			
	Lower-bound	382.438	127.000	3.011			

Pairwise Comparisons

Measure: Intention_X

(I) Type_X	(J) Type_X	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1	2	.594 [*]	.124	<.001	.262	.925
	3	-.141	.115	1.000	-.449	.168
	4	.234	.124	.363	-.097	.566
2	1	-.594 [*]	.124	<.001	-.925	-.262
	3	-.734 [*]	.137	<.001	-1.101	-.367
	4	-.359 [*]	.134	.049	-.718	.000
3	1	.141	.115	1.000	-.168	.449
	2	.734 [*]	.137	<.001	.367	1.101
	4	.375 [*]	.116	.010	.063	.687
4	1	-.234	.124	.363	-.566	.097
	2	.359 [*]	.134	.049	.000	.718
	3	-.375 [*]	.116	.010	-.687	-.063

Based on estimated marginal means

^{*}. The mean difference is significant at the .05 level.

^b. Adjustment for multiple comparisons: Bonferroni.

APPENDIX 10.3

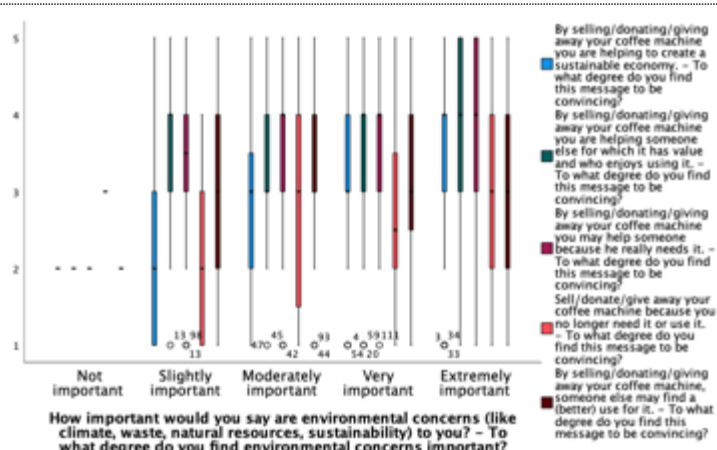
10.3.1 Two-way mixed ANOVAs

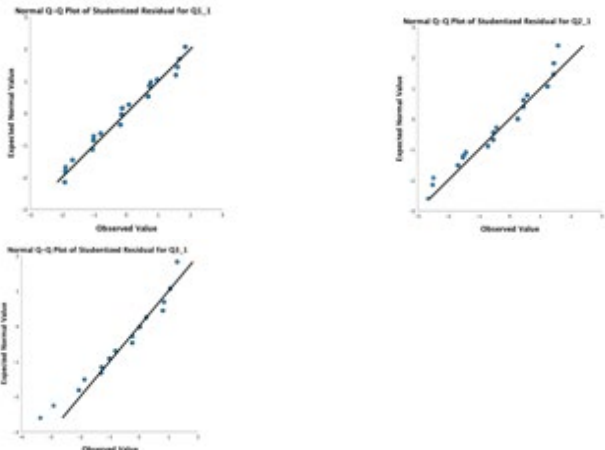
A two-way mixed ANOVA was conducted on the three different types of messages to test if the degree of environmental concern had an effect on the disposition intention of the different types of messages.

Assumptions Two-way mixed ANOVA

(Based on Hair et al. (2014) and Laerd Statistics (n.d.)).

1. The dependent variable is continuous.
2. One between-subjects factor that is categorical with two or more categories.
4. One within-subject factor that is categorical with two or more categories.
5. The data shows no significant outliers.
6. The data should also be approximately normally distributed.
7. Homogeneity of variance.
8. Homogeneity of covariance.
9. Variance of differences must be equal.

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention_1E (measured on a 5-point Likert scale)	✓
Between-subject factor	Categorical scale 2 or more categories	Question 21: How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? (Measured on a 5-point Likert scale)	✓
Within-subject Factor	Categorical with 2 or more categories	Type of message: Increasing the perceived gain Type of message: Reducing the perceived loss Type of message: Combination	✓
No significant outliers	Studentized Residual, Boxplot	 <p>How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? – To what degree do you find environmental concerns important?</p>	(1)

Normally distributed	Q-Q plots	<div></div>	✓																																																																					
Homogeneity of variance	Levene's test of equality of error variances	<div><p>Levene's Test of Equality of Error Variances^a</p><table><thead><tr><th></th><th></th><th>Levene Statistic</th><th>df1</th><th>df2</th><th>Sig.</th></tr></thead><tbody><tr><td rowspan="4">Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. – To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>2.624</td><td>3</td><td>127</td><td>.053</td></tr><tr><td>Based on Median</td><td>2.481</td><td>3</td><td>127</td><td>.064</td></tr><tr><td>Based on Median and with adjusted df</td><td>2.481</td><td>3</td><td>124.236</td><td>.064</td></tr><tr><td>Based on trimmed mean</td><td>2.623</td><td>3</td><td>127</td><td>.053</td></tr><tr><td rowspan="4">Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. – To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>.636</td><td>3</td><td>127</td><td>.593</td></tr><tr><td>Based on Median</td><td>.341</td><td>3</td><td>127</td><td>.795</td></tr><tr><td>Based on Median and with adjusted df</td><td>.341</td><td>3</td><td>123.998</td><td>.795</td></tr><tr><td>Based on trimmed mean</td><td>.619</td><td>3</td><td>127</td><td>.604</td></tr><tr><td rowspan="4">Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. – To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>2.953</td><td>3</td><td>127</td><td>.035</td></tr><tr><td>Based on Median</td><td>2.250</td><td>3</td><td>127</td><td>.086</td></tr><tr><td>Based on Median and with adjusted df</td><td>2.250</td><td>3</td><td>122.515</td><td>.086</td></tr><tr><td>Based on trimmed mean</td><td>2.610</td><td>3</td><td>127</td><td>.054</td></tr></tbody></table><p>Tests the null hypothesis that the error variance of the dependent variable is equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_1E</p></div>			Levene Statistic	df1	df2	Sig.	Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. – To what degree do you find this message to be convincing?	Based on Mean	2.624	3	127	.053	Based on Median	2.481	3	127	.064	Based on Median and with adjusted df	2.481	3	124.236	.064	Based on trimmed mean	2.623	3	127	.053	Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. – To what degree do you find this message to be convincing?	Based on Mean	.636	3	127	.593	Based on Median	.341	3	127	.795	Based on Median and with adjusted df	.341	3	123.998	.795	Based on trimmed mean	.619	3	127	.604	Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. – To what degree do you find this message to be convincing?	Based on Mean	2.953	3	127	.035	Based on Median	2.250	3	127	.086	Based on Median and with adjusted df	2.250	3	122.515	.086	Based on trimmed mean	2.610	3	127	.054	✓
		Levene Statistic	df1	df2	Sig.																																																																			
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Homogeneity of covariance	Box's test of equality of covariance matrices	<div><p>Box's Test of Equality of Covariance Matrices^a</p><table><tbody><tr><td>Box's M</td><td>29.034</td></tr><tr><td>F</td><td>1.516</td></tr><tr><td>df1</td><td>18</td></tr><tr><td>df2</td><td>11855.743</td></tr><tr><td>Sig.</td><td>.074</td></tr></tbody></table><p>Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_1E</p></div>	Box's M	29.034	F	1.516	df1	18	df2	11855.743	Sig.	.074	✓																																																											
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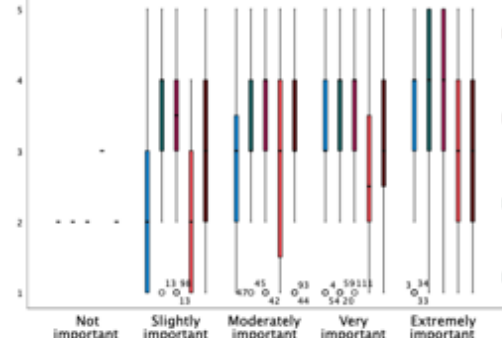
1. There was one outlier, which had a studentized residual value of -3.35. Residuals need to fall between ± 3 .

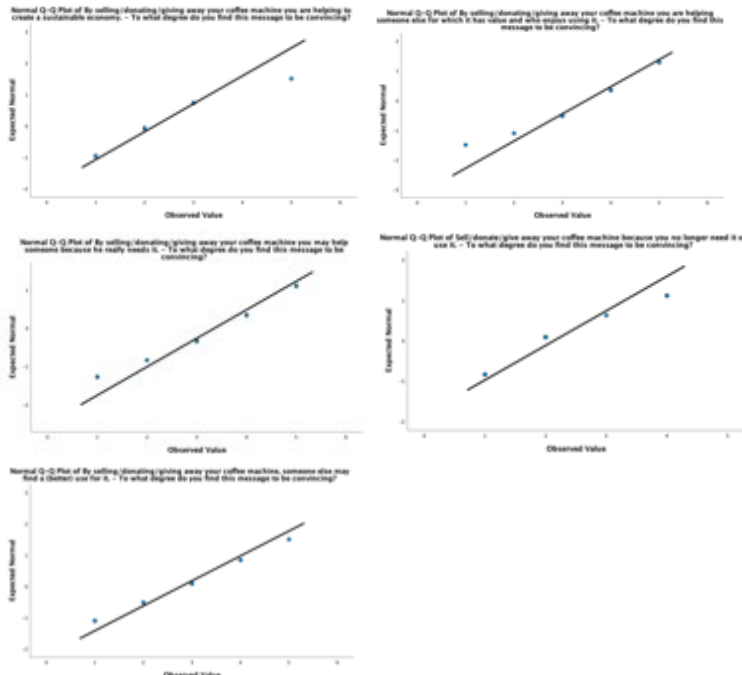
Tests of Within-Subjects Effects							
Measure: Intention_1E							
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_1E	Sphericity Assumed	14.272	2	7.136	15.436	<.001	.108
	Greenhouse-Geisser	14.272	1.931	7.390	15.436	<.001	.108
	Huynh-Feldt	14.272	2.000	7.136	15.436	<.001	.108
	Lower-bound	14.272	1.000	14.272	15.436	<.001	.108
Type_1E * Q21_1	Sphericity Assumed	4.213	8	.527	1.139	.337	.035
	Greenhouse-Geisser	4.213	7.725	.545	1.139	.338	.035
	Huynh-Feldt	4.213	8.000	.527	1.139	.337	.035
	Lower-bound	4.213	4.000	1.053	1.139	.341	.035
Error(Type_1E)	Sphericity Assumed	117.418	254	.462			
	Greenhouse-Geisser	117.418	245.265	.479			
	Huynh-Feldt	117.418	254.000	.462			
	Lower-bound	117.418	127.000	.925			

Tests of Between-Subjects Effects						
Measure: Intention_1E						
Transformed Variable: Average						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	864.173	1	864.173	349.582	<.001	.734
Q21_1	3.475	4	.869	.351	.843	.011
Error	313.947	127	2.472			

10.3.2 Two-way mixed ANOVAs

A two-way mixed ANOVA was conducted on the five most mentioned arguments to enhance willingness to dispose of neglected products.

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention_2E (measured on a 5-point Likert scale)	✓
Between-subject factor	Categorical scale 2 or more categories	Question 21: How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? (Measured on a 5-point Likert scale)	✓
Within-subject Factor	Categorical with 2 or more categories	Type of message: "Sustainability reasons" Type of message: "The product could provide the same or more value / enjoyment to someone else" Type of message: "Someone else really needs it" Type of message: "The product is really not used / not needed anymore" Type of message: "Someone else could find a (better) use for the product" (Measured on a 5-point Likert scale)	✓
No significant outliers	Studentized Residual, Boxplot	 <p>How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? – To what degree do you find environmental concerns important?</p> <p>By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. – To what degree do you find this message to be convincing? By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. – To what degree do you find this message to be convincing? By selling/donating/giving away your coffee machine you may help someone because he really needs it. – To what degree do you find this message to be convincing? Sell/donate/give away your coffee machine because you no longer need it or use it. – To what degree do you find this message to be convincing? By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. – To what degree do you find this message to be convincing?</p>	✓

Normally distributed	Q-Q plots	<div></div>	✓																																																																																																															
Homogeneity of variance	Levene's test of equality of error variances	<div><p>Levene's Test of Equality of Error Variances^a</p><table><thead><tr><th></th><th></th><th>Levene Statistic</th><th>df1</th><th>df2</th><th>Sig.</th></tr></thead><tbody><tr><td rowspan="4">By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. - To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>1.359</td><td>3</td><td>127</td><td>.258</td></tr><tr><td>Based on Median</td><td>.725</td><td>3</td><td>127</td><td>.539</td></tr><tr><td>Based on Median and with adjusted df</td><td>.725</td><td>3</td><td>112.553</td><td>.539</td></tr><tr><td>Based on trimmed mean</td><td>1.284</td><td>3</td><td>127</td><td>.283</td></tr><tr><td rowspan="4">By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>1.073</td><td>3</td><td>127</td><td>.363</td></tr><tr><td>Based on Median</td><td>.350</td><td>3</td><td>127</td><td>.789</td></tr><tr><td>Based on Median and with adjusted df</td><td>.350</td><td>3</td><td>122.981</td><td>.789</td></tr><tr><td>Based on trimmed mean</td><td>.825</td><td>3</td><td>127</td><td>.482</td></tr><tr><td rowspan="4">By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>1.257</td><td>3</td><td>127</td><td>.292</td></tr><tr><td>Based on Median</td><td>.944</td><td>3</td><td>127</td><td>.421</td></tr><tr><td>Based on Median and with adjusted df</td><td>.944</td><td>3</td><td>120.978</td><td>.422</td></tr><tr><td>Based on trimmed mean</td><td>1.243</td><td>3</td><td>127</td><td>.297</td></tr><tr><td rowspan="4">Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>.375</td><td>3</td><td>127</td><td>.771</td></tr><tr><td>Based on Median</td><td>.429</td><td>3</td><td>127</td><td>.733</td></tr><tr><td>Based on Median and with adjusted df</td><td>.429</td><td>3</td><td>126.180</td><td>.733</td></tr><tr><td>Based on trimmed mean</td><td>.421</td><td>3</td><td>127</td><td>.738</td></tr><tr><td rowspan="4">By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. - To what degree do you find this message to be convincing?</td><td>Based on Mean</td><td>1.776</td><td>3</td><td>127</td><td>.155</td></tr><tr><td>Based on Median</td><td>1.255</td><td>3</td><td>127</td><td>.293</td></tr><tr><td>Based on Median and with adjusted df</td><td>1.255</td><td>3</td><td>117.115</td><td>.293</td></tr><tr><td>Based on trimmed mean</td><td>1.823</td><td>3</td><td>127</td><td>.146</td></tr></tbody></table><p>Tests the null hypothesis that the error variance of the dependent variable is equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_2E</p></div>			Levene Statistic	df1	df2	Sig.	By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. - To what degree do you find this message to be convincing?	Based on Mean	1.359	3	127	.258	Based on Median	.725	3	127	.539	Based on Median and with adjusted df	.725	3	112.553	.539	Based on trimmed mean	1.284	3	127	.283	By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?	Based on Mean	1.073	3	127	.363	Based on Median	.350	3	127	.789	Based on Median and with adjusted df	.350	3	122.981	.789	Based on trimmed mean	.825	3	127	.482	By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?	Based on Mean	1.257	3	127	.292	Based on Median	.944	3	127	.421	Based on Median and with adjusted df	.944	3	120.978	.422	Based on trimmed mean	1.243	3	127	.297	Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?	Based on Mean	.375	3	127	.771	Based on Median	.429	3	127	.733	Based on Median and with adjusted df	.429	3	126.180	.733	Based on trimmed mean	.421	3	127	.738	By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. - To what degree do you find this message to be convincing?	Based on Mean	1.776	3	127	.155	Based on Median	1.255	3	127	.293	Based on Median and with adjusted df	1.255	3	117.115	.293	Based on trimmed mean	1.823	3	127	.146	✓
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Homogeneity of covariance	Box's test of equality of covariance matrices	<div><p>Box's Test of Equality of Covariance Matrices^a</p><table><tbody><tr><td>Box's M</td><td>51.027</td></tr><tr><td>F</td><td>1.019</td></tr><tr><td>df1</td><td>45</td></tr><tr><td>df2</td><td>9225.785</td></tr><tr><td>Sig.</td><td>.437</td></tr></tbody></table><p>Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_2E</p></div>	Box's M	51.027	F	1.019	df1	45	df2	9225.785	Sig.	.437	✓																																																																																																					
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Variance of differences must be equal	Maulchý's test of sphericity	<div>Mauchly's Test of Sphericity^a</div> <div>Measure: Intention_2E</div> <table><tr><th>Within Subjects Effect</th><th>Mauchly's W</th><th>Approx. Chi-Square</th><th>df</th><th>Sig.</th><th>Greenhouse-Geisser</th><th>Epsilon^b Huynh-Feldt</th><th>Lower-bound</th></tr><tr><td>Type_2E</td><td>.699</td><td>44.889</td><td>9</td><td><.001</td><td>.839</td><td>.892</td><td>.250</td></tr></table> <div>Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.</div> <div>a. Design: Intercept + Q21_1 Within Subjects Design: Type_2E</div> <div>b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.</div>	Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound	Type_2E	.699	44.889	9	<.001	.839	.892	.250	(1)
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound												
Type_2E	.699	44.889	9	<.001	.839	.892	.250												

1. The assumption of sphericity was violated, as assessed by Mauchly's test of sphericity. Maxwell and Delaney (2004) suggest using the Greenhouse-Geisser correction.

Measure: Intention_2E							
Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_2E	Sphericity Assumed	6.249	4	1.562	2.204	.067	.017
	Greenhouse-Geisser	6.249	3.356	1.862	2.204	.080	.017
	Huynh-Feldt	6.249	3.567	1.752	2.204	.075	.017
	Lower-bound	6.249	1.000	6.249	2.204	.140	.017
Type_2E * Q21_1	Sphericity Assumed	13.174	16	.823	1.162	.295	.035
	Greenhouse-Geisser	13.174	13.425	.981	1.162	.304	.035
	Huynh-Feldt	13.174	14.268	.923	1.162	.301	.035
	Lower-bound	13.174	4.000	3.293	1.162	.331	.035
Error(Type_2E)	Sphericity Assumed	360.087	508	.709			
	Greenhouse-Geisser	360.087	426.255	.845			
	Huynh-Feldt	360.087	453.008	.795			
	Lower-bound	360.087	127.000	2.835			

Tests of Between-Subjects Effects

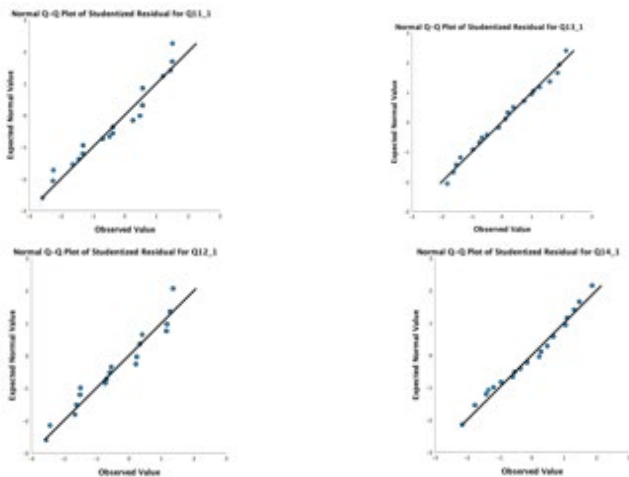
Measure: Intention_2E
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	945.002	1	945.002	291.320	<.001	.696
Q21_1	22.155	4	5.539	1.707	.152	.051
Error	411.971	127	3.244			

10.3.3 Two-way mixed ANOVAs

A two-way mixed ANOVA was conducted on the different gains presented for disposing of the coffee machine.

Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention_3E (measured on a 5-point Likert scale)	✓
Between-subject factor	Categorical scale 2 or more categories	Question 21: How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? (Measured on a 5-point Likert scale)	✓
Within-subject Factor	Categorical with 2 or more categories	Type of message: Messages that provided satisfaction / fulfilment / a good feeling / a smile from the receiver as gained desired Type of message: Messages that provided nothing as gained desired Type of message: Message that provided an alternative product / function (through trading) as gained desired Type of message: Messages that provided money as gained desired	✓
No significant outliers	Studentized Residual,	There were no outliers as assessed by the examination of the studentized residuals for values greater than .3 .	✓

Normally distributed	Q-Q plots	<div></div>	✓																																																																																										
Homogeneity of variance	Levene's test of equality of error variances	<div><p>Levene's Test of Equality of Error Variances^a</p><table><tr><th></th><th></th><th>Levene Statistic</th><th>df1</th><th>df2</th><th>Sig.</th></tr><tr><td rowspan="4">Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?</td><td>Based on Mean</td><td>.254</td><td>3</td><td>127</td><td>.858</td></tr><tr><td>Based on Median</td><td>.150</td><td>3</td><td>127</td><td>.930</td></tr><tr><td>Based on Median and with adjusted df</td><td>.150</td><td>3</td><td>125.300</td><td>.930</td></tr><tr><td>Based on trimmed mean</td><td>.325</td><td>3</td><td>127</td><td>.807</td></tr><tr><td rowspan="4">Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?</td><td>Based on Mean</td><td>1.394</td><td>3</td><td>127</td><td>.248</td></tr><tr><td>Based on Median</td><td>1.402</td><td>3</td><td>127</td><td>.245</td></tr><tr><td>Based on Median and with adjusted df</td><td>1.402</td><td>3</td><td>125.908</td><td>.245</td></tr><tr><td>Based on trimmed mean</td><td>1.387</td><td>3</td><td>127</td><td>.250</td></tr><tr><td rowspan="4">Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?</td><td>Based on Mean</td><td>.982</td><td>3</td><td>127</td><td>.404</td></tr><tr><td>Based on Median</td><td>1.117</td><td>3</td><td>127</td><td>.345</td></tr><tr><td>Based on Median and with adjusted df</td><td>1.117</td><td>3</td><td>119.554</td><td>.345</td></tr><tr><td>Based on trimmed mean</td><td>1.058</td><td>3</td><td>127</td><td>.369</td></tr><tr><td rowspan="4">Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?</td><td>Based on Mean</td><td>1.894</td><td>3</td><td>127</td><td>.134</td></tr><tr><td>Based on Median</td><td>1.202</td><td>3</td><td>127</td><td>.312</td></tr><tr><td>Based on Median and with adjusted df</td><td>1.202</td><td>3</td><td>107.677</td><td>.313</td></tr><tr><td>Based on trimmed mean</td><td>1.886</td><td>3</td><td>127</td><td>.135</td></tr></table><p>Tests the null hypothesis that the error variance of the dependent variable is equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_3E</p></div>			Levene Statistic	df1	df2	Sig.	Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?	Based on Mean	.254	3	127	.858	Based on Median	.150	3	127	.930	Based on Median and with adjusted df	.150	3	125.300	.930	Based on trimmed mean	.325	3	127	.807	Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?	Based on Mean	1.394	3	127	.248	Based on Median	1.402	3	127	.245	Based on Median and with adjusted df	1.402	3	125.908	.245	Based on trimmed mean	1.387	3	127	.250	Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?	Based on Mean	.982	3	127	.404	Based on Median	1.117	3	127	.345	Based on Median and with adjusted df	1.117	3	119.554	.345	Based on trimmed mean	1.058	3	127	.369	Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?	Based on Mean	1.894	3	127	.134	Based on Median	1.202	3	127	.312	Based on Median and with adjusted df	1.202	3	107.677	.313	Based on trimmed mean	1.886	3	127	.135	✓
		Levene Statistic	df1	df2	Sig.																																																																																								
Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?	Based on Mean	.254	3	127	.858																																																																																								
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	Based on trimmed mean	1.886	3	127	.135																																																																																								
Homogeneity of covariance	Box's test of equality of covariance matrices	<div><p>Box's Test of Equality of Covariance Matrices^a</p><table><tr><th>Box's M</th><td>33.829</td></tr><tr><th>F</th><td>1.036</td></tr><tr><th>df1</th><td>30</td></tr><tr><th>df2</th><td>9975.216</td></tr><tr><th>Sig.</th><td>.411</td></tr></table><p>Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.</p><p>a. Design: Intercept + Q21_1 Within Subjects Design: Type_3E</p></div>	Box's M	33.829	F	1.036	df1	30	df2	9975.216	Sig.	.411	✓																																																																																
Box's M	33.829																																																																																												
F	1.036																																																																																												
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df2	9975.216																																																																																												
Sig.	.411																																																																																												

Variance of differences must be equal

Maulchy's test of sphericity

Mauchly's Test of Sphericity^a

Measure: Intention_3E

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon ^b Huynh-Feldt	Lower-bound
Type_3E	.961	4.963	5	.420	.973	1.000	.333

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept + Q21_1
Within Subjects Design: Type_3E

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

✓

Tests of Within-Subjects Effects

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	18.802	3	6.267	6.257	<.001	.047
	Greenhouse-Geisser	18.802	2.919	6.441	6.257	<.001	.047
	Huynh-Feldt	18.802	3.000	6.267	6.257	<.001	.047
	Lower-bound	18.802	1.000	18.802	6.257	.014	.047
Type_3E * Q21_1	Sphericity Assumed	21.995	12	1.833	1.830	.042	.054
	Greenhouse-Geisser	21.995	11.677	1.884	1.830	.044	.054
	Huynh-Feldt	21.995	12.000	1.833	1.830	.042	.054
	Lower-bound	21.995	4.000	5.499	1.830	.127	.054
Error(Type_3E)	Sphericity Assumed	381.618	381	1.002			
	Greenhouse-Geisser	381.618	370.743	1.029			
	Huynh-Feldt	381.618	381.000	1.002			
	Lower-bound	381.618	127.000	3.005			

Four univariate ANOVAs were conducted to test the simple main effect of question 21 concerning environmental concern.

Secondly, a general linear model analysis was conducted on question 21. The level of not important is invalid because it only contains 1 case (n=1).

Tests of Between-Subjects Effects

Dependent Variable: Donate/give away your coffee machine to someone else! It will give you a good fee

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.147 ^a	4	.537	.459	.766	.014
Intercept	249.482	1	249.482	213.127	<.001	.627
Q21_1	2.147	4	.537	.459	.766	.014
Error	148.664	127	1.171			
Total	1733.000	132				
Corrected Total	150.811	131				

a. R Squared = .014 (Adjusted R Squared = -.017)

Tests of Between-Subjects Effects

Dependent Variable: Give away/donate your coffee machine! - To what degree do you find this offer to

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	8.959 ^a	4	2.240	1.606	.177	.048
Intercept	131.029	1	131.029	93.949	<.001	.425
Q21_1	8.959	4	2.240	1.606	.177	.048
Error	177.124	127	1.395			
Total	1309.000	132				
Corrected Total	186.083	131				

a. R Squared = .048 (Adjusted R Squared = .018)

Tests of Between-Subjects Effects

Dependent Variable: Trade your coffee machine for something else! It will give you another product in r

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.725 ^a	4	.181	.152	.962	.005
Intercept	301.562	1	301.562	252.110	<.001	.665
Q21_1	.725	4	.181	.152	.962	.005
Error	151.911	127	1.196			
Total	1942.000	132				
Corrected Total	152.636	131				

a. R Squared = .005 (Adjusted R Squared = -.027)

Tests of Between-Subjects Effects

Dependent Variable: Sell your coffee machine for money! The money is more useful than the coffee ma

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12.581 ^a	4	3.145	2.011	.097	.060
Intercept	220.186	1	220.186	140.760	<.001	.526
Q21_1	12.581	4	3.145	2.011	.097	.060
Error	198.661	127	1.564			
Total	1612.000	132				
Corrected Total	211.242	131				

a. R Squared = .060 (Adjusted R Squared = .030)

Tests of Within-Subjects Effects^a

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	4.750	3	1.583	-	-	1.000
	Greenhouse-Geisser	4.750	-	-	-	-	1.000
	Huynh-Feldt	4.750	-	-	-	-	1.000
	Lower-bound	4.750	1.000	4.750	-	-	1.000
Error(Type_3E)	Sphericity Assumed	.000	0	-	-	-	-
	Greenhouse-Geisser	.000	-	-	-	-	-
	Huynh-Feldt	.000	-	-	-	-	-
	Lower-bound	.000	.000	-	-	-	-

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Not important

Tests of Within-Subjects Effects^a

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	9.196	3	3.065	2.912	.046	.183
	Greenhouse-Geisser	9.196	2.366	3.887	2.912	.061	.183
	Huynh-Feldt	9.196	2.927	3.142	2.912	.048	.183
	Lower-bound	9.196	1.000	9.196	2.912	.112	.183
Error(Type_3E)	Sphericity Assumed	41.054	39	1.053			
	Greenhouse-Geisser	41.054	30.759	1.335			
	Huynh-Feldt	41.054	38.050	1.079			
	Lower-bound	41.054	13.000	3.158			

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Slightly important

Tests of Within-Subjects Effects^a

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	20.250	3	6.750	6.717	<.001	.165
	Greenhouse-Geisser	20.250	2.763	7.329	6.717	<.001	.165
	Huynh-Feldt	20.250	3.000	6.750	6.717	<.001	.165
	Lower-bound	20.250	1.000	20.250	6.717	.014	.165
Error(Type_3E)	Sphericity Assumed	102.500	102	1.005			
	Greenhouse-Geisser	102.500	93.942	1.091			
	Huynh-Feldt	102.500	102.000	1.005			
	Lower-bound	102.500	34.000	3.015			

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Moderately important

Tests of Within-Subjects Effects^a

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	9.412	3	3.137	3.400	.019	.054
	Greenhouse-Geisser	9.412	2.886	3.261	3.400	.021	.054
	Huynh-Feldt	9.412	3.000	3.137	3.400	.019	.054
	Lower-bound	9.412	1.000	9.412	3.400	.070	.054
Error(Type_3E)	Sphericity Assumed	163.338	177	.923			
	Greenhouse-Geisser	163.338	170.288	.959			
	Huynh-Feldt	163.338	177.000	.923			
	Lower-bound	163.338	59.000	2.768			

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Very important

Tests of Within-Subjects Effects^a

Measure: Intention_3E

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Type_3E	Sphericity Assumed	20.273	3	6.758	5.697	.002	.213
	Greenhouse-Geisser	20.273	2.474	8.193	5.697	.003	.213
	Huynh-Feldt	20.273	2.830	7.162	5.697	.002	.213
	Lower-bound	20.273	1.000	20.273	5.697	.026	.213
Error(Type_3E)	Sphericity Assumed	74.727	63	1.186			
	Greenhouse-Geisser	74.727	51.962	1.438			
	Huynh-Feldt	74.727	59.440	1.257			
	Lower-bound	74.727	21.000	3.558			

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Extremely important

Pairwise comparison for the levels of moderately, very, and extremely environmentally concerned.

Pairwise Comparisons^a

Measure: Intention_3E

(I) Type_3E	(J) Type_3E	Mean Difference (I-J)	Std. Error	Sig. ^c	95% Confidence Interval for Difference ^c	
					Lower Bound	Upper Bound
1	2	.629	.250	.100	-.071	1.328
	3	-.343	.281	1.000	-1.130	.444
	4	-.257	.230	1.000	-.900	.386
2	1	-.629	.250	.100	-1.328	.071
	3	-.971*	.244	.002	-1.656	-.287
	4	-.886*	.208	<.001	-1.469	-.303
3	1	.343	.281	1.000	-.444	1.130
	2	.971*	.244	.002	.287	1.656
	4	.086	.218	1.000	-.526	.697
4	1	.257	.230	1.000	-.386	.900
	2	.886*	.208	<.001	.303	1.469
	3	-.086	.218	1.000	-.697	.526

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Moderately important

c. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons^a

Measure: Intention_3E

(I) Type_3E	(J) Type_3E	Mean Difference (I-J)	Std. Error	Sig. ^c	95% Confidence Interval for Difference ^c	
					Lower Bound	Upper Bound
1	2	.267	.185	.934	-.240	.773
	3	-.233	.162	.928	-.675	.209
	4	.217	.178	1.000	-.269	.703
2	1	-.267	.185	.934	-.773	.240
	3	-.500	.188	.060	-1.013	.013
	4	-.050	.179	1.000	-.537	.437
3	1	.233	.162	.928	-.209	.675
	2	.500	.188	.060	-.013	1.013
	4	.450*	.158	.037	.017	.883
4	1	-.217	.178	1.000	-.703	.269
	2	.050	.179	1.000	-.437	.537
	3	-.450*	.158	.037	-.883	-.017

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Very important

c. Adjustment for multiple comparisons: Bonferroni.

Pairwise Comparisons^a

Measure: Intention_3E

(I) Type_3E	(J) Type_3E	Mean Difference (I-J)	Std. Error	Sig. ^c	95% Confidence Interval for Difference ^c	
					Lower Bound	Upper Bound
1	2	.864*	.249	.014	.139	1.588
	3	-.045	.275	1.000	-.846	.756
	4	1.000*	.302	.020	.122	1.878
2	1	-.864*	.249	.014	-1.588	-.139
	3	-.909	.389	.176	-2.041	.223
	4	.136	.374	1.000	-.952	1.225
3	1	.045	.275	1.000	-.756	.846
	2	.909	.389	.176	-.223	2.041
	4	1.045*	.357	.048	.005	2.086
4	1	-1.000*	.302	.020	-1.878	-.122
	2	-.136	.374	1.000	-1.225	.952
	3	-1.045*	.357	.048	-2.086	-.005

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. How important would you say are environmental concerns (like climate, waste, natural resources, sustainability) to you? - To what degree do you find environmental concerns important? = Extremely important

c. Adjustment for multiple comparisons: Bonferroni.

APPENDIX 10.4

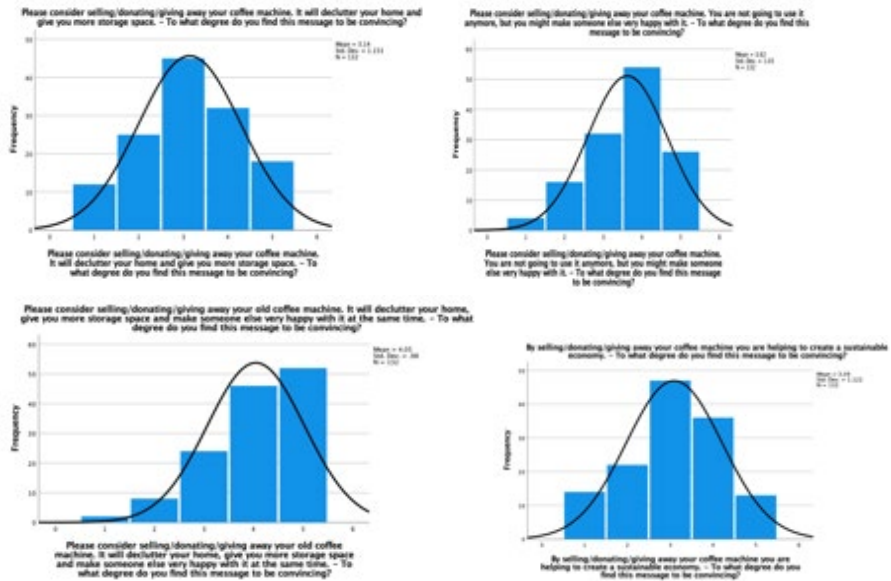
Independent sample T-test gender

An independent T-test was conducted to test if gender played a role in the research that was conducted.

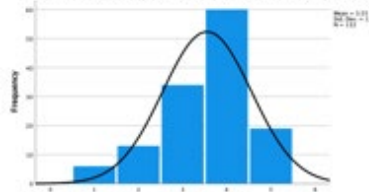
Assumptions independent Sample T-test

(Based on Hair et al. (2013) and Laerd Statistics (n.d.)).

1. The dependent variable is continuous;
2. The independent variable is categorical with 2 or more independent groups
3. The data shows no significant outliers
4. The data should also be approximately normally distributed.
5. The variances of differences are equal.

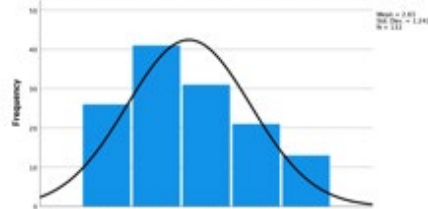
Assumption	Measures	Evidence & analysis	Met?
Dependent variable	Continuous scale	Disposition Intention (measured on a 5-point Likert scale)	✓
Independent variable	Categorical scale 2 or independent groups	Question 17: what's your gender?	✓
No significant outlier		There was one outlier as assessed by the examination of the studentized residuals for values greater than .3 .	(1)
Normally distributed	Histograms,		(2)

By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?

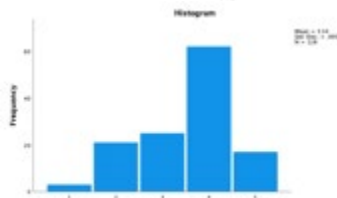


By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?

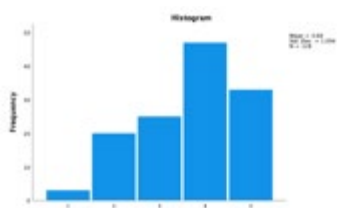
Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?



Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?

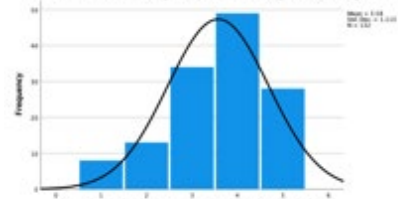


Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?



Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?

By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?

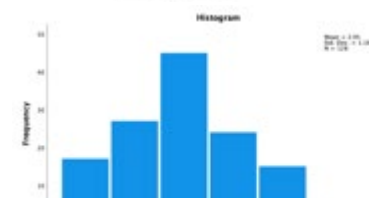


By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?

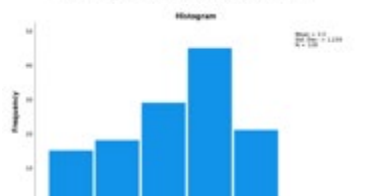
By selling/donating/giving away your coffee machine, someone else may find a better use for it. - To what degree do you find this message to be convincing?



By selling/donating/giving away your coffee machine, someone else may find a better use for it. - To what degree do you find this message to be convincing?



Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?



Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?

Homogeneity of variance

Levene's test of equality of error variances

		Independent Samples Test			
		Levene's Test for Equality of Variances			
		F	Sig.	t	df
Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. - To what degree do you find this message to be convincing?	Equal variances assumed	2.641	.107	-.512	130
	Equal variances not assumed			-.485	72.518
Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. - To what degree do you find this message to be convincing?	Equal variances assumed	.584	.446	-1.212	130
	Equal variances not assumed			-1.196	80.396
Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. - To what degree do you find this message to be convincing?	Equal variances assumed	4.421	.037	-1.906	130
	Equal variances not assumed			-1.782	70.433
By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. - To what degree do you find this message to be convincing?	Equal variances assumed	1.178	.280	-2.341	130
	Equal variances not assumed			-2.246	74.899
By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?	Equal variances assumed	.004	.947	-1.254	130
	Equal variances not assumed			-1.270	85.916
By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. - To what degree do you find this message to be convincing?	Equal variances assumed	.005	.946	-.671	130
	Equal variances not assumed			-.661	80.025
By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?	Equal variances assumed	2.812	.096	-1.984	130
	Equal variances not assumed			-1.838	68.986
Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?	Equal variances assumed	.076	.783	.147	130
	Equal variances not assumed			.143	78.209
Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?	Equal variances assumed	2.200	.140	-2.081	130
	Equal variances not assumed			-2.001	75.391
Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?	Equal variances assumed	1.299	.256	.117	130
	Equal variances not assumed			.112	75.332
Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?	Equal variances assumed	.027	.869	.713	130
	Equal variances not assumed			.716	83.977
Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?	Equal variances assumed	.211	.647	-.157	130
	Equal variances not assumed			-.154	78.957

(3)

1. There was one outlier in the data, a studentized residual value of -3.35 which was decided to be left in.
2. The data was approximately normally distributed with a slight negative skewness of for the combination type of message and for messages that broadcasts the essence that "the product could provide the same or more value / enjoyment to someone else" by visual inspection of their histograms.
3. There was homogeneity of variances for all disposition intention questions except for the message that contained a combination of gain increase and loss reduction as assessed by Levene's test for equality of variances ($p = 0.037$).

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Please consider selling/donating/giving away your coffee machine. It will declutter your home and give you more storage space. - To what degree do you find this message to be convincing?	Equal variances assumed	2.641	.107	-.512	130	.609	-.110	.215	-.535	.315
	Equal variances not assumed			-.485	72.518	.629	-.110	.227	-.562	.342
Please consider selling/donating/giving away your coffee machine. You are not going to use it anymore, but you might make someone else very happy with it. - To what degree do you find this message to be convincing?	Equal variances assumed	.584	.446	-1.212	130	.228	-.232	.191	-.609	.146
	Equal variances not assumed			-1.196	80.396	.235	-.232	.194	-.617	.154
Please consider selling/donating/giving away your old coffee machine. It will declutter your home, give you more storage space and make someone else very happy with it at the same time. - To what degree do you find this message to be convincing?	Equal variances assumed	4.421	.037	-1.906	130	.059	-.343	.180	-.700	.013
	Equal variances not assumed			-1.782	70.433	.079	-.343	.193	-.728	.041
By selling/donating/giving away your coffee machine you are helping to create a sustainable economy. - To what degree do you find this message to be convincing?	Equal variances assumed	1.178	.280	-2.341	130	.021	-.480	.205	-.885	-.074
	Equal variances not assumed			-2.246	74.899	.028	-.480	.214	-.905	-.054
By selling/donating/giving away your coffee machine you are helping someone else for which it has value and who enjoys using it. - To what degree do you find this message to be convincing?	Equal variances assumed	.004	.947	-1.254	130	.212	-.234	.186	-.603	.135
	Equal variances not assumed			-1.270	85.916	.207	-.234	.184	-.600	.132
By selling/donating/giving away your coffee machine, someone else may find a (better) use for it. - To what degree do you find this message to be convincing?	Equal variances assumed	.005	.946	-.671	130	.503	-.132	.196	-.520	.257
	Equal variances not assumed			-.661	80.025	.510	-.132	.199	-.528	.265
By selling/donating/giving away your coffee machine you may help someone because he really needs it. - To what degree do you find this message to be convincing?	Equal variances assumed	2.812	.096	-1.984	130	.049	-.406	.204	-.810	-.001
	Equal variances not assumed			-1.838	68.986	.070	-.406	.221	-.846	.035
Sell/donate/give away your coffee machine because you no longer need it or use it. - To what degree do you find this message to be convincing?	Equal variances assumed	.076	.783	.147	130	.884	.034	.231	-.424	.492
	Equal variances not assumed			.143	78.209	.886	.034	.237	-.438	.506
Donate/give away your coffee machine to someone else! It will give you a good feeling, a feeling of satisfaction and fulfillment and a smile from the recipient. - To what degree do you find this offer to be desirable?	Equal variances assumed	2.200	.140	-2.081	130	.039	-.409	.197	-.799	-.020
	Equal variances not assumed			-2.001	75.391	.049	-.409	.205	-.817	-.002
Trade your coffee machine for something else! It will give you another product in return that is useful to you. - To what degree do you find this offer to be desirable?	Equal variances assumed	1.299	.256	.117	130	.907	.024	.201	-.375	.422
	Equal variances not assumed			.112	75.332	.911	.024	.209	-.393	.440
Give away/donate your coffee machine! - To what degree do you find this offer to be desirable?	Equal variances assumed	.027	.869	.713	130	.477	.158	.222	-.281	.597
	Equal variances not assumed			.716	83.977	.476	.158	.221	-.281	.597
Sell your coffee machine for money! The money is more useful than the coffee machine. - To what degree do you find this offer to be desirable?	Equal variances assumed	.211	.647	-.157	130	.876	-.037	.237	-.505	.431
	Equal variances not assumed			-.154	78.957	.878	-.037	.242	-.518	.444

APPENDIX 10.5

Research schedule

MY RESEARCH SCHEDULE		
MARCH	WEEK 12	Deadline draft proposal on the 26th of March. On the 22nd of March, I handed in my experiment/survey draft for revision and feedback. I agreed with my supervisor to send him my revised experiment (link for qualtrics) by the 26th of march so that he could revise/ pre-test the experiment. Conjunctly I send about 10-15 people my experiment for pre-testing.
APRIL	WEEK 13	I should receive all the pre-test feedback by no later than Monday. Tuesday and Wednesday I will incorporate the feedback and I hope to put out the experiment on the 1st of April to start the data collection process.
APRIL	WEEK 14	Week of Data collection. The experiment has been published and is open for participation. In the meantime, I will take a look at the first 3 chapters to incorporate the feedback provided and to specify where is needed.
APRIL	WEEK 15 & 16 & 17	Week 15 is for data retrieval and data assessment. Decisions need to be made concerning if enough data has been collected and if the data collected is usable. Unusable data will be deleted. After this is done data analyses can begin. In week 16 I will start interpreting the analyses and writing the results. Week 17 the conclusion can be drawn and the discussion can be written.
MAY	WEEK 18 TO 21	In week 18 I will write the limitations of this research and future research possibilities in regards to this topic. Week 19 I will conclude this research by writing the implications and recommendations. I hope to hand in the research by the end of week 19. I will await feedback from my supervisor and incorporate said feedback where needed.
JUNE	WEEK 22 TO 24	Deadline thesis proposal 14th of June.
JUNE	WEEK 25	First possibility to defend your thesis proposal.