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# Barriers to Disposing Products we No Longer Use

The Role of Perceived Product Value in understanding Consumers'

Disposition Resistance towards Neglected Durable Products

A quantitative study

MASTER'S THESIS

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## ABSTRACT

*Why do we keep products we no longer use?*

Within every household, a number of durable products is sentenced to gather dust on attics or be buried within a forgotten cabinet for years. These neglected products are neither used nor disposed of, forming a barrier to product circularity by eventually being thrown away instead of enabling its joy or function to someone else. This research aimed to create a more comprehensive understanding of the product neglect phenomenon by proposing that consumers resist disposition because of the product's perceived functional or emotional value. Through an online questionnaire, 196 respondents expressed their judgements on a self-reported neglected durable product. The results indicated that neglected products hold emotional connections to one's past, as well as potential future functionalities, which significantly influence consumers' resistance to disposition. Emotional value, which is strongly related to the value's uniqueness to the consumer, proved to form a stronger barrier to disposal than functional value did, supposedly as a way to avoid losing part of one's identity. The analyses suggested that, even if consumers perceive a product's value to be easily transferable, disposition is avoided for highly emotionally valued possessions. Moreover, no evidence was found for any effects of consumers' attachment and frugal tendencies, suggesting that consumer characteristics do not play a role within the context of product neglect. Overall, this study provided an initial quantitative overview of product neglect in relation to perceived value, inviting future research to advance this knowledge by identifying other factors that influence the continuous neglect of products. An experimental setting focusing on consumers' actual behaviours is deemed necessary to confirm the notion of a trade-off between gains and losses related to the prospect of disposition.

***Keywords***: *product neglect, resistance to disposition, perceived product value, frugality, attachment, value transferability*

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# 1 INTRODUCTION

*"We are what we have"* was characterised as 'the most powerful fact of consumer behaviour' by Belk (1988), and reflects people's desire to possess products that pose a reflection of their identities, while paradoxically opposing the popular notion of the current 'throwaway society' (Cooper, 2005). While clear evidence exists that the latter notion threatens sustainable consumption by frequent replacement of perfectly usable products (Evans, 2012), the former notion might seem to offer the right perspective in this regard. Yet a closer examination of consumers' product disposition tendencies might reveal otherwise. Countless products once acquired have stuck in the middle of the consumer behaviour cycle, failing to reach the last stage of the disposition process (Jacoby, Berning, & Dietvorst, 1977): ambitiously bought musical instruments are gathering dust on attics; perfectly usable kitchen appliances have been cast away and replaced by newer models; and gifts and decorations holding memories have not turned an eye since being buried in a closet. Such anecdotal evidence of consumer behaviour, or rather, non-behaviour, raises questions about consumers' reluctancy to dispose of products they no longer use.

## 1.1 Problem statement

With slogans such as *"Buy it, sell it, love it"* (www.ebay.com) and *"Don't wear it? Sell it!"* (www.vinted.nl), companies are increasingly encouraging consumers to sell products that they no longer use themselves and offer a platform for making this possible. Above stated examples, however, portray the observed phenomenon of keeping products one no longer uses, hereafter referred to as 'product neglect'. Storing products with possible value for reuse, even if this value is not perceived by the owner, is particularly interesting in the increasingly important context of sustainable consumption. As earth's resources become scarcer, the need for sustainable efforts of individual consumers is being widely recognised (Jonker & Faber, 2015). Specifically, researchers have called for a shift from a linear, 'throwaway' economy to a sustainable, circular economy (Korhonen, Honkasalo, & Seppälä, 2018). However, as the perceived residual value of products decreases with their age (Brough & Isaac, 2010), keeping products that are still usable, or could be reused or repurposed by someone else, results in an unnecessary loss of value. This might conversely create a 'stow-away' society (Boyd & McConocha, 1996), and increase the chances of products eventually being thrown out when their perceived value has worn out (Evans, 2012; Van 't Ende, 2019). In general, a better understanding of socially responsible consumer *disposition* behaviours is needed (Ha-Brookshire & Hodges, 2009; Boyd & McConocha, 1996), but what about products that do not reach the actual disposition stage, or do so too late? An understanding of the product neglect phenomenon is assumed to provide insights into the barriers of reaching disposition, which can consequently be overcome in order to increase

products' chances of following circularity rather than being stored away until they lose value and are thrown away.

## 1.2 Research relevance

Consumer behaviour can be defined as the "acquisition, consumption, and disposition of goods, services, time, and ideas" (Jacoby, 1976, p. 332). While a predominant body of literature has focused on the behaviours surrounding the acquisition and consumption of products, the importance of understanding disposition behaviours has been increasingly recognised and called for (e.g., Cruz-Cardenas & Arevalo-Chavez, 2018; Jacoby et al., 1977; Roster, 2001;). Several research streams can be identified that touch upon the aforementioned phenomenon, yet do not explain product neglect itself. On the one hand, Wansink, Brasel and Amjad (2000) focused on the context of food and uncovered the reasons for purchasing specific-use products that are subsequently not used, while Trocchia and Janda (2002) found reasons for the non-use of products that were never used after purchase. However, these authors focused on the consumption phase and left out durable products that may have been used before. On the other hand, a research stream focused on the inability to dispose products, linking this to hoarding behaviour (Cherrier & Ponnor, 2010; Phillips & Sego, 2011), and consumers' lifestyle traits (Coultier & Ligas, 2003; Haws et al., 2012). For instance, the product retention tendency construct proposed by Haws et al. (2012) was explained by consumer characteristics of frugality and product attachment, while the same characteristics were also attributed to non-extreme behaviours such as product reuse in the context of trade-ins (Simpson et al., 2019). The concepts of frugality and attachment tendencies have thus proven relevant for disposition behaviours, yet have not been used in the context defined by this research. Furthermore, the importance of investigating consumers' non-disposition behaviours regarding ordinary products that have lost their usefulness to their owners has been acknowledged (Guillard & Pinson, 2012), but a comprehensive understanding is still missing. Furthermore, despite the recognised importance of perceived value for consumer behaviour, the literature has failed to provide a clear understanding and measurement of this concept (Zeithaml, 1988; Holbrook, 1999; Gallarza & Saura, 2006). Research has presented evidence that a product's value can be derived from consumers' acquisition ('value-in-exchange'; Bagozzi, 1975), usage ('value-in-use'; Penaloza & Venkatesh, 2006; Vargo & Lusch, 2004), and disposal processes ('value-in-disposition'; Türe, 2014). The latter emerges when consumers "move the object together with its perceived value […]" (p. 62), indicating that a product's value needs to be perceived as *transferable* for consumers to dispose these products (Türe, 2014). This notion has been touched upon in previous disposition literature arguing for the choice of disposal methods (e.g., Price et al., 2000), but has not necessarily been elaborated upon or investigated in a quantitative manner. No research has specifically investigated the concept of value and its transferability in relation

to keeping products that are neither used nor disposed of, especially in relation with the influence of consumers' characteristics. While Türe (2014) outlined the different types of value that can be derived from disposition itself depending on the chosen conduits, this study is interested in the value that prevents products from transitioning into the last phase of the disposition process. Building on Van 't Ende's (2019) finding that products are neglected as a result of the perceived value consumers attach to them, this study aims to further investigate and explain this perceived value concept in relation to disposition resistance and consumer characteristics. Overall, a more comprehensive understanding of the product neglect phenomenon is sought, which leads to the following research question:

*How does a neglected durable product's perceived functional and emotional value influence consumers' resistance to disposition, and how is this relationship influenced by the product's perceived value transferability and consumers' tendencies of attachment and frugality?*

An answer to this question contributes to narrowing the gap in the literature by generating closer insights on the barriers to disposition for products that are no longer used, while focusing on the 'ordinary' consumer and durable products. The results yield academic contributions by explaining consumers' non-disposition behaviour with the interaction between product value characteristics as well as consumer characteristics. Most importantly, this study offers a quantitative approach and thus differs from most previous literature that studies the concept of non-disposal behaviour in a qualitative manner. In addition to expanding the literature base, this research yields relevant practical insights. Cruz-Cardenas and Arevalo-Chavez (2018) mentioned that consumers' product-disposal behaviours have implications for consumers, business, society, and the environment. By understanding consumers' reasons for not disposing products they no longer use, insights can be formed about the potential ways to influence consumers to dispose these products (earlier) and contribute to the circularity of the products while decreasing waste (Bianchi & Birtwistle, 2010; Evans, 2019). Moreover, disposing products can contribute to consumers' psychological well-being by creating space and minimising clutter for example (Ha-Brookshire & Hodges, 2009), and is closely linked to purchasing new products (Cruz-Cardenas, Gonzalez, & Val Nunez, 2016).

## 1.3 Research structure

This research starts by outlining and structuring the existing literature on consumers' (non-) disposition behaviours and its relation to perceived value, in order to provide a comprehensive understanding of the studied phenomenon. Connections to consumers' characteristics of frugality and product attachment, as well as the product's perceived value transferability are proposed and outlined, and the additional possible influences of acquisition type and length of neglect are discussed.

The hypotheses that emerge from these theoretical considerations form the base for the study's methodological decisions and measurements, which are outlined and discussed in the methods section. Subsequently, data collected through a quantitative survey method is analysed and presented in the results section, from which conclusions are drawn in order to provide a sound answer to the research question. After the conclusions are mirrored against previous theory in an elaborate discussion, the research's limitations are addressed. In the final sections, recommendations as well as suggestions for further research are presented.

## 2 LITERATURE REVIEW

### 2.1 Product (non-)disposition

Following the acquisition and consumption processes, the disposition of goods reflects the last phase of the cycle that comprises consumer behaviour (Jacoby, 1976). Product disposition can be defined as "the process of getting rid of an item by intentionally or unintentionally moving it to the ownership of another person or entity" (Boyd & McConocha, 1996, p.236). Jacoby et al. (1977) developed a taxonomy for consumers' disposition decisions, which include either permanently disposing the product (throwing away, giving away, selling, trading), temporarily disposing the product (loaning, renting), or keeping the product (using for original or other purposes, storing). Three factors influence which of these disposition choices occurs; the consumers' psychological characteristics, product-related factors, and situational factors (Jacoby et al., 1977). While the outlined decisions can be seen as disposal *practices*, another stream of research can be identified that offers a more nuanced view on disposition. Rather than solely 'getting rid of an item', Hanson (1980) conceptualised disposition as a *process*. In line with this view, Young and Wallendorf (1989) have proposed a different taxonomy for disposition, which built upon Belk's (1988) notion of the relationship between products and the extended self, and described the process as one's detachment from goods, including both physical and emotional detachment. As products that are no longer used are generally stored out of the consumer's sight (Korosev-Serfaty, 1984), it can be assumed that this constitutes the physical detachment, and the non-disposition of such products most likely relies on emotional detachment. It is worth noting that disposition is generally conceptualised as permanent disposal while the term 'non-disposition' is used when products are kept. This research follows this notion by distinguishing between non-disposition (keeping) and disposition behaviours, with the latter focusing on the redistribution methods of selling, donating, and giving away. These redistribution methods are the focus in this research, as throwing out is not assumed to be relevant when products still hold value, and because of Cruz-Cardenas and Arevalo-Chavez's (2018) proposition to focus on disposition methods through which the product can reach another user.

Previous literature has primarily focused on consumers' psychological and situational characteristics with regard to their disposition behaviours. Studies on packrats (Coulter & Ligas, 2003) and hoarders (Cherrier & Ponnor, 2010; Maycroft, 2009) attributed non-disposition behaviour to more extreme psychological characteristics that differ from the average consumer. By examining mothers' disposal behaviour regarding their children's possessions, Phillips & Sego (2011) found that consumers can develop disposal identities such as keepers and discarders in a family setting. The so-called 'keepers' would tend to keep products because of the products' connections to certain events and people (Cherrier & Ponnor, 2010). Demsar and Brace-Govan (2017) furthered this notion by investigating how consumers become keepers through their consumer-object relationships, and briefly tapped into the product-related factors responsible for non-disposition. With regard to situational factors, Türe (2014) argued that non-disposition cannot solely be explained by consumer characteristics and has attributed consumers' inability to dispose products to the inability of moving the products through the intended disposition conduits. A larger body of literature appointed changing disposition behaviours to key life events, such as marriage, divorce, moving to a new house, or parenthood, which cause consumers to re-evaluate their possessions (Phillips & Sego, 2011; Young, 1991; Roster, 2001). The third factor influencing disposition choices, product-related characteristics, has not been explicitly included in the context of non-disposition. Studies touching upon this topic investigated solely specific product categories such as durables (Bayus, 1988) or toys (Phillips & Sego, 2011), or focused on 'special' possessions that are embedded with meanings (e.g., Belk, 1988; Price, Arnould & Folkman Curasi, 2000). While previous studies have primarily explored (non-)disposition in the context of either 'special' possessions or consumer characteristics that differ from the 'average' consumer, the importance of researching the disposal inability of the average consumer has also been recognised (Türe, 2014). Phillips and Sego's (2011) findings stress the importance of identity in the disposal process for ordinary products, and this is supported by Trudel, Argo and Meng (2016), who have shown that everyday products are often intrinsically linked to consumers' identity in a similar way as meaningful (special) possessions are, and, therefore, also get treated differently at disposition.

The existing literature on non-disposition behaviours can be characterised as rather scattered and incongruent. Arguments are often based on different perspectives on the concept itself and a wide variety of related concepts exists, which are used with inconsistent conceptualisations and in different roles. This research, therefore, aims to synthesise previous insights into a clearer model of the studied phenomenon to be used as a base for further exploration of more beneficial product dispositions.

### 2.1.1 Resistance to disposition

Product disposition is a process requiring at least two decisions (Hanson, 1980). This process starts when the consumer stops using a product that is still engrained with utility in some way (Hanson, 1980; Jacoby et al., 1977), followed by the previously described disposition choices. Not all products, however, make this transition, leaving them stuck in the middle of the disposition process until they become 'neglected'. Several different concepts can be identified in previous literature that refer to the phenomenon of keeping products that are no longer used, including 'cabinet castaways' and 'abandoned products' (Wansink et al., 2000); 'wasteful purchases' (Trocchia & Janda, 2002); 'excess' (Gregson, Metcalfe & Crewe, 2007), and 'neglect' (Belk, 1988). In a further examination of the concept, two aspects can be identified; 'keeping the product', reflecting one of the previously mentioned non-disposition behaviours (Jacoby et al., 1977), and 'no longer using the product', implying that products were once used and thus differing from approaches focusing on product purchases with subsequent non-use (Trocchia & Janda, 2002; Wansink et al., 2000). This research is therefore interested in explaining the barriers that arise when products that were once used enter the disposition decision process by not being used anymore, but are kept instead of following through to actual disposition.

Before actual disposition occurs, consumers often first judge the product's value (Brough & Isaac, 2010). As the usage of a product is seen as a crucial aspect in the creation of this value (Vargo & Lush, 2004; Penaloza & Venkatesh, 2006), this would suggest that products that are not used do not hold any value. However, as noted by Korosev-Serfaty (1984), objects are stored on attics and in cellars, places characterised by forgetting and remembering, because of the fear of losing something valuable. Finding an explanation for consumers' resistance towards disposing their neglected products thus implies finding what constitutes this 'something valuable'. A link between a product's disposability and its value has been proposed by Penaloza and Mish (2011), and Van 't Ende's (2019) findings specifically stress the importance of perceived value for product neglect. Based on Lastovicka and Siranni's (2011) concept of product commitment, defined as "the consumer's decision to be in an enduring relationship with his or her possession and a devotion to keep the possession" (p. 324), this study proposes the concept 'resistance to disposition', reflecting the difficulty of disposing products to which one is committed. This consumer-product relationship is expected to stem from the perceived value that consumers attribute to their products, leading to the main premise of this study; resistance to disposition is a result of the product's perceived value. Consumers can resist disposition when they perceive this value as not fully utilised and do not want to appear as wasteful (Arkes, 1996; Brough & Isaac, 2010), or as value that is personal to them that could be lost after disposition, triggering a deeper attachment to the product (Türe, 2014). Moreover, when the product's perceived value does not correspond with broader value regimes or is ambiguous, Türe (2014) argued that this

attachment can lead to the inability to dispose as a protection strategy. This supports Phillips and Sego's (2011) notion of disposal avoidance as one of the coping strategies when conflicts occur in one's disposal identity.

## 2.2 Perceived product value

Within the perspective of marketing and consumer research, the notion of value was called out by Karababa and Kjeldgaard (2014) as a 'notoriously elusive concept', following many types of values that are often used without clear conceptual understandings. This research focuses on the concept of *perceived value* (or, consumer value), which has been treated discordantly as a unidimensional as well as a multidimensional concept, with the latter being divided into a different number of dimensions by different researchers (see Tasci, 2016 for an overview). As a product's perceived value is derived from the interaction between a product and the consumer (Holbrook, 2006), it becomes interesting to examine which value exists when interaction no longer occurs, but the product is not disposed of either. Perceived value can be defined as a "consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (Zeithaml, 1988, p. 14). Despite this definition being the most commonly cited, such unidimensional approaches have been called out for being too simplistic by simply focusing on the benefit/sacrifice trade-offs and ignoring the concept's complex nature (Sanchez-Fernandez & Iniesta-Bonillo, 2007). This research, therefore, follows the multi-dimensional approach based on the consumption-values theory, for which Sheth, Newman and Gross (1991) and Sweeney and Soutar (2001) are among the main contributors. This approach was deemed appropriate for the product neglect concept as it can explain the usage or non-usage of specific products across a wide range of product types. Sheth et al. (1991) have outlined the following independent values that influence consumer choice: functional value, conditional value, social value, emotional value, and epistemic value. These values were later adopted by Sweeney and Soutar (2001), who developed the 'perval' scale for measuring the perceived value for durable goods based on four dimensions; emotional value, social value, functional value (price/value for money), and functional value (performance/ quality). More recently and within the context of durable neglected products, Van 't Ende (2019) has found the following values attributed to products as crucial predictors of consumers' disposal resistance: economic, utility, symbolic, social, emotional, epistemic, and hedonic value.

It was noted that most reasons for not disposing a product in previous literature can most often be classified into one of two dimensions; the first encompassing the risk of possibly losing something valuable in the future, such as the product's utility, its monetary worth, or its ability to teach the consumer a skill; and the second focusing on losing part of the self or a memory from the past. This supports Schultz, Kleine, and Kernan's (1989) notion that possessions are used as a reflection

of who we are, who we have been, and who we aspire to become. As products are not used at the present time, it can be assumed that unused products cannot be disposed because of their perceived future value (labelled as functional value), their perceived past value (labelled as emotional value), or a combination of both. These two dimensions are in line with Simpson et al. (2019), who converged the reasons for non-disposition to either reflecting the emotional associations with the product or the desire to extend a product's life. Other research streams seem to share this notion by implying that ending one's ownership can leave the consumer feeling like either a valued resource has been wasted or emotional value was lost (Coulter & Ligas, 2003; Lastovicka & Siranni, 2011). Based on the aforementioned definition of perceived value by Zeithaml (1988), it can thus be assumed that consumers who are faced with the prospect of disposition, weight the benefits of disposing the product against its perceived losses. This "subjective expectation of loss" (p. 81) is conceptualised as perceived risk (Sweeney, Soutar & Johnson, 1999), and its relation to disposition is supported by Hanson (1980), who stated that disposition can be avoided or postponed because of the perceived risk related to the consequences of disposition. It is therefore assumed that disposal is resisted as a risk avoiding mechanism to either avoid losing one's past identities and/or memories, or prevent consumers from losing a product's utility in the future may they ever need it. This notion can be furthered by relying on prospect theory, which states that consumers often base their decisions on the trade-off between the risk of losses and opportunities for gains (Kahneman & Tversky, 1979). As consumers tend to be loss averse in most of their decision situations (Kahneman, 2011) and therefore resist disposal as a coping strategy (Phillips & Sego, 2011), it can be stated that consumers would be less resistant to dispose a neglected durable product when either the risk of losing this value would decrease or the gain of benefits would increase. In order to advance this notion, the influence of perceived value on resistance to disposition has to be established.

### 2.2.1 Perceived functional value and resistance to disposition

A product's functional value can be defined as "the utility derived from the perceived quality and expected performance of the product" (Sweeney & Soutar, 2011, p. 211). Generally, disposition occurs when products are 'used up' through consumption, and it can be stated that products are attributed with value until their usage limits are reached (Hoyer, MacInnis & Pieters, 2018). In the context of durable products that are designed to not getting used up, disposal is likely to be delayed until the products' perceived value has worn out. It is important to keep in mind that this value is the *perceived* value that the consumer attributes to a product rather than its objective worth. From a mental accounting perspective, it can be argued that each use of the product decreases its value until it is completely used up over time (Okada, 2001), and these uses can be expressed in monetary, utility, or epistemic terms. Monetary value often forms a barrier to disposal when consumers either paid a

higher price for a product that has not been fully utilised yet, or the monetary compensation for disposition is not seen as satisfactory (Van 't Ende, 2019). It can thus be stated that the price paid for acquiring a certain product, unconsciously relates to the number of times the product has to be used before its value is perceived as fully consumed. When consumers stop using a product that has not reached this point of becoming worthless, losing the product is expected to feel like losing something valuable. Moreover, 'you never know, it might come in handy' is one of the most often used justifications for keeping useless possessions (Korosev-Serfaty, 1984), suggesting that consumers avoid a scenario in which they would ever need a product's functionality that they decided to dispose. Indeed, consumers try to lower their risk of the uncertainty of future needs by keeping the products (Guillard & Pinson, 2012), and evidence for the effect of perceived product necessity on perceived product value was also found by Makanyeza, Macheyo and Toit (2016). Another example of such future needs relates to products for consumers' desires to pursue a desired skill or knowledge, for which disposition would feel like a failure to achieve this (Van 't Ende, 2019). This study therefore proposes that a product's perceived functional value reflects the potential use of the product in the future, which would be lost by disposing the product. Accordingly, a higher level of a product's perceived functional value is expected to result in a higher resistance towards disposition. This is reflected in the following hypothesis:

*H1: The product's perceived functional value is positively related to the resistance to disposition.*

## 2.2.2 Perceived emotional value and resistance to disposition

Whereas a product's functional value reflects its potential future usage, its relations to the past are captured in its perceived emotional value, which encompasses the product's "utility derived from the feelings or affective states that a product generates" (Sweeney & Soutar, 2011, p. 211). This affection generally stems from consumers' attachment to a product, which can be seen as a psychological or emotional connection between the consumer and a product, often resulting in a sense of ownership (Belk, 1988; Brough & Isaac, 2010). Already early on, Korosev-Serfaty (1984) noticed consumers' tendency to keep useless possessions as a result of the relationships between their identities and these products. This notion was picked up by Belk (1988), who regarded possessions as means in which memories and feelings that reflect our sense of past are easily stored, and, therefore, become a part of our extended selves. The author further argued that these possessions are reminders of experiences, accomplishments, or people in one's life, which are likely to overshadow the product's functional aspects when the product's value is estimated (Csikszentmihalyi and Rochberg-Halton, 1981). A research by Ball and Tasaki (1992) confirmed this notion by providing evidence for the relationship between one's attachment and the concept of

emotional significance, which encompasses all associations with significant people and events engrained in a possession. As these emotional connections to one's past often result in the product becoming more valuable to the consumer, this generally leads to a preference for keeping the product as a way to protect its related associations from being lost (Ha-Brookshire & Hodges, 2009; Winterich, Reczek & Irwin, 2017). Moreover, Schultz et al. (1989) investigated consumers' feelings related to their emotionally attached possessions, and found happiness, love, and memories to be most prominent for strong attachments. The authors also argued that attachment is conceptually different from involvement, so it can be stated that strong attachment can co-exist with low involvement, as is the case for neglected products. This research follows the notion that disposing products holding emotional value compares to losing part of one's past, and therefore proposes that consumers with stronger emotional connections to a specific product are more likely to resist disposition in order to avoid this loss. This expectation is reflected in the following hypothesis:

*H2: The product's perceived emotional value is positively related to the resistance to disposition.*

## 2.3 Frugal tendencies and resistance to dispose functionally valued products

Following Haws et al.'s (2012) findings and propositions, it can be expected that the resistance to dispose products that are kept because of their perceived future utility is highly driven by consumers' frugal tendencies. Frugality can be seen as a consumer's aversion to waste or a strong financial consciousness (Simpson et al., 2019), which in turn results in the importance of extending products' life spans and getting one's money's worth (Arkes, 1996; Okada, 1996). A link between frugality and resistance to disposition has been suggested by literature arguing that frugal consumers generally express a preference for keeping rather than discarding products (Haws et al., 2012; Lastovicka et al., 1999). As illustrated in the previous hypothesis, this research proposes that products with high perceived functional value have not been fully utilised during consumption and are therefore still engrained with perceived residual value. As frugal consumers tend to resourcefully use their possessions while focusing on long-term goals (Lastovicka et al., 1999), it is safe to assume that wasting a product's functionality would be avoided. Indeed, Coulter and Ligas' (2003) findings suggest that frugal consumers are more likely to consider disposing a product with residual value as wasting a valuable resource. Moreover, a positive relationship between consumers' product retention tendencies and frugality has been established by Haws et al. (2012) as well as Simpson et al. (2019), and this research aims to extend this notion into the context of product neglect. Specifically, it is expected that the effect of perceived functional value on resistance to disposition is stronger for consumers with high frugal tendencies, as a result of an enhanced feeling of losing value that is not

fully utilised. The following hypothesis was therefore constructed to illustrate the relationship between consumers' frugal tendencies and their non-disposition behaviours:

*H3: The resistance to dispose of durable product with perceived functional value is stronger (vs. weaker) for consumers with high (vs. low) frugal tendencies.*

## 2.4 Attachment tendencies and resistance to dispose emotionally valued products

Although a fine line exists between the two concepts, this research distinguishes between product attachment and consumers' attachment tendencies, with the former reflecting the emotional value engrained in a specific product, and the latter comprising consumers' psychological tendencies to create connections with products *in general* (Haws et al., 2012). As a result of these connections, consumers are likely to imbue products with more affect and more positive valence, which in turn can contribute to the resistance towards disposing them (Belk, 1988; Kleine, Kleine & Allen, 1995; Wallendorf & Arnould, 1988). High attachment tendencies are closely linked to an enhanced sense of ownership for a product, which increases the consumer's associations between the product and the self (Belk, 1988; Dommer & Swaminathan, 2012). As a result of this possession-self link, the consumer is more likely to attribute a higher valuation to a product (Thaler, 1980), which often translates into expecting unrealistically high prices for a product, or avoiding disposal altogether as a way to protect oneself from the potential losses of one's identity (Dommer & Swaminathan, 2012; Simpson et al., 2019). Studies classifying consumers as 'packrats' (Coulter & Ligas, 2003) and 'keepers' (Phillips & Sego, 2011) have confirmed the link between consumers' identities and their non-disposal behaviours. The same authors have strongly suggested that consumers refrain from disposition in order to avoid losses or avoid contradicting these identities. Furthermore, Haws et al. (2012) identified a close resemblance of attachment tendencies to the concept of possessiveness, which has been characterised as one of the dimensions of materialism and defined as "the inclination and tendency to retain control or ownership of one's possession" (Belk, 1985, p. 267). This research therefore relies on this suggested association between disposal avoidance and attachment, and proposes that a general attachment tendency to products should be related to one's attachment to a specific product. As previously stated, it is expected that a products' emotional value prevents consumers from disposing products, as disposition would feel like a loss of the relations to one's past. In turn, this research posits that this effect is stronger for consumers who are more prone to creating emotional connections with products, which is reflected in the following hypothesis:

*H4: The resistance to dispose of durable products with emotional value is stronger (vs. weaker) for consumers with high (vs. low) attachment tendencies.*

## 2.5 Perceived value transferability

While consumers' characteristics are expected to strengthen the perceived value attributed to a product, this research also stresses the relevance of the value's perceived transferability as a barrier for disposal. The transferability of value has been discussed by Türe (2014), however, the existing literature base has not researched nor conceptualised this concept specifically. This research therefore proposes perceived value transferability as a reflection of the extent to which the owner of a product perceives that the value attributed to that product can be preserved when passed on to someone else. In other words, the consumer is expected to seek insurance that the product's next owner will attribute the same value to the product, so that this value will not be lost. Building on the aforementioned notion of loss avoidance, it can be stated that the risk of losing a product's value could, to a certain extent, be mitigated when this value can be preserved by the next owner's similar value assessment. Türe's (2014) interview findings provide evidence for this notion by revealing that consumers seek others who share their value assessment of a product and resist its disposal as a way to protect this value. This is also in line with research focusing on the owner's interest with regard to the product's usage after disposition. For instance, Fortuna and Diyamandoglu's (2017) findings revealed that the preferred disposition method depends on consumers' perceptions of the reuse potential after disposal, which could be translated into the transferability of the product's functional value. Other authors have shown that consumers are willing to accept lower prices for their used possessions when the buyer's intentions for using the product are deemed appropriate, and that high levels of product attachment are the main influencing factors for this effect (Brough & Isaac, 2012). The preference for 'suitable heirs' who value the product's meaning was also acknowledged by Price et al. (2000), who found that older consumers seek to achieve symbolic immortality for their cherished possessions. Moreover, Roster's (2014) findings revealed that some disposition choices are more able to protect a product's sentimental value than others, and finding a meaningful disposition method that can ensure the preservation of this value could then significantly decrease the resistance to disposition. The author found 'storytelling' to be a possible strategy in which consumers express their emotional connection and history with the product in order to ensure that the value is adopted by the new owner.

Based on these findings, this study proposes that consumers are more resistant towards disposing their valued products when they do not perceive this value to be transferable by disposing it. This is expected to be especially prominent for products high in emotional value. As this value is linked to one's self as well as specific experiences and memories (Belk, 1988), it can be speculated that ensuring emotional value transferability is more difficult to achieve as others do not share the experiences related to a specific product. For functional value, it is expected that disposal would be

easier when the product's value could be transferred in terms of reusing or repurposing the product. This research therefore proposes that consumers will be more resistant to dispose their durable product when the product's value transferability is seen as low. This leads to the following hypotheses:

*H5a: Low (vs. high) perceived value transferability strengthens (vs. weakens) the positive effect of perceived functional value on resistance to disposition.*

*H5b: Low (vs. high) perceived value transferability strengthens (vs. weakens) the positive effect of perceived emotional value on resistance to disposition.*

## 2.6 Other factors influencing neglected products' perceived value

**Acquisition type.** The manner in which consumers acquire a product influences its usage, maintenance, and storage (Boyd & McConocha, 1996), and Kleine et al. (1995) suggested that acquisition type may play a role in explaining consumers' non-disposition behaviours too. This research distinguishes between acquiring the product by buying it yourself or receiving the product as a gift. While the former is expected to influence especially the perceived functional value of products, the latter could enhance the emotional value. As value is mentally discounted by usage situations or the product's worth over time (Okada, 2001), it could be stated that the number of uses needed to 'use up' the product over time is more evident when acquiring the product yourself by knowing exactly the objective worth and expected performance of the product. This should be even more important for frugal consumers as a result of their aversion towards wasting financial resources (Simpson et al., 2019). For emotionally valued products on the other hand, gifted products are expected to be more influential. Türe (2014) demonstrated that consumers enhance products' value by turning possessions into gifts, sacrifices, or commodities, suggesting that more value is also attributed to products that have been gifted to them. Gifted products are also more likely to become sacralised, meaning that ordinary products are imbued with extraordinary meanings, and thus perceived as more valuable (Belk, Wallendorf & Sherry, 1989). Next to their meaningfulness, gifted products are more likely to be kept and stored as their disposal may result in a decreased relationship with the product's donor (Roster & Amann, 2003; Rücker et al., 1992). Thus, this research proposes that, generally, a product's emotional value is higher when the product was gifted, while functional value is higher for self-acquired products. This is reflected in the following hypothesis:

*H6: Acquisition type influences the perceived value of a neglected durable product, such that emotional value is higher for gifted (vs. self-acquired) products while functional value is higher for self-acquired (vs. gifted) products.*

**Length of neglect.** Newer products are generally perceived as having a higher residual value (Brough & Isaac, 2010), and are disposed when this value is diminished. As previously described, products become neglected when they are stored away without usage, and disposition behaviours are challenged because of the remaining perceived value. However, storing such products away can also be seen as deliberate physical detachment, which is one of the two crucial detachment practices that consumers engage in before actual disposition can occur (Belk, 1988; Hanson, 1980). Indeed, Roster (2001) has named product neglect as one of the distancing behaviours that occurs when consumers are in the process of distancing themselves either physically from the product, or emotionally from their previous identity. These distancing behaviours can be seen as divestment rituals, which allow consumers to erase the personal and emotional meanings from products and make it easier for them to let go (Lastovicka & Fernandez, 2005; Roster, 2001). This is supported by McCracken (1986), who showed that divestment rituals are "used to empty goods of meaning" (p. 81). Moreover, Demsar and Brace-Govan's (2017) findings indicate that consumer-product relationships change over time depending on one's life stages. This would mean that the longer a neglected product is kept, the more key life stages occur (Young, 1991), and, therefore, changes in one's identity become more and more likely. It can thus be assumed that the longer one keeps a product that is not used, the more emotionally detached one becomes from the product and therefore, the less perceived value will be attributed to the product over time. This is expected to be especially relevant for products imbued with emotional value, whereas a product's functional value could be diminished over time as a result of realisation and acceptance that the expected future usage situation will not occur. Based on this, the following hypothesis emerged:

H7: *The length of time that a durable product is kept but not used influences the perceived value of that product, such that the perceived value of a product is lower (vs. higher) the more (vs. less) time has passed since the product's last usage situation.*

## 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.*
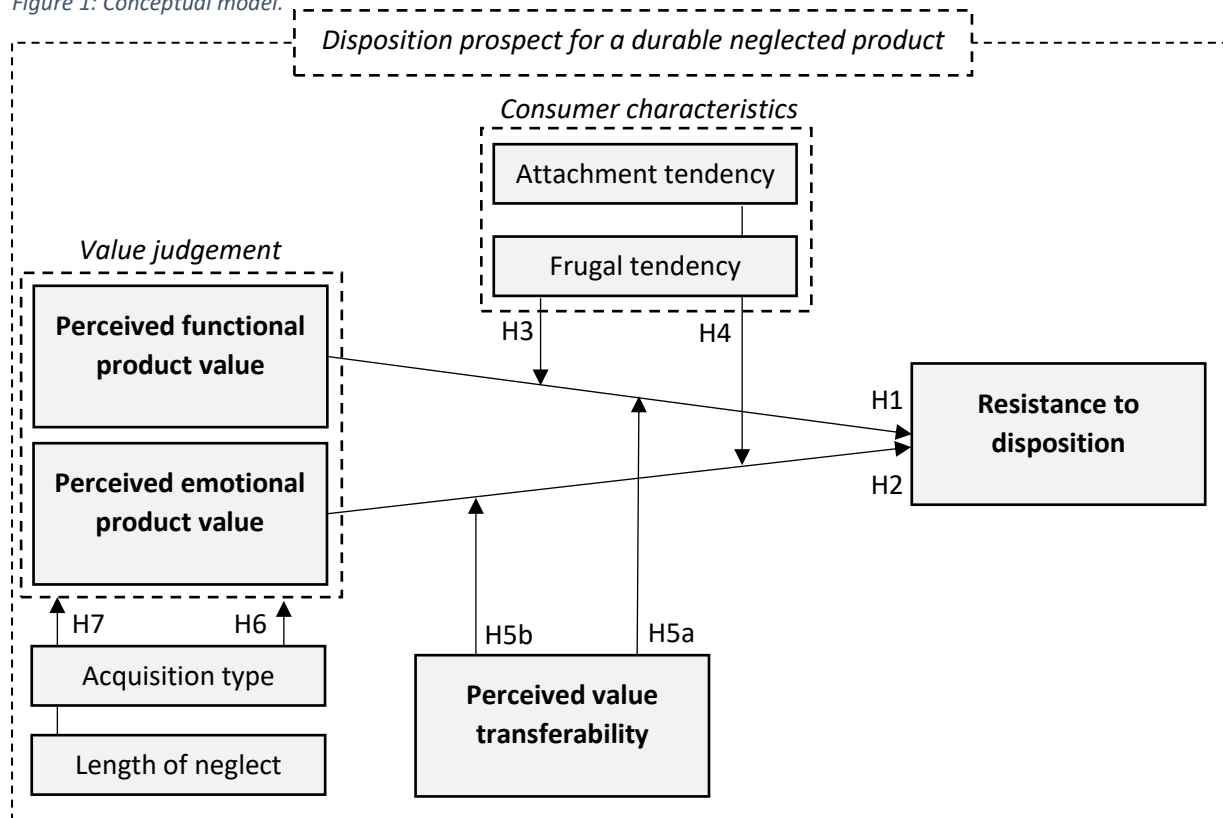
# 3 METHODOLOGY

The following section outlines the research design and methodological considerations, which were based on the aforementioned hypotheses as well as the conceptual model.

## 3.1 Research design

This study aimed to examine the relationship between perceived product value and consumers' resistance to dispose of neglected durable products, and explore how this relationship is influenced by consumers' psychological tendencies, as well as the perceived transferability of the value. In order to achieve this goal and provide a sound answer to the research question, a quantitative survey was employed. Survey research pertains to a "research strategy in which quantitative information is systematically collected from a relatively large sample taken from a population" (De Leeuw, Hox & Dillman, 2008, p. 2). This information was collected through online questionnaires, and the data obtained from these questionnaires was used to test the proposed hypotheses. This can be regarded as a deductive reasoning approach, in which existing theories and patterns cause expectations that are subsequently tested, to observe whether these expected patterns indeed do occur within a certain context (Babbie, 2013). This study's context portrays the prospect of possibly disposing a durable product. While it is assumed that everyone owns at least one product that was not used in a while, it is deemed important that consumers can easily recall this specific context and relate it to themselves. In order to facilitate this, the questionnaire included an introduction outlining the specific context of the study, as well as examples of frequently neglected products.

## 3.2 Data collection and sample

This study investigated the (non-)disposition behaviours of the 'average' consumer and was conducted in the Netherlands, making the Dutch consumer an appropriate unit of analysis. To make sure that participants were able to fully understand and answer the questions, the original English questionnaire was translated into Dutch (see *Appendix A* for both versions). Back translation, referring to a "translation of a text which itself is a translation *back* into the original language" (p. 97), was used to assess the quality of the translated Dutch version of the questionnaire (Harkness & Schoua-Glusberg, 1998). After the original questionnaire was translated, a native Dutch speaker with a sufficiently high proficiency in English as a second language was asked to translate the Dutch version into English. The differences between the translation and original items were then discussed and some Dutch wordings and sentences were improved. After distribution, respondents were able to choose their preferred language before starting the survey.

The questionnaires were distributed online in order to reach respondents from a wide range of age, income, and educational levels, and thus increase the generalisability and external validity of the research (Reips, 2002). For the largest part of the data collection, a non-probability convenient sampling technique was adopted as the distribution of questionnaires relied on subjects' availability (Babbie, 2013). Following the limited time that was available for this study, the chosen sampling method allowed for several practical benefits, the most important being accessibility and quick data collection (Reips, 2002). The questionnaires were initially distributed among the researcher's personal network through social media, and were posted in several Facebook groups (focusing on e.g., sustainable living, selling/trading products) in which members were deemed likely to participate. After the initial distribution, it was quickly noticed that the majority of the respondents was female. To reach more male respondents, they were personally messaged and asked to participate, and a snowball sampling technique (Babbie, 2013) was used by asking respondents to share the survey link within their own networks.

After receiving the questionnaire, participants were presented with an outline of the background of the study as well as their rights with regards to participation, after which consent to continue was requested. Participants were first exposed to a short introduction describing the non-disposition context of neglected products, including examples of products that are often neglected (see *Appendix A*), which was expected to trigger participants' memory about a neglected product that they own. Next, participants were asked to name one durable neglected product they own, which was a crucial step as the remaining questions had to be answered with this product in mind. Evaluations of the product's perceived values and disposition difficulty were collected, after which participants were asked to indicate their agreement with statements regarding their psychological tendencies. Lastly, demographic questions were presented, including gender, age, employment status, as well as educational level. The questionnaire ended with a possibility to win a box of brownies, for which participants' email addresses were requested on a voluntary basis.

## 3.3 Measures

The following section outlines the scales used to measure the concepts that emerged from the theoretical review. The application of the scales in the questionnaire can be found in *Appendix A*.

### 3.3.1 Dependent variable

*Resistance to dispose,* as conceptualised and used in this particular study, pertains to the perceived difficulty of disposing products that are no longer used, and stems from "the consumer's decision to be in an enduring relationship with his or her possession and a devotion to keep the possession" (Lastovicka & Siranni, 2001, p. 324). As this study does not involve an experimental

setting, actual behaviours of disposal could not be measured. Therefore, this study aimed to measure the extent to which it would be difficult for consumers to dispose their chosen product in different ways, thus showing the devotion to the product. In line with the approaches of Paden and Stell (2005) and Harrell and McConocha (1992), the different redistribution methods were selling, donating, and giving away, with the latter distinguishing between giving to family as well as knowing or not knowing the receiver. Respondents were presented with the different options and asked to which extent they perceived using the method as easy or difficult. All items were measured on a 7-point Likert scale ranging from 1 (*Extremely easy*) to 7 (*Extremely difficult*). Additionally, the option *throwing the product away* was included in the questionnaire as a check for the value attached to the product, as it was assumed that valued products would be difficult to throw away. The following items were included in the final scale:

*Selling the product.*
*Giving the product to someone in your family.*
*Giving the product to someone you know (not family).*
*Giving the product to someone you do not know.*
*Donating the product to charity.*

### 3.3.2 Independent variables

*Perceived emotional product value* pertains to "the strength of the emotional bond a consumer experiences with a durable product" (Schifferstein & Zwartkruis-Pelgrim, 2008, p. 1), and is treated by this study as a two-dimensional measure. Next to the *strength* of the emotional value attached to the product, the extent to which this value reflects a consumer's *past* is also of interest. The former is measured with Schifferstein and Zwartkruis-Pelgrim's (2008) scale for product attachment, which was deemed appropriate as it can measure the nuances in emotional attachment that exist in different products. Measured on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*), respondents were asked to express their agreement with the following items:

*I feel emotionally connected to this product.*
*This product is very dear to me.*
*I have a bond with this product.*
*This product has a special meaning for me.*
*This product moves me.*

The value's connection to a consumer's past was measured based on Guillard and Pinson's (2012) scale for a product's perceived emotional value. After asking respondents to re-evaluate the decision to dispose their chosen product, a question was posed asking for the likelihood of saying several phrases to oneself in such a disposition prospect, with answering possibilities ranging from 1 (*Extremely unlikely*) to 7 (*Extremely likely*). The item '*It is a reminder for an important person or event.'*

was self-constructed and added to the scale in order to fully reflect the concept's meaning. Thus, the final scale presented the following items:

> *"What memories of my past!"*
> *"It reminds me of so many things."*
> *"It reminds me of everything I've done."*
> *"It is a reminder for an important person or event."*

*Perceived functional product value* can be seen as the quality and expected performance of a product (Sheth et al., 1991). Similar to the emotional value concept, this concept is treated as consisting of two dimensions: the *strength* of its perceived value and the expected *future* performance. The former was measured with a scale for product utility, which was adapted from Mugge, Schifferstein and Schoormans (2010), and comprised the following items measured on a 7-point Likert scale ranging from 1 (*Extremely unlikely*) to 7 (*Extremely likely*):

> *I think this product functions very well.*
> *I think this product is very useful.*
> *I think this product is easy to use.*
> *I think this product is very practical in its daily use.*

For the expectations of the product's future value, Guillard and Pinson's (2012) utilitarian value scale was adopted. The scale was measured on a 7-point Likert scale ranging from 1 (*Extremely unlikely*) to 7 (*Extremely likely*), assessing consumers' tendencies for saying the following phrases when confronted with a disposition situation:

> *"I may need it someday."*
> *"It may always be of use."*
> *"Who knows? I may want to use it again at some point."*

### 3.3.3 Moderating variables

*Attachment tendencies* refer to consumers' *general* emotional attachments to products (Haws et al., 2012), which differs from the previously outlined emotional value that focusses on the attachment to one specific product. The scale for measuring attachment tendencies used in this study was developed by Haws et al. (2012) and later adopted by Simpson et al. (2019). The concept was measured on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*) and included the following items:

> *Getting rid of stuff is hard for me.*
> *I tend to hold on to my possessions.*
> *Unless I have a really good reason to throw something away, I keep it.*
> *I do not like to dispose of possessions.*

*Frugal tendencies* can be defined as the extent to which consumers carefully use resources and avoid waste (DeYoung, 1996, as cited in Lastovicka et al., 1999). The measurement of this concept was derived from Simpson et al. (2019), who in turn adopted Lastovicka et al.'s (1999) original scale. The following items, based on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*), were used in this study:

> *I believe in being careful in how I spend my money.*
> *I discipline myself to get the most from my money.*
> *I am willing to wait on a purchase I want so that I can save money.*
> *There are things I resist buying today so I can save for tomorrow.*

*Perceived value transferability* is the extent to which the product's owner perceives that the value attributed to a product can be transferred to someone else. This definition was constructed based on Türe's (2014) discussion of the concept, as well as studies that tapped into a similar idea of a product's next owner's value recognition (Fortuna & Diyamandoglu, 2017; Price et al., 2017). As no clear definitions or constructed scales for this construct could be found in existing literature, the measurement of perceived value transferability relied on self-constructed items. The core meaning of the concept is ensuring the preservation of a product's value when this product is adopted by another person, which is assumed to be easier when a lot of people are able to share the same value perception, and when this value resembles the owner's valuation of the product. Therefore, perceived value transferability can be divided into two dimensions: the number of people who share the product's value, and the similarity of this value. Based on these dimensions, the following items were constructed, making up the scale for perceived value transferability, measured on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*):

> *It is easy to find someone who will appreciate this product as much as I do.*
> *I have no doubt many others will perceive this product as valuable as I do.*
> *There is no one else who would value this product like I do.*
> *This product would be worthless to someone else.*
> *The meaning of this product is unique for me.*
> *If I would pass this product on to someone else, its value would be lost.*

### 3.3.4 Additional variables

The acquisition type was established by asking respondents whether their product was either gifted by someone else or bought by themselves. A third option, 'other', was included to provide the possibility of clarification in case an answer would not qualify as either category. Moreover, length of neglect was determined by asking respondents to report the number of months that have passed since the last time the product was used. As it was expected that estimating this number might be difficult or ambiguous, a question was added asking for the number of months that the product has been in one's possession. Lastly, questions regarding the consumers' demographics were included, in which the respondents were asked to provide their *gender*, *age,* and *educational level*.

### 3.4 Pre-test

Within social science research, pre-testing data collection instruments is seen as a crucial step before conducting the actual research, as respondents' understandings and interpretations of the instrument can differ from the researcher's intentions (Krosnick, 1999). After the questionnaire was developed, a small group of respondents was asked individually to review the questionnaire and provide feedback on its content, as well as its practicality. Most importantly, an assessment confirming whether the questionnaire's Dutch translation was sufficiently reflective of the original one was encouraged. Moreover, a review of the understandability and formulations of the questions, items and concepts was sought, after which the reviewers were asked to comment on the overall duration and cohesiveness of the instrument. Lastly, the respondents were asked to assess whether the description is sufficient to understand the concept of product neglect and which products came to mind after reading it.

Based on the responses and further discussions about the provided comments, several adjustments were made to the questionnaire. Some wordings and Dutch translations were improved to increase the understandability of questions and items, and some items were reversed from a negative wording to a positive one to improve the cohesiveness of the scale. Furthermore, the introduction text was adjusted and examples of products that are often neglected were added to clarify the situation further. The products that were taken as examples by the participants included a printer, a guitar, and a coffee machine, which were deemed satisfactory.

### 3.5 Data analysis strategy

The data collected with the questionnaires was analysed using SPSS (IBM Corp., 2017). First, several factor and reliability analyses were conducted to ensure validity and reliability among the items, followed by computing these items into their corresponding variables. A first overview of the sample and potential relationships was presented using frequency and demographic tables, as well as

a correlations matrix. Subsequently, assumptions for the needed analyses were evaluated and after these were met, the hypotheses were tested with multiple regression analyses and an independent samples t-test. The expected moderating effects were analysed using the PROCESS macro procedure as developed by Hayes (2017). Lastly, additional analyses were conducted in order to explore possible effects within the data that were not accounted for beforehand, so no insightful results were left uncovered.

## 3.6 Research ethics

This study did not result in any major ethical issues, however, several considerations in this regard were worth noting. After receiving the questionnaire, participants were clearly informed about the purpose, context, and duration of the questionnaire. The descriptive text emphasised that their answers would solely be used for this research, that anonymity would be ensured throughout the whole research process, and that they could withdraw from the questionnaire at any time. Before continuing with the questions, respondents were asked for their consent to participate based on the provided information. Moreover, although some questions about demographics were asked, participants were not required to provide any sensitive information. Email addresses were asked only if respondents indicated interest in the chance of winning the appreciation brownies, and were subsequently handled with utmost confidentiality. Initially, an indication of income was included in the questionnaire, but this question was removed after considering that the current situation due to the pandemic might have caused job losses and income levels to be sensitive topics for some people. Furthermore, given these current circumstances, questionnaires were distributed solely online so that no physical contact with respondents could occur.

# 4 RESULTS

## 4.1 Sample description

In total, 310 interactions with the questionnaire were recorded. However, 116 respondents did not finish the questionnaire and could not be included in the analysis as too much information was missing from their responses. One respondent formed an exception to this as only demographic questions were not filled in, but all of the scales were. Within the remaining participants no missing values were detected, which was expected as the questionnaire could not be continued without answering all questions. The final sample thus consisted of *N = 195* 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: 64 | (32.7%) | Range: 19 – 73 | Student: 69 | (35.2%) | High school: 11 | (5.6%) |
| Female: 129 | (65.8%) | $M_{age}$: 33.06 | Employed: 109 | (55.6%) | Mbo: 23 | (11.7%) |
| Other: 2 | (1.0%) | SD: 11.01 | Unemployed: 8 | (4.1%) | Bachelor: 92 | (46.9%) |
| | | | Retired: 2 | (1.0%) | Master: 63 | (32.1%) |
| | | | Other: 7[a] | (3.6%) | Doctorate: 6 | (3.1%) |

*a. All 'other' options were specified as 'stay-at-home-moms'.*

Respondents elicited a wide range of different neglected products based on which they have answered the questions, with guitars (23), printers (13), and coffee machines (10) being the most frequently chosen products. The full list can be found in *Appendix B*, and the most frequently mentioned products are displayed in *Figure 2*. The products could be divided into seven clear categories, the largest being electronics and musical instruments, followed by (kitchen) appliances,

*Figure 2: Neglected products named by respondents.*

sport/fitness equipment, kids' stuff, furniture, and personal care. Products that were not clearly distinguishable or formed a category on their own were classified as hobby/other. While 70 (35.7%) of these products were gifted, 126 (64.3%) were acquired by the respondents themselves. Moreover, the average length of time that respondents have had the products in their possession was 97 months (*M* = 97.13, *SD* = 89.68, *range*: 3 − 552 months), and the reported average time that the products have not been used was 46 months (*M* = 46.36, *SD* = 58.97, *range:* 1 – 390 months). The average time that the neglected products have been used could subsequently be calculated and resulted in 51 months (*M* = 50.77, *SD* = 60.61). An overview of the average ownership, neglect, and usage times per product category can be found in *Appendix B*.

## 4.2 Validity and reliability

To ensure consistency among the items' measures, several items of the value transferability scale were reverse coded. Subsequently, the validity and reliability of the chosen concepts were assessed by conducting multiple factor and reliability analyses. As all scales were either adopted from, or constructed based on existing theory, the main concern for the factor analyses was confirming that all items measure their expected corresponding factors with no underlying dimensions. For each separate scale, principle axis factoring was therefore deemed the appropriate method for determining the total as well as the error variance in the data (Field, 2013). Based on Hair et al.'s (2014) proposed threshold of $N$ = 100, the required sample size for these analyses was regarded as satisfactory. Before interpreting the derived factors, the suitability of conducting factor analyses was determined by addressing the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, as well as Bartlett's Test of Sphericity. While the former measure compares the squared correlations between items with their partial correlations, the latter tests the null hypothesis stating that all correlations are 0 (Field, 2013). The suitability of the data for performing factor analyses was justified with a KMO value greater than .50, and by significantly ($p$ < .05) rejecting the assumption that the items are uncorrelated as stated by Bartlett's Test (Field, 2013). After this suitability was established, several aspects of the extracted factors were assessed. Specifically, the items' communalities should not be lower than .50 while loading on one factor per scale, which could be assessed with the scree plot as well as an eigenvalue greater than 1 (Field, 2013; Hair et al., 2014). In addition, Hair et al.'s (2014) recommended cut-off point of .55 for factor loadings was taken into account, and ideally, at least 60% of explained variance was sought. Deletion of items was considered for cases that did not satisfy these set requirements.

After each scale was considered valid, it was assessed with a reliability analysis 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., 2014). However, this research adopted the threshold of .60 for the Cronbach's Alpha measure, as suggested by Field (2013).

*Appendix C* contains the detailed steps that were taken for all of the factor and reliability analyses, as well as the data on which decisions regarding the concepts were based. Conducting the factor analyses was justified for all scales with sufficient KMO and Bartlett's Test values (*Table 2*). First, the scales for both perceived product values were examined, which were constructed by combining a product's present value with this values' past and future aspects. For *emotional value*, the factor analysis confirmed that all items could indeed sufficiently explain this variable, and could thus be combined into one valid scale. For *functional value,* however, the analysis indicated the existence of two factors. After examination of both factors, the three items measuring a product's perceived *future*

value were seen as a better predictor by satisfying all previously stated requirements, while the other factor did not. Despite its violations of meeting the chosen thresholds, the other functional value factor was also taken into account in testing the hypotheses to assess whether it could provide influential results. Further factor analyses for *resistance to disposition* and *attachment tendencies* resulted in valid factors, but the ones for *value transferability* and *frugal tendencies* proved to be more problematic. The former variable was self-constructed and did not load on one factor as expected. Two variables were extracted, within which two items showed serious cross-loadings (see *Appendix C, 'Perceived product transferability'* for a detailed explanation). As no previous measures for this concept exist in previous literature, it was decided to use both factors in further analyses in order to find the right predictors for the non-disposal behaviours of neglected products. The two factors are *ease of value transfer*, capturing the *amount* of people that a product's perceived value can be transferred to and thus increasing the chances of someone sharing this value, and *value uniqueness*, which reflects the extent to which a product's value is unique to the person owning it and would thus be lost when redistributed. Furthermore, the analysis of the *frugal tendencies* scale indicated a low explained variance as well as communality values below the threshold of .50. The four-item scale could be decreased to two items, which would have solved these problematic values, but as it is not recommended to use scales with fewer than three items (Raubenheimer, 2004), and the four-item scale was proven to be valid in previous studies, the items were not removed.

Regarding the reliability of the validated scales, all analyses produced satisfactory Cronbach's Alpha values (*Table 2*), providing evidence that the scales are reliable. The analyses did, however, result in three items within different scales that could improve the reliability value when deleted, but as these were solely minor changes that did not affect further analyses, all items were retained. As validity as well as reliability of items could be ensured, all items were computed into their corresponding variables.

*Table 2: Summary of the concepts with the corresponding factor and reliability analyses values.*

| Variable *source* | Items | KMO | Bartlett's Test | Cronbach's alpha | α higher if deleted? |
|---|---|---|---|---|---|
| **Emotional_Value** *Schifferstein and Zwartkruis-Pelgrim, 2008; Guillard and Pinson, 2012* | 10 | .916 | .000* | .961 | Past_4 (.963) |
| **Functional_Value** *Guillard and Pinson, 2012* | 3 | .730 | .000* | .859 | - |
| **Resistance_ Disposition** | 5 | .819 | .000* | .903 | Selling (.914) |
| **Value transferability** | | .577 | .000* | | |
| Ease_Value_Transfer | 2 | | | .691 | - |
| Value_Uniqueness | 2 | | | .812 | - |
| **Attachment tendencies** *Haws et al., 2012* | 4 | .842 | .000* | .918 | Attachment_4 (.922) |
| **Frugal tendencies** *Lastovicka et al., 1999* | 4 | .739 | .000* | .787 | - |

* Significant at p < .001

## 4.3 Correlation matrix

As a first overview of the relationships between the measured variables, a correlation matrix (*Table 3*) of all relevant concepts was examined. As expected, significant positive relationships were detected between both perceived values and resistance to disposition, and emotional value showed a stronger effect than functional value. Regarding consumer characteristics, attachment tendencies were significantly correlated with both emotional value and resistance to disposition, while no relationships were established between frugal tendencies and neither functional value nor resistance to disposition. Interestingly, both value transferability concepts showed relationships with emotional value, with the correlation between value uniqueness and emotional value being remarkably high. Neither of these concepts showed a relationship with functional value, and only value uniqueness correlated with resistance to disposition. Overall, the correlation matrix did not yield satisfactory initial results for all expected hypotheses and indicated only moderate effects for the significant relationships.

*Table 3: Correlation matrix of all relevant variables.*

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Emotional value 1 | 1 | .104 | **.486*** | **-.230*** | **.702*** | **.233*** | .075 | **-.212*** | **.262*** |
| Functional value 2 | .104 | 1 | **.247*** | .089 | .018 | **.144**** | -.007 | **.199*** | **-.248** |
| Disposition resist. 3 | **.486*** | **.247*** | 1 | -.071 | **-.417*** | **.193*** | -.016 | -.060 | .104 |
| Ease of transfer 4 | **-.230*** | .089 | -.071 | 1 | **-.350*** | -.133 | **-.160**** | .077 | **-.232*** |
| Value uniqueness 5 | **.702*** | .018 | **-.417*** | **-.350*** | 1 | **-.223*** | .025 | **.232*** | -.138 |
| Attachment 6 | **.233*** | **.144**** | **.193*** | -.133 | **-.223*** | 1 | .079 | -.011 | .033 |
| Frugality 7 | .075 | -.007 | -.016 | **-.160**** | .025 | .079 | 1 | .101 | .060 |
| Acquisition type 8 | **-.212*** | **.199*** | -.060 | .077 | **.232*** | -.011 | .101 | 1 | **.198*** |
| Length of neglect 9 | **.262*** | **-.248*** | .104 | **-.234*** | -.138 | .033 | .060 | **-.198*** | 1 |

## 4.4 Preparation for analyses

Before the actual analyses, all variables were checked for normality using univariate statistics. The skewness and kurtosis of each variable were assessed with a threshold of $|.3|$ when divided by the corresponding standard error, as proposed by Field (2013). All variables resulted in satisfactory kurtosis values and most variables did not result in any issues with regard to their skewness. Exceptions were *functional value* ($Z_{skewness}$ = -6.20), *value uniqueness* ($Z_{skewness}$ = 5.63)*, and *frugal tendencies* ($Z_{skewness}$ = -4.84), for which a log transformation of each variable satisfied the skewness boundary of $|.3|$. Multiple regression analysis is, however, quite robust to violations of normality and generally does not make any normality assumptions about the independent variables (Tabachnick & Fidell, 2013). This robustness is especially evident in samples with more than 200 cases, for which the shape of the distribution is much more important to assess (Field, 2013; Tabachnick & Fidell, 2013). With this study's sample size of *N* = 196, the decision was made to investigate the results of the

analyses with the original variables as well as the log transformed ones, as deviations of normality could have a negative impact on the linearity and homoscedasticity assumptions. As such, the best predictive model for each hypothesis test was sought, while taking the interpretation difficulties into account as well.

Moreover, all independent, as well as moderating variables, were mean-centered in order to create a meaningful reference-point and reduce the possible multicollinearity between the variables, which is especially relevant for the interaction terms.

The hypotheses were tested with several multiple regression analyses, the PROCESS macro procedure (Hayes, 2017), an independent samples t-test, and a one-way ANOVA analysis. In order to ensure that the collected data was suitable for the execution of these analyses, several assumptions were checked. The assumptions were based on the propositions of Hair et al. (2014), Field (2013), and Laerd Statistics (n.d.). For multiple regression analysis, linearity should exist between the dependent variable and all independent variables separately, as well as combined, and residuals should be normally distributed, independent, and homoscedastic. In addition, multicollinearity should be avoided, and no influential observations should significantly affect the results. Hair et al. (2014) also proposed multiple regression analysis to be executed with sample sizes greater than 50, but preferably with 20 times the number of variables, which this study's sample size of 196 has satisfied. Subsequently, assumptions for the independent samples t-test and ANOVA analysis included a normal distribution of the dependent variables for all groups of the independent variable, no significant outliers, and homogeneity of variances. The detailed step-by-step evaluation of all assumptions, as well as the decisions that were based on the outcomes of these assumptions, are outlined in *Appendices D - G*.

## 4.5 Hypotheses testing

*Effects on resistance to disposition.* To test H1 and H2, a multiple regression analysis was conducted to predict consumers' resistance to disposing their neglected products based on their emotional and functional value attributed to these products. A check of the assumptions (*Appendix D, 'Analysis 1'*) revealed signs of heteroscedasticity in the functional value variable. As this variable was previously established as skewed, the log transformed variable was entered into the analysis, and while this resulted in slightly more homogeneity, it did not satisfy the assumption to the desired extent and would solely complicate the interpretation of the coefficients. Including polynomial terms did not show improvements either. In order to ensure that better estimates were produced by the model,

Field (2013) suggested to use a Weighted Least Squares regression[1], in which cases are weighted differently to compensate for the violations of homoscedasticity. The derived model was significant ($F$ (2, 193) = 50.94, $p$ < .001, $R^2$ = .35; *Table 4*), proving that 35% of the variance in resistance to disposition could be explained by both the emotional and functional value that consumers attribute to their neglected products. A significant positive relationship has been found between functional value and resistance to disposition ($b$ = 174, $t$ (195) = 4.32, $p$ < .01), positing that an increase in functional value leads to an increase in consumers' resistance. H1 could therefore be supported.

As for emotional value, a positive relationship has been found as well ($b$ = .44, $t$ (195) = 8.03, $p$ < .001). Thus, an increase in emotional value leads to an increase in resistance to disposition, which confirms H2. When comparing both values based on their standardised coefficients, it could be concluded that emotional value is a stronger predictor of resistance to disposition (β = .48, $p$ <.001) than functional value (β = .26, $p$ < .01).

*Table 4: Results multiple regression analysis for 'Resistance to disposition'.*

Model Summary[b]

| | R | $R^2$ | $R^2_{adj}$ | $SE_{est}$ | $R^2$ change | df1 | df2 | F |
|---|---|---|---|---|---|---|---|---|
| | .588[a] | .345 | .339 | 1.257 | .345 | 2 | 193 | 50.941* |

Coefficients

| | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| Constant | 3.617 | .091 | | 39.906* | .000 |
| Mean_Emotional_Value | .439 | .055 | .478 | 8.034* | .000 |
| Mean_Functional_Value | .174 | .040 | .257 | 4.321* | .000 |

*\* Significant at <.001.  a Dependent variable: Resistance_Disposition  b WLS Regression*

*Moderating effects of attachment and frugality*. In order to test hypotheses H3 and H4, the interaction terms for both consumer characteristics with both values were computed and consequently added to the regression model. All assumptions were met, except for homoscedasticity (*Appendix D, 'Analysis 2'*), which again could not be sufficiently solved by including the log transformed variables. A WLS regression was therefore executed. This resulted in two models (*Table 5*); the first being the original model with emotional and functional value which remained significant ($F$ (2, 193) = 53.85, $p$ < .001, $R^2_{adj}$ = .35), and the second containing the attachment and frugality variables, as well as all the interaction terms. Significance for the latter model was also found ($F$ (8, 187) = 15.21, $p$ < .001, $R^2_{adj}$ = .37). Unfortunately, the second model did not significantly explain additional variance for resistance to disposition ($F$ change = 1.85, $p$ = .09), opposing the expectations about the effects of

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[1] All regression analyses were also run using other methods (OLS and including the transformed variables), for which the results differed slightly in numbers while the conclusions remained the same. Ultimately, WLS was deemed the most reliable method to report.

attachment and frugality. A closer look at the individual variables revealed that both emotional and functional value remained significant ($p < .001$) in the second model. However, none of the characteristic variables proved to be significant ($p > .05$), which opposed the previous correlation matrix in which attachment tendencies correlated with both values as well as resistance to disposition. Both hypotheses H3 and H4, therefore, could not be supported.

*Table 5: Results moderation analysis of 'Attachment tendencies' and 'Frugal tendencies' on 'Resistance to disposition'.*

Model Summary[b]

| Model | R | $R^2$ | $R^2_{adj}$ | $SE_{est}$ | $R^2$ change | df1 | df2 | F | F change |
|---|---|---|---|---|---|---|---|---|---|
| 1 | .598[a] | .358 | .352 | 1.292 | .358 | 2 | 193 | 53.847* | |
| 2 | .628[a] | .394 | .368 | 1.276 | .036 | 6 | 187 | 15.205 | 1.850 |

Coefficients

| Model | | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | Constant | 3.658 | .089 | | 41.157* | .000 |
| | Mean_Emotional_Value | .483 | .054 | .520 | 8.946* | .000 |
| | Mean_Functional_Value | .165 | .041 | .236 | 4.065* | .000 |
| | | | | | | |
| 2 | Constant | 3.659 | .091 | | 40.379* | .000 |
| | Mean_Emotional_Value | .436 | .056 | .470 | 7.724* | .000 |
| | Mean_Functional_Value | .175 | .041 | .250 | 4.285* | .000 |
| | Mean_Attachment_Tendencies | .041 | .058 | .045 | .708 | .480 |
| | Mean_Frugal_Tendencies | -.090 | .074 | -.075 | -1.223 | .223 |
| | FunctionalxFrugality | .049 | .037 | .085 | 1.329 | .186 |
| | EmotionalxFrugality | -.078 | .043 | -.108 | -1.829 | .069 |
| | FunctionalxAttachment | .112 | .186 | .037 | .605 | .546 |
| | EmotionalxAttachment | -.039 | .036 | -.066 | -1.071 | .286 |

*\* Significant at <.001.    a. Dependent variable: Resistance_Disposition.    b. WLS Regression*

*Moderating effects of value transferability.* H5a and H5b assumed that perceived value transferability would strengthen the relationships between both emotional and functional values on resistance to disposition. As the variable for value transferability was split into ease of value transfer and value uniqueness, both variables as well as their computed interaction terms were added to the original model. After a check of the assumptions (*Appendix D, 'Analysis 3'),* heteroscedasticity was once again evident in the data and the decision was made to conduct a WLS regression analysis. The original model remained significant ($F$ (2, 193) = 71.11, $p < .001$, $R^2_{adj}$ = .42; *Table 6*), and this was also the case for the second model including the transferability variables ($F$ (8, 187) = 21.89, $p < .001$, $R^2_{adj}$ = .46). Adding the transferability variables accounted for 4.3% additional explained variance in resistance to disposition ($F$ *change* = 3.58, $p < .01$), and the direct effects of functional as well as emotional value remained significant ($b$ = .18, $t$ = 4.32, $p < .001$ and $b$ = .23, $t$ = 4.01, $p < .001$,

respectively). Surprisingly, the relative effect of emotional decreased by adding the transferability variables into the model (from $\beta$ = .54 to $\beta$ = .33). Moreover, a positive direct effect of value uniqueness ($b$ = .20, $t$ = 2.10, $p$ < .05) on resistance to disposition was found, while this effect was not significant for ease of transfer ($b$ = -.01, $t$ = -.11, $p$ = .912). Moreover, neither ease of use ($b$ = -.003, $t$ = .01, $p$ = .93) nor value uniqueness ($b$ = .01, $t$ = .23, $p$ = .822) showed a significant interaction effect with functional value, and therefore, H5a was rejected. For emotional value, the interaction effect with value uniqueness was also not significant ($b$ = .05, $t$ = 1.24, $p$ = .217), but the interaction did prove to be significant for ease of value transfer ($b$ = .12, $t$ = 3.36, $p$ < .01).

*Table 6: Results moderation analysis of 'Ease of value transfer' and 'Value uniqueness' on 'Resistance to disposition'.*

Model Summary[b]

| Model | R | $R^2$ | $R^2_{adj}$ | $SE_{est}$ | $R^2$ change | df1 | df2 | F | F change |
|---|---|---|---|---|---|---|---|---|---|
| 1 | .651[a] | .424 | .418 | 1.314 | .424 | 2 | 193 | 71.106* | |
| 2 | .695[a] | .484 | .461 | 1.264 | .059 | 6 | 187 | 21.887* | 3.580 |

Coefficients

| | | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|---|
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | Constant | 3.565 | .089 | | 40.144* | .000 |
| | Mean_Emotional_Value | .479 | .050 | .539 | 9.541* | .000 |
| | Mean_Functional_Value | .173 | .039 | .252 | 4.455* | .000 |
| | | | | | | |
| 2 | Constant | 3.584 | .115 | | 31.093* | .000 |
| | Mean_Emotional_Value | .292 | .073 | .329 | 4.007* | .000 |
| | Mean_Functional_Value | .177 | .041 | .258 | 4.315* | .000 |
| | Mean_Value_Uniqueness | .198 | .094 | .211 | 2.099*** | .037 |
| | Mean_Ease_Value_Transfer | -.008 | .069 | -.007 | -.111 | .912 |
| | FunctionalxUniqueness | .006 | .028 | .018 | .225 | .822 |
| | EmotionalxUniqueness | .053 | .043 | .079 | 1.240 | .217 |
| | EmotionalxEase | .122 | .036 | .211 | 3.363** | .001 |
| | FunctionalxEase | .003 | .031 | .007 | .086 | .931 |

*\* Significant at p <.001. \*\* Significant at p < .01 \*\*\* Significant at p < .05*
*a. Dependent variable: Resistance_Disposition. b. WLS Regression*

As an additional check, the latter moderation effect was tested with Hayes' (2017) PROCESS, as this offers a more robust analysis to any of the previously established violations. Next to bootstrapping the sample, the HC4 estimate was used in order to ensure that the found heteroscedasticity was compensated for while attributing the test with sufficient power and validity, based on the recommendations of Hayes and Cai (2007). The overall model (*Table* 7) was significant ($F$ (3, 192) = 26.81, $p$ < .001, $R^2$ = .26) and the moderation effect of ease of value transfer on the relationship between emotional value and resistance to disposition was also significant and positive ($b$ = .09, 95%

CI [.012, .172], *t* = 2.27, *p* < .05). This effect is visualised in *Figure 3*. It can thus be concluded that H5b is partly confirmed.

*Table 7: Results moderation analysis of 'Ease of value transfer' with 'Emotional value' on 'Resistance to disposition'.*

Model Summary

| | R | R² | MSE | F(HC4) | df1 | df2 | p |
|---|---|---|---|---|---|---|---|
| | .509 | .259 | 1.621 | 26.806 | 3 | 192 | .000 |

Model

| | coeff | se (HC4) | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| Constant | 3.661 | .093 | 39.277* | .000 | 3.477 | 3.845 |
| Emotional_Value | .452 | .055 | 8.198* | .000 | .343 | .561 |
| Ease_Value_Transfer | .017 | .075 | .228 | .820 | -.130 | .164 |
| Int_1 | .092 | .040 | 2.273* | .024 | .012 | .172 |

\* Significant at <.001.          Int_1: Emotional_Value x Ease_Value_Transfer

Conditional effects of the focal predictor at values of the moderator:

| Ease_Value_Transfer | Effect | se(HC4) | t | p | LLCI | ULCI |
|---|---|---|---|---|---|---|
| Low | .328 | .083 | 3.961** | .0001 | .165 | .491 |
| At mean | .452 | .055 | 8.198* | .0000 | .343 | .561 |
| High | .576 | .072 | 8.019* | .0000 | .434 | .717 |

\* Significant at p < .001

\** Significant at p < .01

*Figure 3: Plot visualising the moderation of 'Ease of value transfer' on 'Resistance to disposition'.*
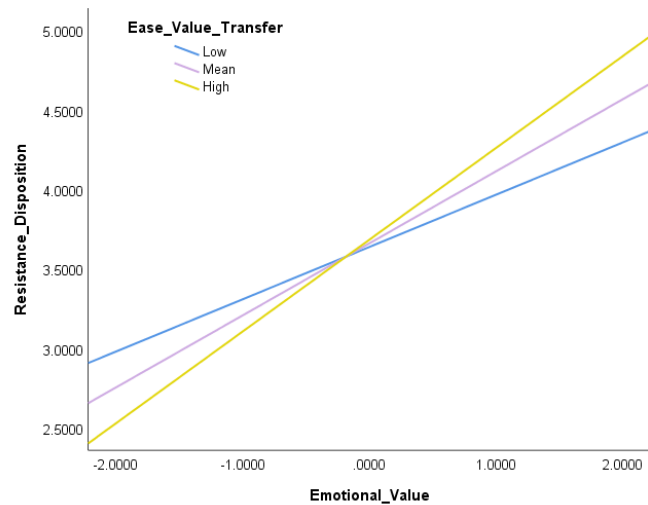


*Effect of acquisition type.* The sixth hypothesis' proposition that emotional value is higher for gifted products while functional value is higher for self-acquired products was tested with two independent samples t-tests. Testing the assumptions (*Appendix E*, *'Analyses 1 & 2'*) revealed several outliers in the bought group of the functional value variables. As these were found to negatively impact the results, and based on the fact that it is not recommended to delete outliers (Field, 2013), these were retained in the analysis. Moreover, for both emotional and functional value, the categories of bought products were either negatively or positively skewed. Despite the Independent Samples T-Test being quite robust to violations of normality, the non-parametric Mann-Whitney U Test was conducted as an additional check (see *Appendix E*). The results proved that the groups differed

significantly from one another in both variables, and as the other assumptions were met, the two independent samples t-tests were conducted. For emotional value (*Table 8*), the test provided significant results ($t$ (194) = 3.01, $p < .01$, 95% CI) and indicated that emotional value was higher for the gifted products ($M_{gifted}$ = 3.52, $SD$ = 1.60) than it was for self-acquired products ($M_{bought}$ = 2.79, $SD$ = 1.63).

Table 8: Results independent samples t-test for 'Emotional value'.

| Group Statistics | | | | |
|---|---|---|---|---|
| Acquisition type | N | Mean | Std. Deviation | Std. Error mean |
| Gifted | 70 | 3.517 | 1.598 | .191 |
| Bought | 126 | 2.790 | 1.630 | .145 |

| t-test for Equality of Means | | | | | |
|---|---|---|---|---|---|
| | | | | | 95% CI of the difference |
| | | Sig. | Mean | Std. Error | Lower | Upper |
| t | df | (2-tailed) | difference | difference | | |
| 3.014* | 194 | .003 | .727 | .241 | .251 | 1.203 |

*\* Significant at <.01.*

The t-test for functional value (*Table 9*) was also significant ($t$ (194) = -2.82, $p < .01$, 95% CI), and confirmed that functional value was higher for self-acquired products ($M_{bought}$ = 5.44, $SD$ = 1.59) than it was for gifted products ($M_{gifted}$ = 4.76, $SD$ = 1.71). From the analysis, it can be concluded that gifted products lead to more emotional value being attributed to neglected products, while functional value increases when consumers acquire the products themselves, and H6 can thus be accepted.

Table 9: Results independent samples t-test for 'Functional value'.

| Group Statistics | | | | |
|---|---|---|---|---|
| Acquisition type | N | Mean | Std. Deviation | Std. Error mean |
| Gifted | 70 | 4.757 | 1.706 | .204 |
| Bought | 126 | 5.444 | 1.592 | .142 |

| t-test for Equality of Means | | | | | |
|---|---|---|---|---|---|
| | | | | | 95% CI of the difference |
| | | Sig. | Mean | Std. Error | Lower | Upper |
| t | df | (2-tailed) | difference | difference | | |
| -2.822* | 194 | .005 | -.687 | .243 | -1.168 | -.207 |

*\* Significant at <.01.*

*Effect of the length of neglect.* To test H7, respondents indicated the number of months that have passed since the last time they have used their product. Two linear regression analyses were conducted to examine whether a product's perceived value indeed decreases as more time passes. A check of the assumptions (*Appendix F*, '*Analyses 1 & 2*') revealed violations of normality, linearity, and homoscedasticity for both emotional and functional value as the dependent variables. Transforming the independent variable 'length of neglect' with a log transformation clearly improved the variance

in such a way that linearity and homoscedasticity could be assumed. This showed that non-normality of the independent variable was the reason for the violations, which can be explained by the variable's one-measure and product-specific nature. However, including the transformed variable would complicate the interpretation of the results, and since these should indicate the change in perceived values with every additional month that had past, running the regressions with the original variables was deemed to provide a clearer interpretation of the effects. However, Weighted Least Squares regressions were conducted to take these violations into account and produce better estimates (Field, 2013). For emotional value (*Table 10*), the regression model was significant ($F$ (1, 194) = 14.52, $p <$ .001, $R^2$ = .07), and revealed a very small positive relationship between the number of months of neglect and emotional value ($b$ = .01, $t$ = 3.81, $p <$ .001).

*Table 10: Results linear regression analysis for 'Emotional value'.*

Model Summary[b]

| | R | R² | R²$_{adj}$ | SE$_{est}$ | R² change | df1 | df2 | F |
|---|---|---|---|---|---|---|---|---|
| | .264[a] | .070 | .065 | 1.180 | .070 | 1 | 194 | 14.518* |

Coefficients

| | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| Constant | 2.713 | .145 | | 18.665 | .000 |
| Neglect_Length | .007 | .002 | .264 | 3.810* | .000 |

*\* Significant at <.001.*  *a Dependent variable: Emotional_Value*  *b WLS Regression*

Similarly, the WLS model for functional value (*Table 11*) also proved to be significant ($F$ (1, 194) = 9.86, $p <$ .01, $R^2$ = .05), and showed a very small negative effect of neglect time on functional value ($b$ = -.01, $t$ = -3.14, $p <$ .01). Despite the very small effect sizes and a very low explained variance of both the emotional value (6,9%) and functional value (4,8%) models, it can be concluded that functional value decreases the more time a neglected product is not used, while emotional value increases. Therefore, H7 can be accepted for the former, but has to be rejected for the latter value.

*Table 11: Results linear regression analysis for 'Functional value'.*

Model Summary[b]

| | R | R² | R²$_{adj}$ | SE$_{est}$ | R² change | df1 | df2 | F |
|---|---|---|---|---|---|---|---|---|
| | .220[a] | .048 | .043 | 1.340 | .048 | 1 | 194 | 9.857** |

Coefficients

| | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| Constant | 5.530 | .147 | | 37.717* | .000 |
| Neglect_Length | -.007 | .002 | -.220 | -3.140** | .002 |

*\* Significant at <.001.*  *a Dependent variable: Functional_Value*

*\*\* Significant at p < .01*  *b WLS Regression*

Although the hypothesis can be partly accepted with the length of neglect variable, it should be noted that 'length of ownership' could be a better predictor for this desired effect as the former variable is rather ambiguous and difficult to establish. Testing this variable is the same way as the 'length of neglect' variable resulted in significant regression models for both emotional value ($F$ (1, 194) = 47.64, $p < .001$, $R^2 = .20$) as well as functional value ($F$ (1, 194) = 5.35, $p < .05$, $R^2 = .03$). While the relationship between the number of months that consumers have owned their product and functional value was very small but significant and negative ($b = -.003$, $t = -2.27$, $p < .05$), the effect on emotional value was again significant and positive ($b = .01$, $t = 6.73$, $p < .001$).

## 4.6 Additional analyses

In addition to the examined hypotheses, several tests were conducted in order to investigate possible effects between the measured variables which were not taken into account in the hypotheses.

First, the potential influence of the demographic variables age, education and employment status was tested by including them in the previously outlined regression models, as well as examining their direct effects on the different variables. No significant results were obtained, indicating that demographic variables do not play a role in product neglect as specified by this study's model.

As the 'resistance to disposition' variable was formed by computing the measures for the resistance towards individual disposition methods, each method was analysed separately to see whether differences in results exists between the different methods. The results indicated similar values for each method (*Table 12*), so no further investigation into these was deemed necessary.

*Table 12: Results multiple regression analyses for 'Resistance to disposition' per redistribution method.*

| | Unstandardised | | Standardised | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | b | Std. Error | Beta | t | F | $R^2_{adj}$ |
| **Resistance to sell** | | | | | 28.848* | .222 |
| Emotional_Value | .468 | .070 | .426 | 6.708* | | |
| Functional_Value | .197 | .069 | .181 | 2.847** | | |
| **Resistance to give - family** | | | | | 16.450* | .137 |
| Emotional_Value | .316 | .066 | .321 | 4.803* | | |
| Functional_Value | .171 | .065 | .175 | 2.619** | | |
| **Resistance to give - known** | | | | | 25.015* | .198 |
| Emotional_Value | .427 | .067 | .414 | 6.412* | | |
| Functional_Value | .152 | .066 | .149 | 2.303*** | | |
| **Resistance to give - unknown** | | | | | 24.984* | .197 |
| Emotional_Value | .436 | .070 | .404 | 6.267* | | |
| Functional_Value | .180 | .069 | .168 | 2.601*** | | |
| **Resistance to donate** | | | | | 25.398* | .200 |
| Emotional_Value | .418 | .066 | .405 | 6.286* | | |
| Functional_Value | .177 | .066 | .173 | 2.686** | | |

*\* p < .001; \*\* p < .01; \*\*\* p < .05*

Furthermore, the resistance variable focused solely on different *redistribution* methods, and resistance towards throwing the product away was not included in the final variable. A separate WLS regression model was run with resistance towards throwing away as the dependent variable, resulting in significant model ($F$ (2, 193) = 43.69, $p$ < .001, $R^2$ = .31; *Table 13*), which indicated a positive relationship with emotional value ($b$ = .33, $t$ = 9.26, $p$ < .001), but a non-significant one with functional value ($b$ = -.06, $t$ = -.06, $p$ = .303).

*Table 13:Results multiple regression analysis for 'Resistance to throwing away'.*

Model Summary

| | R | $R^2$ | $R^2_{adj}$ | $SE_{est}$ | $R^2$ change | df1 | df2 | F |
|---|---|---|---|---|---|---|---|---|
| | .558[a] | .312 | .305 | 1.529 | .312 | 2 | 193 | 43.694* |

Coefficients

| | Unstandardised | | Standardised | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| Constant | 5.761 | .128 | | 45.171* | .000 |
| Mean_Emotional_Value | .325 | .035 | .571 | 9.255* | .000[b] |
| Mean_Functional_Value | -.062 | .060 | -.064 | -1.033 | .303[b] |

*\* Significant at <.001.*     *a Dependent variable: Throwing_Away*

*\*\* Significant at p < .01*     *b WLS Regression*

Additionally, the sample was split into products for which emotional value was higher than functional value, and products for which functional value was higher than emotional. The results per redistribution method are displayed in *Figure 4*, and showed a very low number of emotional products ($N$ = 30) compared to the functional products ($N$ = 161).

*Figure 4: Resistance to disposition per redistribution method.*
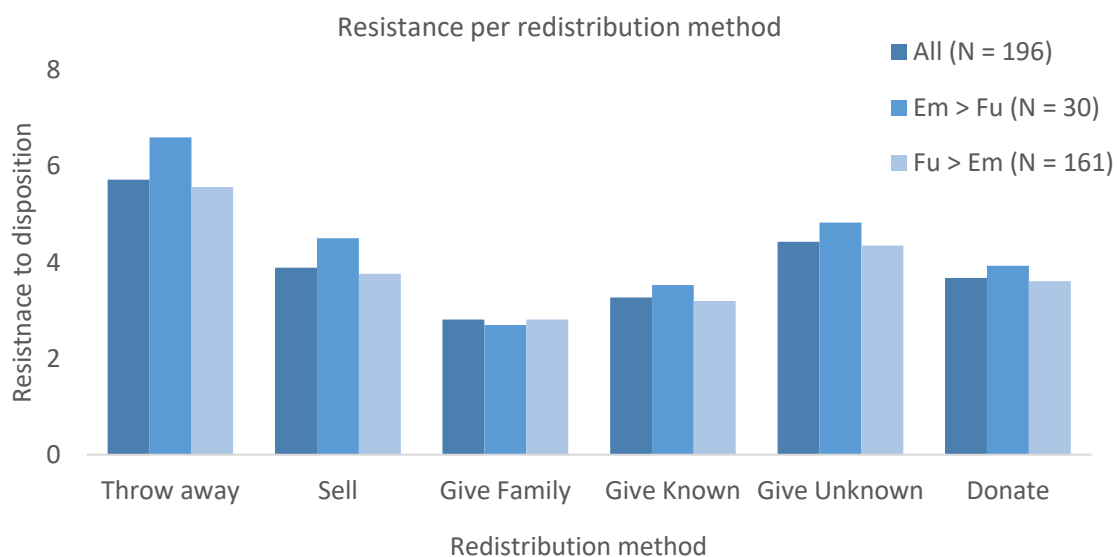
The previously outlined correlation matrix has revealed a strong positive correlation between emotional value and value uniqueness. This relationship was further analysed with a linear regression analysis, which was justified with a satisfactory check of the assumptions (*Appendix F*, '*Analysis 3*'). A significant model ($F$ (1, 194) = 188.01, $p$ < .001, $R^2$ = .49) revealed that 49% of the variance in emotional value is explained by value uniqueness, and a strong positive relationship exists between the two variables ($b$ = .76, $t$ = 13.71, $p$ < .001). With this result and the previous evidence for a direct effect of value uniqueness on resistance to disposition, this research continued exploring the variables emotional value, value uniqueness, and resistance to disposition. Through Hayes' (2017) PROCESS, a mediation effect was found. Specifically, the indirect effect of value uniqueness on resistance to disposition was found to be statistically significant ($b$ = .26, 95% CI [.15, .37]) and fully mediated by emotional value.

Another investigation was done using the previously reported product categories. To determine whether differences occur between these categories, several one-way ANOVA analyses were conducted, for which assumptions were tested prior to the actual analyses (*Appendix G, 'Analyses 1 & 2'*). Significant results have been obtained for the existence of group differences in resistance to disposition ($F$ (7, 188) = 2.83, $p$ < .01) and emotional value ($F$ (7, 187) = 5.91, $p$ < .001). As homogeneity of variances could be assumed but the categories have unequal sample sizes, the Hochberg's Post Hoc Test was chosen to examine the significant differences further. The test revealed that the extent of resistance to disposition solely differs significantly between musical instruments ($M$ = 4.36, $SD$ = 1.35, $p$ < .05) and kids' stuff ($M$ = 2.92, $SD$ = 1.07). Another Hochberg's Post Hoc Test revealed that emotional value is statistically significantly lower for the electronics ($M$ = 2.38, $SD$ = 1.42, $p$ < .001) and appliances ($M$ = 2.33, $SD$ = 1.32, $p$ < .001) categories compared to the musical instruments category ($M$ = 3.96, $SD$ = 1.44).

Lastly, respondents reported arguments that would convince them to dispose their neglected possessions earlier, as well as gains that would be desired in exchange for the possible disposition. All answers where analysed and summarised in *Table 14* and *Table 15*.

# BARRIERS TO DISPOSING PRODUCTS WE NO LONGER USE

*Table 14: Summary responses indicating arguments for disposing neglected products.*

**Arguments to enhance willingness to dispose neglected product** (number of times mentioned)

"Someone else could find a (better) use for the product" (35);

"The product does / will not function well anymore" (11);

"The product is really not used / not needed anymore" (27);

"Someone else really needs it" (23);

"The product could provide the same or more value / enjoyment to someone else" (22)

"The product takes up (too much) space" (13)

"None / do not know" (19)

*Other:* "Too old for it" (1); "No other option" (1); "Expensive to keep" (1); "Decreases in value" (1); "Sustainability reasons" (2); "Someone you know can use it / needs it" (6); "It can be kept in the family" (3); "Someone wants to buy it" (7)

*Table 15: Summary responses indicating gains desired for disposing neglected products.*

**Gain desired in return for disposing neglected product** (number of times mentioned)

Gratitude / a thank you (13);

Money (51);

An alternative product / function (through trading) (34);

Knowing the product will end up in a good home (11);

More free space / less clutter (11);

Satisfaction / fulfilment / a good feeling / a smile from the receiver (14);

Knowing that it has meaning to someone else / has helped someone (10);

Knowing the product will be used (more often) (14);

Nothing (35);

*Other:* Memory preservation (1); Permission from the giver (3); The option to rent it whenever it would be needed (1); Depends on the receiver (3); Something small or symbolic (4)

## 5 CONCLUSION AND DISCUSSION

The concept of consumer behaviour presents a fascinating array of phenomena, many of which have yet to be explored. The topic of disposal behaviour in particular has created an ambiguous and unsystematic range of findings, despite inducing a wide recognition and interest throughout the last four decades (Cruz-Cardenas & Arevalo-Chavez, 2018). While literature has tapped into consumers' *non*-disposal behaviours within many divergent focusses of study, existing knowledge on neglected products that are neither used nor disposed of is surprisingly scarce. This research, therefore, aimed to address this gap by answering the following research question: *"How does a product's perceived functional and emotional value influence consumers' resistance to dispose of neglected durable products, and how is this relationship influenced by the product's perceived value transferability and consumers' tendencies of attachment and frugality?"*. To achieve this, a conceptualisation for the concept 'resistance to disposition' and an operationalisation of 'value transferability' were introduced, and a quantitative survey approach provided answers for this question with the data collected among Dutch consumers. The findings of this research extend Van 't Ende's (2019) findings by broadening the understanding of neglected products, and shed light on Türe's (2014) value-in-disposition notion by including the influence of perceived value transferability. In addition, the concepts of attachment and frugal tendencies are extended into the context of neglected durable products, following up on previous literature's findings (Haws et al., 2012; Simpson et al., 2019).

First, it should be noted that the elicited products in this study could not be clearly divided into a functionally or emotionally valued product category as most products were, to a certain extent, associated with both values. This indicates a more complex nature of the reasons for neglecting products that cannot simply be attributed to one type of value. However, as hypothesised, both emotional and functional value can be seen as significant predictors of consumers' resistance to disposition. Specifically, the higher the perceived product value, the more resistant consumers are to dispose their neglected product through the redistribution methods of selling, donating, and giving away. This confirms Van 't Ende's (2019) qualitative finding that a product's perceived value forms the main barrier to disposal. Next to confirming the expected relationships, this study's factor and reliability analyses demonstrated that emotional connections to the past, one's orientation toward the future, or a combination of these, are the main motivators for keeping products that are no longer used. This notion was previously attributed to the psychological tendency to hoard (Cherrier & Ponnor, 2010; Guillard & Pinson, 2012), and can thus be extended into this study's proposed context of product neglect. Moreover, the stronger effect of emotional value could be attributed to the so-called

'endowment effect' (Thaler, 1980). When a product is associated with a specific memory or becomes related to one's identity, consumers often experience a greater sense of ownership, and consequently attribute a higher perceived value to the product (Lastovicka & Sirianni, 2011; Belk, 1988). This leads to disposal being associated with greater perceived losses (Dommer & Swaminathan, 2013), which is therefore rejected in order to protect oneself from losing this value or one's identity (Winterich et al., 2017). This value loss can also be experienced for functionally valued products, but resistance could be lower due to the future functionality that is lost, which is not necessarily unique to the product. Functional value could thus be seen as less irreplaceable, which was also supported by respondents who indicated being more willing to dispose their product when receiving an alternative product with a similar functionality in return. Another notion worth taking into account for the strength of disposition resistance stems from Phillips and Sego (2011), whose findings stated that consumers' identities of discarders and keepers change through conscious reflection, which in turn influences their behaviours. Following the discussion of mental accounting (Okada, 2011), this revaluation of a product's value could trigger a realisation of its non-usage, subsequently resulting in a higher willingness to dispose.

Furthermore, no differences were found across the effects of product value on the different redistribution methods separately. One exception is a lower effect of emotionally valued products on resistance toward giving the product away to a family member. This corresponds with Price et al.'s (2000) as well as Lastovicka and Fernandez's (2005) findings, as keeping the product in the family can increase the chances of finding a 'shared self' and thus ensure that the product's meaning will be preserved, decreasing the experience of a loss. Further results suggested that emotional value is also positively related with throwing the product away, while functional value does not form a barrier for this behaviour. The univariate analysis, however, did show a higher value for throwing away across the whole sample, but with the lack of relation with functional value, the importance of emotional connections within the product neglect context is emphasised even further. As concluded by Cherrier and Ponnor (2010), consumers perceive throwing away their valued possessions as a threat to the memory and security of the owner.

Unlike expectations, the consumer tendencies of attachment and frugality did not have a moderating effect on the relationship between the product's perceived value and resistance to disposition. This contradicts the findings of Haws et al. (2012) and Simpson et al. (2019), who established positive relationships between both concepts and product retention tendency. Context might explain these incongruities, as the present study differs from previous literature in its focus on the resistance to dispose one specific item that respondents elicited themselves, whereas Haws et al. (2012) focused on a resistance tendency towards products in general, and Simpson et al. (2019)

questioned solely the context of personal computers. This might also show that resisting to dispose a product is not necessarily the same as a tendency to keep the product. Additionally, for attachment tendencies, Simpson et al.'s (2019) findings suggested that the concepts' effect on product retention increases at first, but declines in strength after 1.62 years of ownership. The products used in this study were owned for an average length of 8.09 years, which could indicate that general attachment tendencies play a role in the initial decision to not discard products, but become irrelevant in the context of subsequent neglect of specific products. The lack of effects of frugal tendencies is perhaps even more surprising given Brough and Isaac's (2010) finding that consumers' notion of wastefulness influences the perceived value of their products. However, it demonstrates that the context of product neglect adopted in this study clearly differs from the contexts of hoarders (Cherrier & Ponnor, 2010) and packrats (Phillips & Sego, 2011), in which these tendencies did influence consumers' disposition behaviours.

As indicated by the factor analyses, the value transferability concept could be divided into two factors; value uniqueness and ease of value transfer. While the two-item measurement of both concepts was not ideal, an initial understanding of the concepts' roles could be established. The reasoning behind the tested hypotheses was based on previous studies that argued for the importance of meaning transfer when redistributing valued possessions (Lastovicka & Fernandez, 2005; Price et al., 2000), which was expected to be easier if many people could share the same value and thus this value would not be lost. Unfortunately, the expected moderation effects of value transferability could not be supported by the data in this research. One exception is the moderating effect of ease of value transfer on the relationship between emotional value and resistance to disposition. Specifically, for products with low levels of emotional value, disposition resistance is higher when this value is perceived as difficult to transfer. This is in line with the expectation that ensuring value preservation is more difficult when hardly anyone can share this value (Türe, 2014). However, as emotional value is low and the previous finding stated a positive relationship between this value and throwing away, another explanation for this effect could be related to the effort associated with redistribution methods. When the costs of finding a new owner for the product with low emotional value outweigh the benefits, the consumer may be more prone to keeping the product or throwing it away (Roster, 2001). In contrast, when products are highly emotionally valued and this value is *easily* transferable, resistance toward disposition was found to be higher. This contradicts the expectations based on Türe's (2014) suggestions of meaning preservation, as well as Brough and Isaac's (2012) findings stating that consumers who are strongly emotionally attached to their possession tend to more prone to provide discounts on the product's selling price when the buyer's usage intentions are deemed appropriate. One explanation for this study's finding might be the ambiguous measurement of the

concept ease of value transfer, which solely asked respondents whether many people would perceive or appreciate the product's value in a similar way as they do. More specification on the type of value might be necessary to truly reflect the meaning of the concept. For instance, the value of musical instruments could be regarded as easily transferable because of its specific function that it is meant to provide, and many people would probably regard it as valuable for that particular function. However, next to its functionality, instruments can also hold emotional value in the form of memories or relationships, which is not transferable. More research into this notion is therefore needed for reliable and insightful conclusions to be drawn.

An additional analysis revealed a relationship between value uniqueness and resistance to disposition, which was fully mediated by emotional value. This suggests that a product's emotional value stems from associations tied to the product that are unique to the consumer, which is in line with Csikszentmihalyi and Rochberg-Halton (1981), who argued that unique experiences lead to identity building in sacred possessions. This finding can carefully confirm Belk's (1988) notion that possessions are part of the extended self, and thus, the possibility of losing part of one's identity forms a strong barrier to dispose neglected products. Lastovicka and Fernandez (2005) also found the prospect of disposal especially difficult for consumers owning products tied to their 'private meanings' or 'past me'. Additionally, Türe (2014) argued that consumers often avoid disposition to avoid others' value assessments of the product, as these could result in conflicting perceptions of this value when it is uniquely tied to the owner. The negative relation between value uniqueness and its perceived ease of transfer, which became evident from the correlation matrix, could supposedly offer a more comprehensive view in this regard, which is worth exploring further.

Congruent with expectations, emotional value was found to be higher for gifted products than it was for self-acquired products, which supports the literature describing gift-giving. Gift-giving can be seen as a process that is often triggered by a special occasion (Davies, Whelan, Foley & Walsh, 2010), after which an ordinary product is sacralised and imbued with symbolic meaning (Belk et al., 1989), and often represents the relationship between the giver and the recipient (Roster & Amann, 2003). This contributes to the product's value forming a barrier to disposal (Sherry, McGrath & Levy, 1992). Subsequently, functional value was found to be higher for self-acquired products than for gifted products, which could be a result of the time and money that the acquisition required (Van 't Ende, 2019), or the simple fact that products are bought for their utility. Interestingly, functional value proved to be higher for the self-acquired as well as the gifted category than emotional value was for both categories. This leads to the conclusion that, within this study, products that become neglected have a high future potential in terms of their functionality, strengthening the importance of timely

disposal for their circulation. It should also be noted that most products in this study were self-acquired, contradicting Van 't Ende's (2019) conclusion that most neglected products are gifted.

The last hypothesis expected the perceived product value to decrease as the number of months that the product was kept without usage increased. While this negative relationship was confirmed for functional value, the analysis revealed a positive relationship for emotional value. The former finding makes sense as the product's objective residual value generally decreases with the product's age (Brough & Isaac, 2010). Moreover, following the notion of mental accounting in which a product's perceived value decreases with each usage situation (Okada, 2001), a revaluation of the product's value could result in the realisation that the product is indeed not used anymore, and disposition might be considered. The positive relationship with emotional value could be related to personal nostalgia, which encompasses an affective experience associated with memories and feelings of the past that is linked to a product, and which can be evoked by stimuli involving the product (Holbrook, 1993). Holbrook and Schindler (2003) argued that such nostalgia creates a lifelong preference for the product that has become part of the extended self. As more time passes, the memories might become more important to hold on to.

The study did not find any significant effects of consumers' demographics, neither within the hypothesised analyses nor in any direct relationships. Previous literature did, however, point out that gender influences consumers' reasons for becoming attached to products, and that utilitarian reasons are more important in the development of this attachment for men than they are for women (Mugge et al., 2010; Csikszentmihalyi & Rochberg-Halton, 1981). The more recent study of Simpson et al. (2019) on disposition behaviour also found a small significant effect of gender on product retention, but no other effects of demographics were evident. It can thus be concluded that demographics do not play a significant role in the context of neglected products, as specified by this study.

*Characteristics of neglected products*

Most of the neglected products named by respondents fell into the musical instruments, electronics, and appliances categories. The same categories were also named as mostly prone to neglect by Van 't Ende (2019), who additionally reported products related to one's appearance as highly neglected products. Regarding differences between product categories, the analysis showed that musical instruments are significantly more difficult to dispose than products related to kids are. The former might be related to losing future ambitions or past memories, while the latter might be easier when children no longer need the products. In addition, emotional value was found to be lower for electronics and appliances when compared to the musical instrument category. This difference makes sense as the former category is assumed to be kept for their functionalities, while the latter

could be tied to past memories. Regarding the time of ownership and neglect, products are on average owned for 8 years, and neglected for 4 of those years. However, the length of ownership and neglect are not extremely insightful as the time that the product will continue to be owned is not known, and standard deviations are relatively large. Appliances and personal care products tend to be used for the shortest amount of time before becoming neglected.

The most frequently mentioned argument that would make respondents more willing to dispose their neglected product related to finding someone that could make better use of the product. Other arguments included a confirmation that the product is really not used anymore, or passing the product on to someone who would really need or value it more. Only a relatively small number of participants responded not being able to dispose the product for any argument. From the majority of the responses, it could be concluded that arguments given to consumers should specifically point out the fact that their product could provide a better value to someone else. This is also reflected in the reported desired gains. A great majority has responded being more willing to dispose neglected products when receiving money or an alternative product in return, which supports the importance of balancing gains and losses from the disposal process, as argued for by Türe (2014) and Van 't Ende (2019). The other part of the respondents would not need anything in return, or solely a good feeling to have helped someone or the knowledge that the product will be used again. The fact that a large number of respondents has indicated wanting to gain money or an alternative product in return for their neglected product, supports the aforementioned discussion that the perceived functional value represents a value that is not yet fully 'used up'. From this, it can be concluded that for most neglected products, consumers do not necessarily need much in return, but just a simple reminder of the potential benefit, either for them or someone else, that could be gained by disposing their product. The potential to help others or a beneficial exchange have also been pointed out by Simpson et al. (2019) as most frequent reasons for disposal.

## 6 LIMITATIONS AND FUTURE RESEARCH

Several limitations can be identified within this study that should be taken into account when interpreting the results. The first set of limitations concerns the research's validity, which might be compromised by the fact that respondents were asked to choose a neglected product themselves, based on which they responded to the questionnaire. Despite the efforts to clarify the study's context beforehand, each chosen product was supposedly related to a different situation, and, therefore, might have led to different interpretations of the questions. This variety between products was reflected by the high standard deviations found within the different product categories. Furthermore, the chosen examples of frequently neglected products included in the questionnaire's introduction

could have influenced consumers' elicited products. While this choice was deemed necessary in order to minimise the previously described issue, this might have simultaneously created a bias due to respondents choosing to report one of the listed products. This could on the one hand be seen as useful for reflecting the study's context, as the examples were chosen based on literature and anecdotal evidence, and thus confirming these products' proneness to becoming neglected. On the other hand, however, this bias might have left an important category of neglected products still uncovered. Unlike the approach taken in this and previous studies, future research might take interest in finding a more comprehensive overview of neglected products within an average household, and discovering which product categories are most beneficial to timely dispose of.

Moreover, the sample used in this research might form a limitation in two regards. First, women were overrepresented in the sample, and although no effects of gender were found in this study, the generalisability of the results might be compromised following an inaccurate representation of the population. In addition, generalisability could have been influenced by the approach taken to distribute the questionnaires. As not enough respondents could be gained through a personal network and snowballing, the questionnaire was posted into several Facebook groups. Larger groups with a greater variety and representation of consumers, however, did not allow the questionnaire to be posted, which led to using smaller groups focusing on topics such as sustainable living, parenting, trading, and selling. As a variety of different topics was approached and no extreme ones were included, no issues conflicting the results were expected. Nevertheless, the possibility of bias in this regard should be taken into consideration.

With regard to the conceptualisations, another limitation became apparent with regard to the term 'resistance to disposition'. This concept was constructed based on Lastovicka and Sirianni's (2011) definition of product commitment, reflecting a devotion to keep a specific product. The usage of this concept within this study might be somewhat confusing as it was measured by asking respondents to indicate the ease or difficulty of using the different methods of disposal, which rests on the assumption that more difficulty to use a method is equal to being resistant towards this method. However, the ambiguity of meaning possibly caused by this term is recognised. Future research should consider the differences in formulating the item, and perhaps investigate whether differences or relationships exist between difficulty, resistance, and inability to dispose in an experimental setting.

Further limitations concern the measurements of the frugal tendencies and perceived value transferability concepts. The factor analysis for the former proved to be problematic in terms of explained variance and communalities, making the chosen items questionable for measuring the frugality concept, which might have influenced its lack of effects. While the same scale was used in

previous studies (Haws et al., 2012; Simpson et al., 2019), in which it did indicate significant influences, a different measurement scale might be considered before completely discarding the influence of frugal tendencies on product neglect. Furthermore, while the analyses resulted in some interesting initial insights into the role of value transferability, this concept should definitely be investigated further. As both value uniqueness and ease of value transfer were used as two-item measurements, further research is necessary to develop these scales to increase their reliability, and investigate the concepts' roles for product neglect again, in order to obtain more specific and reliable results.

Furthermore, this study concluded that product neglect can be regarded as different from hoarding behaviours, but it is worth noting that the two contexts are similar in terms of concepts and reasons to avoid disposition. This study, however, did not control for consumers' tendency to hoard, which might have led to more insightful results. Based on the approaches of Cherrier and Ponnor (2010) and Maycroft (2009), future research should take this into account when investigating product neglect, and establish clear distinctions between these two contexts.

Overall, the collected data and subsequent results might give reason to believe that this studies' hypotheses were perhaps too advanced, given the lack of focus on product neglect within previous literature, paired with an even more severe lack of quantitative research within the field of (non-)disposition behaviours, which limited this research in its measurements, as well as evidence and explanations for the different concepts and relationships. Nevertheless, the insights obtained in this study provide several additional fruitful areas for future research to explore. Whereas this study solely focused on consumers' self-reported assessment of the difficulty to dispose a neglected product through different methods, future research could definitely benefit from investigating their actual behaviours. An observational or experimental research setting could focus on consumers' decisions to either keep or dispose a neglected product, or their choices concerning the actual use of certain redistribution methods over others. Furthermore, this study's proposition for neglected products' value to focus on either the past or the future was derived from the rationale of perceived value *loss*, but whether high perceived emotional and functional values are actually caused by this loss was not measured. Future research could explore the dimensions of value loss, and measure the extent to which consumers experience loss from each redistribution method, which could be extended with an experimental study investigating the benefits provided by these methods. Specifically, practical recommendations could be derived from findings indicating which gains could outweigh the losses of disposition. Within these models, considering concepts such as 'aversion to loss' and 'wastefulness' should be useful in explaining this balance, as people tend to be loss averse in most decision situations (Kahneman, 2011), and generally do not want to appear as being wasteful (Arkes, 1996). Following

this notion of perceived loss, future research could extend this study's findings of past and future value by investigating whether consumers' value protection strategies (Phillips & Sego, 2011) differ for emotional and functional value in order to develop more specific recommendations in this regard.

Lastly, a different perspective could be considered. An interesting thought has been suggested by Lastovicka and Sirianni (2011), stating that sustainability benefits could be enhanced when material possession love would be even higher. The authors argued that this could increase the chances of products being used instead of keeping them unused until they are thrown away. Following the findings of this research, this thought raised two questions that future research could explore. First, could consumers be persuaded into picking up their already neglected products and use them again? In other words, which factors could influence the reuse of products for their original or novel purpose? Second, how could the products' perceived emotional value be enhanced from the beginning of acquiring the product? Studies focusing on these topics could rely on the concept of value uniqueness and its role in the formation of perceived emotional product value.

## 7 IMPLICATIONS AND RECOMMENDATIONS

Despite the incongruencies between this study's expectations and the obtained results, several important contributions can be drawn from both a theoretical and practical perspective. From a theoretical perspective, this study has explicitly explored the context of product neglect in a quantitative setting, whereas previous literature either touched upon the phenomenon within a different context, or studied it qualitatively. An effort was made to reduce the ambiguity and inconsistencies within non-disposition literature, and offer a more comprehensive overview of aspects contributing to product neglect. This research has thus shown that the links between perceived product value and consumers' disposition behaviour are not restricted to 'special' possessions or specific consumer characteristics or lifestyles. Ordinary, durable products are subjects to long-lasting neglect as a result of their connections to the past or potential functionalities in the future. The additional findings also provide evidence for this study's assumption that this notion is based on the avoidance of value loss, which emphasises that an experimental design is necessary for further development of knowledge on product neglect. This research also identifies yet another nuance within the spectrum of (non-)disposition behaviours by proving that the resistance toward disposing neglected products differs from general retention and hoarding tendencies. Additionally, taking into account the perceived value's transferable qualities in a quantitative manner characterises this study's most novel contribution to the literature base, which invites new research into an unexplored aspect of consumer behaviour. Moreover, the relationship between emotional value and value uniqueness

extends Belk's (1988) notion of one's self-concept by showing that the most powerful fact of consumer behaviour stating *'we are what we have'* indeed plays a role in consumers' non-disposition behaviours.

From a practical perspective, this research is expected to provide marketing managers with a better understanding of consumers' (non-)disposition behaviours, and how to respond to them in order to encourage sustainable behaviours. As neglected products can be left unused for many years, the main concern should focus on earlier disposal by making the disposition possibilities be perceived as easier. Emotionally valued products are expected to be more difficult to influence because of their larger and increasing influence on disposition resistance. Earlier disposition of these products could be encouraged by protecting the product's unique value and ensuring that this value would not be lost after disposition. Tactics for making disposal easier could include taking a picture of the product to preserve its memory (Winterich et al., 2017), or enabling consumers to share their products' stories with potential new owners, for which a platform could be created. Moreover, lending or renting neglected products with residual functional value could form a solution for consumers to keep their product while sharing its perceived value with others. Arguments such as '*let your guitar help someone else's ambition until you are ready to pick up on yours again*' could be used to stimulate these behaviours. Moreover, as emotional value concerns the past and functional value the future, the former value might be considered more fixed while the latter is expected to be easier to influence. While a large number of platforms for selling and trading products among consumers already exists, promoting these platforms should be more explicitly focused on possible benefits for the residual value of functional products, for instance by advertising *'a better home for your product, a cleaner home for you'*. For electronics and appliances, which form a large group among neglected products, trade-in programs offering compensation could be effective (Simpson et al., 2019). In general, arguments should focus on the potential utilisation of the product's value to decrease the perceived loss, and in turn enhance the circularity of products.

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# APPENDIX A

## QUESTIONNAIRE

| MT Product Neglect |
|---|

| | |
|---|---|
| Dear respondent, | Beste deelnemer, |
| Thank you for taking interest in participating in this survey! My name is Karoline and I'm a Marketing student at Radboud University Nijmegen. For my master's thesis, I am interested in consumers' reasons for keeping products they no longer use. Think of an ambitiously bought guitar that is gathering dust on the attic, or a forgotten exercise bike that is being stored in the basement. Why are these products kept, and not sold, gifted, or donated? Passing them on could perhaps have positive benefits for yourself, but also for the environment by stimulating product circularity. What are your reasons for keeping such products? | Allereerst ontzettend bedankt dat je de tijd neemt om deze vragenlijst in te vullen! Mijn naam is Karolina en ik studeer Marketing aan de Radboud Universiteit Nijmegen. Voor mijn masterscriptie ben ik geïnteresseerd in de redenen die mensen hebben om producten te bewaren die ze niet meer gebruiken. Denk aan een gitaar die vol ambitie ooit is gekocht en nu stof verzamelt op zolder, of een vergeten trimfiets die in de kelder wordt bewaard. Waarom worden deze producten bewaard en niet verkocht, weggegeven of gedoneerd? Dit zou niet alleen voordelen kunnen hebben voor jezelf, maar ook voor het milieu doordat het hergebruik van producten stimuleert. Wat zijn jouw redenen om dit soort producten te bewaren? |
| In this survey, you will be presented with questions concerning a product that you own but no longer use. Your answers will remain completely anonymous and will solely be used for research purposes within this project. Participation in this survey is voluntary and you may withdraw at any time. Please read all questions carefully and answer them honestly, as all your input will be valuable for the goals of this research. | In deze vragenlijst ben ik geïntereseerd in jouw mening over een product dat je niet meer gebruikt maar ook niet weg doet. Je antwoorden zullen volledig anoniem blijven en de resultaten worden uitsluitend gebruikt voor de doeleinden van dit onderzoek. Deelname is geheel vrijwillig en stoppen kan op elk moment. Lees alsjeblieft de vragen zorgvuldig door en beantwoord deze zo eerlijk mogelijk. Alle antwoorden zijn ontzettend waardevol voor de doeleinden van dit onderzoek! |
| This survey will take approximately 9 minutes to complete. | Het invullen van deze vragenlijst duurt ongeveer 9 minuten. |
| To show my appreciation, I will give away a *box of brownies* to one random respondent! More information about this will be given at the end of this survey :-) | Als waardering wil ik graag een *doosje brownies* weggeven aan een willekeurige deelnemer! Meer informatie hierover is te vinden aan het einde van deze vragenlijst :-) |
| ○ I have read the information above and agree to participate in this survey. | ○ Ik heb bovenstaande information gelezen en ga hiermee akkoord. |
| We all own products that we once used for a certain amount of time and stopped using at some point. Instead of disposing these products, however, we still keep them around. We store them in closets, keep them out of sight on attics, or ignore them as we walk by. We do not use them anymore, but we keep them anyway. It might even be said that we tend to neglect these products. | We bezitten allemaal wel spullen die we ooit voor een bepaalde tijd gebruikten en die we vanaf een bepaald moment nooit meer gebruikt hebben. In plaats van deze spullen weg to gooien of op een andere manier weg te doen, houden we ze. We bergen ze op in kasten, houden ze uit het zicht op zolder, of negeren ze elke keer dat we er voorbij lopen. We gebruiken ze niet meer, maar we houden ze toch. Het kan zelfs gezegd worden dat we deze producten neigen te *verwaarlozen*. |
| Products that tend to be neglected often are durable products*, for example:<br>- musical instruments, such as a guitar or keyboard;<br>- kitchen appliances, such as a coffee maker or microwave;<br>- electronics, such as a printer or laptop;<br>- kids' products, such as a stroller or toys. | Producten die vaak verwaarloosd worden zijn *duurzame producten\**, bijvoorbeeld:<br>- muziekinstrumenten, zoals een gitaar of keyboard;<br>- keukenapparaten, zoals een koffiezetapparaat of magnetron; |

| | |
|---|---|
| However, any durable product from other categories could of course be neglected as well.<br><br>*\* durable products are products that do not wear out quickly, meaning that they are intended to last for a longer period of time and therefore do not have to be purchased frequently.* | - elektronica, zoals een printer of laptop;<br>- producten van/voor kinderen, zoals een kinderwagen of speelgoed.<br><br>Natuurlijk zou ieder ander duurzaam product uit andere productcategorieën ook verwaarloosd kunnen worden.<br><br>*\* onder duurzame producten verstaan we spullen die niet snel slijten, wat betekent dat deze spullen bedoeld zijn om voor een langere tijd mee te gaan and daarom niet vaak gekocht hoeven te worden.* |
| **Q1 Please name a durable product that you have not used in a long time.** | **Q1 Welk duurzaam product heb jij al een lange tijd niet meer gebruikt?** |
| Please answer the following questions with <u>your chosen product</u> in mind. | Beantwoord de vragen alsjeblieft met <u>jouw gekozen product</u> in gedachten. |
| **Q2 Which of the following is applicable for your chosen product?**<br>○ This product was a gift.<br>○ I bought this product myself.<br>○ Other (please specify shortly) | **Q2 Welke van de volgende opties is van toepassing op het gekozen product?**<br>○ Dit product was een cadeau.<br>○ Ik heb dit product zelf gekocht.<br>○ Anders (licht kort toe) |
| **Q3 Please state the number of *months* that you have <u>owned</u> this product.** *[approximately]* | **Q3 Hoe lang heb je dit product al?** *[geshcat, in maanden]* |
| **Q4 Please state the number of *months* that you have <u>not used</u> this product.** *[approximately]* | **Q4 Hoe lang heb je dit product al niet meer gebruikt?** *[geschat, in maanden]* |
| The next questions relate to your reasons for keeping this product. | De volgende vragen gaan over de redenen voor het behouden van dit product. |
| **Q5 Please indicate the extent to which you (dis)agree with the following statements.**<br>*(Strongly disagree ... Strongly agree)*<br>This product has a special meaning to me.　ooooooo<br>This product is very dear to me.　ooooooo<br>I have a bond with this product.　ooooooo<br>I am very attached to this product.　ooooooo<br>I feel emotionally connected to this product.　ooooooo<br>This product moves me.　ooooooo<br>I think this product functions very well.　ooooooo<br>I think this product is very useful.　ooooooo<br>I think this product is easy to use.　ooooooo<br>I think this product is very practical in its daily use.　ooooooo | **Q5 Geef aan in hoeverre je het (on)eens bent met de onderstaande uitspraken.**<br>*(Zeer mee oneens ... Zeer mee eens)*<br>Dit product heeft een speciale betekenis voor mij.　ooooooo<br>Dit product is mij zeer dierbaar.　ooooooo<br>Ik heb een band met dit product.　ooooooo<br>Ik ben erg gehecht aan dit product.　ooooooo<br>Ik voel mij emotioneel verbonden met dit product.　ooooooo<br>Dit product raakt mij.　ooooooo<br>Dit product functioneert heel goed.　ooooooo<br>Dit product is heel nuttig.　ooooooo<br>Dit product is gemakkelijk in gebruik.　ooooooo<br>Dit product is heel praktisch in het dagelijkse gebruik ervan.　ooooooo |
| **Q6 When the question of getting rid of your product arises, how likely are you to say the following to yourself?**<br>*(Extremely unlikely ... Extremely likely)*<br>"I may need it someday."　ooooooo<br>"It may always be of use."　ooooooo<br>"Who knows? I may want to use it again at some point."　ooooooo<br>"What memories of my past!"　ooooooo<br>"It reminds me of so many things."　ooooooo<br>"It reminds me of everything I've done."　ooooooo<br>"It is a reminder for an important person or event."　ooooooo | **Q6 Stel dat de vraag opkomt om dit product weg te doen. Hoe waarschijnlijk is het dat je het volgende tegen jezelf zal zeggen?**<br>*(Zeer onwaarschijnlijk ... Zeer waarschijnlijk)*<br>"Misschien heb ik het ooit nog nodig."　ooooooo<br>"Het kan altijd van pas komen."　ooooooo<br>"Wie weet? Misschien wil ik het ooit nog een keer gebruiken."　ooooooo<br>"Wat een herinneringen van mijn verleden!"　ooooooo<br>"Het herinnert mij aan zoveel dingen."　ooooooo<br>"Het herinnert mij aan alles wat ik gedaan heb."　ooooooo<br>"Het is een herinnering aan een belangrijk(e) persoon of gebeurtenis."　ooooooo |

**Q7 Imagine that you would consider disposing your product at this moment. How easy or difficult would the following options be for you?**

*(Extremely easy … Extremely difficult)*

| | |
|---|---|
| *Throwing* the product *away* | ○○○○○○○ |
| *Selling* the product | ○○○○○○○ |
| *Giving* the product to someone in your family | ○○○○○○○ |
| *Giving* the product to someone you know (not family) | ○○○○○○○ |
| *Giving* the product to someone you do not know | ○○○○○○○ |
| *Donating* the product to charity | ○○○○○○○ |

**Q7 Stel dat je op dit moment toch zou overwegen om afstand te doen van jouw product. Hoe makkelijk of moeilijk zou je de volgende manieren vinden?**

*(Zeer makkelijk … Zeer moeilijk)*

| | |
|---|---|
| Het product **weggooien** | |
| Het product **verkopen** | |
| Het product **weggeven** aan een familielid | |
| Het product **weggeven** aan een bekende (niet familie) | |
| Het product **weggeven** aan een onbekende | |
| Het product **doneren** aan het goede doel | |

**Q8 Which argument, if any, could make you *more* willing to dispose your product?**

☐

**Q8 Welk argument zou je kunnen overtuigen om jouw product af te staan?**

☐

**Q9 What would you want to gain from disposal to make you *more* willing to dispose your product?**

☐

**Q9 Wat zou je voor het product moeten krijgen om overgehaald te worden jouw product af te staan?**

☐

**Q10 How do you think others would perceive your product? Please indicate the extent to which you (dis)agree with the following statements.**

*(Strongly disagree … Strongly agree)*

| | |
|---|---|
| It is easy to find someone who will appreciate this product as much as I do. | ○○○○○○○ |
| I have no doubt many others will perceive this product as valuable as I do. | ○○○○○○○ |
| There is no one else who would value this product like I do. | ○○○○○○○ |
| This product would be worthless to someone else. | ○○○○○○○ |
| The meaning of this product is unique for me. | ○○○○○○○ |
| If I would pass this product on to someone else, its value would be lost. | ○○○○○○○ |

**Q10 Wat denk je dat anderen van jouw product vinden? Geef aan in hoeverre je het (on)eens bent met de onderstaande uitspraken.**

*(Zeer mee oneens … Zeer mee eens)*

| | |
|---|---|
| Het is makkelijk om iemand te vinden die dit product net als ik zou waarderen. | ○○○○○○○ |
| Vele anderen zullen dit product ongetwijfeld net zo waardevol vinden als ik. | ○○○○○○○ |
| Er is niemand anders die dit product zal waarderen zoals ik. | ○○○○○○○ |
| Dit product zou waardeloos zijn voor iemand anders. | ○○○○○○○ |
| De betekenis van dit product is uniek voor mij. | ○○○○○○○ |
| Als ik dit product af zou staan aan iemand anders, zou de waarde ervan verloren gaan. | ○○○○○○○ |

From now on, you do <u>not</u> have to keep your chosen product in mind anymore.

The following questions concern your general opinions about disposing products.

Vanaf nu hoef je het gekozen product <u>niet</u> meer in gedachten te houden.

De volgende vragen betreffen jouw mening over spullen wegdoen in het algemeen.

**Q11 Please indicate the extent to which you (dis)agree with the following statements.**

*(Strongly disagree … Strongly agree)*

| | |
|---|---|
| Getting rid of stuff is hard for me. | ○○○○○○○ |
| I tend to hold on to my possessions. | ○○○○○○○ |
| Unless I have a really good reason to throw something away, I tend to keep it. | ○○○○○○○ |
| I do not like to dispose of possessions. | ○○○○○○○ |
| I believe in being careful in how I spend my money. | ○○○○○○○ |
| I discipline myself to get the most from my money. | ○○○○○○○ |
| I am willing to wait on a purchase I want so that I can save money. | ○○○○○○○ |
| There are things I resist buying so I can save for tomorrow. | ○○○○○○○ |

**Q11 Geef aan in hoeverre je het (on)eens bent met de onderstaande uitspraken.**

*(Zeer mee oneens … Zeer mee eens)*

| | |
|---|---|
| Spullen wegdoen is moeilijk voor mij. | ○○○○○○○ |
| Ik heb de neiging om vast te houden aan mijn bezittingen | ○○○○○○○ |
| Tenzij ik een hele goede reden heb om iets weg te gooien, heb ik de neiging om het te houden. | ○○○○○○○ |
| Ik vind het niet leuk om bezittingen weg te doen. | ○○○○○○○ |
| Ik geloof in het voorzichtig zijn met de manier waarop ik mijn geld uitgeef. | ○○○○○○○ |
| Ik disciplineer mijzelf om het meeste uit mijn geld te halen. | ○○○○○○○ |
| Ik ben bereid om te wachten met een aankoop om zo geld te besparen. | ○○○○○○○ |
| Er zijn spullen die ik weiger te kopen om te sparen voor later. | ○○○○○○○ |

Finally, please respond to the last few questions relating to your background.

Beantwoord tot slot alsjeblieft de laatste vragen met betrekking tot jouw achtergrondkenmerken.

| | |
|---|---|
| **Q12 What is your gender?**<br>○ Male<br>○ Female<br>○ Other/prefer not to say | **Q13 Wat is je geslacht?**<br>○ Man<br>○ Vrouw<br>○ Anders/wil het niet zeggen |
| **Q13 What is your age?**<br>[_____] | **Q13 Wat is je leeftijd?**<br>[_____] |
| **Q14 What is your current employment status?**<br>○ Student<br>○ Employed<br>○ Unemployed<br>○ Retired<br>○ Other, namely:<br>[_____] | **Q14 Welke van de volgende omschrijft jouw situatie het beste?**<br>○ Student<br>○ Werkend<br>○ Werkloos<br>○ Gepensioneerd<br>○ Anders, namelijk:<br>[_____] |
| **Q15 What is your highest level of education? (Achieved or currently pursuing)**<br>○ No formal education<br>○ High school degree<br>○ Secondary vocational degree (mbo)<br>○ Bachelor's degree<br>○ Master's degree<br>○ Doctorate degree<br>○ Other, namely:<br>[_____] | **Q15 Welke van de volgende opties omschrijft jouw hoogst behaalde opleidingsniveau (inclusief het niveau waar je momenteel mee bezig bent)?**<br>○ Geen formele opleiding<br>○ Middelbare school<br>○ Mbo<br>○ Bachelor<br>○ Master<br>○ Doctoraal<br>○ Anders, namelijk:<br>[_____] |
| Thank you for taking the time to fill in this survey!<br><br>As I appreciate all responses, I would like to give away a box of brownies from 'The Brownie Box'. When all surveys are done, I will choose one respondent at random and get in contact asap!<br><br>Do you want the chance to win a box of brownies (6 pieces) of your choice?<br>○ Yes -> Please fill in your email address:<br>[_____]<br>○ No -> Please click on the 'next' button one last time. | Dankjewel voor het invullen van deze vragenlijst!<br><br>Omdat ik alle deelname zeer waardeer, wil ik graag een doosje brownies van 'The Brownie Box' weggeven. Wanneer alle resultaten binnen zijn, zal ik willekeurig een deelnemer kiezen en zsm een bericht hierover sturen!<br><br>Wil je meedoen aan de loting om een doosje brownies (6 stuks) naar keuze toegestuurd te krijgen?<br>○ Ja -> Vul alsjeblieft je e-mailadres in:<br>[_____]<br>○ Nee -> Klik alsjeblieft op de 'verder' know hieronder. |

# APPENDIX B

## NEGLECTED PRODUCTS WITH OWNERSHIP, NEGLECT, AND USAGE TIME PER CATEGORY

| Product category | Average time ownership (in months) | | Average time neglect (in months) | | Average time usage (in months) | |
|---|---|---|---|---|---|---|
| **Musical instruments** | *M* = 131.30 | *SD* = 93.59 | *M* = 62.61 | *SD* = 68.23 | *M* = 68.70 | *SD* = 58.49 |
| *Products:* | Guitar | 23 | Keyboard | 4 | Flute | 3 |
| | Musical instrument(s) | 4 | Ukulele | 2 | Clarinet | 2 |
| | Piano | 5 | Violin | 1 | Cajon | 1 |
| **Electronics** | *M* = 72.39 | *SD* = 58.64 | *M* = 30.33 | *SD* = 32.41 | *M* = 42.06 | *SD* = 42.71 |
| *Products:* | Printer | 13 | Sound box (system) | 5 | Tablet | 2 |
| | Laptop | 6 | Game console | 2 | MP3 player | 1 |
| | Computer | 4 | Mobile phone | 2 | TV | 1 |
| | Router | 1 | CD player | 1 | DVD player | 1 |
| **Appliances** | *M* = 64.75 | *SD* = 58.64 | *M* = 37.93 | *SD* = 40.62 | *M* = 26.82 | *SD* = 42.71 |
| *Products:* | Coffee machine | 9 | Slow cooker | 2 | Air fryer | 1 |
| | Microwave | 3 | Iron | 1 | Steam cleaner | 1 |
| | Vacuum cleaner | 2 | Tumble dryer | 1 | Waffle iron | 1 |
| | Kettle | 1 | Food processor | 2 | Bread machine | 1 |
| | Electric juicer | 1 | Soda stream | 1 | Freezer | 1 |
| **Furniture** | *M* = 205.75 | *SD* = 192.60 | *M* = 75.00 | *SD* = 87.47 | *M* = 130.75 | *SD* = 181.84 |
| *Products:* | Bed | 3 | Furniture | 2 | Table | 1 |
| | Chairs | 2 | Lamp | 1 | | |
| **Kids' stuff** | *M* = 128.31 | *SD* = 115.02 | *M* = 56.23 | *SD* = 78.60 | *M* = 72.08 | *SD* = 55.25 |
| *Products:* | Stroller | 6 | Baby bottles | 1 | Baby stuff | 1 |
| | Toys | 5 | | | | |
| **Personal care** | *M* = 43.60 | *SD* = 6.99 | *M* = 17.20 | *SD* = 12.78 | *M* = 26.40 | *SD* = 14.93 |
| *Products:* | Hair straightener | 2 | Hairdryer | 2 | Curling iron | 1 |
| **Sport/fitness** | *M* = 90.93 | *SD* = 58.28 | *M* = 33.36 | *SD* = 28.01 | *M* = 57.57 | *SD* = 51.55 |
| *Products:* | Bicycle | 6 | Cross-trainer | 1 | Football | 1 |
| | Skates | 3 | Resistance band | 1 | Tennis racket | 1 |
| **Hobby/other** | *M* = 85.85 | *SD* = 88.28 | *M* = 53.79 | *SD* = 77.48 | *M* = 32.06 | *SD* = 36.05 |
| *Products:* | Book(s) | 6 | Game boy | 2 | Cool box | 1 |
| | Camera | 6 | DJ set | 1 | Oven dish | 1 |
| | Tent | 2 | Coffee machine filter | 1 | Sewing machine | 2 |
| | Camping stuff | 3 | Cutting plotter | 1 | Boots | 1 |
| | Beeswax cloth | 1 | E-reader | 1 | Poker set | 1 |
| | Aquarium | 1 | Hay madam | 1 | Car | 1 |
| | Bronze statue | 1 | Motorcycle suit | 1 | Calculator | 1 |
| | Yugioh cards | 1 | Lego | 1 | Dinnerware | 1 |
| | Puzzle | 1 | | | | |

# APPENDIX C

## FACTOR AND RELIABILITY ANALYSES

### 'Perceived emotional product value'

The first factor analysis was conducted for the independent variable '*perceived emotional product value*'. As previously described, this study expected emotional value to consist of emotional attachment to a certain product as well as its past value. The factor analysis aimed to discover whether the two used scales could indeed sufficiently explain this variable combined, or whether one of the scales would be considered a better predictor. Conducting this factor analysis was regarded as appropriate with a very high KMO value of .916 as well as a significant Bartlett's Test of Sphericity ($p$ < .001). Based on the eigenvalues and scree plot, the analysis strongly suggested the existence of one factor within the inserted items. With values greater than .50 and .55 respectively, both communalities and factor loadings proved to share and explain variance within the extracted factor. The total explained variance was 72.178%, which could be regarded as satisfactory. A subsequent reliability analysis resulted in a Cronbach's alpha of .961, from which the conclusion could be drawn that the scale is highly consistent and reliable for measuring the construct of emotional value. The deletion of one item could slightly improve the α value, but as this change would only be minor, the decision was made to retain the item. Thus, ten items could be computed into the variable 'Emotional_Value'.

**Total variance explained**

| Factor | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
|--------|-------|---------------|--------------|-------|---------------|--------------|
| | | *Initial Eigenvalues* | | | *Extraction Sums of Squared Loadings* | |
| 1 | 7.485 | 74.850 | 74.850 | 7.218 | 72.178 | 72.178 |
| 2 | .776 | 7.763 | 82.613 | | | |
| 3 | .456 | 4.558 | 87.11 | | | |
| 4 | .324 | 3.239 | 90.410 | | | |
| 5 | .283 | 2.826 | 93.236 | | | |
| 6 | .235 | 2.355 | 95.591 | | | |
| 7 | .178 | 1.781 | 97.372 | | | |
| 8 | .110 | 1.101 | 98.473 | | | |
| 9 | .079 | .787 | 99.290 | | | |
| 10 | .074 | .740 | 100.000 | | | |

## Factor Matrix**

| | Factor 1 |
|---|---|
| This product has a special meaning to me. | .894 |
| This product is very dear to me. | .880 |
| I have a bond with this product. | .902 |
| I am very attached to this product. | .875 |
| I feel emotionally connected to this product. | .893 |
| This product moves me. | .829 |
| "What memories of my past!" | .850 |
| "It reminds me of so many things." | .865 |
| "It reminds me of everything I've done." | .774 |
| "It is a reminder for an important person or event." | .714 |

## Communalities

| | Initial | Extraction |
|---|---|---|
| | .856 | 800 |
| | .844 | .775 |
| | .873 | 814 |
| | .848 | 765 |
| | .803 | .798 |
| | .724 | .686 |
| | .844 | .722 |
| | .858 | .749 |
| | .690 | .599 |
| | .534 | .510 |

## Kaiser-Meyer-Olkin Measure of Sampling Adequacy

| | |
|---|---|
| | .916 |

## Bartlett's Test of Sphericity

| | |
|---|---|
| Approx. Chi-Square | 2278.719 |
| df | 45 |
| Sig. | .000* |

## Scree plot
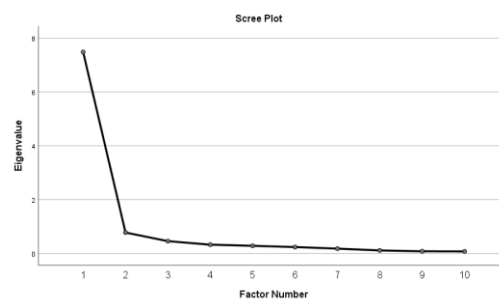


## Correlation Matrix***

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| This product has a special meaning to me. | 1 | 1 | .886 | .839 | .820 | .820 | .738 | .717 | .724 | .594 | .625 |
| This product is very dear to me. | 2 | .886 | 1 | .829 | .798 | .759 | .781 | .670 | .702 | .616 | .635 |
| I have a bond with this product. | 3 | .839 | .829 | 1 | .905 | .824 | .733 | .706 | .726 | .658 | .595 |
| I am very attached to this product. | 4 | .820 | .798 | .905 | 1 | .799 | .754 | .676 | .671 | .609 | .599 |
| I feel emotionally connected to this product. | 5 | .820 | .759 | .824 | .799 | 1 | .786 | .743 | .766 | .667 | .602 |
| This product moves me. | 6 | .738 | .781 | .733 | .754 | .786 | 1 | .660 | .679 | .638 | .557 |
| "What memories of my past!" | 7 | .717 | .670 | .706 | .676 | .743 | .660 | 1 | .906 | .776 | .651 |
| "It reminds me of so many things." | 8 | .724 | .702 | .726 | .671 | .766 | .679 | .906 | 1 | .787 | .648 |
| "It reminds me of everything I've done." | 9 | .594 | .616 | .658 | .609 | .667 | .638 | .776 | .787 | 1 | .642 |
| "It is a reminder for an important person or event." | 10 | .625 | .635 | .595 | .599 | .602 | .557 | .651 | .648 | .642 | 1 |

Extraction method: Principal Axis Factoring.

* Significant at p < .001.

** 1 factor extracted: 4 iterations required.

*** all values are significant at p < .001.

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .961 | 10 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| This product has a special meaning to me. | 27.01 | .870 | .955 |
| This product is very dear to me. | 27.21 | .857 | .956 |
| I have a bond with this product. | 27.32 | .876 | .955 |
| I am very attached to this product. | 27.39 | .849 | .956 |
| I feel emotionally connected to this product. | 27.41 | .870 | .955 |
| This product moves me. | 27.64 | .807 | .958 |
| "What memories of my past!" | 27.40 | .839 | .956 |
| "It reminds me of so many things." | 27.58 | .854 | .956 |
| "It reminds me of everything I've done." | 28.02 | .767 | .959 |
| "It is a reminder for an important person or event." | 27.48 | .704 | .962 |

## 'Perceived functional product value'

The next factor analysis concerned the '*perceived functional product value'*, which again, was expected to consist of the utility of a product as well as its perceived future value. Although the suitability for factor analysis was justified with a KMO value of .728 and a significant Bartlett's test ($p < .001$), the eigenvalues and scree plot clearly indicated that the items loaded on two factors. The items comprising the product's present utility presented low communalities (.322, and .485) and both factors explained 56.177% of the variance. After a closer look at both factors, it could be concluded that the scale for future value was a better predictor for a product's functional value. With another factor analysis being appropriate (KMO = .730; Bartlett's test: $p < .001$), these three items clearly loaded on one factor that explained 67.289% of the variance, and showed no problems with regard their communalities or factor loadings. Moreover, a Cronbach's alpha of .859 indicated this scale to be highly reliable, and the three items were therefore computed into the variable 'Functional_Value'. Another variable was computed for the second factor representing a product's utility, and although this variable was not used to test the hypotheses, it was included into separate analyses to explore whether possible effects would exist.

**Total variance explained**

| | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| Factor | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.343 | 78.090 | 78.090 | 2.019 | 67.289 | 67.289 |
| 2 | .368 | 12.278 | 90.368 | | | |
| 3 | .289 | 9.632 | 100.000 | | | |

**Factor Matrix\*\***

|  | Factor 1 |
|---|---|
| "I may need it someday." | .799 |
| "It may always be of use." | .868 |
| "Who knows? I may want to use it again at some point." | .792 |

**Communalities**

|  | Initial | Extraction |
|---|---|---|
| "I may need it someday." | .527 | .638 |
| "It may always be of use." | .585 | .753 |
| "Who knows? I may want to use it again at some point." | .519 | .627 |

**Kaiser-Meyer-Olkin Measure of Sampling Adequacy**

| .730 |
|---|

**Bartlett's Test of Sphericity**

| Approx. Chi-Square | 268.294 |
|---|---|
| df | 3 |
| Sig. | .000\* |

**Scree plot**
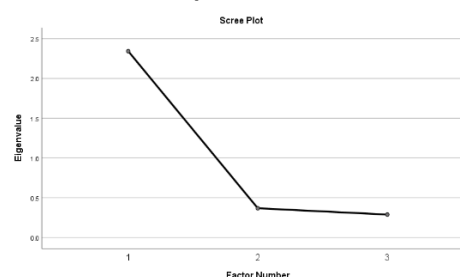


**Correlation Matrix**

|  |  | "I may need it someday." | "It may always be of use." | "Who knows? I may want to use it again at some point |
|---|---|---|---|---|
| Correlation | "I may need it someday." | 1.000 | .694\* | .632\* |
|  | "It may always be of use." | .694\* | 1.000 | .688\* |
|  | "Who knows? I may want to use it again at some point." | .632\* | .688\* | 1.000 |

*Extraction method: Principal Axis Factoring.*

*\* Significant at p < .001.*

*\*\* 1 factor extracted: 9 iterations required.*

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .859 | 3 |

**Item-Total Statistics**

|  | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| "I may need it someday." | 10.47 | .723 | .813 |
| "It may always be of use." | 10.59 | .765 | .772 |
| "Who knows? I may want to use it again at some point." | 10.13 | .717 | .819 |

### 'Resistance to disposition'

This study tested *'resistance to disposition'* with the perceived ease or difficulty to dispose a product through different redistribution methods. The total resistance was therefore expected to be composed of consumers' resistance toward the different individual methods, and a factor analysis was conducted to assess whether these items could indeed form a scale. Additionally, the separate methods are addressed in the 'Additional analyses' section. With a KMO value of .819 and a significant Bartlett's test (*p* < .001), conducting a factor analysis was justified. All five items loading on one factor

as expected and together explained 66.795% of the variance. One item, 'difficulty of selling the product' showed a communality of .415, which is below the set threshold of .50. This is understandable as selling differs from the other items that all describe a form of giving. However, based on theoretical considerations of the different redistribution methods and given the satisfactory factor loading of the item, the decision was made to retain this item in the scale for the analysis of the total resistance. Furthermore, a reliability test also showed a slight increase in Cronbach's alpha when the selling item would be deleted, but with an original value of .903 and the above stated reasoning, this scale could be seen as highly reliable. The five items were therefore computed into the variable 'Disposition_Resistance'.

**Total variance explained**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.643 | 72.829 | 72.959 | 3.340 | 66.795 | 66.795 |
| 2 | .612 | 12.249 | 85.108 | | | |
| 3 | .402 | 8.050 | 93.158 | | | |
| 4 | .227 | 4.545 | 97.703 | | | |
| 5 | .115 | 2.297 | 100.000 | | | |

**Factor Matrix****

| | Factor 1 |
|---|---|
| Selling the product | .644 |
| Giving the product to someone in your family | .865 |
| Giving the product to someone you know (not family) | .939 |
| Giving the product to someone you do not know | .802 |
| Donating the product to charity | .806 |

**Communalities**

| | Initial | Extraction |
|---|---|---|
| | .407 | .415 |
| | .770 | .749 |
| | .820 | .882 |
| | .664 | .644 |
| | .657 | .650 |

**Kaiser-Meyer-Olkin Measure of Sampling Adequacy**

| | |
|---|---|
| | .819 |

**Bartlett's Test of Sphericity**

| Approx. Chi-Square | 722.529 |
|---|---|
| df | 10 |
| Sig. | .000* |

**Scree plot**
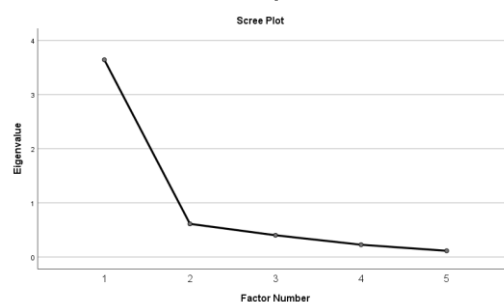
**Correlation Matrix**

| | | Selling the product | Giving the product to someone in your family | Giving the product to someone you know (not family) | Giving the product to someone you do not know | Donating the product to charity |
|---|---|---|---|---|---|---|
| Correlation | Selling the product | 1.000 | .599* | .624* | .495* | .473* |
| | Giving the product to someone in your family | .599* | 1.000 | .871* | .626* | .664* |
| | Giving the product to someone you know (not family) | .624* | .871* | 1.000 | .722* | .711* |
| | Giving the product to someone you do not know | .495* | .626* | .722* | 1.000 | .774* |
| | Donating the product to charity | .473* | .664* | .711* | .774* | 1.000 |

*Extraction method: Principal Axis Factoring.*
*\* Significant at p < .001.*
*\*\* 1 factor extracted: 6 iterations required.*

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .903 | 5 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| Selling the product | 14.18 | .613 | .914 |
| Giving the product to someone in your family | 15.26 | .809 | .872 |
| Giving the product to someone you know (not family) | 14.81 | .870 | .858 |
| Giving the product to someone you do not know | 13.64 | .758 | .882 |
| Donating the product to charity | 14.39 | .761 | .882 |

## 'Perceived value transferability' ('Ease of value transfer' & 'Value uniqueness')

The next factor analysis was conducted for the self-composed variable '*perceived value transferability*'. Conducting the analysis was justified with a KMO value of .765 and a significant ($p >$ .001) Bartlett's test of sphericity. Despite the expectation to find one factor, the analysis clearly extracted two factors. Moreover, the item 'Value_Transferability_4' was considered as problematic due to its cross-loading (difference < |.20|) as well as its low communality of .351, and the decision was made to delete this item from the analysis. Re-running the factor analysis was still appropriate with a KMO value of .705 and a significant Bartlett's test (p < .001), and resulted in two items which explained more variance (61.891%) than before the deletion of the item. However, the item 'Value_Transferability_3' still showed a cross-loading, and did not reach the threshold of .55 for either

factor's loading. The decision was therefore made to delete this item as well. A subsequent factor analysis resulted in a KMO value of .577 and a significant Bartlett's test (p < .001), so performing the analysis was appropriate. 61.898% of the variance was explained, and based on the eigenvalues as well as the scree plot, two factors were extracted. As no previous study addressed the concept of value transferability in a quantitative manner, the decision for this study was made to retain both factors to provide an initial indication of the concept. It should be noted that the item 'Value_Transferability_1' showed a communality of .438, which was just below the set threshold of .50, but was retained to allow a second factor to be formed. The factor loadings of all four items were deemed satisfactory. Thus, this study treats value transferability as a multidimensional concept, consisting of the variables '*Ease of value transfer*' and '*Value uniqueness*', both consisting of two items. It should be taken into account that scales with fewer than three items are undesirable and their use is generally discouraged (Raubenheimer, 2004), but as this study aimed to form a base for a concept that has not been researched before, the variables were still included in the analysis. The subsequent reliability analyses revealed satisfactory results with a value of .691 for 'Ease_Value_Transfer' and .812 for 'Value_Uniqueness'. Both scales were therefore computed into their corresponding variables.

**Total variance explained**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.176 | 54.398 | 54.398 | 1.828 | 45.709 | 45.709 |
| 2 | 1.056 | 26.392 | 80.791 | .648 | 16.189 | 61.898 |
| 3 | .486 | 12.156 | 92.946 | | | |
| 4 | .282 | 7.054 | 100.000 | | | |

**Pattern Matrix****

| | Factor 1 | Factor 2 |
|---|---|---|
| It is easy to find someone who will appreciate this product as much as I do | | .677 |
| I have no doubt many others will perceive this product as valuable as I do | | .776 |
| The meaning of this product is not unique for me[1] | .893 | |
| If I would pass this product on to someone else, its value would not be lost[1] | .767 | |

**Communalities**

| | Initial | Extraction |
|---|---|---|
| | .289 | .438 |
| | .366 | .645 |
| | .525 | .816 |
| | .479 | .578 |

**KMO Measure Of Sampling Adeq.**

| |
|---|
| .577 |

**Bartlett's Test of Sphericity**

| Approx. Chi-Square | 222.671 |
|---|---|
| df | 6 |
| Sig. | .000* |

[1] *Reverse-coded item.*

**Scree plot**



**Factor Correlation Matrix**

| Factor | 1 | 2 |
|---|---|---|
| 1 | 1.000 | .444 |
| 2 | .444 | 1.000 |
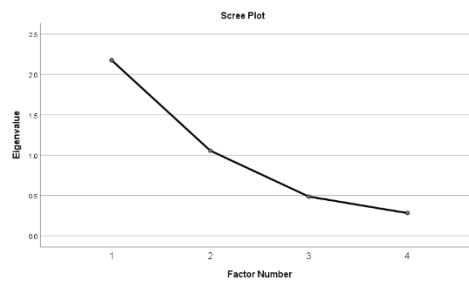
*Extraction method: Principal Axis Factoring.*

*Rotation method: Oblimin with Kaiser Normalisation.*

*\* Significant at p < .001.*

*\*\* 1 factor extracted: 4 iterations required.*

Reliability 'Ease of value transfer'

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .691 | 2 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| It is easy to find someone who will appreciate this product as much as I do | 4.38 | .528 | - |
| I have no doubt many others will perceive this product as valuable as I do | 4.55 | .528 | - |

Reliability 'Value uniqueness'

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .812 | 2 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| The meaning of this product is not unique for me[1] | 5.59 | .687 | - |
| If I would pass this product on to someone else, its value would not be lost[1] | 5.25 | .687 | - |

The next factor analysis was conducted for the *'attachment tendencies'* concept, which was deemed appropriate with a KMO value of .842 and a significant Bartlett's test ($p < .001$). Analysis of the scree plot and the eigenvalues revealed that all four items clearly load on one factor, and the items' communalities and factor loadings all met the threshold of .50 and .55, respectively. 74.217% of the variance was explained, which was also seen as satisfactory. Moreover, the scale proved to be highly reliable after a reliability analysis resulted in a Cronbach's alpha of .918. The analysis did, however, indicate that deleting item 'Attachment_4' would lead to an increase in this value. After consideration it was decided to retain the item in the analysis as the reliability and validity improvements were only minor, and theoretically, the item fit the scale. The four items were therefore computed into the variable 'Attachment_Tendencies'.

**Total variance explained**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.214 | 80.361 | 80.361 | 2.969 | 74.217 | 74.217 |
| 2 | .384 | 9.593 | 89.954 | | | |
| 3 | .249 | 6.222 | 96.176 | | | |
| 4 | .153 | 3.824 | 100.000 | | | |

**Factor Matrix****

| | Factor 1 |
|---|---|
| Getting rid of stuff is hard for me. | .928 |
| I tend to hold on to my possessions. | .893 |
| Unless I have a really good reason to throw something away, I tend to keep it. | .861 |
| I do not like dispose of possessions. | .755 |

**Communalities**

| | Initial | Extraction |
|---|---|---|
| | .775 | .861 |
| | .739 | .797 |
| | .675 | .741 |
| | .527 | .570 |

**Kaiser-Meyer-Olkin Measure of Sampling Adequacy**

| | |
|---|---|
| | .842 |

**Bartlett's Test of Sphericity**

| Approx. Chi-Square | 589.791 |
|---|---|
| df | 6 |
| Sig. | .000* |

**Scree plot**
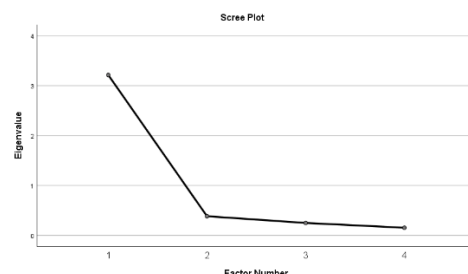
| | | Getting rid of stuff is hard for me. | I tend to hold on to my possessions. | Unless I have a really good reason to throw something away, I tend to keep it. | I do not like dispose of possessions. |
|---|---|---|---|---|---|
| Correlation | Getting rid of stuff is hard for me. | 1.000 | .843* | .792* | .691* |
| | I tend to hold on to my possessions. | .843 | 1.000 | .760* | .666* |
| | Unless I have a really good reason to throw something away, I tend to keep it. | .792* | .760* | 1.000 | .668* |
| | I do not like dispose of possessions. | .691* | .666* | .668* | 1.000 |

*Extraction method: Principal Axis Factoring.*

*\* Significant at p < .001.*

*\*\* 1 factor extracted: 6 iterations required.*

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .918 | 4 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| Getting rid of stuff is hard for me. | 12.66 | .869 | .874 |
| I tend to hold on to my possessions. | 12.49 | .841 | .884 |
| Unless I have a really good reason to throw something away, I tend to keep it. | 12.49 | .817 | .892 |
| I do not like dispose of possessions. | 12.69 | .725 | .922 |

## 'Frugal tendencies'

The last factor analysis was conducted for the concept of consumers' *'frugal tendencies'*. This analysis was considered appropriate as the KMO value was .739 and Bartlett's test proved to be significant ($p < .001$). Based on the eigenvalues and scree plot, one factor was extracted, and all factor loadings were greater than the threshold of .55. However, the explained variance and the items' communalities after extraction indicated problematic values that required further investigation. First, the total explained variance was below the threshold of 60% (48.895%), and all items' communalities were rather low as well, with two values below the threshold of .50. One solution to achieve the desired values for communalities (> .50) and explained variance (60.288%) was to delete Frugality_3 as well as Fruaglity_4, leaving a scale with only two items. Theoretically, this could make sense, as the items 'I am willing to wait on a purchase I want so that I can save money' and 'There are things I resist buying so I can save for tomorrow' can be regarded as different from the items 'I believe in being careful in how I spend my money' and 'I discipline myself to get the most from my money'. While the latter items fit the concept's definition of being careful with resources and avoiding their waste

particularly well, the former items focus more on saving money and still acquiring a desired purchase at a later point in time, which could also be impacted by different factors that do not necessarily concern a consumer's avoidance of waste. Deleting two out of the four items was, however, not preferred for this research as using scales with fewer than three items is strongly discouraged (Raubenheimer, 2004; Hair et al., 2014). Moreover, the scale was developed and validated by Lastovicka et al. (1999) and later used by Simpson et al. (2019), who reported the scale as valid with high factor loadings (> 0.70) and a sufficient explained variance (70.3%). Following the validations of these previous studies and this study's theoretical consideration, as well as a satisfactory Cronbach's alpha ($\alpha$ = .787) that emerged from a reliability analysis, the original four items were computed into the variable 'Frugal_Tendencies'.

**Total variance explained**

| Factor | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.456 | 61.406 | 61.406 | 1.956 | 48.895 | 48.895 |
| 2 | .726 | 18.151 | 79.557 | | | |
| 3 | .442 | 11.043 | 90.600 | | | |
| 4 | .376 | 9.400 | 100.000 | | | |

**Factor Matrix\*\***

| | Factor 1 |
|---|---|
| I believe in being careful in how I spend my money | .744 |
| I discipline myself to get the most from my money | .694 |
| I am willing to wait on a purchase I want so that I can save money | .750 |
| There are things I resist buying so I can save for tomorrow | .598 |

**Communalities**

| | Initial | Extraction |
|---|---|---|
| | .444 | .554 |
| | .403 | .482 |
| | .433 | .562 |
| | .321 | .357 |

**Kaiser-Meyer-Olkin Measure of Sampling Adequacy**

| | |
|---|---|
| | .739 |

**Bartlett's Test of Sphericity**

| Approx. Chi-Square | 234.635 |
|---|---|
| df | 6 |
| Sig. | .000* |

**Scree plot**
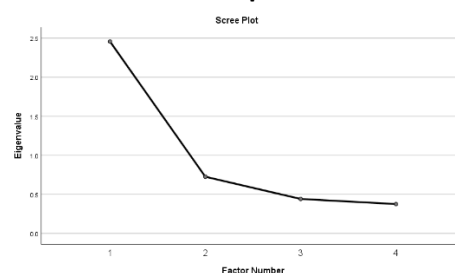
**Correlation Matrix**

| | | I believe in being careful in how I spend my money | I discipline myself to get the most from my money | I am willing to wait on a purchase I want so that I can save money | There are things I resist buying so I can save for tomorrow |
|---|---|---|---|---|---|
| Correlation | I believe in being careful in how I spend my money | 1.000 | .604* | .527* | .383* |
| | I discipline myself to get the most from my money | .604* | 1.000 | .468* | .373* |
| | I am willing to wait on a purchase I want so that I can save money | .527* | .468* | 1.000 | .549* |
| | There are things I resist buying so I can save for tomorrow | .383* | .373* | .549* | 1.000 |

*Extraction method: Principal Axis Factoring.*

*\* Significant at p < .001.*

*\*\* 1 factor extracted: 6 iterations required.*

**Reliability Statistics**

| Cronbach's alpha | N of items |
|---|---|
| .787 | 4 |

**Item-Total Statistics**

| | Scale Mean if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|
| I believe in being careful in how I spend my money | 15.43 | .631 | .720 |
| I discipline myself to get the most from my money | 16.04 | .586 | .740 |
| I am willing to wait on a purchase I want so that I can save money | 15.85 | .645 | .708 |
| There are things I resist buying so I can save for tomorrow | 16.14 | .526 | .769 |

# APPENDIX D

## ASSUMPTION TESTING FOR MULTIPLE REGRESSION ANALYSES
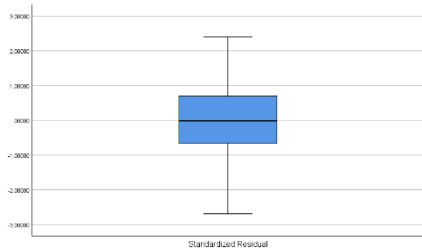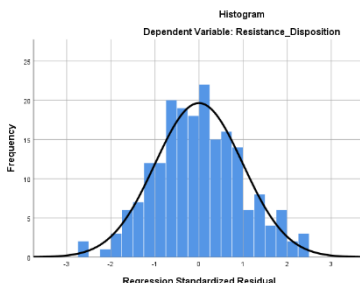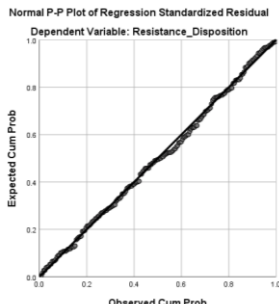
**Assumptions multiple regression**
*(Based on Hair et al. (2014) and Laerd Statistics (n.d.)).*
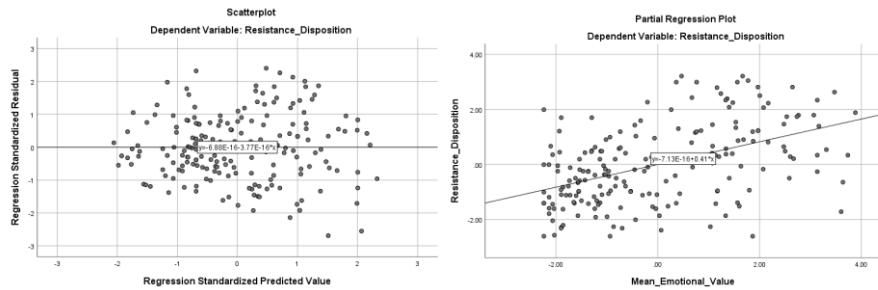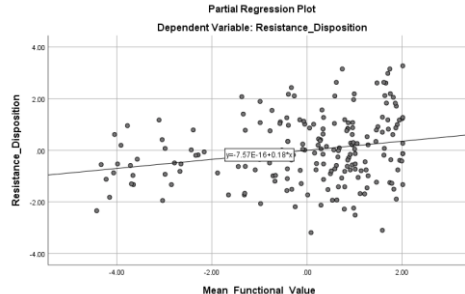
1. The dependent variable is continuous;
2. The independent variables are continuous;
3. The data shows no significant outliers;
4. The residuals are normally distributed;
5. There is independence of errors;
6. A linear relationship can be assumed between (a) the dependent variable and each independent variable, as well as between (b) the dependent variable and the variate;
7. The data shows homoscedasticity;
8. The data shows no multicollinearity.

## ANALYSIS 1



| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Resistance_Disposition (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Emotional_Value (measured on a 7-point Likert scale); Functional_Value (measured on a 7-point Likert scale); | ✓ |
| No significant outliers | Boxplot, Cook's distance < 1 |  | ✓ |
| Normal distribution residuals | Histogram, P-Plot, Skewness, Kurtosis |  | ✓ |

| | | | |
|---|---|---|---|
| | | $\dfrac{Skewness}{SE\ Skewness} = 0.454$ <br> $\dfrac{Kurtosis}{SE\ Kurtosis} = 0.514$ | |
| Independence of errors | Durbin-Watson: 1 -3 | Durbin-Watson <br> 1.933 | ✓ |
| Linearity between DV & IV (individually and collectively) | Scatterplots |  | ✓ |
| Homoscedas-ticity | Scatterplots |  | (1) |
| No multicollinear-ity | TOL > .10 <br> VIF: 1 - 10 |  | ✓ |

(1) The clear pattern within the scatterplot between Disposition_Resistance and Functional_Value showed signs of both bias and heteroscedasticity within the data. As the functional value variable is skewed, the log transformed variable was entered into the analysis, which resulted in the following scatterplot:
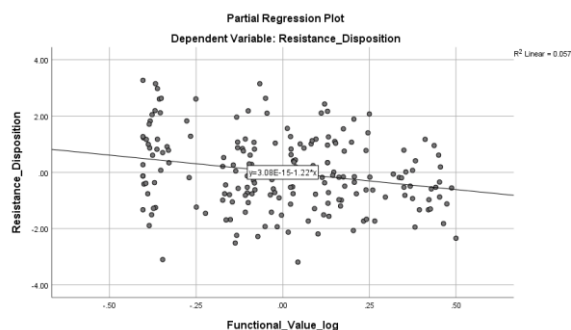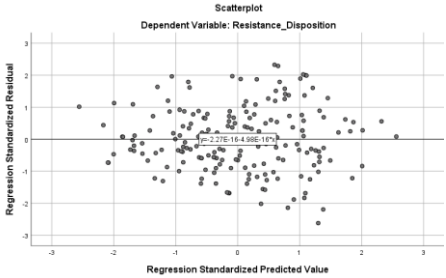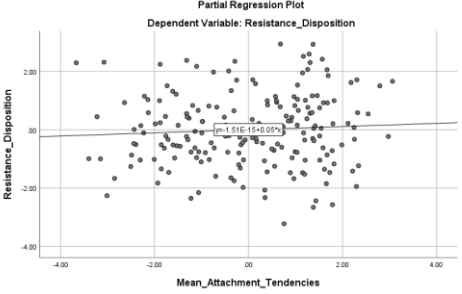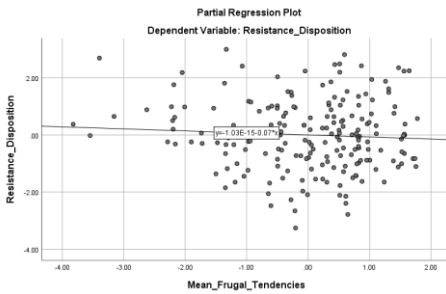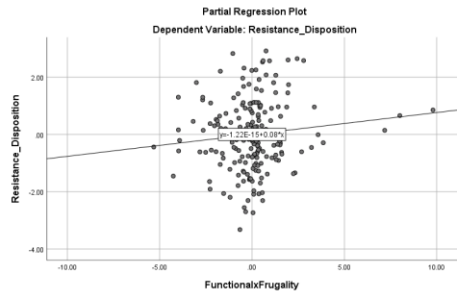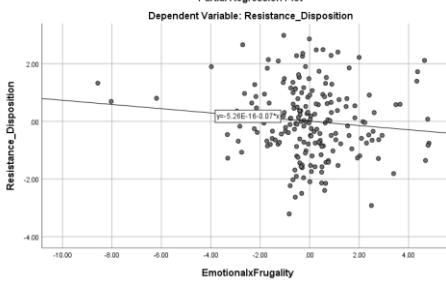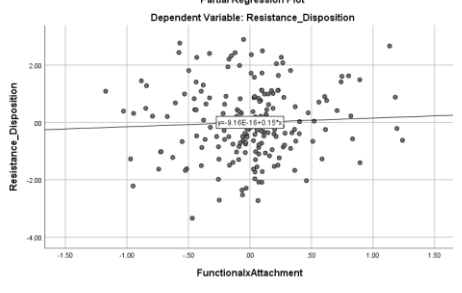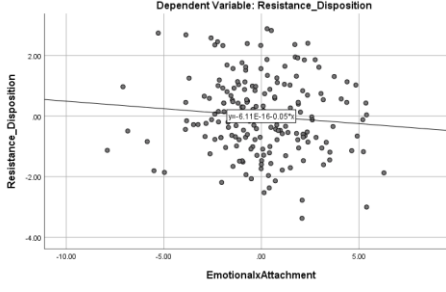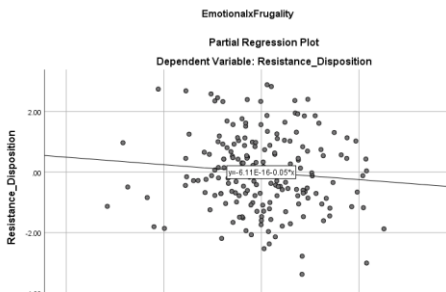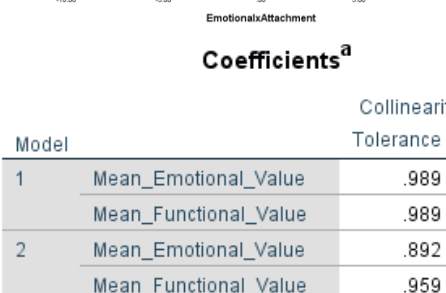
## ANALYSIS 2



| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Resistance_Disposition (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Emotional_Value (measured on a 7-point Likert scale);<br>Functional_Value (measured on a 7-point Likert scale);<br>Attachment_Tendencies (measured on a 7-point Likert scale);<br>Frugal_Tendencies (measured on a 7-point Likert scale);<br>EmotionalxAttachment; EmotionalxFrugality;<br>FunctionalxAttachment; FunctionalxFrugality | ✓ |
| No significant outliers | Boxplot, Cook's distance < 1 | **Statistics**<br>Cook's Distance<br>N Valid 196<br>Missing 0<br>Std. Deviation .00895604<br>Minimum .00000<br>Maximum .05756 | (1) |
| Normal distribution residuals | Histogram, P-Plot, Skewness, Kurtosis | Histogram — Dependent Variable: Resistance_Disposition; Normal P-P Plot of Regression Standardized Residual — Dependent Variable: Resistance_Disposition<br><br>$\dfrac{Skewness}{SE\ Skewness} = 0.638$<br>$\dfrac{Kurtosis}{SE\ Kurtosis} = 0.618$ | ✓ |
| Independence of errors | Durbin-Watson: 1 -3 | Durbin-Watson<br><br>1.900 | ✓ |

| Linearity between DV & IV (individually and collectively) | Scatterplots |  | ✓ |
| Homoscedas-ticity | Scatterplots |  | (2) |
| No multicollinear-ity | TOL > .10 VIF: 1 - 10 |  | ✓ |

**Coefficients$^a$**

| Model | | Collinearity Statistics | |
| --- | --- | --- | --- |
| | | Tolerance | VIF |
| 1 | Mean_Emotional_Value | .989 | 1.011 |
| | Mean_Functional_Value | .989 | 1.011 |
| 2 | Mean_Emotional_Value | .892 | 1.121 |
| | Mean_Functional_Value | .959 | 1.043 |
| | Mean_Attachment_Tendencies | .905 | 1.105 |
| | Mean_Frugal_Tendencies | .987 | 1.014 |
| | FunctionalxFrugality | .965 | 1.036 |
| | EmotionalxFrugality | .972 | 1.029 |
| | FunctionalxAttachment | .960 | 1.042 |
| | EmotionalxAttachment | .949 | 1.054 |

a. Dependent Variable: Resistance_Disposition

(1) A boxplot of the residual revealed one outlier (61). After running the analysis with and without the outlier, it could be concluded that results were not affected by this outlier as no significant differences were found. Moreover, it is generally not recommended to delete outliers (Field, 2013), and, therefore, the outliers remained part of the analysis and the assumption could be regarded as met.

(2) Heteroscedasticity was detected for functional value as well as frugal tendencies. Including the log transformations produced the following scatterplots:
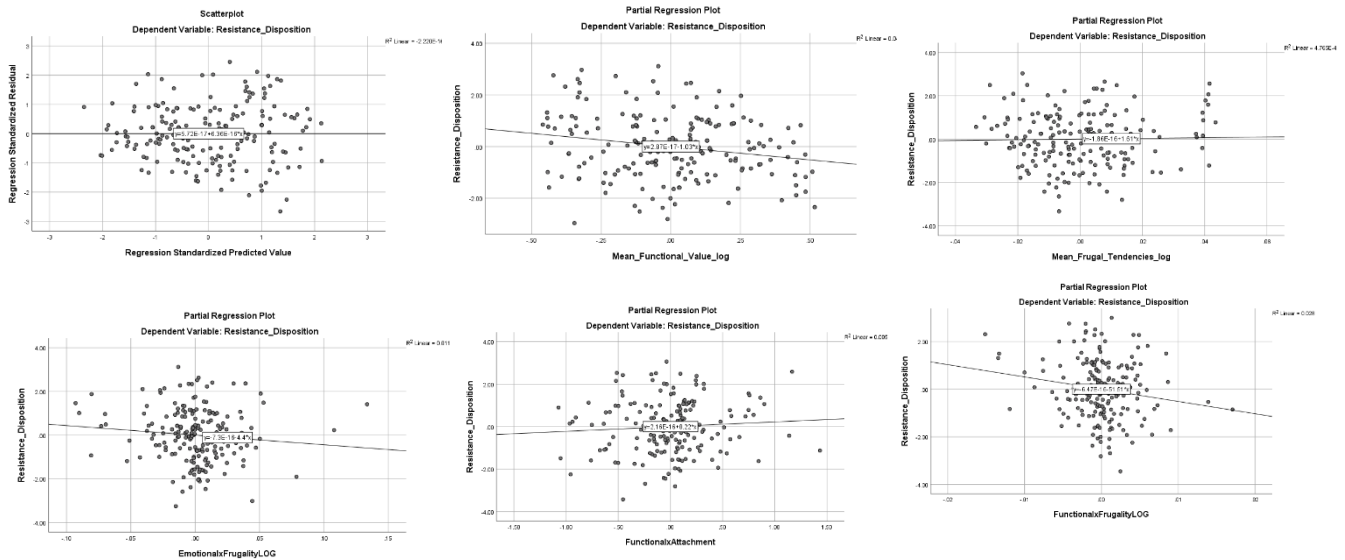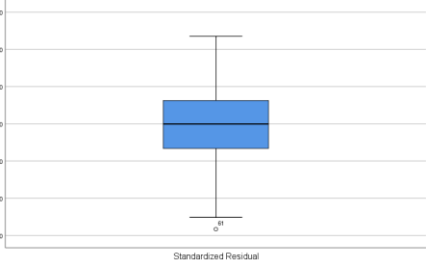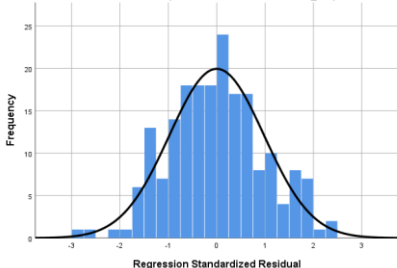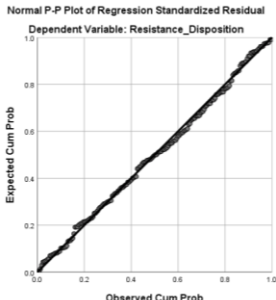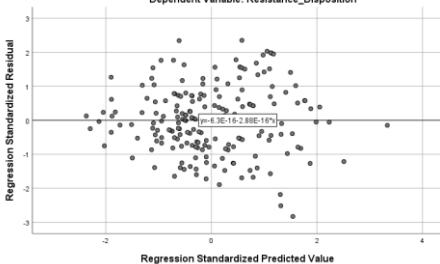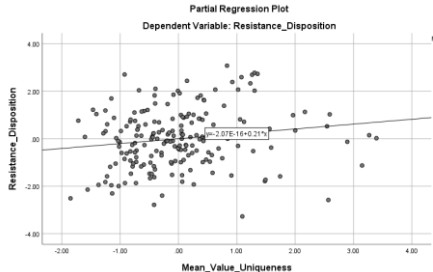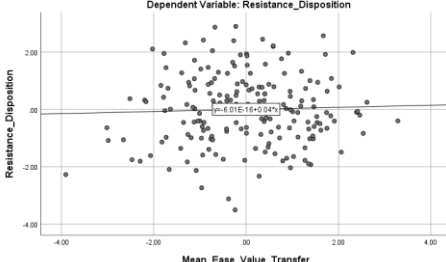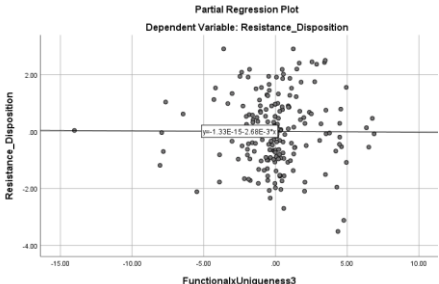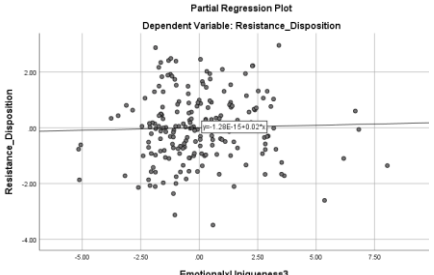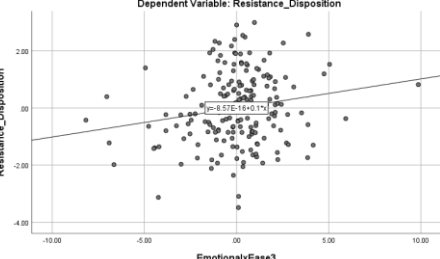


## ANALYSIS 3
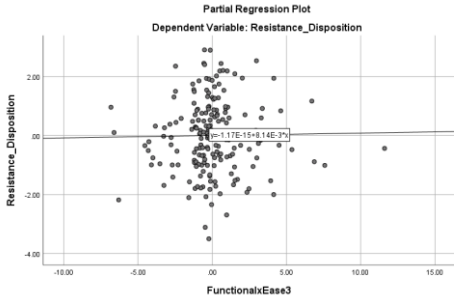


| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Resistance_Disposition (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Emotional_Value (measured on a 7-point Likert scale);<br>Functional_Value (measured on a 7-point Likert scale);<br>Ease_Value_Transfer (measured on a 7-point Likert scale);<br>Value_Uniqueness (measured on a 7-point Likert scale);<br>EmotionalxEase; EmotionalxUniqueness; FunctionalxEase; FunctionalxUniqueness | ✓ |

| No significant outliers | Boxplot, Cook's distance < 1 |  | (1) |
|---|---|---|---|
| Normal distribution residuals | Histogram, P-Plot, Skewness, Kurtosis |  $$\frac{Skewness}{SE\ Skewness} = 0.230$$ $$\frac{Kurtosis}{SE\ Kurtosis} = 0.393$$ | ✓ |
| Independence of errors | Durbin-Watson: 1 -3 | Durbin-Watson 1.875 | ✓ |
| Linearity between DV & IV (individually and collectively) | Scatterplots |  | ✓ |
| Homoscedas-ticity | Scatterplots |  | (2) |

Partial Regression Plot
Dependent Variable: Resistance_Disposition

| No multicollinear-ity | TOL > .10 VIF: 1 - 10 | | ✓ |
|---|---|---|---|

**Coefficients**<sup>a</sup>



|  | | Collinearity Statistics | |
|---|---|---|---|
| Model | | Tolerance | VIF |
| 1 | Mean_Emotional_Value | .989 | 1.011 |
| | Mean_Functional_Value | .989 | 1.011 |
| 2 | Mean_Emotional_Value | .490 | 2.040 |
| | Mean_Functional_Value | .940 | 1.064 |
| | Mean_Value_Uniqueness | .393 | 2.547 |
| | Mean_Ease_Value_Transfer | .850 | 1.177 |
| | FunctionalxUniqueness3 | .843 | 1.187 |
| | EmotionalxUniqueness3 | .637 | 1.571 |
| | EmotionalxEase3 | .817 | 1.224 |
| | FunctionalxEase3 | .853 | 1.173 |

a. Dependent Variable: Resistance_Disposition

(1) A boxplot of the residual again revealed one outlier (61), but as the analysis was not impacted by it, the outlier was not deleted.

(2) Heteroscedasticity remained for functional value and the scatterplot for value uniqueness also showed slight violations of homogeneity. Including the log transformed variables elicited the following scatterplots:
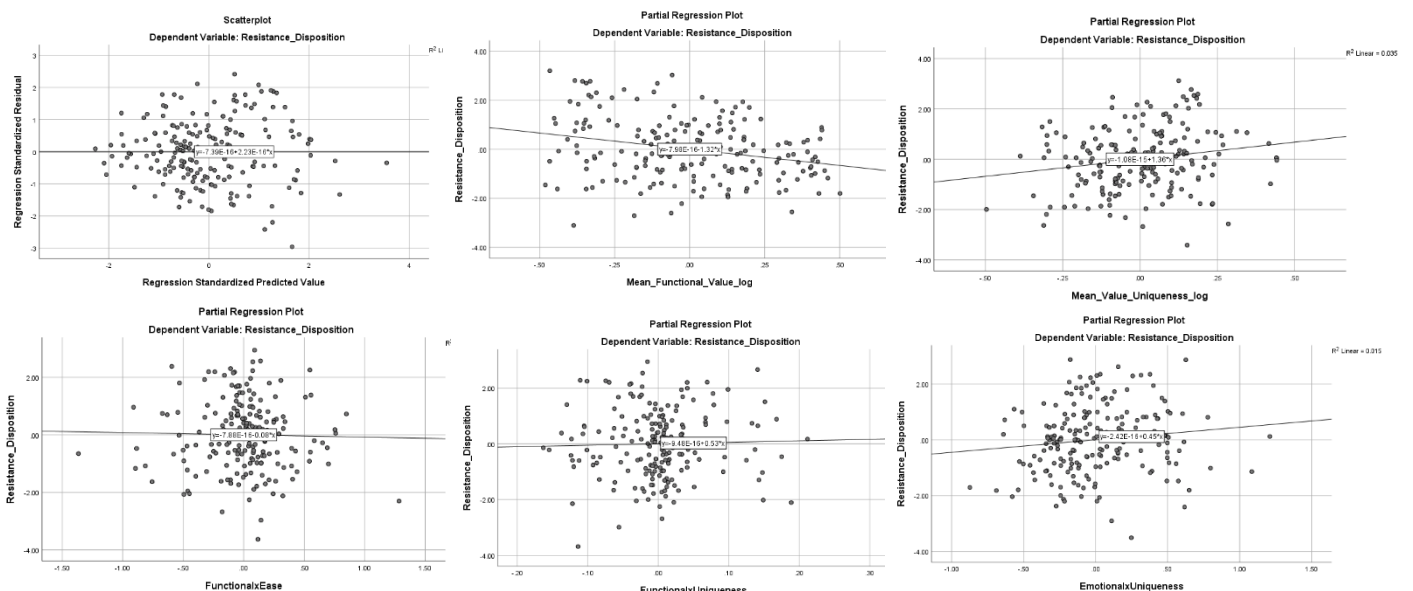
# APPENDIX E

## ASSUMPTION TESTING FOR INDEPENDENT SAMPLES T TEST

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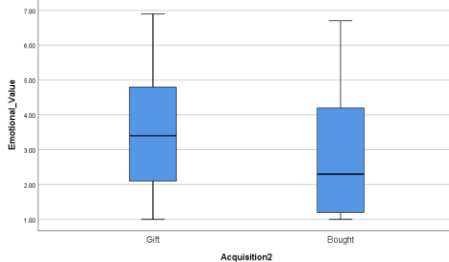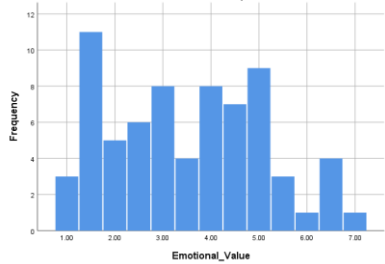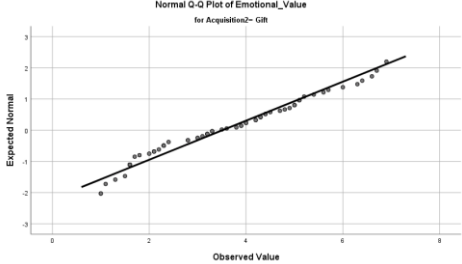**Assumptions Independent Samples T-Test**
*(Based on Field (2013) and Laerd Statistics (n.d.)).*

1. The dependent variable is continuous;
2. The independent variable is categorical with 2 independent groups;
3. The observations of both groups are independent of one another;
4. There are no significant outliers in the dependent variable for both groups;
5. The dependent variable is approximately normally distributed for both groups of the independent variable;
6. The data shows homogeneity of variances.
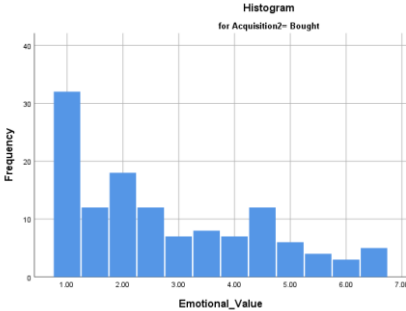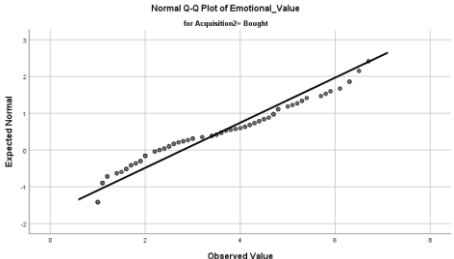
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## ANALYSIS 1

Acquisition_Type (Gifted vs. Bought) → Emotional_Value

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Emotional_Value (measured by four items on a 7-point Likert scale) | ✓ |
| Independent variable | 2 categorical groups | Acquisition_Type (2 independent categories: Gifted vs. Bought) | ✓ |
| Independence of observations | Research design | Each respondent was able to choose only one of the two categories (gifted or bought), so no case could include both categories and thus, the observations are independent of one another. | ✓ |
| No significant outliers | Boxplot |  | ✓ |
| Normal distribution | Histogram, Q-Q Plot |  | (1) |

| | | | | | ✓ |
|---|---|---|---|---|---|
| Homogeneity of variance | Levene's Test ($p > .05$) | | | | |

**Levene's Test for Equality of Variances**

| | | F | Sig. |
|---|---|---|---|
| Emotional_Value | Equal variances assumed | .084 | .772 |
| | Equal variances not assumed | | |

*F* (194) = .084, *p* = .772

(1) Based on the histograms and Q-Q Plots, normality could be assumed for the 'gifted' group. The 'bought' group, however, showed strong signs of positively skewed data. This fits with the expectations of emotional value being low for self-acquired products, providing reasons to believe that this hypothesis can be confirmed. As the Independent Samples T-Test is quite robust to violations of normality and is supposed to provide reliable results with non-normality as well (Laerd Statistics, n.d.), the decision was made to conduct this test. Additionally, this decision was justified by conducting the non-parametric Mann-Whitney U test, which showed that the gifted and bought categories differed significantly ($U = 3213.5$, $p < .01$) from one another based on their mean ranks.
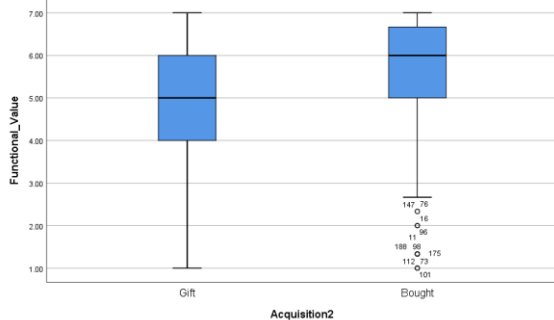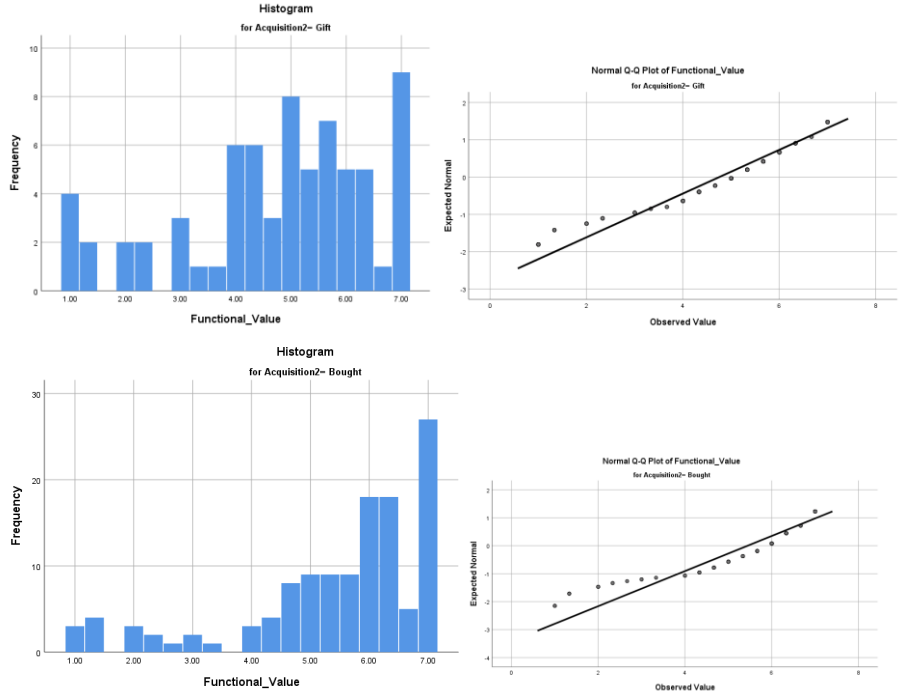
**Ranks**

| | Acquisition2 | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| Emotional_Value | Gift | 70 | 115.59 | 8091.50 |
| | Bought | 126 | 89.00 | 11214.50 |
| | Total | 196 | | |

**Test Statistics[a]**

| | Emotional_Value |
|---|---|
| Mann-Whitney U | 3213.500 |
| Wilcoxon W | 11214.500 |
| Z | -3.148 |
| Asymp. Sig. (2-tailed) | .002 |

a. Grouping Variable: Acquisition2

## ANALYSIS 2

| Acquisition_Type (Gifted vs. Bought) | → | Functional_Value |
|---|---|---|

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Functional_Value (measured by four items on a 7-point Likert scale) | ✓ |
| Independent variable | 2 categorical groups | Acquisition_Type (2 independent categories: Gifted vs. Bought) | ✓ |
| Independence of observations | Research design | Each respondent was able to choose only one of the two categories (gifted or bought), so no case could include both categories and thus, the observations are independent of one another. | ✓ |
| No significant outliers | Boxplot |  | (1) |
| Normal distribution | Histogram, Q-Q Plot |  | (2) |
| Homogeneity of variance | Levene's Test ($p > .05$) | Levene's Test for Equality of Variances<br><br>| | | F | Sig. |<br>| Functional_Value | Equal variances assumed | .901 | .344 |<br>| | Equal variances not assumed | | |<br><br>$F (194) = .901, p = .344$ | ✓ |

(1) 11 outliers (147, 76, 16, 96, 11, 98, 188, 112, 175, 73, 101) were detected in the 'bought' category. Deleting these outliers significantly changed the results, especially with regard to the significance of the Levene's Test. Moreover, the mean ($M$ = 2.7897) and trimmed mean ($M$ = 2.6916) did not differ that much, and it is not advised to delete outliers from the analysis (Field, 2013). Especially large numbers of outliers that are not caused by measurement or response errors could be of importance for analysis and interpretation. Therefore, the outliers were retained in the analysis.

(2) Similar to the previous assumption check, the 'bought' group showed signs of negative skewness. This was again expected based on the hypothesis that functional value is high for self-acquired products. In addition to the robust Independent Samples T-Test for this violation, a Mann-Whitney U test was conducted. This resulted in significant differences in functional value between the gifted and bought categories ($U$ = 3190.5, $p$ < .01).

**Ranks**

| | Acquisition2 | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| Functional_Value | Gift | 70 | 81.08 | 5675.50 |
| | Bought | 126 | 108.18 | 13630.50 |
| | Total | 196 | | |

**Test Statistics[a]**

| | Functional_Value |
|---|---|
| Mann-Whitney U | 3190.500 |
| Wilcoxon W | 5675.500 |
| Z | -3.223 |
| Asymp. Sig. (2-tailed) | .001 |

a. Grouping Variable: Acquisition2

# APPENDIX F

## ASSUMPTION TESTING FOR LINEAR REGRESSION
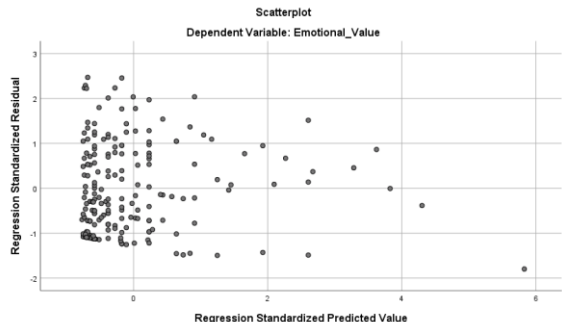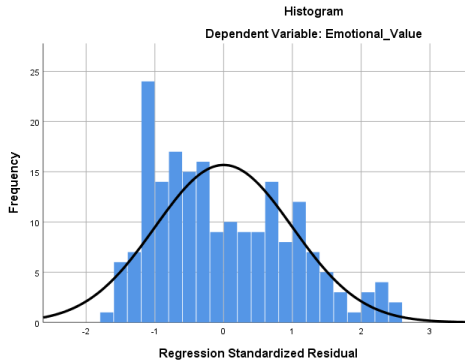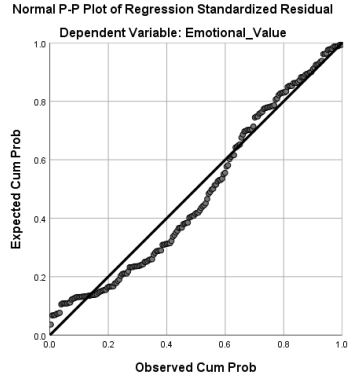
**Assumptions Linear Regression**
*(Based on Hair et al. (2014) and Laerd Statistics (n.d.)).*

1. The two variables are continuous;
2. There is independence of observations;
3. The data shows no significant outliers;
4. There is a linear relationship between the two variables;
6. The data is homoscedasticity;
7. The residuals (errors) are approximately normally distributed.

## ANALYSIS 1

| Length_Neglect | → | Emotional_Value |

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Emotional_Value (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Length_Value (values reflect number of months); | ✓ |
| Independence of observations | Research design | Every measure is independently reported by each respondent. | ✓ |
| No significant outliers | Scatterplot |  | (1) |
| Linear relationship | Scatterplot | | |
| Homoscedasticity | Scatterplots | | |
| Normal distribution residuals | Histogram, P-Plot |  | ✓ |

(1)  The assumptions of outliers, homoscedasticity, and linearity were violated. Despite this posing an issue for the regression analysis, it can be explained by looking at the nature of the independent variable. The length of neglect is entirely specific for the chosen neglected product, which is very context-specific per respondent and can range from low to very high values. Log transforming Length-Neglect improved all these assumptions, providing the following results and thus, confirming that skewness is the reason for the violations of assumptions:
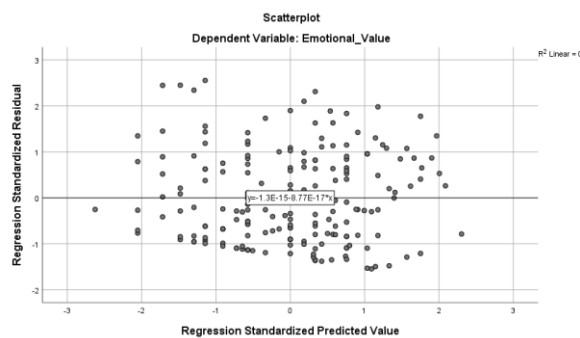


Performing the regression analysis with the log transformed variable yielded the following results. The interpretation of this effect states that a 1% increase in number of months leads to an increase in emotional value by 0.0076 units.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Change Statistics | | | | | |
| 1 | .241[a] | .058 | .053 | 1.60772 | .058 | 11.925 | 1 | 194 | .001 | 2.007 |

a. Predictors: (Constant), Neglect_log
b. Dependent Variable: Emotional_Value

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 30.823 | 1 | 30.823 | 11.925 | .001[b] |
| | Residual | 501.447 | 194 | 2.585 | | |
| | Total | 532.270 | 195 | | | |

a. Dependent Variable: Emotional_Value
b. Predictors: (Constant), Neglect_log

**Coefficients[a]**
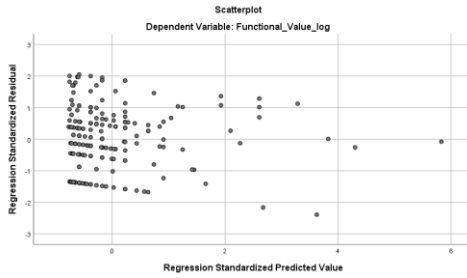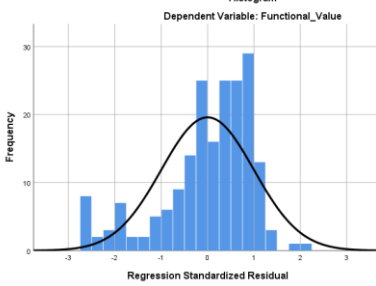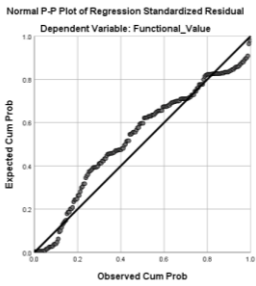
| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. | 95.0% Confidence Interval for B Lower Bound | Upper Bound | Correlations Zero-order | Partial | Part | Collinearity Statistics Tolerance | VIF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | (Constant) | 2.006 | .323 | | 6.202 | .000 | 1.368 | 2.643 | | | | | |
| | Neglect_log | .756 | .219 | .241 | 3.453 | .001 | .324 | 1.188 | .241 | .241 | .241 | 1.000 | 1.000 |

a. Dependent Variable: Emotional_Value

## ANALYSIS 2

| Length_Neglect | ➔ | Functional_Value |

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Functional_Value (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Length_Value (values reflect number of months); | ✓ |
| Independence of observations | Research design | Every measure is independently reported by each respondent. | ✓ |
| No significant outliers | Scatterplot |  | (1) |
| Linear relationship | Scatterplot | | |
| Homoscedas-ticity | Scatterplots | | |
| Normal distribution residuals | Histogram, P-Plot |  | ✓ |

(1) As with the previous assumptions, violations were found for outliers, homoscedasticity, and linearity. While this again makes sense when looking at the theoretical considerations, the inclusion of the log transformed variable yielded the following scatterplot and results. Consequently, the interpretation of the effect states that a 1% increase in number of months leads to a decrease in functional value by 0.0063.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .199[a] | .039 | .034 | 1.63369 | .039 | 7.960 | 1 | 194 | .005 | 1.552 |

a. Predictors: (Constant), Neglect_log
b. Dependent Variable: Functional_Value

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 21.245 | 1 | 21.245 | 7.960 | .005[b] |
| | Residual | 517.773 | 194 | 2.669 | | |
| | Total | 539.018 | 195 | | | |

a. Dependent Variable: Functional_Value
b. Predictors: (Constant), Neglect_log



**Coefficients[a]**

| Model | | Unstandardized Coefficients B | Std. Error | Standardized Coefficients Beta | t | Sig. | Correlations Zero-order | Partial | Part | Collinearity Statistics Tolerance | VIF |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | (Constant) | 6.066 | .329 | | 18.460 | .000 | | | | | |
| | Neglect_log | -.628 | .223 | -.199 | -2.821 | .005 | -.199 | -.199 | -.199 | 1.000 | 1.000 |
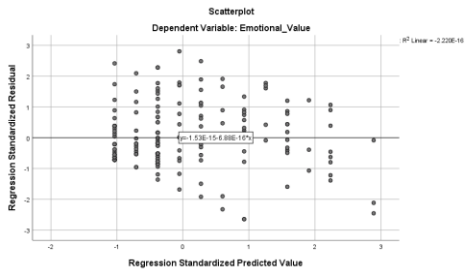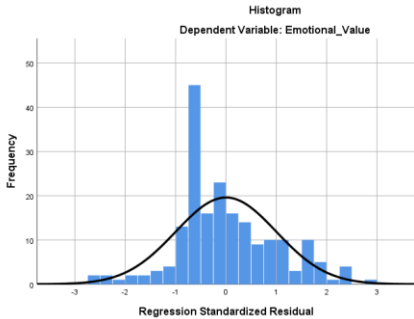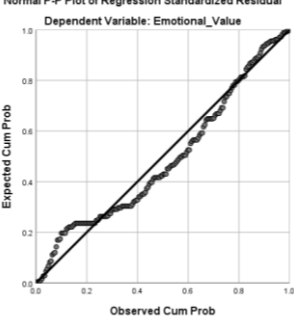
a. Dependent Variable: Functional_Value
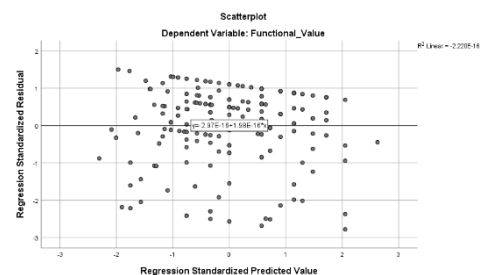
## ANALYSIS 3

| Value_Uniqueness | ➝ | Emotional_Value |
|---|---|---|

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Emotional_Value (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Value_Uniqueness (measured on a 7-point Likert scale); | ✓ |
| Independence of observations | Durbin-Watson: 1-3 | Durbin-Watson 1.868 | ✓ |
| No significant outliers | Scatterplot |  | ✓ |
| Linear relationship | Scatterplot | | |
| Homoscedas-ticity | Scatterplots | | |
| Normal distribution residuals | Histogram, P-Plot |  | ✓ |

# APPENDIX G

## ASSUMPTION TESTING FOR ANOVA

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**Assumptions One-Way ANOVA**
*(Based on Hair et al. (2014) and Laerd Statistics (n.d.)).*
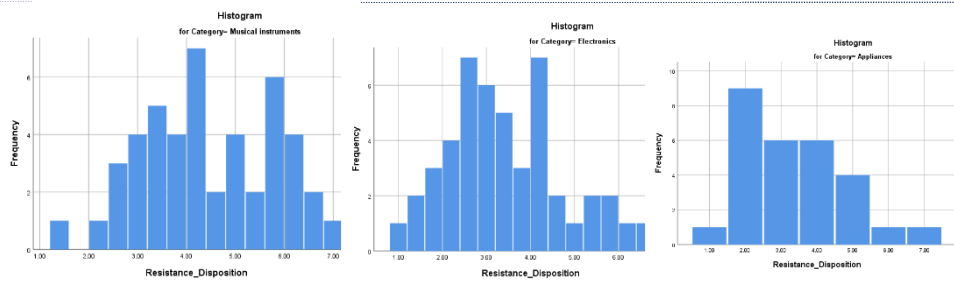
1. The dependent variable is continuous;
2. The independent variable consists of two or more categorical, independent groups;
3. There is independence of observations;
4. There are no significant outliers;
5. The dependent variable is approximately normally distributed for each category of the independent variable;
6. There is homogeneity of variance.

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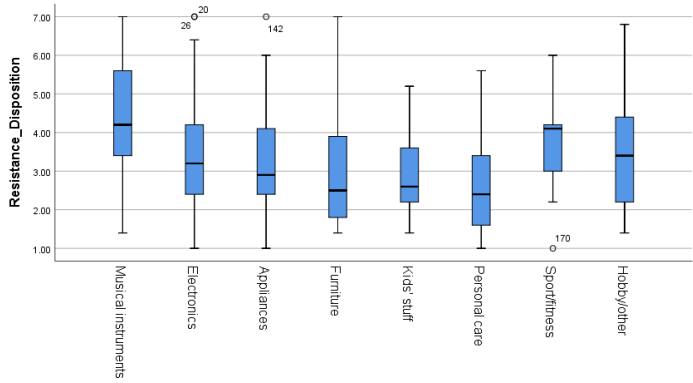## ANALYSIS 1

| Product_Category | → | Disposition_Resistance |
|---|---|---|

| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Disposition_Resistance (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Category (8 independent categories: musical instruments, electronics, appliances, furniture, kids' stuff, personal care, sport/fitness, and hobby/other) | ✓ |
| Independence of observations | Research design | Each respondent reported one neglected products, which was sorted into one of the categories by the respondent. Each product was solely classified into one category. | ✓ |
| No significant outliers | Boxplots |  | (1) |
| Normal distribution DV | Histogram |  | (2) |

| Homogeneity of variances | Levene's Test > .05 | | | | | | ✓ |

**Test of Homogeneity of Variances**

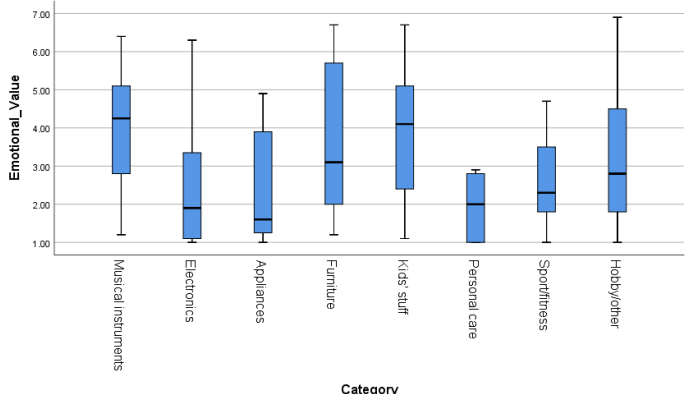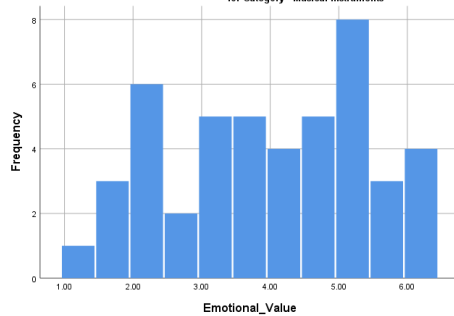| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Resistance_Disposition | Based on Mean | .525 | 7 | 188 | .815 |
| | Based on Median | .382 | 7 | 188 | .912 |
| | Based on Median and with adjusted df | .382 | 7 | 161.142 | .912 |
| | Based on trimmed mean | .459 | 7 | 188 | .863 |

(1) Outliers were found in the electronics (20.26), appliances (142), and sport/fitness (170) categories. It was deemed important to run the analysis with the outliers included, as some categories are quite small, and each value represents a specific situation.

(2) Several categories showed signs of either positive or negative skewness. As this is not seen as problematic given the data, an additional check is done with a non-parametric test. This showed significant result, and thus, significant differences exist between the categories.

**Ranks**

| | Category | N | Mean Rank |
|---|---|---|---|
| Resistance_Disposition | Musical instruments | 46 | 127.61 |
| | Electronics | 49 | 92.40 |
| | Appliances | 28 | 87.63 |
| | Furniture | 8 | 72.38 |
| | Kids' stuff | 13 | 70.81 |
| | Personal care | 5 | 65.60 |
| | Sport/fitness | 14 | 105.68 |
| | Hobby/other | 33 | 95.39 |
| | Total | 196 | |

**Test Statistics[a,b]**

| | Resistance_Disposition |
|---|---|
| Kruskal-Wallis H | 20.561 |
| df | 7 |
| Asymp. Sig. | .004 |

a. Kruskal Wallis Test

b. Grouping Variable: Category

## ANALYSIS 2

| Product_Category | ⟶ | Emotional_Value |
|---|---|---|

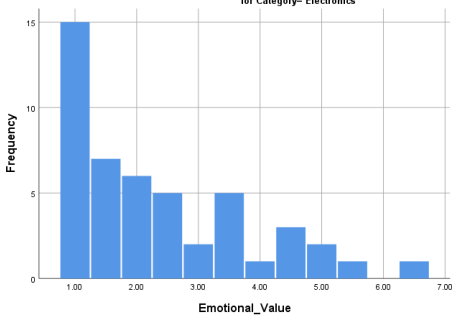| Assumption | Measures | Evidence & analysis | Met? |
|---|---|---|---|
| Dependent variable | Continuous scale | Emotional_Value (measured on a 7-point Likert scale); | ✓ |
| Independent variable(s) | Continuous scale | Category (8 independent categories: musical instruments, electronics, appliances, furniture, kids' stuff, personal care, sport/fitness, and hobby/other) | ✓ |
| Independence of observations | Research design | Each respondent reported one neglected products, which was sorted into one of the categories by the respondent. Each product was solely classified into one category. | ✓ |
| No significant outliers | Boxplots |  | ✓ |
| Normal distribution DV | Histogram |  | (1) |

| Homogeneity of variances | Levene's Test > .05 | | | | |
|---|---|---|---|---|---|

**Test of Homogeneity of Variances**

| | | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Emotional_Value | Based on Mean | 2.295 | 7 | 188 | .029 |
| | Based on Median | 1.663 | 7 | 188 | .120 |
| | Based on Median and with adjusted df | 1.663 | 7 | 173.926 | .121 |
| | Based on trimmed mean | 2.251 | 7 | 188 | .032 |
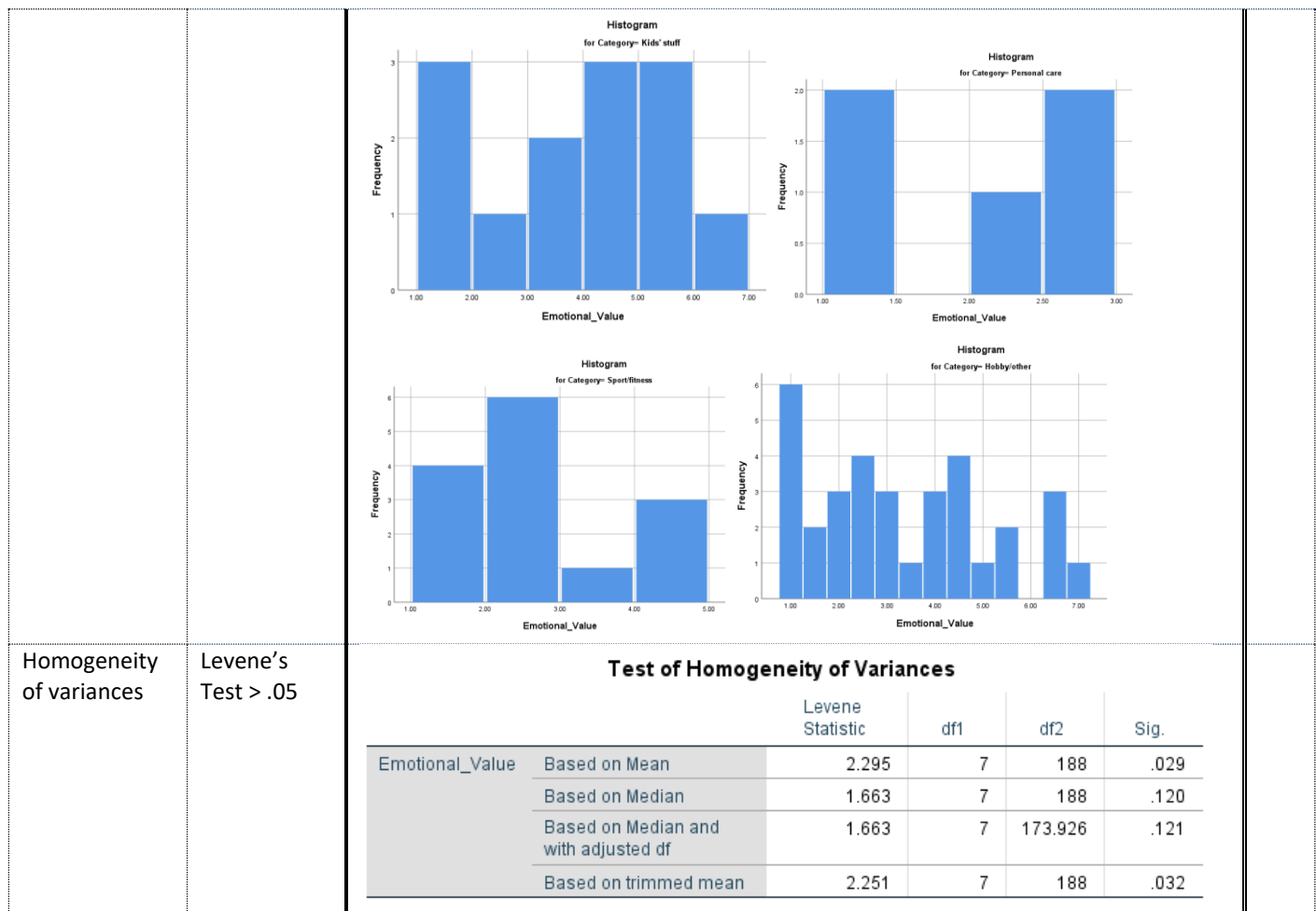
(1) Again, skewness was detected within several categories, which was expected. Nevertheless, a non-parametric test was run to confirm that the groups differed from one another, and thus, could be compared. The test proved to be significant.

**Ranks**

| | Category | N | Mean Rank |
|---|---|---|---|
| Emotional_Value | Musical instruments | 46 | 131.97 |
| | Electronics | 49 | 74.07 |
| | Appliances | 28 | 73.09 |
| | Furniture | 8 | 118.13 |
| | Kids' stuff | 13 | 121.92 |
| | Personal care | 5 | 59.70 |
| | Sport/fitness | 14 | 88.57 |
| | Hobby/other | 33 | 105.79 |
| | Total | 196 | |

**Test Statistics[a,b]**

| | Emotional_Value |
|---|---|
| Kruskal-Wallis H | 37.285 |
| df | 7 |
| Asymp. Sig. | .000 |

a. Kruskal Wallis Test
b. Grouping Variable: Category