Title

I own, therefore I am? The role of material possession for consumers' self-perception and attitude towards non-ownership consumption modes

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Abstract

In reference to Belk's theory of the extended self this thesis investigates how and to what extent the link between an object and one's sense of self can affect consumption mode preferences. Two hypotheses are proposed: First, the level of self-extension into a material object correlates negatively with consumers' willingness to participate in consumption modes that value access over ownership. And second, feelings of non-generosity and possessiveness have a mediating function in this relationship. Based on the premise that ownership-substituting consumption modes promise a more sustainable lifestyle the aim of this thesis is to contribute to a better knowledge on the effect of the symbolic meaning of object on and consumer preference.

To empirically test the proposed theoretical model, an online survey with 130 German participants was conducted. In a correlative research design respondents were asked to evaluate a total of eight different objects in terms of personal attachment, feelings of possessiveness and non-generosity, and to state their willingness to access the objects through ownership-substituting consumption modes. Additionally, social trust and materialism were measured on a general level.

The findings support the claim that the extent to which consumers perceive an object as integral to their extended self has an effect on their willingness to forsake ownership and rather access this object through renting- or sharing-offerings. Evidence is found that this effect can be mediated by possession-linked feelings such as possessiveness and non-generosity. A general model to answer the proposed hypothesis is not supported. Rather the findings raise awareness on the object-specific nature and complexity of these effects. It becomes clear that a realistic assessment of the symbolic meaning of ownership and possession requires further experimental research and multi-category comparison.

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1 Introduction

1.1 Motivation and research relevance

Earth's inhabitants are currently facing a number of obstacles such as global warming, resource scarcity, growing pollution and biodiversity loss (UN General Assembly 2015). The cause of this is mainly due to human misbehaviour: Both the political and economic circumstances, as well as the individual decisions of individuals “all have direct and indirect impacts on the environment, on social equity and on personal (and collective) well-being” (Jackson 2014: 279). The most serious damage is caused by the current models of consumption that have encouraged a hyper consumerism and a throw-away mentality (Jackson 2014: 279, Botsman & Rogers 2011: 7, 20). There is broad consensus in sustainability science that technical progress and efficiency alone are not a sufficient solution to current sustainability challenges (Jackson 2014: 279-282, Leismann, Schmitt, Rohn & Baedeker 2013). In order to implement a more sustainable lifestyle, it requires a fundamental shift in how we consume (Ibid.). During the past century the most dominant consumption modes have involved the act of purchasing and thus ultimately becoming the sole owner of a good (Baumeister & Wangenheim 2014). Facing the consequences of growing pollution and resource scarcity politicians, producers and consumers alike have to rethink the current relation to material goods (Jackson 2014: 287, Belk 2014b). Definitions of *sustainable consumption* vary across the literature, however, at its core it is about consuming in such a way as to protect the environment, use natural resources wisely and promote quality of life now, without compromising the ability of future generations to meet their needs (Jackson 2014: 281). Hence, the main challenge is to find a way that consumers can acquire and use material goods *without compromising the possibilities for future generations* (Jackson 2014: 287, Belk 2014b).

In an attempt to do so, more and more alternative consumption models have emerged across the globe and increasingly established themselves in the familiar structures (Baumeister & Wangenheim 2014, Radka & Margolis 2011). They come in a variety of forms and have to be viewed in regard to their subtle differences (Hamari, Sjöklint & Ukkonen 2015, Belk 2007). What aligns them is the fact that they all rethink the traditional consumption patterns and forsake sole ownership (Botsman & Rogers: 2011: xx). This recent trend was first identified by Rifkin (2000) and received great attention with the rise of the so-called ‘Sharing Economy’ (Belk 2014b, Botsman & Rogers 2011, Wallaschkowski et al. 2016). Since then, the literature provided manifold reasons for this phenomenon: Technological developments have made it easier to quickly access and share information even with strangers, and beyond that, to imagine new value-exchange models (e.g. Hamari et al. 2015, Radka & Margolis 2011). Sharing services create networks and build trust and thus satisfy a growing need for social integration (e.g. Belk 2007, Botsman & Rogers 2011). In addition, they allow consumers to partake in a variety of goods and

experiences without the responsibilities and “burdens of ownership” such as maintenance, storage and divestiture (e.g. Moeller & Wittkowski 2010: 179, Lawson 2011, Scholl, Schulz, Süßbauer & Otto 2010). A study by PwC (2015) found 46% of German participants to have used a sharing or renting service at least once within two years. And even more, especially young people, said they would participate in the next years (PwC 2015). Some authors consider this development a fundamental cultural upheaval and expect further growth of ownership-substituting services (e.g. Botsman & Rogers 2011, Heinrichs & Grunenberg 2012). Some even foretell the ‘*Age of sharing*’ (John 2016) and the beginning of a “post-ownership economy” where the expression “you are what you share” becomes the new premise (Belk 2014b: 1599).

This change in human consumption behaviour promises numerous benefits for sustainable development. The environmental impact of an ownership-substituting use culture has been outlined in several studies (e.g. Leismann et al. 2013, Scholl et al. 2010). With sole ownership, many durable goods are disposed before they reach their maximum use capacity (Leismann et al. 2013). An optimized utilization of products, that otherwise would sit idle, can increase resource productivity (Ibid.). It would further encourage providers to turn away from built-in obsolescence to long-living and repairable products which are easy to maintain (Ibid.). Accordingly, ownership-substituting consumption modes can reduce resource overuse and waste on large scale without compromising general prosperity (Leismann et al. 2013, Wallaschkowski et al. 2016). In order to provide a realistic assessment, I have to add that alternative consumption models can also cause negative side effects that are often less visible (Leismann et al. 2013, Scholl et al. 2010). However, they can contribute to sustainable development by rethinking consumption patterns (Ibid.). My thesis is therefore based on the premise, that *alternative consumption models that focus on access rather than sole ownership are more preferable in a sustainable point of view.*

In order to make a significant contribution to sustainability, such models would have to be *the most common* forms of consumption (Jackson 2011, Wallaschkowski et al. 2016). Yet, as Belk (2007, 2010) has noted, sharing of objects is more likely to take place within close kin and friends than among strangers. From an overall perspective, alternative business models are still a niche that only represent five percent of the gross consumer market (Scholl et al. 2010, Wallaschkowski et al. 2016). In case of both types of consumption modes - ownership and non-ownership – being available, consumers have to face the choice (Baumeister & Wangenheim 2014, Scholl et al. 2010). And although a growing number of Germans are open to the concept of ‘using rather than owning’ (PwC 2015, Scholl 2010), most people still prefer buying and owning products (Wallaschkowski et al. 2016). There is a discrepancy between usage awareness and usage behaviour (Ibid.). Hence, the challenge is to understand *the determinants for consumers’ preferences* (Baumeister & Wangenheim 2014, Wallaschkowski et al. 2016). This leads me to further question the human-object relationship.

1.2 Research questions and structure of the thesis

While numerous studies have addressed the motivational factors that affect consumers' attitudes and intentions towards traditional business models, access-based consumption is still a research field that needs further investigation (Baumeister & Wengenheim 2014, Hamari et al. 2015, Wallaschkowski et al. 2016). In order to promote a more sustainable consumption behaviour, it is necessary to identify the determinants that lead consumers to choose ownership over access when facing the choice. Especially the role of functional values of goods has been the subject of many studies in this context (Wallaschkowski et al. 2016). But beyond that, to own something also has a *symbolic value*. There is a research gap with regard to the issues that tie with the symbolism of ownership and access (Leisman et al. 2013, Scholl et al. 2010). Some authors question whether accessing an object can provide symbolic value to the same extent that ownership does (Belk 1988, 1992, 2007). So far, the focus has been more on consumers' brand preferences and loyalty rather than the phenomenon of *attachment to objects directly* (Wallendorf & Arnould 1988). However, several findings suggest that the symbolic value can cause an object to literally become part of the own self or identity (Belk 1988, 1992, 2007, Dittmar 2004). The role of ownership for identity-construction is a factor that has not yet been considered in prior investigation on sustainable consumption. Consequently, I dedicate my thesis to contribute to a better understanding this relationship.

In reference to Belk's theory of the "*extended self*" (1988: 139) I investigate *how and to what extent the link between an object and one's sense of self can affect consumption mode preferences*.

In order to provide new insights on the relationship of identity-construction and consumption I propose two hypotheses that are then empirically tested. First, whether the attachment to material possessions can be an impediment for consumers' willingness to participate in alternative consumption modes that value access over ownership. And second, whether feelings of non-generosity and possessiveness have a mediating function in this relationship. I hope to provide insights that can help to understand consumers' attitude towards access to and sharing of goods. And thus, to identify new starting points for the successful implementation of a more sustainable consumption behaviour.

A first step is to understand the underlying phenomena of my research question. Thus the following part provides the theoretical framework of my thesis. I start with a review of the literature on ownership and possession-linked phenomena and the central meanings of human-object relationships. Following on from this I present consumers' perceptions on access versus ownership, and I argue why it is important to investigate the symbolic value, in especially the identity-related functions, of possessions. Based thereupon I present the hypotheses that build the

basis for the further empirical investigation. In the third part I describe the applied methods, including the operationalisation of the theoretical model and sample characteristics. I then present analyses of the data and report the results of this empirical investigation. Subsequently, the findings are evaluated. To conclude, I discuss the implications and limits of my findings and highlight possible future research areas.

2 Theoretical framework

The theoretical framework of my thesis is structured into four parts. First, the phenomena of property and ownership are reviewed in detail to gain knowledge on consumers' motivation for consumption. The second part then focuses on the symbolic meaning of possessions, particularly on the link to one's self-perception. Subsequently, the two consumption modes ownership and access are contrasted in order to find determinants for consumer preferences. The last chapter will review the identity-related meaning of possessions from a different perspective. As a final conclusion, I present two hypotheses for further empirical investigations.

2.1 A world of ownership and property

Ownership and possession are very multifaceted phenomena that are deeply rooted in our everyday life and culture (Furby 1991, Noles & Keil 2011). They built the foundation of my thesis. In order to properly approach them, it requires to "map out the terrain" and to identify the variety of possession-linked behaviour and attitude (Furby 1991: 458).

2.1.1 Essential terms and definitions

This chapter focuses on three questions: How is ownership established? What can be property? And how do we define when we own? In simple terms, ownership is understood as an associative process, connecting the object and its owner by their mere appearance together and frequently interaction (Noles & Keil 2011). But this definition is too limited in its scope, in our modern world the links between people and property are more often than not invisible (Ibid.). In a more abstract context ownership can be defined as "host of legal rights and obligations" (Ibid.: 94). Four main property rights can be differentiated: *ius usus* - the right to use a good and deny access to others; *ius usus fructus* - the right to retain the gain resulting from its utilization; *ius abusus* - the right to convert the form of a good; and finally *ius abutendi* - the right to transfer any of these property rights by giving or selling it to other people (Furubotn & Pejovich 1972, as cited in Moeller & Wittkowski 2010). In day to day life the terms ownership and possession are used interchangeable and are therefore often mistaken (Radka & Margolis 2011). Yet *possessing* an object is defined in its core as having physical custody or control of an object (Gabler Wirtschaftslexikon 2018: "Besitz"). In comparison to ownership, which entails full property rights, to possess an object only implies access and thus the right to use it (*ius usus*) and to retain the benefits from its utilization (*ius usus fructus*) (Moeller & Wittkowski 2010, Wallaschkowski et al. 2016). Typical examples include renting, leasing and sharing. However, the remaining two

property rights and the state of ownership remain with the owner (Ibid.). Thus, these two terms need to be differentiated, the owner of an object may not always possess it and vice versa.

What can be owned, or in other words *property*, is one of the more “mysterious” aspects of ownership (Noles & Keil 2011: 95). People were found to intuitively recognise property when they see it, yet they were not able to explicitly recall the criteria they were using to identify it (Ibid.). From an economic viewpoint anything that is in demand and at the same time scarce can become property (Ibid.). This includes material objects and real estate, e.g. clothes, cars, one’s home and garden, and other entities such as one’s own body or animals (Ibid.). Beyond that, even intangible objects, e.g. ideas, knowledge, can be seen as owned (Noles & Keil 2011, Belk 1988). With the birth of the Internet and digital possessions we now experience a variety of intangible objects that has never been there before (Belk 2013, 2014b). Intangible goods are by their very nature not limited, infinitely sharable and their access and transfer is hard to control (Noles & Keil 2011). They highlight the limits of an economic viewpoint and call for a more abstract definition of property and ownership (Radka & Margolis 2011). Societies have thus established numerous social norms, rules and legal structures to frame what can be owned by whom (Brosnan 2011, Noles & Keil 2011). Yet even these definitions do not provide a clear framework. They can change over time, e.g. slavery was once acknowledged, and from place to place, e.g. owning cannabis plants is only legal in some countries (Noles & Keil 2011). Given this alterable nature, the question on what can be property has no final answer. The investigation of how we define when we own can provide a better understanding.

One way to declare ownership is to base it on legal and economic regulations (Martins 2010, Noles & Keil 2011). Legal ownership and property rights emerge from formal norms and rules and are thus objective phenomena (Ibid.). Beyond that, ownership can also be experienced as a subjective condition by an individual (Martins 2010: 15, Pierce, Kostova & Dirks 2001). This psychological ownership is defined as “state of the mind [...] in which individuals feel as though the target of ownership (material or immaterial in nature) or a piece of it is *theirs*” (Pierce et al. 2001: 299). Although in most cases the two concepts go hand in hand, it is possible for people to claim psychological ownership of an object in the absence of legal ownership, e.g. a seat in a classroom (Furby 1991, Pierce et al. 2001). It is important to distinguish these two definitions of ownership in order to fully understand how we own and what can be owned (Martins 2010: 15).

So far, I drafted some first attempts to frame ownership by highlighting the differences between ownership over and access to goods, and by looking at the wide spectrum of what can be owned. Next, I will investigate the psychological perception of ownership further by looking at its origins and its functions, some of which are genetic and others social in nature (Furby 1991, Pierce et al. 2001).

2.1.2 The nature and central meaning of ownership

There is hardly a more ubiquitous phenomenon in our daily lives than ownership, thus it has long been the subjects of interest in many different research fields (Furby 1991). The sense of ownership and property is part of the human condition and deeply interwoven in economy and society (Baumeister & Wangenheim 2014, Friedmann & Ross 2011). We have gone so far as to establish a framework of social norms, formal rules, and governance structures that manage the complex human-object relationships (Brosnan 2011, Noles & Keil 2011). Even some animal species such as primates show behaviour similar to human's sense of possessions as well as acts of barter (Brosnan 2011, Habermas 1996: 13). Ownership seems a shared fundamental principle that is ubiquitous, although it may vary considerably across cultures and species (Friedmann & Ross 2011). It was first thought that the origin of the concept is genetic in nature and a human instinct (McDougall 1948: 75). Later research suggested that ownership and its psychological state are learned in the early development processes (Furby 1991). As with other human behaviours, it seems safe to say that both genetic factors and experiences are important (Brosnan 2011, Dittmar 1992, Pierce et al. 2001). Besides its roots, it has been found that even toddlers can relate to the basic concept of ownership and property (Furby 1991, Jarrett 2013, Noles & Keil 2011). Our sense of ownership refines as we grow older, enabling us to identify property regardless of time, spatial proximity and current usage (Habermas 1996: 41). It shapes our perception of the world and becomes essential for reasoning and acting in our physical and social environment (Habermas 1996: 41, Nolen & Keil 2011).

It was not until the second half of the 20th century that studies began to address the core questions regarding possessive motives and behavior, and the psychological needs satisfied by ownership (Beggan 1991, Furby 1991). "What does it mean that something is yours? Why do you want it to be yours? (...)" (Furby 1991: 462). Some of the first attempts by Furby (1976 & 1978, as cited by Furby 1991) to empirically address these core questions have shown that both the meaning of, and the motivation for, ownership can be linked to two fundamental concepts: First, a sense of *personal control* and on the other hand, the association *between an object and one's self* (Furby 1991). In regard to the first aspect we already now that the state of ownership and the rights that come with it (see chapter 2.1.1) enable the owner to discover and transform his or her environment. Thus, this *functional meaning* of ownership helps to satisfy the innate human motivation for control and efficacy (Beggan 1991, Furby 1991, Pierce et al. 2001). On the other hand, the *symbolic meaning* addresses the human need to create, maintain and enhance a sense of identity (Dittmar 1992, Hogg & Michell 1996, Wallendorf & Arnould 1988). In this context property does not only serve "as signs to one's connection to or differentiation from other members of society (...)" (Wallendorf & Arnould 1988: 532). Additionally, individuals use ownership "for the purpose of defining themselves (...) and ensuring a continuity of the self across time" (Pierce et al. 2001: 300). By acknowledging the central meanings of and motivation

for ownership, we are able to gain important insights into the motivational drivers for people's consumption behaviour, why we buy and retain some possessions while disposing others (Dittmar 2004, Hogg & Michell 1996, Richins 1994).

The state of ownership over an object can cause interesting social and psychological effects. For example, property functions as status symbol and signal to others, defining social recognition and self-perception (Belk 1988, Dittmar 1992, Habermas 1996: 41, Jarrett 2013). At the same time, it also manipulates the owner's perception. Individuals were found to place greater value to an object just as soon as it becomes theirs and to devalue identical objects owned by others (Kahneman, Knetsch & Thaler 1990). To fully address the scope of possession-linked behaviour is beyond the scope of this work. The given examples serve to highlight the behavioural, emotional and psychological consequences that are directed by the presence of ownership (Pierce et al. 2001). The following chapter investigates these phenomena further, particularly the *link between property and identity*.

2.2. Symbolic value of possessions

In contrast to the functional meaning, the symbolic meaning of objects is still relatively untouched (Belk 1988, 1992, 2007, Dittmar 2004). I aim to illustrate the relevance of the symbolic value, especially in terms of how people incorporate objects into their personal self-perception. Therefore, I present first notions on the self (James 1890) and the concept of self-extension (Belk 1988) in reference to other literature on consumption, possession and identity.

2.2.1 Conceptual introduction to self-extension

More than mere tools or luxuries, possessions can have different degrees of centrality to their owner (Belk 1988, 1992). One of the first to address this phenomenon from a psychological perspective was William James (1890) who laid the foundation of the modern concept of self (Belk 1988, 1992). In his book '*The Principles of Psychology*' he defines the self as everything that one can describe as *me*. He blurs the line between personal and possessive pronouns (*me* - *mine*) and notes that "between what a man calls *me* and what he simply calls *mine* the line is difficult to draw"¹ (James 1890: 291) indicating the coherence of these two constructs (Belk 1988, Habermas 1996). Belk draws on this notion and suggests that the objects that one considers to own are "a major contributor and reflection of one's identity" as they become the "*extended self*" (Belk 1988: 139). This means owners are likely to find a part of themselves present in what they perceive as property, thus experiencing it as integral to their self (Belk 1988, 2007, James 1890).

¹ Gender-specific formulations derive from the historical linguistic context and are not intended to be excluding.

As a consequence, individuals will *feel* and *act* about the incorporated possessions in the same way they feel and act about themselves, including feelings of attachment and fear of loss (Ibid.). A recent empirical study by Kim and Johnson (2011) has proven that those feelings are not a mere metaphor but a well-founded psychological state. While scanning participant's brains when looking at various objects previously labelled *mine*, they observed increasing activity in areas of the brain that are usually active when thinking about oneself (Kim & Johnson 2011). Belk (1988) notes that the process of self-extension can happen knowingly but more often develops unintentionally.

The scope of possessions in this context accounts everything that one *can* call 'mine', regardless of whether it is owned in legal terms, in temporary control or simply identified as owned in a subjective condition (Belk 1988, 1992). Accordingly, James' definition of self and Belk's theory of self-extension go hand in hand with the concept of psychological ownership (see chapter 2.1.1) where property is grounded psychologically and is experienced by the individual as *mine* or even *me* (Martins 2010, Pierce et al. 2001). Thus, the subjective perception of self-extension is not restricted to objects that are owned in a legal sense (Belk 1988, 1992, Pierce et al. 2001). It can include material objects such as body parts and even people, as well as intangible objects such as digital possessions, knowledge and experiences (Belk 1988, 2013, Pierce et al. 2001). In regard to the purpose of my thesis to derive insights for a more resource-conscious consumption behaviour, the relationship to material objects, e.g. clothes, tools, seems the most relevant form of possession.

Not all objects are seen in the same light and to the same extent as part of our self. It may vary with the character traits and psychological state of the individual person (Habermas 1996: 22, James 1890: 291). Belk (1988) and James (1890: 292) identified the following material entities to be generally most central to the self: one's own body as the innermost part, followed by goods of a personal nature such as clothes, next our immediate family and close friends, and finally our homes. Beyond that there is *no limit* on which material objects can evoke feelings of psychological ownership (Ibid.). To what extent and which possessions are incorporated in one's self is fluctuating throughout the life as the extended self is dynamic and ever-changing (Belk 1988, 2014a). Similarly, the ways in which possessions may be incorporated into the extended self can differ depending on object and individual. The first is by appropriation or control of an object as it is the case with legal ownership but also by physically possessing it (Belk 1988, 1992). Second, by creating it what makes it in James' words "saturated with our labor" (Belk 1988, James 1890: 292). Finally, an object can slowly enter our self, through our knowledge of it and through habituation, e.g. the mere persistent presence of a picture on the wall that represents familiarity, linked memories or expectations (Belk 1988, 1992, Habermas 1996: 23). In addition, an object can be perceived as "contaminated" by another person's self through left marks, e.g. snot, sweat, body heat and smell, but also through more intangible marks such as glancing, noise pollution or violating personal space (Belk 1988: 151). Objects that contain a sense of another

person's self, e.g. shared goods or second-hand clothing, are less likely to be incorporated in one's own self (Belk 1988, 1992, 2007). This distinction of objects can influence consumers' consumption behaviour as we will see in chapter 2.2.2 and chapter 2.3.2 .

In my thesis I work with Belk's theory of self-extension, however, it is necessary to acknowledge the existence of alternative formulations for conceptualizing the relationship to tangible and intangible objects. In a comparative work, Belk (2014a) refers in particular to the concepts of *the expanded self* (e.g. Aron, Aron, Tudor & Nelson 1991) and *the extended mind* (e.g. Clark & Chalmers 1998). He also highlights that several researchers suggest that rather than from a single self, every individual derives its consciousness from multiple or plural selves (e.g. Ahuvia 2005, Bahl & Milne 2010) that simultaneously or alternately determine the attraction to certain objects (Belk 2014a). Additionally, I have to address the interlacing meanings of *identity* and *self* because the terms are used synonymously throughout the cited literature (e.g. Belk 1988: 150, 1992: 45, Pierce et al. 2001: 299. Despite numerous studies, the scientific community still remains divided regarding the nature of identity (Schwartz, Luyckx & Vignoles 2011: 4). Nonetheless, is acknowledged that four major aspects are involved: individual, relational and collective identities as well as "[the] identification with treasured material possessions" (Ibid.). Thus, the extension into material objects is acknowledged as contributing to one's identity. These examples do not exhaust the field of alternative formulations but rather serve to underline the specific focus of my thesis on the concept of the extended self (Belk 2014a). The common ground, however, of all existing formulations is that what can be defined as the self of an individual "does not end with the mind and the body" (Ibid: 253).

2.2.2 Relevance of self-extension

Just as ownership is ubiquitous in our life its link to our self-perception and identity is ever-present (Dittmar 2004, Jarrett 2013). Since the first notion of a broader concept of self (James 1890) numerous theories and later also empirical studies have addressed the lifelong relationship to property (Furby 1991). What they found is that the state of self-extension into objects already occurs at a young age (Jarret 2013). When three- to six-year olds were offered to swap their beloved object for a perfect replica, the majority insisted to take home the original, some were even horrified by the chance to receive a copy (Hood & Bloom 2008, Jarrett 2013). This "unique essence" that children ascribed their possession is a metaphor for a sense of self within the object (Jarrett 2013: 560). The relevance of material objects grows within the years, peaking at middle-adolescence when one's own identity starts to crystallize (Chaplin 2007). Throughout adulthood the feelings about property are becoming ever more complex, turning it into external vessels for memories, relationships and identity (Jarrett 2013). Elderly people are often surrounded by cherished possessions, e.g. when moving into nursing homes, which provide a preservation of their former selves, helping to foster a sense of continuity (Belk 1988, Dittmar 2004, Kroger &

Adair 2008). The thinking that an object can contain a person's unique essence persists into adulthood: The property of a deceased family member or celebrity is kept and treasured as if it were contaminated with the lost person's self and could preserve it forever (Belk 1988).

Despite the ubiquitous nature of the relationship to property one question still remains: *Why* do individuals seek to extend their self beyond body and mind? Belk suggests that the concepts of *being*, *doing* and *having* are integrally connected (Belk 1988). Saying this, the fundamental question of every human being 'who am I?' can only be answered by also taking into account what one *has* (Ibid.). Morrison & Johnson (2011) found empirical evidence that individuals perceived their property as a way to tell themselves and others 'who they *are*'. Serving as vessels that contain memories and links to the past, possessions also conserve the previous selves and emotions, thus constantly reminding their owners 'who they *were*' (Belk 1988). Further, people are constantly shaping an ideal version of themselves (Gollwitzer, Bayer & Wicklund 2002). When experiencing discrepancies in regard to their ideal image individuals often refer to "self-symbolizing actions", e.g. object incorporation, to stabilize the picture of 'who they *want to be*' (Belk 1988, Gollwitzer et al. 2002: 195). To sum up, possessions are acquired for the purpose to at least symbolically complete the concept of self (Belk 1988).

When taking together the insights so far, I can conclude: Property provides functional and symbolic meaning and is thus acquired in order to fulfil two main psychological needs - control and efficacy, and to maintain of a sense of self. The latter can be observed in the extension of one's self into tangible and intangible objects. Empirical evidence is supporting the concept of an extended self and shows that material possessions have a high relevance throughout life. The reason for that is that the concepts of having and being are interwoven. As a consequence, human consumption behaviour is likely to be impacted by the concept of the extended self (Belk 1988, Dittmar 2004, Hogg & Michell 1996). This knowledge is particularly interesting in the light of the growing number of alternative forms of consumption that are emerging due to the scarcity of resources. By forsaking sole ownership, they aim to fulfil the basic psychological human needs, without compromising the possibilities for future generations. The next part of my theoretical framework will explore the differences with this kind of human-object relationship in more detail.

2.3 Consumer preference: ownership versus non-ownership

As it now seems, a growing number of people no longer aspire to own (Heinrichs & Grunenberg 2012, PWC 2015). The purpose of this chapter is to distinguish the two consumption modes ownership and non-ownership and to address the question of when and why individuals (do not) share and accept to lose the state of ownership. Considering the knowledge regarding the link between ownership and self-extension that has been gained so far, I especially question to what extent the symbolic meaning of objects effect consumer preferences

2.3.1 Definition of access and non-ownership

The purpose of this chapter is to develop a framework of *ownership-substituting consumption modes* that clearly distinguish from the state of ownership and related types of value-exchange. In its widest possible sense, we can refer to this concept as a state of *sharing the access to goods* instead of solely owning them (Baumeister & Wangenheim 2014, Wallaschkowski et al. 2016). Relating behaviours such as bartering, renting, borrowing and gifting are very old ways to exchange goods (Belk 2007, 2010, Botsman & Rogers 2011). Sharing access therefore does not only play a critical role in the most recent consumption patterns but is “likely to [be] the oldest type of consumption” (Belk 2010: 730) and an underlying principle of economic trade (Baumeister & Wangenheim 2014). Similar to ownership, our sense for sharing is directed by a number of social rules and formal constructs, thus making it a culturally learned behaviour (Belk 2007, Furby 1991). Sharing goods and ownership are not so distinct from each other as it might seems at the beginning, in fact they are interwoven because there first has to be some sense of property or ownership to allow access and exchange of goods (Belk 2007, 2010). Yet for the purpose of my thesis, it is necessary to highlight the differences with access to goods.

In news and media terms such as ‘Sharing Economy’ and ‘Collaborative Consumption’ are used to cover the wide range of ventures and services that focus on access rather than ownership (Wallaschkowski 2016). Despite their popularity, these terms lack a common understanding and are rather umbrella terms for the trend that people, often mediated by the Internet, share more tangible and intangible goods and services with each other again (Ibid.). To provide a suitable definition of ownership-substituting consumption I consider the variety within alternative models. Botsman & Rogers (2011) differentiate three collaborative consumption systems: First *product service system* where products owned by a company or a private person are shared or rented in order to be used by many (Botsman & Rogers 2011: 71-72). Second *redistribution markets* which are networks that enable used or pre-owned goods to be redistributed (Ibid.: 72-73). Third and last are *collaborative lifestyles* that exchange intangible assets such as time, space, skills and knowledge (Ibid.: 73). All of them promise a more conscious use of resources regarding a sustainable lifestyle (Leismann et al. 2013). However, redistribution markets do not fit with my research field. Rather than shared access, they are based on the conventional exchange of the ownership status, which can be called “temporary ownership” but is not the same as non-ownership (Moeller & Wittkowski: 2010: 177). I further have to exclude collaborative lifestyles because they do not address the relation to tangible products. This leaves product service systems to be further investigated.

The most popular form of ownership-substituting product service systems takes place within the rental market (Lawson 2011). By *renting* products, consumers pay for the temporary right of use and enjoy the benefits of a good which is in legal terms the property of someone else (Lawson 2011, Leismann et al. 2013). The concept of *leasing* is similar to renting but is usually

based on long-term contractual agreement and usage requirements (Lawson 2011). Other forms of product service systems that need to be distinguished are borrowing and *sharing* (Ibid.). In its original definition sharing is the act of giving “what is ours to others for their use and/or (...) taking something from others for our use” and does not involve any reciprocal compensation e.g. in form of money (Belk 2007: 126). The intimacy involved in sharing may vary considerably, e.g. sharing toys with a sibling versus sharing tools with neighbours, but still remains distinct to marketplace exchange (Belk 2007, 2010). Renting, leasing and sharing differ in a variety of key acquisition and consumption characteristics², but what unites them is that they all represent a transaction of goods in which *no transfer of ownership* takes place. This common ground will serve as the main criterion for my definition. It is in line with other formulations, such as *access-based consumption* (Bardhi & Eckhardt 2012), *ownership-substituting services* (Leismann et al. 2013) and ‘*using rather than owning*’ (German: ‘Nutzen statt Besitzen’, Scholl et al. 2010).

Finally, I have to add three more specifications to adopt a definition that fits my research field. While authors restrict the sharing of goods solely to peer-to-peer practices (e.g. Hamari et al. 2015), I refer to authors who also encompass public and commercial stakeholders (e.g. Heinrichs & Grunenberg 2012, Lawson 2011). Thus, provider and recipient may be a private person, an organisation or a public institution as long as there is no transfer of ownership involved. For the same reason it would not make sense to distinguish between for-profit and non-profit types of consumption (e.g. Wallaschkowski 2016). The last specification concerns the goods directly. Service platforms for intangible assets such as digital possessions and intellectual property will not be considered since my overarching research interest in non-ownership lies in its promise to provide a more conscious relation to tangible resources.

In summary, I define ownership-substituting consumption as renting, leasing, sharing and all other *forms of transaction or consumption - that may be market mediated - where consumers forsake ownership and instead chose temporary possession, access or usage of tangible products.*

2.3.2 Determinants of consumer preferences

A growing number of Germans are open to the concept of ‘using rather than owning’ (Scholl et al. 2010, PwC 2015). Yet, most people still prefer buying and owning products (Wallaschkowski et al. 2016). In order to make a real contribution to sustainability, renting and sharing of tangible goods would have to be the most common forms of consumption (Jackson 2011, Wallaschkowski et al. 2016). Hence, the challenge is to understand how to make non-ownership attractive to the majority of customers (Ibid.). While ownership and purchasing practises have been a major research theme for long, consumers’ perspective of non-ownership and consumption per access slowly gained attention within the last decades (Moeller & Wittkowski 2010, Wallaschkowski et

² See Lawson 2011, p. 7-9 for a more in-depth distinction of the concepts

al. 2016). Particularly one area has barely been addressed so far: What are the determinants of consumer preference for renting and sharing when *directly compared* to similar ownership-based offers (Baumeister & Wangenheim 2014, Wallaschkowski et al. 2016)?

In access- and sharing-based consumption the human-object relationship is quite different than in ownership (Bardhi & Eckhardt 2012, Chen 2009). In comparison to ownership which entails full property rights, to access an object only implies the right to use it (*ius usus*) and to retain the benefits from its utilization (*ius usus fructus*) (see chapter 2.1.1). In addition, solely owned objects have a better capability, than rented or borrowed goods, to function as symbolic vessels and to reflect one's identity (Belk 1988, 1992, 2007, Richins 1994). As a consequence, consumers' decision processes of acquiring and valuing objects is different in regard to certain attributes depending on the consumption mode (Baumeister & Wangenheim 2014, Lawson 2011).

Throughout several studies, functional perceptions, e.g. maintenance effort and use limitations, are the most relevant determinants for consumers' attitude towards a consumption mode (e.g. Bardhi & Eckhardt 2012, Baumeister & Wangenheim 2014, Moeller & Wittkowski 2010). Monetary perceptions, e.g. total costs, and experiential perceptions, e.g. convenience orientation, were not evaluated as consistently high, but also had a considerable relevance (Ibid.). These findings show clear references to the meanings of and motivations for ownership as presented in chapter 2.1.2. Thus, *utility related* features and their ability to address the innate human need for control and efficacy have been a main theme in research so far (Wallaschkowski et al. 2016). In comparison, the symbolic perceptions, e.g. personal attachment and signalling one's identity, were found to be generally least important (Baumeister & Wangenheim 2014). Given the empirical evidence, consumers' consumption mode preferences mainly derive from the functional value of a good and not from the innate human motivation to maintain a sense of self.

And yet *I cannot accept that the importance people attach to their possessions should be based solely on utilitarian reasoning*. My concerns are grounded in chapter 2.1 and chapter 2.2, which have highlighted the relevance of the symbolic meaning of property, in particular in form of self-extension. The concepts of having and being are interwoven (Belk 1988). Accordingly, possessions are used as vessels for experiences, relationships to other people, to reflect one's identity and even to create a sense of immortality after death (e.g. Belk 1988, Dittmar 2004, Kroger & Adaire 2008). Our relationships to material objects influence our whole lives but often develop unknowingly (Belk 1988). With all these findings combined, I dispute the assumption that the preference for a certain type of human-object relationship is a rational choice. Belk (1991) proclaimed in this context "We court magic³ in a plethora of material loci [i.e. objects] that cumulatively compel us to conclude that the rational possessor is a myth that can no longer be sustained (...)" (Belk 1991: 17-18).

³ the term *magic* in this formulation refers to the symbolic meaning of possessions, e.g. through self-extension

Although maintaining a sense of self is not the only, or even a main, driver of economic and consumer behaviour, I support the claim of Dittmar (2004) and Belk (1992, 2014b) that identity-related features of possessions are a significant concern if we want to understand the psychological functions of material goods. My thesis thus aims to investigate the role of self-extension into objects in regard to consumption mode preferences.

2.4 Self-extension in a different light

The theoretical framework of my thesis has illustrated the broad body of knowledge on ownership and property, access and sharing, and the main determinants of consumption behaviour. Yet, I have to state that the current literature cannot provide sufficient data on *the role of self-extension into material objects in regard to consumption mode preferences*. Therefore, the aim of this final part will be to investigate what effects on consumers' consumption choice can be expected from self-extension and to present hypotheses to further empirically address this question.

2.4.1 Identity-related effects on consumption mode preferences

In chapter 2.2 I have outlined the essential characteristics of the concept of self-extension. Among the most important points were that the concepts of having and being are interwoven, thus by extending their self, individuals experience objects as integral to their identity (Belk 1988, 1992, James 1890). As a consequence, they are likely to *feel* and *act* about the incorporated possessions in the same way they feel and act about their selves (Ball & Tasaki 1992, Belk 1988, 1992, 2007). Especially the latter gives reason to assume that the self-extension into possessions can influence consumption attitude as it has been stated by Belk (1988, 1992, 2007), Dittmar (2004).

As possessions become more infused with an owner's identity, so their preciousness increases, leading to strong feelings of *personal and emotional attachment* (Ball & Tasaki 1992, Belk 1988, 1991, 2007). These feelings can be defined as the perceived degree of psychological closeness and emotional significance of an object (Ball & Tasaki 1992, Baumeister & Wangenheim 2014). On the other hand, people who lose their property unintentionally, e.g. in an environmental disaster or by entering a prison, experience feelings of violation and grief (Belk 1988, 1992, Wallendorf & Arnould 1988). If possessions extend the self, it follows that their loss will lead to a diminished sense of self (Ibid.). Substitute or borrowed objects may eventually restore some sense of self but do not provide the same symbolic meaning (Ibid.). Due to strong feelings of attachment, individuals are likely to perceive an object as non-substitutable and thus, are unwilling to part with it (Belk 1991, 1992, 2007). In other words, the more an object is seen as integral part to one's self, the greater is the desire to retain it (Ibid.).

This in turn can lead to *possessive* and *selfish* behaviour (Ibid.). Possessiveness is defined as the “tendency to retain control or ownership of one’s possessions” (Belk 1992: 49). The importance an individual attaches to the ownership of a good has negative influence on his or her receptivity to non-ownership consumption modes (Belk 1992, 2007, 2010, Moeller & Wittkowski 2010). Selfish behaviour, or rather non-generosity, is defined as “an unwillingness to give possessions to or share possessions with others” even if it is rarely used (Belk 1992: 49). It is caused by the fear of missing out the scarce value of objects (Ibid.). Similar to possessiveness, it represents another impediment to individual’s receptivity to non-ownership (Ibid.).

To sum up, strong feelings of attachment and fear of loss both represent a more “magical” and emotional relation to material objects than their mere utilitarian benefits (Belk 1991, 1992). At the same time, however, temporary renting or borrowing an object does not represent an attractive alternative due to selfish and possessive feelings (Belk 2007, 2010, Chen 2009, Scholl et al. 2010). In conclusion, to the extent to which we feel a possession can be a part of our extended self, we *are more likely to wish to solely own it* (Belk 1992, 2007, 2010). Vice versa, when accessing a rented or shared good, consumers believe they cannot form a similar emotional connection (Bardhi & Eckhardt 2012, Baumeister & Wangenheim 2014, Chen 2009). They form rather distant and circumstantial human-object relationships and as a result, *are more willing to share it with others* (Chen 2009). The following hypothesis is therefore proposed regarding the relationship between self-extension into objects and consumers’ receptivity to ownership-substituting consumption, such as renting, leasing, and sharing:

H1: The perception of a tangible object as part of the extended self correlates negatively with the willingness to participate in ownership-substituting consumption modes.

The associated null hypothesis $H1_0$ is thus formulated as follows: The perception of a tangible object as part of the extended self does not correlate with the willingness to participate in ownership-substituting consumption modes.

2.4.2. Extended theoretical model

With my research hypothesis H1 I have set the focus of my thesis. However, ownership over and access to products are both very multifaceted concepts (Chen 2009, Furby 1991). Thus, consumers’ reasoning and behaviour related to both types of consumption is affected by a myriad of variables and premises, including the various functional, monetary and experiential functions of possessions (Bardhi & Eckhardt 2012, Baumeister & Wangenheim 2014, Moeller & Wittkowski 2010, Richins 1994). It would be far beyond the scope of this thesis to provide a

holistic research design. Nevertheless, in order to gain better insights in the validity of my investigation I include further variables in my final theoretical model.

The first two additional variables are *non-generosity* and *possessiveness*. Both have already been presented as possession-related feelings in chapter 2.4.1. They arise from the desire to retain an object due to strong feelings of personal and emotional attachment (Belk 1991, 1992, 2007). Accordingly, the level of non-generosity and possessiveness felt towards an object is linked to a high level of self-extension. At the same time, they act - per definition - as impediments to sharing related behaviour (Ibid.). Thus, I conclude that they are linked to a low willingness to access an object through ownership-substituting services. Given the link to both the predictor and the outcome variable of hypothesis H1, possessiveness and non-generosity could be possible mediators for this correlation. If this assumption is true, it will support the validity of hypothesis H1, despite the myriad of other influencing factors. To empirically prove this extended theoretical model, I propose a second confirmatory hypothesis in regard to both feelings:

H2a: The effect of self-extension on the willingness to access an object through ownership-substituting consumption is mediated by feelings of possessiveness.

H2b: The effect of self-extension on the willingness to access an object through ownership-substituting consumption is mediated by feelings of non-generosity.

The associated null hypothesis H2a₀ (H2b₀) is thus formulated as follows: The effect of self-extension on the willingness to access an object through ownership-substituting consumption is not mediated by feelings of possessiveness (...by feelings of non-generosity).

In addition to object-specific feelings, general attitudes also influence consumer decisions. In order to gain a better insight into the validity of my research, I will control possible effects on the influence of distorting variables. Thus, I include two covariates in the extended theoretical model of my thesis: *social trust* and *materialism*. Both are centrally held beliefs that are highlighted throughout the literature as having a meaningful influence on consumer preference for consumption modes (e.g. Ball & Tasaki 1992, Belk 1992, 2007, 2010, Botsman & Rogers 2011: x, Heinrichs & Grunenberg 2012). Materialism is a psychological trait, which is defined as placing high importance on material goods “as a means for reaching important life goals” (Richins & Chaplin 2015: 1334). Evidence suggests that people with high materialistic values are strongly seeking self-extension through material objects (Dittmar 2004, Richins & Chaplin 2015). Thus, they value ownership and acquisition of possessions as central goals in life (Ibid.). The term trust seems much more complex but can be generalized as an expectation towards future events that refers to feelings of tranquillity and safety (Kassebaum 2004:21). Social trust is considered an essential condition for consumers’ receptivity to renting and sharing networks (Botsman &

Rogers 2011: x, Heinrichs & Grunenberg 2012). A great social distrust is accordingly a barrier (Ibid.). Knowing of the possible influence of trust and materialism, I include two further *explorative research questions (Q)* in my extended theoretical model:

Q1: Can individuals, who have a high level of materialism, be expected to be less willing to participate in ownership-substituting consumption modes?

Q2: Can individuals, who have a high level of social trust, be expected to be more willing to participate in ownership-substituting consumption modes?

To sum up, I present a theoretical model that focuses on individual's perception of an object as part of the extended self and the correlation to their willingness to participate in ownership-substituting consumption (H1). In addition, I investigate whether possessiveness and non-generosity as possession-linked feelings have a mediating function (H2). And I consider the possible effect of centrally held beliefs on consumer decisions (Q). A simple illustration of the extended model is shown in figure 1, including all object-related variables (rounded squares) and variables that refer to the general attitude (edged square). By providing an extended model, I hope to be able to better evaluate the impact of self-extension.

Figure 1: Extended theoretical model of the relationship between the variables presented in hypothesis H1 and H2, supplemented by social trust and materialism.

The main hypothesis H1 and the confirmatory hypothesis H2 shall now be empirically tested. Therefore, the theoretically grounded variables are operationalized in order to conduct an online survey. With the analysis of the results I hope to collect further empirical evidence. This will allow a theoretically and empirically grounded statement in regard to the relevance of the identity-related symbolic meaning of possession.

3 Methods

To empirically assess the proposed hypothesis an online survey with German participants was conducted. The method part is structured and presented as follows: First I will describe the sample characteristics. Subsequently, I will illustrate how the theoretical model from chapter 2.4 was operationalized by giving insights into the research design and procedure, and into the development of the measurement methods. Finally, I present preliminary analyses of the results.

3.1 Data collection and sample characteristics

The survey was programmed in German, using the onlinesurvey tool Unipark. The data was collected without the help of an external recruiter, rather representing a *convenience sampling*. This limitation in the generalizability of the sample was due to the given limited scope of my thesis. The acquisition of participants took place via social media (i.e. Facebook, Xing), e-mails and individual approaches. Participation in the survey was voluntary and not supported by external incentives such as money or vouchers. In total 130 persons completed the survey during the field period of two weeks in September 2018.

After revising the sample data no responses had to be excluded from the evaluation. Because participants were given the opportunity to reject from answering the socio-demographic questions, the following assessment of the sample characteristics does not always refer to the total of 130 participants. For a detailed overview of the sample characteristics refer to table 7 in appendix C. The total sample contains 62% female respondents and 37% male respondents. The mean age is 33 years with a standard deviation of 14.61. Age distribution was ranging from 16 to 80 years, however, 40% of all respondents were between 16 and 25 years old. The level of education is above the average within the German population: 38% of all respondents have a university entrance qualification and 44% have already completed an academic degree (Statistisches Bundesamt 2017: 84-86). Furthermore, half of all respondents stated that they were currently in apprenticeship or study. This is in line with the result that half of all respondents have to live with a monthly net income below 1.000€. In regard to their place of residency, two thirds of the respondents live in medium-sized towns or cities with over 100.000 inhabitants. The rest tend to live in rural and village areas. Looking at the distribution of age, current education and occupation, and net income, the sample is not representative for the German population (Statistisches Bundesamt 2017). Rather, it represents the young generation, particularly the more highly educated.

3.2 Operationalisation

3.2.1 Research design and procedure

For my thesis I use a *correlational* research design to determine the extent to which self-extension into objects and a preference for consumption modes are related. The data for my analyses were retrieved with the help of an *online questionnaire* consisting of different Likert scales types. These have proven to be reliable when it comes to capturing a person's opinion or attitudes (Porst 2014: 95, Thielsch & Brandenburg 2012: 233). Participants of the survey were not further divided into different groups, each received the same information and assignments. An important aspect, however, of my research design is that participants were asked to assess each variable in relation to *a variety of goods*. As described in chapter 2.2.1, feelings of psychological ownership, i.e. self-extension, do not necessarily generalize to all possessions (Habermas 1996: 22). That consumers perceive the symbolic value of ownership and access quite differently in relation to specific object categories has already been empirically proven (Baumeister and Wangenheim 2014). This underlines the necessity of further multi-category studies (Ibid.). Thus, I provide a total of *eight* objects to derive more generalizable findings (Ibid.). The first four objects represent the most common types of shared goods: vehicles, e.g. *car* and *bike*, print media, e.g. *books*, and *tools* (Scholl et al. 2010). Given the growing offers for available goods, that make it even possible to rent a whole lifestyle, I decided to further include less common types of shared goods: Furniture, e.g. *sofa*, technical devices, e.g. *TV*, non-intimate clothing, e.g. *T-shirts*, and *kitchen utensils* (Lawson 2011). Only the general held beliefs, social trust and materialism, were measured with no regard to specific object categories. To sum up, I used a research design where I retrieved a total of 34 data entries from *each participant*. Figure 2 illustrates the basic design concept based on the different variables and object categories.

Level of self-extension	Non-generosity	Possessiveness	Willingness to substitute ownership	Social trust	Materialism
<ul style="list-style-type: none"> • Car • Tool • Book • Kitchen Ut. • Bike • Sofa • TV • T-shirt 	<ul style="list-style-type: none"> • Car • Tool • Book • Kitchen Ut. • Bike • Sofa • TV • T-shirt 	<ul style="list-style-type: none"> • Car • Tool • Book • Kitchen Ut. • Bike • Sofa • TV • T-shirt 	<ul style="list-style-type: none"> • Car • Tool • Book • Kitchen Ut. • Bike • Sofa • TV • T-shirt 		

Figure 2: Illustration of the research design: Participants were asked to assess the predictor and outcome variables for eight different objects. The two covariates were measured on a general level.

Care was taken to ensure that the structure of the questionnaire was comprehensible for the participants without compromising the validity and reliability of the measurements (Bortz & Döring 2006: 256, Porst 2014: 146). First drafts were analysed in a pre-test with a total number

of seven participants. The pre-test included paraphrasing, information retrieval probing and comprehension probing, the methods were inspired by Porst's handbook for questionnaires (2014). The subsequent discussion on suggestions for improvement led to an optimized comprehensibility of the question items.

The survey was structured in four main sections. In the first two sections, participants were introduced to the topic and then asked to evaluate their attitude towards an object. First, the predictor variable of hypothesis H1, i.e. level of self-extension into an object, and the variables of hypothesis H2, i.e. possessiveness and non-generosity, were measured. Subsequently, the outcome variable, i.e. the willingness to participate in ownership-substituting consumption modes, was measured. Thereby participants received a definition of the concept of ownership-substituting consumption to create a shared understanding of the term. In the third part participant's general beliefs in terms of social trust and materialism were measured with no regard to specific object categories. Socio-demographic characteristics of the sample, including age, sex, education, occupation, income and residency, were collected at the end of the questionnaire. Only in this last part participants were given the opportunity to reject from answering. The final version of the applied questionnaire is found in appendix A. The mean survey duration was 14 minutes.

3.2.2 Measures

The definitions of the variables have already been presented in context with the development of the theoretical model in chapter 2.4 . Thus, only the development of the final scales is described in this section. An overview of all questionnaire elements can be found in appendix B.

Table 1: Excerpts from the scales used to measure object attachment and incorporation

Ball & Tasaki 1992 Attachment Scale ($\alpha=.93$)	Sivadas & Machleit 1994 Incorporation into the Extended Self Scale ($\alpha=.90$)
1. How much would you agree with the statement, "If someone ridiculed my car, I would feel irritated."	1. My cars helps achieve the identity I want to have.
2. How much do you agree with the statement, "My car reminds me of who I am."	2. My car helps me narrow the gap between what I am and what I try to be.
...	...
6. How much do you agree with the statement, "I don't really have too many feelings about my car."*	5. If my car is stolen form me I will feel as if my identity has been snatched from me.
...	...
*reverse scored item	

To develop a reliable scale to measure the phenomenon of self-extension I referred to the limited attempts of other authors, including: a nine-item Likert scale by Ball and Tasaki (1992) to measure *attachment to possessions*, and a six-item Likert scale from Sivadas and Machleit (1994, as cited in Sivadas & Venkatesh 1995) to measure the extent to which an object has been *incorporated into the self*. Both publications also referred to the work of Belk (1988, 1992), Wallendorf and

Arnould (1988) and Schultz, Kleine and Kernan (1989). I decided to develop a *cross-over* version of both scales with a total number of four items so as not to exceed the size of the questionnaire. Table 1 provides examples for the items that I retrieved from the scales. Summarizing the scales to a few items bears the risk of losing reliability, I therefore opted for *bipolar scales* when developing my final scale. Compared to unipolar scales, bipolar scales have the advantage that the two opposing scale anchors define each other, i.e. they increase the precision of participant's judgements (Bortz & Döring 2006: 177). The final scale includes four German item-pairs representing feelings of personal attachment towards an object, i.e. 'emotional attachment' and 'fear of loss', as well as the representative character of an object, i.e. 'self-expressing' and 'identity-related'. In order to be able to record slight tendencies among the participants and to exclude indifference-ambivalence issues, the scale covers *six gradations* (Bortz & Döring 2006: 180, Porst 2014: 82-85). When naming the intermediate levels, care was taken not to use negative labels, instead the symbols '+' or '++' indicate the level of agreement with the respective scale anchor (Porst 2014: 92-93). The use of endpoint-named bipolar scales, in which scale points are regarded as equidistant, allows me to consider the resulting data as interval scaled (Ibid.: 75-76).

Non-generosity and possessiveness were measured using six-point bipolar Likert scales, based on the same reasons described for the measure of self-extension. I adapted four elements from scales presented by Micken and Scott (1995). They are revised elements of a scale first presented by Belk in 1984. Table 2 provides examples for the items that I retrieved from the scales. I have translated two of the elements from non-generosity into German and transformed them into an opposing pair. In case of possessiveness I adapted the original formulations to fit more into my research field. As with self-extension, both scales represent an interval measure level.

Table 2: Excerpts from the scales used to measure non-generosity and possessiveness

Micken & Scott 1995	
“A New Appraisal of the Belk Materialism Scale”	
Non-generosity i.e. not sharing ($\alpha=.54$)	Possessiveness i.e. worry over loss of possession ($\alpha=.48$)
1. I don't like to lend things, even to good friends.*	...
...	4. I worry about people taking my possessions.
3. I enjoy sharing what I have.*	5. I am less likely than most people to lock things up.*
*reverse scored items	

The outcome variable, i.e. willingness to participate in ownership-substituting services, was asked in form of a *slider* that represented the *probability of use* for the various object categories. This way, the metric scale level is retained and secondly, there is less room for interpretation than with given answer options. The slider ranges from 0 'is no option for me' to 100 meaning 'I will

definitely do it'. Additionally, participants were asked to indicate on a *dichotomous scale*, whether or not, they are currently using an ownership-substituting service for any object.

Social trust and materialism were measured using a *unipolar* Likert scale. Again, in order to be able to record slight tendencies among the participants and to exclude indifference-ambivalence issues the scale covers *six gradations*, ranging from 'not true at all' to 'true entirely'. Thus, the scale level is ordinal. To measure social trust, I adapted a scale from Heinrichs and Grunenberg (2012), which in turn is based on the work of Kassebaum (2004: 284-285). I adopted the first two statements according to Heinrichs and Grunenberg and added a third, more suitable, statement from Kassebaum's *inventory for measuring interpersonal trust IIV* (German title: Inventar zur Erfassung interpersonellen Vertrauens, IIV). My final scale is in accordance to his notion that trust can be measured in a continuum between doubt and good faith (Kassebaum 2004:15). To measure materialism, I adapted a scale from Richins (2004). This three-item scale represents a short version of her former work on the *Material Values Scale* that consists of the three subscales 'centrality', 'success', and 'happiness'. (Richins & Dawson 1992). Although the reliability is not as high as in the original scale, I decided to choose the short version so as not to exceed the size of the questionnaire (Richins 2004). For a translation of the English items into German I referred to the work of Müller et al. (2013) on the German version of the Material Values Scale.

All in all, the linguistic design of the questionnaire is based on the language habits of the target group and therefore kept simple (Bortz & Döring 2006: 253, Thielsch & Brandenburg 2012: 255). Care was taken to ensure that all scale anchor items were worded as statements, kept in first-person formulations and that they did not contain any successive expressions (Ibid.).

3.3 Preliminary analysis

The data processing was conducted using *Microsoft Excel* and *SPSS*. Especially the latter was used to perform the preliminary analysis. After correcting the responses for the reverse scored items I checked the distribution and characteristics within the data. In some cases, the box plot diagrams clearly showed outliers that were beyond the second standard deviation of the mean. However, these were not excluded from the final data because they were in line with the general skewness and kurtosis for each variable and should not be seen as error. Thus, a total sample size of $N=130$ remained.

In a second step, a scale reliability analysis in terms of internal consistency was carried out for the scales 'self-extension', 'social trust' and 'materialism'. It was done by computing the Cronbach's Alpha coefficients. Table 8 in appendix C provides an overview of the computed scores for each scale. All four items of the self-extension scale combined reached respectable scores ranging from $\alpha = .75$ to $\alpha = .89$ across the object categories (Field 2009: 675). The three-

item scales reached similar scores with a computed Cronbach's alpha of .75 for social trust and .84 for materialism. Accordingly, the respective items measure, as assumed, the same construct (Ibid.). Therefore, the data of the items of each scale have been combined and the mean value was used to create the data sets for the variables self-extension, social trust and materialism.

Subsequently, I checked my data to see if they comply with the requirements for parametric testing. Because an *interval* measure level and *independence* of the data are ensured by the research design, I only checked for normally distributed data⁴ (Field 2009: 133). Detailed results of the analysis can be found in appendix C table 9. For a first assessment I used *P-P plots* which showed that in some cases the data values deviated away from the diagonal that represents normally distributed data (Field 2009: 134-139). Thus, in a next step I quantified the values of skewness and kurtosis of the data distribution by converting them into z-scores (see appendix E for an overview). Because the necessary requirements of z-scores ± 1.96 for samples with $N < 200$ are not met, I have to assume that my data are *not* normally distributed (Ibid.). To make use of parametric tests the data would have to be transformed first. However, to avoid the consequences that might occur when applying a 'wrong' transformation I will refrain from transforming my data for further analysis and instead rely on *robust* parametric tests or their *non-parametric* counterparts (Field 2009: 155-163).

Finally, basic descriptive statistics such as median, mean and standard deviation were calculated for each variable. As table 10 in appendix C shows, the characteristics of predictor and outcome variables differed between the various object categories. To prove whether these differences in the ratings are significant I run a *Friedman's ANOVA* together with *Kendall's W* (Field 2009: 573-580). I choose the non-parametric test for two reasons: First the lack of normal distribution within the data, and additionally the lack of homogeneity in variance which was detected by *Mauchly's Test of Sphericity*. Results of Friedman's ANOVA show scores for Kendall's W that are close to zero, indicating a low agreement between the different ratings. These differences are significant for self-extension ($\chi^2(7) = 324.38$, $p < .001$), possessiveness ($\chi^2(7) = 195.07$, $p < .001$), non-generosity ($\chi^2(7) = 253.31$, $p < .001$), and the willingness to participate in ownership-substituting consumption ($\chi^2(7) = 295.61$, $p < .001$). Additionally, I run a *pairwise comparison* with SPSS to see even more clearly between which object categories the differences are significant and how strong these effects are. The scores in table 13 in appendix C show that not all pairs differ significantly, however, these form the minority. The effect sizes are rather small with the highest $r = .36$ (Cohen 1988, as cited in Rasch, Frieze, Hofmann & Naumann 2014: 90). Nonetheless, the findings confirm the assumption that consumers assess the predictor and outcome variables quite differently in relation to certain object categories. Thus, all further analysis will be performed *for each object category separately*.

⁴ According to *central limit theorem* in samples of $N > 30$ the distribution will tend to be normal regardless of the population distribution (Field 2009: 42). However, I sought a realistic assessment of my data.

4 Results

So far, I illustrated the operationalization of the theoretical model and I presented preliminary results of the retrieved survey data. This chapter now presents the main analysis results. It is divided into two parts that first present the main findings in regard to the proposed research hypotheses H1 and H2, and second, look into further exploratory insights of the data.

4.1 Examination of hypotheses

4.1.1 Self-extension and consumption preference

When examining whether two variables are related, then it is necessary to look whether changes in one variable are met with similar changes in the other variable (Field 2009: 167). Therefore, I computed the correlation coefficients and their significance for the level of self-extension and participant's willingness to participate in ownership-substituting consumption. This was done by running the parametric correlation test of *Pearson's r* on SPSS. However, due to a violation of some of the parametric assumptions such as non-normally distributed data, Pearson's test may not deliver robust results. Thus, additionally the non-parametric statistic of *Spearman's rho* was computed to gain reliable insights. The 95% confidence intervals for each correlation coefficient were computed with Microsoft Excel using the formula for the standard deviation of *Fisher's Z-values* which seems appropriate for a sample size of $N = 130$ (Rasch et al. 2014: 89-90). As table 3 shows the results of both tests are consistent in their essential meaning. The correlation between self-extension and consumption preference is significant in the object categories car, tool, sofa and TV (all $ps < .001$), bike ($p < .01$), book and kitchen utensil ($ps < .05$). For T-shirt this relationship is not significant. In all object categories the two variables are *negatively* correlated.

Table 3: Correlation coefficients and confidence intervals (95%) for the relationship between self-extension and willingness of ownership substitution for each object category

self-extension and willing. ownership sub. (N=130)	Pearson's Correlation Coefficient				Spearman's Correlation Coefficient			
	r	r ²	Upper CI ^a	Lower CI ^a	r _s (rho)	r _s ²	Upper CI ^a	Lower CI ^a
Car	-.492***	.242	-.35	-.61	-.484***	.234	-.34	-.61
Tool	-.302***	.091	-.14	-.45	-.357***	.127	-.20	-.50
Book	-.160*	.026	.01	-.32	-.191*	.036	-.02	-.35
Kitchen Utensil	-.187*	.035	-.02	-.35	-.160*	.026	.01	-.32
Bike	-.285**	.081	-.12	-.44	-.282**	.080	-.12	-.43
Sofa	-.338***	.114	-.18	-.48	-.338***	.114	-.18	-.48
TV	-.526***	.277	-.39	-.64	-.537***	.288	-.40	-.65
T-shirt	-.087	.008	.09	-.26	-.065	.004	.11	-.23

Correlation is significant (1-tailed) when * $p < .05$, ** $p < .01$, *** $p < .001$

^a 95% Confidence interval

To further examine hypothesis H1 a *simple linear regression analysis* of consumers' willingness to participate in ownership-substituting consumption was used with the predictor level of self-extension in regard to an object (Field 2009: pp.198, Rasch et al. 2014: pp.98). With regard to the later generalizability of the findings, scatterplots of the data were checked for homoscedasticity. Across all object categories, the scatters of the values of the outcome variable are homogeneous over the whole range of predictor values, indicating homoscedasticity (Field 2009: 220, Rasch et al. 2014: 108). The results of the linear regression models for each object category are listed in table 14 in appendix C, highlights are briefly reported in the following. The level of self-extension predicts the willingness to substitute ownership significantly in the categories car ($F(1,128) = 40.80, r^2 = .24$), tool ($F(1,128) = 12.85, r^2 = .09$), bike ($F(1,128) = 11.29, r^2 = .08$), sofa ($F(1,128) = 16.46, r^2 = .11$) and TV ($F(1,128) = 48.98, r^2 = .28$) at the $p < .001$ level and for the category kitchen utensil ($F(1, 128) = 4.66, r^2 = .04$) at the $p < .05$ level. The data of the categories book and T-shirt do not fit any significant regression equation ($p > .05$), thus the level of self-extension cannot predict consumer preference.

4.1.2 Possessiveness and non-generosity

The premise for hypothesis H2 is that the two possession-linked feelings possessiveness and non-generosity correlate with self-extension and the consumption preference. Thus, Pearson's and Spearman's test was conducted on SPSS to determine the correlation coefficients and their significance for both variables. The results of each object category are listed in form of correlation matrices in appendix C. Again, the scores of both the Pearson's and Spearman's test show slightly differences but are consistent in their essential meaning with regard to the relationships. As expected, the variables possessiveness and non-generosity are *positively* correlated. Furthermore, this relationship is significant in all object categories at the $p < .001$ level (2-tailed). For the category car the correlation coefficients reached the highest scores ($r = .78$), the category sofa reached the lowest scores ($r = .56$).

Self-extension is also *positively* related to both possession-linked behaviours across all object categories. Thereby the correlation coefficient scores with possessiveness are consistently higher than with non-generosity. The correlation coefficients for the relationship of self-extension and possessiveness reached the highest scores in the category car ($r = .67$) and the lowest scores in the category T-shirt ($r = .27$). The correlation is significant in all object categories at the $p < .001$ level (2-tailed). The correlation coefficients for self-extension and non-generosity also reached the highest scores in the category car ($r = .60$) and the lowest scores in the category T-shirt ($r = .17$). The correlation is significant in almost all object categories at the $p < .001$ level (2-tailed), except for T-shirt where $p < .01$.

The willingness to substitute ownership is *negatively* related to both possessiveness and non-generosity. Thereby the correlation coefficient scores with non-generosity are consistently

higher than with possessiveness. The relationship between the willingness to substitute ownership and possessiveness reached the highest coefficient scores in the category car ($r = -.69$) and the lowest in the categories bike and T-shirt ($r = -.52$). The correlation is significant in all object categories at the $p < .001$ level (2-tailed). The correlation coefficients for the willingness to substitute ownership and non-generosity reached the highest scores in the category kitchen utensil ($r = -.78$) and the lowest scores in the category bike ($r = -.56$). The relationship is significant in all object categories at the $p < .001$ level (2-tailed).

Figure 3: Simple mediation model for the relationship between the predictor variable self-extension (X) and the outcome variable willingness to substitute ownership (Y) through a mediator variable possessiveness / non-generosity (M).

To test hypothesis H2 which predicted a *mediation effect* for possessiveness and non-generosity the linear regression paths for both variables were computed (Hayes 2018a: pp78). This was done with the analysis modelling tool *PROCESS v.3.1* for SPSS which used ordinary least squares regression to estimate variables, and 5000 bootstrapped samples to compute confidence intervals and to test the statistical significance (Ibid.: pp93). The regression results for the direct effect of the predictor, i.e. self-extension, on the outcome variable, i.e. willingness to substitute ownership, in each object category was already presented in table 14 in appendix C. Although this relationship is not significant for each object, the mediation test was performed for all eight object categories. By now it is acknowledged that mediation analyses no longer have to prove the evidence of a significant association between predictor and outcome variable as precondition (Ibid.: 80). For the indirect effect of the predictor through a *mediator variable* possessiveness and non-generosity are tested individually in a *simple mediation model* (Model 4 in PROCESS) as can be seen figure 3. A detailed overview of the results for the regression paths a , b and c' is listed in table 23 and table 24 in appendix C. Because an in-depth report for each object category is beyond the scope of my thesis, I only present the highlights in the following, which are further interpreted in the discussion part.

In all object categories, except for T-shirt ($p < .01$), the effect of the predictor variable self-extension on the mediator variable possessiveness is significant with $p < .001$. The effect of possessiveness on the outcome variable willingness to substitute ownership is also significant in all object categories (all $ps < .001$). In all object categories the indirect effect is significant. In the categories car, tool, kitchen utensil, bike, sofa and T-shirt the level of self-extension is *no longer a significant predictor* for consumer preference after controlling for possessiveness. In these

cases, the relationship of self-extension and the willingness to substitute ownership is strongly explained through the mediator variable possessiveness. In the categories book and TV the effect of self-extension on consumer preference is still significant and *not smaller* compared to the direct effects presented in table 14. In these cases, possessiveness does not mediate the effect of self-extension on the willingness to substitute ownership, which is not in line with hypothesis H2. Overall, the effect sizes differ considerably across the object categories.

The effect of self-extension on the mediator variable non-generosity is significant in the categories car, bike, sofa, TV ($ps < .001$), tool, book ($ps < .01$) and kitchen utensil ($p < .05$). This is not true in the category T-shirt, which means non-generosity cannot be predicted through self-extension and thus cannot fulfil a mediating function. The effect of non-generosity on the outcome variable willingness to substitute ownership is significant in all object categories (all $ps < .001$). The indirect effect is significant in all categories except T-shirt. For the categories car, tool, book, kitchen utensil and bike the level of self-extension is *no longer a significant predictor* for the willingness to substitute ownership after controlling for non-generosity. This indicates that the relationship between self-extension and the willingness to substitute ownership is strongly explained through the mediator variable non-generosity. In the categories sofa and TV the effect of self-extension on consumer preference is still significant and *not smaller* compared to the direct effects presented in table 14. In this case non-generosity does not mediate the effect of self-extension on the willingness to substitute ownership, which is not in line with hypothesis H2. Again, the effect sizes differ considerably across the object categories.

4.2 Further results

4.2.1 Familiarity with access-based consumption

As I described in chapter 3.2 the outcome variable was measured as the probability with which participants were likely to choose ownership-substituting consumption over sole ownership. To better interpret this assessment, participants also stated whether or not they already had access to the object through renting or sharing at the time the survey was conducted. Table 25 in appendix D shows the descriptive statistics for the willingness to participate in ownership-substituting consumption after the data was split according to respondent's previous experiences. The number of people that already had access (i.e. renting, sharing) varies across the object categories. 68% of all respondents have shared a book, but only a few shared a sofa (6%) or a TV (8%). In all object categories the group of the already familiar respondents showed a higher mean value, and thus more willingness to substitute ownership, than those who had not yet gained experiences with sharing and renting. The magnitude of the difference between the two mean values varies

considerably between the categories. The standard deviation tends to be higher in the non-familiar group in almost each object category.

Table 4: Point-biserial correlation coefficients for the relationship between the willingness to substitute ownership and the familiarity with access-based consumption

willing. ownership sub. and familiarity w. access-based consumption ^c (N=130)	Pearson's Correlation Coefficient (point-biserial)	
	r_{pb}	r_{pb}^2
Car	.469***	.219
Tool	.197*	.039
Book	.334***	.112
Kitchen Utensil	.330***	.109
Bike	.321***	.103
Sofa	.329***	.108
TV	.142	.020
T-shirt	.411***	.169

Correlation is significant (2-tailed) when * $p < .05$, *** $p < .001$

^c coded 1 for 'yes' and 0 for 'no'

To examine the relationship between the willingness to substitute ownership and the familiarity with access-based consumption further, a *point-biserial correlation* was conducted on SPSS. Thereby the coding is 1 for 'yes' and 0 for 'no'. As table 4 shows, for almost all categories the willingness to forsake ownership over an object is significantly related to the familiarity with accessing this object through ownership-substituting consumption modes ($ps < .001$). The category tool showed quite low scores compared to the others ($r_{sp} = .20$, $r_{sp}^2 = .04$, $p < .05$). TV is the only object category in which this relationship is not significant. Due to the coding the two variables correlate *positively* which means that respondents that are not familiar with access-based consumption stated a lower willingness to substitute ownership.

4.2.2 Social trust and materialism

To find answers to the exploratory research questions Q1 and Q2 it was additionally examined whether the willingness to substitute ownership correlates with the two general held beliefs social trust and materialism. Because the two latter variables were measured at the ordinal level this was done with Spearman's correlation test on SPSS.

As table 5 shows, in all object categories social trust correlates *positively* with the willingness to substitute ownership. This relationship is significant in the categories car, kitchen utensil, sofa, TV and T-shirt (all $ps < .01$), but not in the categories tool, book and bike. Participant's willingness to substitute ownership correlates *negatively* with materialism across all object categories. Thereby the correlation coefficient scores are consistently lower than with social trust. In the categories car, kitchen utensil and T-shirt the relationship between materialism and consumer preference is significant at the $p < .01$ level, and in the categories sofa and TV at

the $p < .05$ level. Again, in the categories tool, book and bike the relationship is not significant. Thus a generalized answer to the exploratory questions Q1 and Q2 is not supported. The overall effect sizes for both general held beliefs are rather low compared to the scores of the other variables. Finally, Spearman's test showed that the variables social trust and materialism also correlate significantly ($r_s = -.40$, $p < .001$).

Table 5: correlation coefficients for the relationship between the willingness to substitute ownership and social trust / materialism

(N=130)	willing. ownership sub. and social trust		willing. ownership sub. and materialism	
	r_s (rho)	r_s^2	r_s (rho)	r_s^2
Car	.382**	.146	-.246**	.061
Tool	.102	.010	-.039	.002
Book	.170	.029	-.048	.002
Kitchen Utensil	.334**	.112	-.183**	.033
Bike	.063	.004	-.084	.007
Sofa	.368**	.135	-.203*	.041
TV	.266**	.071	-.191*	.036
T-shirt	.283**	.080	-.300**	.090

Correlation is significant (1-tailed) when * $p < .05$, ** $p < .01$

Although the data retrieved from the online survey may offer more insight, no further analyses have been carried out. It was not within the scope of my thesis to fully exploit the rich potential of the collected data. All results presented so far are critically examined and interpreted in the next chapter.

5. Discussion

For a better overview the discussion part of my thesis is divided into two parts. The first part summarizes and interprets the results from the previous chapter. Subsequently, I reflect on the limitations of my study and suggest key points for future research.

5.1 Interpretation of the results

I aim to provide the relevant findings in regard to both hypothesis *for all eight object categories*. However, due to the amount of results that I derived from the data analyses I am not able to discuss all findings in-depth. With regard to the central limit theorem and the great consistency within the results I consider the parametric test results as reliable for further interpretation.

5.1.1 Relationship of self-extension and consumption preference

The level of self-extension into an object and the willingness to forsake ownership over this object are negatively correlated across all object categories. Thus, if consumers perceive an object as part of their self, they are less likely to be willing to participate in ownership substituting consumption modes to acquire this object and vice versa. These findings support the proposed hypothesis H1 and are in line with Belk's notion that people wish to solely own objects that they perceive as extended self (Belk 2007, 2010). Although the relationship between self-extension and consumer preference is significant in almost all provided object categories, the effect size differs considerably between the objects. It is medium for sofa and even strong for car and TV, however for the remaining object categories it is rather low (Cohen 1988, as cited in Rasch et al. 2014: 90). Furthermore, the results from the linear regression show that the observed effect of self-extension on the willingness to substitute ownership is not significant in all object categories. Consequently, to what extent self-extension and the willingness to substitute ownership are related *is object-specific and cannot be generalized*. Thus, the proposed hypothesis *H1 is not supported in each object category*.

From all object categories, car and TV show the largest effect sizes, thus, hypothesis H1 is supported in these categories. In tool, bike and sofa the coefficients are not that large but the effect of self-extension on consumer preference is still significant. Thus, H1 is also supported in the categories tool, bike and sofa. In the category book self-extension and consumer preference correlated significantly, but the effect was not significant anymore in the linear regression. The width of the confidence intervals provides further information about the accuracy of the estimate. As can be seen, they include the value zero which would prove the null-hypothesis (Field 2009: 45). Consequently, it cannot be said with certainty that H1 is supported. Similar to book, the

scores for kitchen utensil indicate that the sample value could be different from the true value, making it a bad representation of the population (Field 2009: 45). Nonetheless the effect of self-extension is significant in the linear regression, thus, H1 is supported in the category kitchen utensil. In the category T-shirt the effect of self-extension on consumer preference is not significant. This supports the null-hypothesis H10 that the perception of a T-shirt as part of the extended self does not correlate with the willingness to access a T-shirt through ownership-substituting consumption modes. The findings up to now can be summed up as follows:

⇒ The Hypothesis H1, which predicted that the perception of a tangible object as part of the extended self correlates negatively with the willingness to participate in ownership-substituting consumption modes, is supported in the categories *car, tool, kitchen utensil, bike, sofa* and *TV*.

In the object categories book and T-shirt, the null-hypothesis H1₀ is supported.

The values of r^2 can be used for further interpretations in terms of how much of the variability consumer preference can be explained by the predictor (Field 2009: 179, Rasch et al. 2014: 90). The level of self-extension accounts for up to 28% of variation in consumers' willingness to access an object through ownership-substituting consumption modes. To put this into perspective, it leaves 72% of the variability still to be accounted for by other factors. In the most object categories, the amount of variability that can be explained through self-extension is rather low, i.e. in tool (9%), bike (8%) and kitchen utensil (4%). Consequently, the observed effect accounts only for a very small part. A large part of consumer preference is thus determined by other factors. This can include functional and experiential perceptions of objects as suggested by several authors (e.g. Bardhi & Eckhardt 2012, Baumeister & Wangenheim 2014, Moeller & Wittkowski 2010).

Finally, it is important to acknowledge that a correlation or simple regression analysis cannot be used to infer *causal* relationships (Field 2009: 173-173, Rasch et al. 2014: 86-87). Hence, the findings only prove that a consumers' willingness to participate in ownership-substituting consumption is negatively related to the level of self-extension into this object. The findings cannot prove that the level of self-extension is the *cause* for consumer preference.

5.1.2 The mediating function of possessiveness and non-generosity

As expected, the variables possessiveness and non-generosity are *positively* correlated. This effect is very large across all object categories, with r ranging from .56 to .78 (Cohen 1988, as cited in Rasch et al. 2014: 90). People with high feelings of possessiveness are very likely to have high feelings of non-generosity as well, and vice versa. In the following I aim to evaluate the relationships to the predictor and outcome variable further. The results differ considerably between the object categories, plus the '*patterns*' of the differences seem to be also different for

each variable. This makes it extremely difficult to make somehow generalized assumptions on the observed effects. Also, all *comparing* assumptions need to be statistically tested by transforming all coefficients in a normally distribution. Hence, the following interpretations should be considered with the appropriate caution.

Possessiveness and non-generosity correlate positively with self-extension which is in line with Belk's notion that both are possession-linked feelings that arise from the intimate connection that people build to their possessions (Belk 1988, 1992, 2007). Across the object categories the relationship with self-extension is not as large as in-between the two possession-linked feelings. Based on the theoretical model, I have expected that the two feelings correlate more strongly with the supposed cause, i.e. level of self-extension, rather than with themselves. This observation indicates that both feelings might be overlapping constructs. On the other hand, the results show that while there were medium to large effects between self-extension and possessiveness, the correlation effect with non-generosity was consistently smaller. That the two feelings do not relate to the same extend with self-extension indicates that they are perceived as two different concepts.

As expected, possessiveness and non-generosity correlate negatively with the willingness to substitute ownership. This is in line with the in this thesis given definition of both variables and with Belk's claim that feelings of possessiveness and non-generosity are impediments for sharing-related behaviour (Belk 2007, 2010). Compared to self-extension, the effects of consumer preference with both feelings are consistently very large, with r ranging from .52 to .78 (Cohen 1988). Both feelings correlate to consumer preference to the same extend they correlate with each other. Interestingly the effects with non-generosity were slightly larger than the effects with possessiveness in almost all object categories. It is the opposite of what is observed with self-extension, where non-generosity scored consistently lower. A more in-depth evaluation of the relationships between all four variables requires further research.

All four variables correlate significantly and thus *meet the premise* for hypothesis H2 which predicted a mediating function of possessiveness (H2a) and non-generosity (H2b). However, not all requirements for a mediation process are fulfilled in each object category. Consequently, whether the relationship between self-extension and the willingness to substitute ownership is mediated by possessiveness or non-generosity *is object-specific and cannot be generalized*. Thus, the proposed hypotheses *H2a and H2b are not supported in each object category*.

The mediating function of possessiveness is supported in the categories car, tool, kitchen utensil, bike, sofa and T-shirt. In the category book, the effect of self-extension on consumer preference is still significant after controlling for possessiveness, and surprisingly, the variables are then *positively* related. It means the more respondents perceived a book as part of their selves the more they were likely to access a book through ownership substituting consumption modes. This finding contrasts with hypothesis H1 and should be verified in replications of the study.

The mediating function of non-generosity is supported in the categories car, tool, book, kitchen utensil and bike. In the category sofa, self-extension is still a significant predictor for consumer preference and the effect size even increased, which disqualifies non-generosity as mediator variable. In the category T-shirt self-extension fails to predict non-generosity which means that the indirect effect on consumer preference is not significant and H2b is not supported.

Surprisingly, in the category TV no mediation effects for any of the two feelings exist. The in regard to H1 observed effects between self-extension and consumer preference are the largest from all categories, and the relationships to possessiveness and non-generosity also showed large scores (with r up to .65), thus I expected to find mediation effects for both mediator variables. Instead the findings suggest that neither hypothesis H2a nor H2b is not supported.

The findings up to now can be summed up as follows:

⇒ The Hypothesis H2a, which predicted that the effect of self-extension on the willingness to access an object through ownership-substituting consumption is mediated by feelings of possessiveness, is supported in the categories *car, tool, kitchen utensil, bike, sofa* and *T-shirt*.

In the object categories book and TV the null-hypothesis H2a₀ is supported.

⇒ The Hypothesis H2b, which predicted that the effect of self-extension on the willingness to access an object through ownership-substituting consumption is mediated by feelings of non-generosity, is supported in the categories *car, tool, book, kitchen utensil and bike*.

In the categories sofa, TV and T-shirt the null-hypothesis H2a₀ is supported.

The relationships between the variables in a simple mediation model are assumed to be causal with the mediator variable located between the predictor and the outcome variable (Hayes 2018a: 78). In this light the findings in the object categories that supported hypotheses H2a and H2b give reason to claim that the level of self-extension and the willingness to substitute ownership *are causally related*. This would provide empirical evidence for Belk's (2007, 2010) and Dittmar's (2004) proposition that the identity-related symbolic meaning of ownership and possession causes people to refrain from ownership-substituting consumption modes and sharing-related behaviour, and thus should receive more attention in consumption research. Psychological phenomena such as self-extension would then gain more weight in terms of how consumers evaluate ownership and access. However, the claim of causality in this model is based solely on the theoretical framework given in chapter 2. Thus, it should be seen with the required caution and caveats given the limitations in data collection and research design (Hayes 2018a: 81).

Despite the question of causality, the extended theoretical model can explain the variability of respondent's willingness to substitute ownership much better than a single variable

relationship. Up to half of the variability in consumer preference can be explained when the effect of possessiveness or non-generosity are considered. However, the simple mediation model used for my thesis is a very rudimentary model. Consequently, it oversimplifies the complex dynamics that are involved in a mediation process and has limited validity (Ibid.: 80).

5.1.3 Further observations

The degree of social trust measured among respondents is in the medium range which does not differ markedly from the results of similar surveys of the German population (Heinrichs & Grunenberg 2012, Kassebaum 2004). High scores in trust correlate *positively* with the willingness to substitute ownership, indicating that trust is an incentive for sharing-related behaviour as was predicted (Botsman & Rogers 2011, Heinrichs & Grunenberg 2012). The general materialistic attitude of the respondents is rather low. These results are consistent with the observed general trend towards less materialistic values and more increase in post-materialistic values (Statistisches Bundesamt 2016: 418-421). As expected, a materialistic attitude correlates *negatively* with the willingness to substitute ownership and can thus be seen as impediment for sharing and renting (Belk 2007, 2010). Overall, the effect sizes for both covariates are rather low compared to self-extension, possessiveness and non-generosity. The findings question the propositions of other authors that social trust and materialism have a meaningful influence on consumer preference for consumption modes. Surprisingly, in the object categories tool, book and bike neither the effect of social trust nor of materialism is significant, denying a generalized answer to the exploratory questions Q1 and Q2. Individuals with a high level of social trust or materialism cannot be expected to be *generally* more, or less, willing to access goods through ownership substituting modes. The findings follow the other observations in my thesis that predictions about the effect of a variable can only be made *object-specifically and should not be generalized*.

The number of people who already have access to the proposed object, i.e. through renting or sharing, varies considerably across the categories. As expected, the most familiar objects are car, tool and book, which represent the most common sharing-offerings (Scholl et al. 2010). Consistently the group of the already familiar respondents show greater willingness to substitute ownership, than those who have not yet gained experiences with sharing and renting. Some authors suggest that once consumers participate in renting- and sharing-networks successfully they begin to question whether they really need to own goods, and are more open to ownership-substituting concepts in the future (Lawson 2011, Radka & Margolis 2011). This general proposition is not supported in my findings, e.g. a great willingness to access a TV through ownership-substituting consumption modes is observed although only 8% of respondents have experiences with such sharing- and renting-offerings. Nonetheless, familiarity with alternative consumption modes correlates significantly with consumer preference at a medium level in six

object categories. In my research design I did not separate the sample according to familiarity with certain sharing-offerings. This might led to a distorted picture of the overall findings. Future study replications should consider a research design with several sample groups.

The last but probably most important findings to discuss are the complex differences between the eight proposed object categories. I will not repeat them because they should have become clearly visible in the results and discussion parts of my thesis. The observed differences further seem to have different ‘*patterns*’ in each estimated variable. This makes it almost impossible to derive generalizable statements. It is beyond the scope of my thesis to make any reasoned propositions regarding the underlying causes of the differences between the various objects. Nonetheless, the overall findings of my thesis support the claim of Baumeister and Wangenheim (2014) that consumption research requires *more multi-category studies* in order to derive more generalizable findings and to highlight important differences.

5.2 Limitations and further research

5.2.1 Limitations

Subsequent to the contextual discussion, I critically reflect on the limitations of my thesis that derive with the chosen research design and measure methods. A major topic of discussion is data collection. Participants were acquired through convenience sampling and are not representative for the German population which limits the generalizability of the findings. Data acquisition by means of an online survey further implies several sources of potential errors: The environment and the psychological constitution of the participants at the time of data collection were not controlled; and it was not possible to address any comprehension questions that might arose with regard to the questionnaire scales.

As Bortz and Döring (2006) note, the informative value of data obtained with a questionnaire design is also limited. The available data for my thesis are purely correlational, collected at a single time point and with no experimental manipulation. The possible influence of unintentional factors and third variables was not controlled, and no statements can be made about their magnitude. Causal interpretations of correlations can - if at all - only be justified in terms of consistent argumentation as it is attempted with the mediation model. To allow to confidently infer causality for the observed relationships a more complex research design is required that at least includes experimental manipulation (Hayes 2018a: 81).

Further limitations concern the scales used in the questionnaire. Although all scales were adapted from published studies, the final design and translation into German was my own work. For this reason, no empirical evidence exists about their actual reliability and validity. Data on

self-extension, possessiveness and non-generosity was derived using endpoint-named bipolar Likert scales. Although the data can be regarded as interval in analyses, they share more similarities with ordinal measures (Porst 2014: 92-93). Furthermore, the self-declarations made in regard to symbolism and personal attitude can always be flawed as respondents consciously or unconsciously distort them (Bortz and Döring 2006: 250). Future studies could include at least controls for the social desirability.

A potential limitation also stems from the fact that the proposed object categories have not been further specified in terms of brands or product types. This was done in order to increase comparability to the completely unspecified ownership condition but might have led to different notions among the respondents. A common understanding for the objects and related questions was not controlled during the survey.

Finally, as described in the preliminary analysis the data lacks some important characteristics that are necessary to retrieve reliable results from parametric tests, such as regression models that I have used in my analysis (Field 2009: 220, Rasch et al. 2014: 108). The assumption of non-zero-variance, non-perfect-multicollinearity and homoscedasticity are met. However, the data are only limited interval and normally distributed which can be considered acceptable in view of the central limit theorem, but the influence of third variables was not controlled. Consequently, my regression models do violate some of the assumptions to an extent that a generalization of the findings beyond my sample is not possible (Field 2009: 251).

In summary, it can be stated that both the investigation and the results gained from it are not free of errors. The major criticism of the findings is the limited generalizability. Nonetheless, it is possible to obtain some first empirical insights into the relationship between the identity-related symbolic meaning of objects and consumer preference.

5.2.2 Outlook on future research

The critical reflection provides persuasive reasons why future research needs to add further generalizability and validity. In the following, I suggest some key points for further studies to deepen the understanding of identity-related perceptions of objects.

First of all, the proposed findings of my thesis need further examination. Future studies should aim to confidently infer causality between the level of self-extension and the willingness to substitute ownership. This requires a more complex research design that includes experimental manipulation in a controlled environment. This could also cover several sample groups. In my analysis I have solely looked into object-specific similarities and differences within the effects. Beyond that, my research design provides sufficient data to additionally conduct an intra-class correlation. It was beyond the scope of this thesis to run these analyses, but future research can

make use of the collected data and further examine to what extend differences within the sample account for the variability in self-extension and consumer preference. In a next step, other identity-related variables beside non-generosity and possessiveness should be integrated in the theoretical model to allow better predictions. In this context I suggest to develop and test more complex mediation models, and to also include possible moderation effects, i.e. of social trust and materialism. Future research should address why and under what conditions mediation effects occur for each object and what are the factors that prohibit these relationships.

Furthermore, the limitations of the study should be addressed. To provide better reliability and validity, the proposed scales have to be empirically tested and might need further improvement. The generalizability of the findings should be increased by conducting several replication studies. Because there are notable differences between western and eastern cultures in the way they perceive and approach property (e.g. Gjersoe, Newman, Chituc & Hood 2014, Morrison & Johnson 2011), the effects of identity-related phenomena such as self-extension might be less significant for consumer preference in cultures that are based on collectivistic and shared identity. Beyond that also gender, age and education can be manipulated to provide better generalizability. Because my sample consisted mainly young people with an above-average level of education, which are found to be particularly open to ownership-substituting consumption (Heinrichs & Grunenberg 2012, Scholl et al. 2010), effects might differ with changing sample composition. The same accounts for gender differences: Although men and women do not differ significantly with regard to their general attitude towards ownership and access, this changes when it comes to specific types of objects (Dittmar 2004). Hence, future studies should address the effect of socio-demographic characteristics in the context of self-extension and object evaluation.

Finally, replications in other object categories would further add to the generalizability. Due to the significant differences in the perception of objects, more multi-category studies are required to derive object-specific findings instead of general assumptions. A special role in this context play intangible assets such as digital possessions. Some authors suggest that consumers' relationships with objects is in the midst of great change as their identity merges more and more into technology and the digital world (Belk 2013, 2014b, Jarrett 2013). Thereby the essential question is whether a dematerialized possession can be integral to the extended self in the same way as its material counterpart is (Belk 2013, 2014b). A decrease in the symbolic value of material possessions could lead to a greater willingness to participate in sharing- and renting-offerings (Ibid.). The observation of the development of the symbolic value of ownership and access can help to foster more sustainable consumption.

6 Conclusion

With ownership and identity being such multifaceted phenomena, I am aware that the results of my investigation can only add a tiny piece to the existing knowledge. No study of this extent can offer a completely comprehensive picture, but it allows first empirical insights into the role of identity-related symbolic meaning in ownership and access.

The chosen research design and the collected data sufficiently addressed all questions and hypotheses that were proposed in the theoretical part of the thesis. The findings support the claim that the extent to which people perceive an object as their extended self does have an effect on their willingness to access this object through renting- or sharing-offerings (Belk 2007, 2010). I further found evidence that this effect can be mediated by possession-linked feelings of possessiveness and non-generosity. My findings raise awareness on the object-specific nature of these effects which cannot be generalized to a universal model. Due to the complexity of the differences in each examined object category it became clear that further experimental research and multi-category comparison is required to derive a realistic assessment of the symbolic meaning of ownership and possession.

By acknowledging the many forms and effects of motivations for, and determinants of consumer behaviour it will be possible to understand society's obsession with to have is to be. I believe that this knowledge will help to develop models for an overall more sustainable consumption that does not compromise the needs of today's or future generations.

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Declaration of Authorship

I hereby certify that the work presented this thesis is, to the best of my knowledge and belief, original and the result of my own investigations, except where otherwise indicated. All direct or indirect sources used are acknowledged as references.

This thesis has not previously been submitted, either in part or whole, for a degree at this or any other university.

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APPENDIX

Appendix A – Screenshot of the German online Questionnaire

Appendix B – Variables and Scales

Appendix C – Preliminary Analysis

Appendix D – Results

Attachments on CD

I. Bachelor Thesis

II. Data records

III. SPSS Syntax

IV. Excel-Sheet for Analysis

APPENDIX A – SCREENSHOT OF THE GERMAN ONLINE QUESTIONNAIRE

Fragebogen

1 erste Seite

Objektbezogene Einstellungen

Im ersten Teil geht es um deine Einstellungen zu bestimmten Objekten, die du besitzt bzw. nutzt. Dafür habe ich insgesamt 8 Beispielobjekte herausgesucht. Es geht nicht darum, ob sich jedes der genannten Objekte derzeit in deinem Besitz befindet, sondern vielmehr um deine allgemeine Einschätzung des Objektes, während du es nutzt.

- Auto
- Werkzeuge
- Bücher
- Küchengerät
- Fahrrad
- Sofa
- Fernseher
- T-Shirts

Im folgenden findest du verschiedene Aussagenpaaren. Lies dir je beide Aussagen aufmerksam durch und beurteile anschließend, wo auf der Skala du deine eigene Einstellung zu dem jeweiligen Beispielobjekt einordnen würdest.

- Wenn du einer Aussage ganz zustimmst, wähle in der entsprechenden Zeile bitte die Auswahloption ganz rechts bzw. ganz links.
- Mit den Auswahloptionen dazwischen kannst du deine Beurteilung abstufen.

Hier gibt es keine richtigen oder falschen Antworten. Wichtig ist nur, dass du **ehrlich** und **möglichst spontan** antwortest, ohne deine Antwort lange zu überdenken.

Persönliche Verbundenheit mit dem Objekt

[illegible] [illegible]

Bücher

Küchengerät

Fahrrad

Sofa

Fernseher

T-Shirt

Identifikation mit dem Objekt

	Ich nutze es, um mir und anderen zu zeigen, wer ich war/ bin/ und sein möchte.	++	+	+	++	Weder ich noch andere sehen darin eine Verbindung zu meinem Selbstbild.
Auto	☐	☐	☐	☐	☐	☐
Werkzeuge	☐	☐	☐	☐	☐	☐
Bücher	☐	☐	☐	☐	☐	☐
Küchengerät	☐	☐	☐	☐	☐	☐
Fahrrad	☐	☐	☐	☐	☐	☐
Sofa	☐	☐	☐	☐	☐	☐
Fernseher	☐	☐	☐	☐	☐	☐
T-Shirt	☐	☐	☐	☐	☐	☐

	Ich kann mich darin nicht wiederfinden. Es hat keinen Bezug zu mir.	++	+	+	++	Wenn jemand es lobt/verspottet, dann fühle ich mich auch wertgeschätzt/beleidigt.
Auto	☐	☐	☐	☐	☐	☐
Werkzeuge	☐	☐	☐	☐	☐	☐
Bücher	☐	☐	☐	☐	☐	☐
Küchengerät	☐	☐	☐	☐	☐	☐
Fahrrad	☐	☐	☐	☐	☐	☐
Sofa	☐	☐	☐	☐	☐	☐
Fernseher	☐	☐	☐	☐	☐	☐
T-Shirt	☐	☐	☐	☐	☐	☐

2 Seite 2

Nutzung der Objekte

Man hat verschiedene Möglichkeiten, um Dinge zu nutzen. Man kann sie kaufen und in den eigenen Besitz bringen, oder sie mieten/leihen oder teilen. In letzterem Fall werden die Dinge nach der Nutzungszeit (das können Minuten, aber auch Jahre sein) zurückgegeben.

Gemeint ist hier allerdings nicht der regelmäßige Austausch im privaten Familien- und Freundeskreis, sondern ausschließlich mit Menschen darüber hinaus

Die folgenden Aussagen beziehen sich auf die gemeinsame Nutzung der Objekte. Bitte beurteile, wo auf der Skala du deine eigene Einstellung einordnen würdest.

- Wenn du einer Aussage ganz zustimmst, wähle in der entsprechenden Zeile bitte die Auswahloption ganz rechts bzw. ganz links.
- Mit den Auswahloptionen dazwischen kannst du deine Beurteilung abstufen.

Versuche dabei dein persönliches Empfinden in Bezug auf das jeweilige Beispielobjekt wiederzugeben, ohne pragmatischen Faktoren (wie Geld, Aufwand, etc.) zu viel Gewicht zu geben. Auch hier gibt es keine richtigen oder falschen Antworten. Wichtig ist wieder nur, dass du ehrlich antwortest.

Der Besitz eines Objektes

	Ich habe kein Problem, es zu mieten/leihen. Der Besitz ist mir nicht wichtig.	++	+	+	++	Mir ist es wichtig, der Eigentümer zu sein.
Auto	☐	☐	☐	☐	☐	☐
Werkzeuge	☐	☐	☐	☐	☐	☐
Bücher	☐	☐	☐	☐	☐	☐
Küchengerät	☐	☐	☐	☐	☐	☐
Fahrrad	☐	☐	☐	☐	☐	☐
Sofa	☐	☐	☐	☐	☐	☐
Fernseher	☐	☐	☐	☐	☐	☐
T-Shirt	☐	☐	☐	☐	☐	☐

Gemeinsame Nutzung eines Objektes

	Ich würde mich nicht wohl dabei fühlen, es mit anderen zu teilen.	++	+	+	++	Ich finde es gut, wenn auch andere es nutzen können.
Auto	☐	☐	☐	☐	☐	☐
Werkzeuge	☐	☐	☐	☐	☐	☐
Bücher	☐	☐	☐	☐	☐	☐
Küchengerät	☐	☐	☐	☐	☐	☐
Fahrrad	☐	☐	☐	☐	☐	☐
Sofa	☐	☐	☐	☐	☐	☐
Fernseher	☐	☐	☐	☐	☐	☐
T-Shirt	☐	☐	☐	☐	☐	☐

Wahrscheinlichkeit der Beteiligung an eigentumslosen Nutzungsformen

Wie bereits erwähnt, hat man verschiedene Möglichkeiten, Dinge zu nutzen. Man kann sie kaufen und besitzen. Oder man kann sie für kurze oder lange Zeiträume mieten, leihen oder teilen und nach der Nutzungszeit zurückgeben.

Gemeint ist auch hier nicht der Austausch im privaten Familien- und Freundeskreis, sondern die allgemeine Bereitschaft, auf den Besitz eines Objektes zu verzichten und eine eigentumslose Nutzung des Objektes vorzuziehen.

Wie wahrscheinlich würdest du eigentumslose Nutzungsformen wie mieten/leihen/teilen in Anspruch nehmen?

Positioniere den Schieberegler auf der Skala von 0 % bis 100 %, wobei

- 0 % als "Das wäre für mich überhaupt keine Option."
- und 100 % als "Das würde ich mit Sicherheit machen."

zu werten sind.

Auto

Werkzeuge

Bücher

Küchengerät

Fahrrad

Sofa

Fernseher

T-Shirt

Für welche Objekte nimmst du eigentumslose Nutzungsformen wie mieten/leihen/teilen bereits in Anspruch?

Hier geht es nicht um die Wahrscheinlichkeit der Nutzung, sondern darum, welche Objekte du tatsächlich bereits durch mieten/leihen/teilen nutzt.

"ja" = ich miete/leihe/teile es

"nein" = ich miete/leihe/teile es nicht

Auto	☐ ja	☐ nein
Werkzeug	☐ ja	☐ nein
Bücher	☐ ja	☐ nein
Küchengerät	☐ ja	☐ nein
Fahrrad	☐ ja	☐ nein
Sofa	☐ ja	☐ nein
Fernseher	☐ ja	☐ nein

T-Shirt

☐ ja
 ☐ nein

Anmerkungen zur Nutzung (optional)

Hast du Anmerkungen zu deinen eben getätigten Antworten? Wenn ja, kannst du sie hier vermerken:

4 Seite 4

Allgemeine Einstellungen

In diesem Teil geht es nun nicht mehr um deine Einstellung zu konkreten Objekten, sondern um deine allgemeine Meinung. Auch hier gibt es keine richtigen oder falschen Antworten. Wichtig ist wieder nur, dass du **ehrlich** und **möglichst spontan** antwortest.

Bitte lies dir die folgenden allgemeinen Aussagen aufmerksam durch.
Beurteile anschließend, inwieweit jede einzelne auf dich zutrifft.

	Trifft nicht zu	Trifft überwiegend nicht zu	Trifft eher nicht zu	Trifft eher zu	Trifft überwiegend zu	Trifft voll zu
In der Regel begegne ich fremden Menschen mit großer Vorsicht.	☐	☐	☐	☐	☐	☐
Mich beunruhigt der Gedanke, mich auf andere verlassen zu müssen	☐	☐	☐	☐	☐	☐
Im Grunde begegne ich meinen Mitmenschen mit Vertrauen.	☐	☐	☐	☐	☐	☐
Ich bewundere Menschen, die teure Häuser, Autos und Kleidung haben	☐	☐	☐	☐	☐	☐
Ich mag viel Luxus in meinem Leben.	☐	☐	☐	☐	☐	☐
Ich wäre glücklicher, wenn ich mir mehr kaufen könnte.	☐	☐	☐	☐	☐	☐

5 Seite 5

Angaben zur Person

Vielen Dank für deine bisherigen Antworten! Für die Auswertung der Umfrage ist es wichtig, dass du nun noch abschließend ein paar Angaben über deine Person machst.

Sollte es dir unangenehm sein, biographische Angaben zu z.B. Bildungsgrad oder Einkommen zu machen, hast du die Möglichkeit die Angabe dieser Daten zu verweigern.

Wie alt bist du?

Welchem Geschlecht fühlst du dich zugehörig?

 keine Angabe
 weiblich
 männlich
 andere

Bitte gib deinen höchsten Bildungsabschluss an.

keine Angabe
Hauptschule
Mittlere Reife
Abitur, Hochschulreife
Kein Schulabschluss
Abgeschlossenes Studium

Welcher Tätigkeit gehst du derzeit nach?

keine Angabe
Ich arbeite nicht
Ich bin erwerbstätig
Ich befinde mich in der Ausbildung / im Studium

Wie viel Geld steht dir monatlich zur Verfügung? (Netto Einkommen)

keine Angabe
< 1.000€
1.001 – 1.500€
1.501 – 2.000€
2.001 – 2.500€
> 2.500€

Wie viele Einwohner hat dein derzeitiger Wohnort?

keine Angabe
< 5.000 (Landgemeinde)
5.000 – 20.000 (Kleinstadt)
20.001 – 100.000 (Mittelstadt)
> 100.000 (Großstadt)

Anmerkungen zum Fragebogen (optional)

Hast du allgemeine Anmerkungen zum Fragebogen oder möchtest du eine bestimmte Antwort näher erklären, dann hast du hier die Möglichkeit dazu:

6 Endseite

Vielen Dank!

Der Fragebogen ist nun abgeschlossen.

Zum Hintergrund der Befragung:

In meiner Bachelorarbeit untersuche ich, ob die Empfindung eines Objektes als Teil des eigenen Selbstbildes Einfluss darauf nimmt, ob wir bereit sind, auf den Besitz des entsprechenden Objektes zu verzichten und stattdessen die eigentumslose Nutzung in Erwägung ziehen. Meiner Hypothese zufolge sind Identifikation mit und Zuneigung zu einem Objekt Faktoren, die hemmend auf die Akzeptanz von geteilter Nutzung von Produkten wirken.

Die Bereitschaft zur Nutzung alternativer Konsumformen wie "Sharing", Leasing und Mietnutzung hat besonders vor dem Hintergrund ökologischer und sozialer Herausforderungen große Bedeutung.

Solltest du noch Fragen oder Anmerkungen haben, kontaktiere mich gerne unter ulrike.wolf@stud.leuphana.de

APPENDIX B – VARIABLES AND SCALES

Table 6: overview of all variables and scales in the online questionnaire

Variable	Scale	Text elements (English)	Key (English)	Level	Source
Emotional attachment (Self-extension)	6-point, bipolar, interval	I don't feel that way about it. For me it has a rather functional character. ... I associate it with many emotions and memories. It is very important to me.	text elements as scale anchors left = low right = high	object-specific	adapted from Ball & Tasaki 1992, Sivadas & Machleit 1994
Fear of loss (Self-extension)*	6-point, bipolar, interval	It is special to me. I don't want to lose it. ... I wouldn't have a problem giving it away or replacing it.	text elements as scale anchors left = high right = low	object-specific	adapted from Schultz, Kleine & Kernan 1989
Self-expressing (Self-extension)*	6-point, bipolar, interval	I use it to signal to me and others who I was/ am/ want to be. ... Neither I nor others see in it a connection to my self-image.	text elements as scale anchors left = high right = low	object-specific	adapted from Ball & Tasaki 1992, Sivadas & Machleit 1994
Identity related (Self-extension)	6-point, bipolar, interval	I cannot find a part of me in it. It has no relation to me. ... If someone praises/mocks it, then I also feel appreciated/offended.	text elements as scale anchors left = low right = high	object-specific	adapted from Ball & Tasaki 1992, Sivadas & Machleit 1994
Possessiveness	6-point, bipolar, interval	I have no problem renting or borrowing it. Ownership is not important to me. ... It's very important to me to own it.	text elements as scale anchors left = low right = high	object-specific	adapted from Micken & Scott 1995
Non-generosity*	6-point, bipolar, interval	I wouldn't feel comfortable sharing it with others. ... I think it's good if others can use it too.	text elements as scale anchors left = high right = low	object-specific	adapted from Micken & Scott 1995
Attitude towards access (willingness to substitute ownership)	slider, metric	How likely would you be to use ownership-substituting consumption modes such as renting and sharing?	0 = is no option for me 100 = I will definitely do it	object-specific	none
Participation in access	dichotomous, nominal	Please indicate for which of the objects you already use ownership-substituting consumption modes	1 = yes 2 = no	object-specific	none
Social trust	6-point, unipolar ordinal	I generally meet strangers with great caution.* The thought of having to rely on others worries me.* Basically, I meet my fellow beings with trust.	1=not true at all 2=mostly not true 3=rather not true 4=rather true 5=mostly true 6=true entirely	general	adapted from Heinrichs & Grunenberg 2012, Kassebaum 2004
Materialism	6-point, unipolar ordinal	I admire people who own expensive homes, cars, and clothes. I like a lot of luxury in my life.	1=not true at all 2=mostly not true 3=rather not true 4=rather true 5=mostly true	general	adapted from Müller et al. 2013, Richins 2004

		I'd be happier if I could afford to buy more things.	6=true entirely		
Age	slider, metric	How old are you?	open question	general	none
Gender	select box, nominal	What gender do you feel you belong to?	1=n/a 2=Female 3=Male 4=Other	general	none
Highest education	select box, nominal	Please state your highest level of education.	1=n/a 2= 3=Basic second. 4=Middle second. 5=Higher second. 6=University degree	general	adapted from ALLBUS 2016
Occupation	select box, nominal	What is your current occupation?	1=n/a 2=not working 3=working 4=training or study	general	adapted from ALLBUS 2016
Financial income	select box, nominal	How much money is at your disposal each month? (Net income)	1=n/a 2= < 1.000€ 3= 1.001-1.500€ 4= 1.501-2.000€ 5= 2.001-2.500€ 6= > 2.500€	general	based on Statistisches Bundesamt 2018
Residency	select box, nominal	How many inhabitants does your current residence have?	1=n/a 2= < 5.000 3= 5.001-20.000 4= 20.001-100.000 5= > 100.000	general	based on BBSR 2015

* reverse scored items

APPENDIX C – PRELIMINARY ANALYSIS

Table 7: Socio-demographic characteristics of the sample

Gender N=129 (%)	Age N=130 (%) SD = 14.61	Highest education N=130 (%)	Occupation N=123 (%)	Monthly income (net) N=116 (%)	Residency (inhabitants) N=125 (%)
Female n=80 (62.0%)	16-25 yr. n=53 (40.8%)	Basic second. School n=3 (2.3%)	Not working n=5 (4.1%)	< 1.000€ n=56 (49.1%)	< 5.000 n=24 (19.2%)
Male n=48 (37.2%)	26-35 yr. n=37 (28.5%)	Middle second. School n=19 (14.6%)	Working n=54 (43.9%)	1.001-1.500€ n=18 (15.8%)	5.001-20.000 n=16 (12.8%)
Other n=1 (0.8%)	36-45 yr. n=12 (9.2%)	Higher second. School n= 50 (38.5%)	Training or study n=64 (52.0%)	1.501-2.000€ n=11 (9.6%)	20.001-100.000 n=43 (34.4%)
	46-55 yr. n=10 (7.7%)	University degree n=58 (44.6%)		2.001-2.500€ n=15 (13.2%)	> 100.000 n=42 (33.6%)
	56-65 yr. n=16 (12.3%)			> 2.500€ n=16 (14.0%)	
	> 65 yr. n=2 (1.5%)				

Table 8: Cronbach's alpha for the scales self-extension, social trust and materialism

<i>Self-extension</i>	Car	Tool	Book	Kitchen Ut.	Bike	Sofa	TV	T-shirt
N of items	4	4	4	4	4	4	4	4
Cronbach's Alpha	.89	.75	.83	.82	.86	.81	.81	.89

<i>Social trust</i>	overall
N of items	3
Cronbach's Alpha	.75

<i>Materialism</i>	overall
N of items	3
Cronbach's Alpha	.84

Figure 4: Two examples for P-P Plots (probability-probability plots). Deviations from the diagonal indicate non-normally distributed data.

Table 9: Standardized level of skewness and kurtosis for each variable

	Car	Tool	Book	Kitchen Ut.	Bike	Sofa	TV	T-shirt
<i>Self-extension</i>								
z-Score Skewness	2.18	5.57	-2.33	3.59	-1.17	2.21	5.75	-1.04
z-Score Kurtosis	-2.72	2.18	-1.45	-0.68	-2.18	-1.86	2.24	-2.14
<i>Willing. ownership sub.</i>								
z-Score Skewness	-3.09	-7.97	-3.27	-1.36	-1.23	3.01	-0.41	4.39
z-Score Kurtosis	-2.93	5.35	-1.49	-2.79	-2.89	-2.46	-4.00	-0.44
<i>Possessiveness</i>								
z-Score Skewness	2.78	5.59	0.16	1.21	-1.19	-0.94	2.95	-4.36
z-Score Kurtosis	-3.22	0.37	-3.34	-3.11	-3.45	-3.74	-2.98	-1.22
<i>Non-generosity</i>								
z-Score Skewness	-2.59	-9.11	-3.96	-2.29	-0.62	-0.38	-4.28	3.42
z-Score Kurtosis	-3.24	6.89	-1.18	-2.85	-3.26	-4.01	-1.73	-1.94
Overall								
<i>Social Trust</i>								
z-Score Skewness	-2.59							
z-Score Kurtosis	-3.24							
<i>Materialism.</i>								
z-Score Skewness	-9.11							
z-Score Kurtosis	6.89							

Table 10: Median, mean, and standard deviation for each variable

	Car	Tool	Book	Kitchen Ut.	Bike	Sofa	TV	T-shirt
<i>Self- extension</i>								
Median	2.25	1.75	4.25	2.00	3.75	2.25	1.50	4.00
Mean	2.68	1.95	4.12	2.36	3.49	2.61	1.93	3.66
Std. dev.	1.48	0.99	1.29	1.19	1.39	1.21	1.06	1.41
<i>Possessiveness</i>								
Median	2.00	1.00	3.00	3.00	4.00	4.00	2.00	5.00
Mean	2.72	2.24	3.45	3.08	3.71	3.75	2.71	4.55
Std. dev.	2.00	1.67	1.84	1.80	1.89	2.02	1.97	1.73
<i>Non-generosity</i>								
Median	2.00	1.00	2.00	2.00	3.00	3.00	1.00	5.00
Mean	2.78	1.78	2.44	2.85	3.22	3.48	2.44	4.45
Std. dev.	1.99	1.38	1.62	1.79	1.77	2.09	1.85	1.73
<i>Willing. ownership sub.*</i>								
Median	82.50	90.00	79.00	56.00	60.00	22.50	52.00	20.00
Mean	65.33	80.36	68.42	53.68	57.07	34.48	53.25	25.72
Std. dev.	38.69	25.56	29.33	32.89	33.05	35.56	41.20	28.45
overall								
<i>Social trust</i>			<i>Materialism</i>					
Median	4.00		Median		2.00			
Mean	3.86		Mean		2.28			
Std. dev.	1.08		Std. dev.		1.19			

*This scale's gradation (0-100) differs from the other scales (1-6)

Table 11: Results of Mauchly's Test of Sphericity. Testing for homogeneity of variance within the object categories

N=130	Mauchly's W	Approx. Chi-Square	df	Sig.*
<i>Self-extension</i>	.252	174.54	27	.000
<i>Willing. ownership sub.</i>	.433	105.85	27	.000
<i>Possessiveness</i>	.388	119.88	27	.000
<i>Non-generosity</i>	.541	77.70	27	.000

*High significance ($p < 0.5$) indicates insufficient homogeneity of variance

Table 12: Results of Friedman's ANOVA and Kendall's W. Testing for differences between the object categories

N=130	Kendall's W*	Chi-Square	df	Asymp. Sig.
<i>Self-extension</i>	.356	324.38	7	.000
<i>Willing. ownership sub.</i>	.352	295.61	7	.000
<i>Possessiveness</i>	.214	195.07	7	.000
<i>Non-generosity</i>	.278	253.31	7	.000

*Kendall's Coefficient of Concordance. Scores close to 0 indicate no agreement among raters

Table 13: Pairwise comparison of the object categories, conducted with a Friedman ANOVA to test whether two object categories are significantly different from each other

Pairwise Comparison	Self-extension				Willing. ownership sub.				Possessiveness				Non-generosity			
	Test Statistic	Std. Error	Adj. Sig.*	Effect size r	Test Statistic	Std. Error	Adj. Sig.*	Effect size r	Test Statistic	Std. Error	Adj. Sig.*	Effect size r	Test Statistic	Std. Error	Adj. Sig.*	Effect size r
N = 130																
TV Tool	.050	.304	1.000	.00	1.750	.304	.000	.15	-.538	.304	1.000	-.05	.846	.304	.150	.07
TV Kitchen	.638	.304	.997	.06	-.308	.304	1.000	-.03	.412	.304	1.000	.04	-.546	.304	1.000	-.05
TV Sofa	1.281	.304	.001	.11	-.1596	.304	.000	-.14	1.392	.304	.000	.12	-.1385	.304	.000	-.12
TV Car	1.388	.304	.000	.12	.692	.304	.635	.06	.212	.304	1.000	.02	-.415	.304	1.000	-.04
TV Bike	2.735	.304	.000	.24	-.096	.304	1.000	-.01	1.350	.304	.000	.12	-.1177	.304	.003	-.10
TV T-Shirt	-3.019	.304	.000	-.26	2.362	.304	.000	.21	-2.612	.304	.000	-.23	2.812	.304	.000	.25
TV Book	3.781	.304	.000	.33	.750	.304	.380	.07	1.054	.304	.015	.09	-.081	.304	1.000	-.01
Tool Kitchen	-.588	.304	1.000	-.05	2.058	.304	.000	.18	-.950	.304	.049	-.08	1.392	.304	.000	.12
Tool Sofa	-1.231	.304	.001	-.11	3.346	.304	.000	.29	-1.931	.304	.000	-.17	2.231	.304	.000	.20
Tool Car	1.338	.304	.000	.12	-1.058	.304	.014	-.09	.750	.304	.380	.07	-1.262	.304	.001	-.11
Tool Bike	-2.685	.304	.000	-.24	1.846	.304	.000	.16	-1.888	.304	.000	-.17	2.023	.304	.000	.18
Tool T-shirt	-2.969	.304	.000	-.26	4.112	.304	.000	.36	-3.150	.304	.000	-.28	3.658	.304	.000	.32
Tool Book	-3.731	.304	.000	-.33	1.000	.304	.028	.09	-1.592	.304	.000	-.14	.927	.304	.064	.08
Kitchen Sofa	-.642	.304	.966	-.06	1.288	.304	.001	.11	-.981	.304	.035	-.09	.838	.304	.162	.07
Kitchen Car	.750	.304	.380	.07	1.000	.304	.028	.09	-.200	.304	1.000	-.02	.131	.304	1.000	.01
Kitchen Bike	-2.096	.304	.000	-.18	-.212	.304	1.000	-.02	-.938	.304	.056	-.08	.631	.304	1.000	.06
Kitchen T-shirt	-2.381	.304	.000	-.21	2.054	.304	.000	.18	-2.200	.304	.000	-.19	2.265	.304	.000	.20
Kitchen Book	3.142	.304	.000	.28	1.058	.304	.014	.09	.642	.304	.966	.06	.465	.304	1.000	.04
Sofa Car	.108	.304	1.000	.01	2.288	.304	.000	.20	-1.181	.304	.003	-.10	.969	.304	.040	.08
Sofa Bike	1.454	.304	.000	.13	1.500	.304	.000	.13	-.042	.304	1.000	.00	.208	.304	1.000	.02
Sofa T-Shirt	-1.738	.304	.000	-.15	.765	.304	.329	.07	-1.219	.304	.002	-.11	1.427	.304	.000	.13
Sofa Book	2.500	.304	.000	.22	2.346	.304	.000	.21	-.338	.304	1.000	-.03	1.304	.304	.000	.11
Car Bike	-1.346	.304	.000	-.12	.788	.304	.265	.07	-1.138	.304	.005	-.10	.762	.304	.341	.07
Car T-Shirt	-1.631	.304	.000	-.14	3.054	.304	.000	.27	-2.400	.304	.000	-.21	2.396	.304	.000	.21
Car Book	-2.392	.304	.000	-.21	-.058	.304	1.000	-.01	-.842	.304	.156	-.07	-.335	.304	1.000	-.03
Bike T-Shirt	-.285	.304	1.000	-.02	2.265	.304	.000	.20	-1.262	.304	.001	-.11	1.635	.304	.000	.14
Bike Book	1.046	.304	.016	.09	.846	.304	.150	.07	-.296	.304	1.000	-.03	1.096	.304	.009	.10
T-Shirt Book	.762	.304	.341	.07	3.112	.304	.000	.27	-1.558	.304	.000	-.14	2.731	.304	.000	.24

*Significance values have been adjusted by Bonferroni correction for multiple tests. High significance ($p < 0.1$) rejects the null-hypothesis that the pair distributions are the same.

APPENDIX D – RESULTS

Figure 5: Example for a scatterplot used to examine homoscedasticity, showing the relationship between self-extension and willingness to substitute ownership with the computed linear regression model for the category car

Table 14: Linear regression coefficients, F-ratios and r squares for the relationship between self-extension and willingness to substitute ownership in each object category

Outcome variable: Willingness to substitute ownership
Predictors: (Constant), Self-extension

(N=130)		b ^b	Std. Error ^b	t	F	r ²
Car	(Constant)	99.63***	6.14	16.24	40.80***	.242
	Self-ex. car	-12.81***	2.01	-6.388		
Tool	(Constant)	95.58***	4.76	20.09	12.85***	.091
	Self-ex. tool	-7.82***	2.18	-3.58		
Book	(Constant)	83.38***	8.55	9.75	3.37	.026
	Self-ex. book	-3.63	1.98	-1.84		
Kitchen Utensil	(Constant)	65.93***	6.35	10.31	4.66*	.035
	Self-ex. kitchen	-5.19*	2.40	-2.16		
Bike	(Constant)	80.63***	7.56	10.68	11.29***	.081
	Self-ex. bike	-6.77***	2.01	-3.36		
Sofa	(Constant)	60.31***	7.02	8.60	16.46***	.114
	Self-ex. sofa	-9.90***	2.44	-4.06		
TV	(Constant)	92.73***	6.43	14.41	48.98***	.277
	Self-ex. TV	-20.49***	2.93	-6.99		
T-shirt	(Constant)	32.13***	6.99	4.50	0.97	.008
	Self-ex. T-shirt	-1.75	1.783	-0.98		

Regression is significant (1-tailed) when *p < .05, **p < .01, ***p < .001

^b Unstandardized regression coefficients

Table 15: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category car.

Car (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.492***	.686***	.604***
	R ²		.24	.47	.36
	Spearman's r _s	1	-.484***	.647***	.579***
	R _s ²		.23	.42	.34
Willing. ownership sub.	Pearson's r	-.492***	1	-.693***	-.702***
	R ²	.24		.48	.49
	Spearman's r _s	-.484***	1	-.703***	-.739***
	R _s ²	.23		.49	.54
Possessive-ness	Pearson's r	.686***	-.693***	1	.778***
	R ²	.47	.48		.61
	Spearman's r _s	.647***	-.703***	1	.761***
	R _s ²	.42	.49		.58
Non-generosity	Pearson's r	.604***	-.702***	.778***	1
	R ²	.36	.49	.61	
	Spearman's r _s	.579***	-.739***	.761***	1
	R _s ²	.34	.54	.58	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 16: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category tool.

Tool (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.302***	.510***	.361***
	R ²		.09	.26	.13
	Spearman's r _s	1	-.357***	.545***	.359***
	R _s ²		.13	.30	.13
Willing. ownership sub.	Pearson's r	-.302***	1	-.623***	-.667***
	R ²	.09		.39	.44
	Spearman's r _s	-.357***	1	-.578***	-.615***
	R _s ²	.13		.33	.38
Possessive-ness	Pearson's r	.510***	-.623***	1	.666***
	R ²	.26	.39		.44
	Spearman's r _s	.545***	-.578***	1	.624***
	R _s ²	.30	.33		.39
Non-generosity	Pearson's r	.361***	-.667***	.666***	1
	R ²	.13	.44	.44	
	Spearman's r _s	.359***	-.615***	.624***	1
	R _s ²	.13	.38	.39	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 17: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category book.

Book (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.160*	.531***	.272***
	R ²		.03	.28	.07
	Spearman's r _s	1	-.191*	.544***	.304***
	R _s ²		.04	.30	.09
Willing. ownership sub.	Pearson's r	-.160*	1	-.553***	-.669***
	R ²	.03		.31	.45
	Spearman's r _s	-.191*	1	-.540***	-.650***
	R _s ²	.04		.29	.42
Possessive-ness	Pearson's r	.531***	-.553***	1	.640***
	R ²	.28	.31		.41
	Spearman's r _s	.544***	-.540***	1	.632***
	R _s ²	.30	.29		.40
Non-generosity	Pearson's r	.272***	-.669***	.640***	1
	R ²	.07	.45	.41	
	Spearman's r _s	.304***	-.650***	.632***	1
	R _s ²	.09	.42	.40	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 18: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category kitchen.

Kitchen (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.187*	.445***	.217***
	R ²		.03	.20	.05
	Spearman's r _s	1	-.160*	.397***	.216***
	R _s ²		.02	.13	.05
Willing. ownership sub.	Pearson's r	-.187*	1	-.612***	-.776***
	R ²	.03		.37	.60
	Spearman's r _s	-.160*	1	-.604***	-.734***
	R _s ²	.02		.36	.54
Possessive-ness	Pearson's r	.445***	-.612***	1	.617***
	R ²	.20	.37		.38
	Spearman's r _s	.397***	-.604***	1	.614***
	R _s ²	.13	.36		.38
Non-generosity	Pearson's r	.217***	-.776***	.617***	1
	R ²	.05	.60	.38	
	Spearman's r _s	.216***	-.734***	.614***	1
	R _s ²	.05	.54	.38	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 19: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category bike.

Bike (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.285**	.580***	.459***
	R ²		.08	.34	.21
	Spearman's r _s	1	-.282**	.563***	.459***
	R _s ²		.08	.32	.21
Willing. ownership sub.	Pearson's r	-.285**	1	-.518***	-.556***
	R ²	.08		.27	.31
	Spearman's r _s	-.282**	1	-.521***	-.530***
	R _s ²	.08		.27	.28
Possessive-ness	Pearson's r	.580***	-.518***	1	.600***
	R ²	.34	.27		.36
	Spearman's r _s	.563***	-.521***	1	.608***
	R _s ²	.32	.27		.37
Non-generosity	Pearson's r	.459***	-.556***	.600***	1
	R ²	.21	.31	.36	
	Spearman's r _s	.459***	-.530***	.608***	1
	R _s ²	.21	.28	.37	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 20: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category sofa.

Sofa (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.338***	.532***	.287***
	R ²		.11	.28	.08
	Spearman's r _s	1	-.338***	.525***	.277***
	R _s ²		.11	.28	.08
Willing. ownership sub.	Pearson's r	-.338***	1	-.584***	-.631***
	R ²	.11		.34	.40
	Spearman's r _s	-.338***	1	-.621***	-.622***
	R _s ²	.11		.39	.39
Possessive-ness	Pearson's r	.532***	-.584***	1	.558***
	R ²	.28	.34		.31
	Spearman's r _s	.525***	-.621***	1	.568***
	R _s ²	.28	.39		.32
Non-generosity	Pearson's r	.287***	-.631***	.558***	1
	R ²	.08	.40	.31	
	Spearman's r _s	.277***	-.622***	.568***	1
	R _s ²	.08	.39	.32	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 21: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category TV.

TV (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.526***	.572***	.485***
	R ²		.28	.33	.24
	Spearman's r _s	1	-.537***	.597***	.556***
	R _s ²		.29	.36	.31
Willing. ownership sub.	Pearson's r	-.526***	1	-.648***	-.637***
	R ²	.28		.42	.41
	Spearman's r _s	-.537***	1	-.615***	-.620***
	R _s ²	.29		.38	.38
Possessive-ness	Pearson's r	.572***	-.648***	1	.662***
	R ²	.33	.42		.44
	Spearman's r _s	.597***	-.615***	1	.670***
	R _s ²	.36	.38		.45
Non-generosity	Pearson's r	.485***	-.637***	.662***	1
	R ²	.24	.41	.44	
	Spearman's r _s	.556***	-.620***	.670***	1
	R _s ²	.31	.38	.45	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 22: Correlation matrix of self-extension, willingness of ownership substitution, possessiveness and non-generosity for the object category T-shirt.

T-shirt (N=130)		Self-extension	Willing. own. sub.	Possessive-ness	Non-generosity
Self-extension	Pearson's r	1	-.087	.275***	.170**
	R ²		.01	.08	.03
	Spearman's r _s	1	-.065	.247**	.155**
	R _s ²		.	.06	.02
Willing. ownership sub.	Pearson's r	-.087	1	-.515***	-.679***
	R ²	.01		.27	.46
	Spearman's r _s	-.065	1	-.558***	-.727***
	R _s ²	.		.31	.53
Possessive-ness	Pearson's r	.275***	-.515***	1	.636***
	R ²	.08	.27		.40
	Spearman's r _s	.247**	-.558***	1	.669***
	R _s ²	.06	.31		.45
Non-generosity	Pearson's r	.170**	-.679***	.636***	1
	R ²	.03	.46	.40	
	Spearman's r _s	.155**	-.727***	.669***	1
	R _s ²	.02	.53	.45	

Correlation is significant (2-tailed) when *p < .05, **p < .01, ***p < .001

Table 23: Regression coefficients, F-ratios and r squares for a simple mediation model of the effect of the predictor variable on the outcome variable through the mediation variable possessiveness (in each object category)

Car (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.92	10.68	.000	c'	-0.77	-0.34	.738
M (possessiveness)		-	-	-	b	-13.05	-7.66	.000
constant	i ₁	0.24	0.92	.359	i ₂	102.81	20.12	.000
r ² = .47				r ² = .48				
F (1,128) = 114.09, p < .001				F (2,127) = 58.95, p < .001				

^b Unstandardized regression coefficients

Tool (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.87	6.71	.000	c'	0.55	0.26	.793
M (possessiveness)		-	-	-	b	-9.68	-7.86	.000
constant	i ₁	0.56	1.97	.051	i ₂	100.96	25.38	.000
r ² = .26				r ² = .39				
F (1,128) = 44.96, p < .001				F (2,127) = 48.98, p < .001				

^b Unstandardized regression coefficients

Book (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.75	7.08	.000	c'	4.21	2.17	.032
M (possessiveness)		-	-	-	b	-10.39	-7.61	.000
constant	i ₁	0.44	0.73	.468	i ₂	86.87	12.19	.000
r ² = .28				r ² = .33				
F (1,128) = 50.14, p < .001				F (2,127) = 31.39, p < .001				

^b Unstandardized regression coefficients

Kitchen Utensil (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.67	5.62	.000	c'	2.93	1.36	.176
M (possessiveness)		-	-	-	b	-12.06	-8.47	.000
constant	i ₁	1.49	4.70	.000	i ₂	83.86	15.21	.000
r ² = .20				r ² = .38				
F (1,128) = 31.60, p < .001				F (2,127) = 39.52, p < .001				

^b Unstandardized regression coefficients

Bike (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.79	8.05	.000	c'	0.56	0.25	.800
M (possessiveness)		-	-	-	b	-9.34	-5.71	.000
constant	i ₁	0.97	2.64	.009	i ₂	89.66	12.90	.000
r ² = .34				r ² = .27				
F (1,128) = 64.86, p < .001				F (2,127) = 23.34, p < .001				

^b Unstandardized regression coefficients

Sofa (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.89	7.10	.000	c'	-1.10	-0.44	.660
M (possessiveness)		-	-	-	b	-9.92	-6.64	.000
constant	i ₁	1.44	4.01	.000	i ₂	74.59	11.59	.000
r ² = .28				r ² = .34				
F (1,128) = 50.44, p < .001				F (2,127) = 33.07, p < .001				

^b Unstandardized regression coefficients

TV (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	1.07	7.89	.000	c'	-8.99	-2.89	.005
M (possessiveness)		-	-	-	b	-10.79	-6.47	.000
constant	i ₁	0.65	2.20	.030	i ₂	99.78	17.48	.000
r ² = .33				r ² = .46				
F (1,128) = 62.25, p < .001				F (2,127) = 53.18, p < .001				

^b Unstandardized regression coefficients

T-shirt (N=130)	consequent							
	M (possessiveness)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.34	3.23	.002	c'	1.20	0.75	.455
M (possessiveness)		-	-	-	b	-8.76	-6.73	.000
constant	i ₁	3.31	8.09	.000	i ₂	61.14	8.25	.000
r ² = .08				r ² = .27				
F (1,128) = 10.44, p < .01				F (2,127) = 23.33, p < .001				

^b Unstandardized regression coefficients

Table 24: Regression coefficients, F-ratios and r squares for a simple mediation model of the effect of the predictor variable on the outcome variable through the mediation variable non-generosity (in each object category)

Car (N=130)		consequent						
		M (non-generosity)			Y (willing. ownership sub.)			
antecedent		b ^b	t	p	b ^b	t	p	
X (self-ext.)	a	0.81	8.57	.000	c'	-2.77	-1.35	.179
M (non-generosity)		-	-	-	b	-12.43	-8.11	.000
constant	i ₁	0.61	2.13	.035	i ₂	107.28	21.09	.000
		r ² = .36			r ² = .50			
		F (1,128) = 73.49, p < .001			F (2,127) = 63.58, p < .001			

^b Unstandardized regression coefficients

Tool (N=130)	consequent							
	M (non-generosity)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.50	4.37	.000	c'	-1.84	-1.00	.318
M (non-generosity)		-	-	-	b	-11.90	-9.08	.000
constant	i ₁	0.80	3.18	.002	i ₂	105.08	27.19	.000
r ² = .13				r ² = .45				
F (1,128) = 19.12, p < .01				F (2,127) = 51.71, p < .001				

^b Unstandardized regression coefficients

Book (N=130)	consequent							
	M (non-generosity)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.34	3.20	.002	c'	0.53	1.55	.731
M (non-generosity)		-	-	-	b	-12.21	-9.87	.000
constant	i ₁	1.03	2.24	.027	i ₂	95.97	14.58	.000
r ² = .07				r ² = .45				
F (1,128) = 10.21, p < .01				F (2,127) = 51.64, p < .001				

^b Unstandardized regression coefficients

Kitchen Utensil (N=130)	consequent							
	M (non-generosity)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.33	2.51	.013	c'	-0.56	-0.35	.727
M (non-generosity)		-	-	-	b	-14.16	-13.45	.000
constant	i ₁	2.08	6.06	.000	i ₂	95.40	20.55	.000
r ² = .05				r ² = .60				
F (1,128) = 6.32, p < .05				F (2,127) = 96.00, p < .001				

^b Unstandardized regression coefficients

Bike (N=130)		consequent						
		M (non-generosity)			Y (willing. ownership sub.)			
antecedent		b ^b	t	p	b ^b	t	p	
X (self-ext.)	a	0.58	3.16	.000	c'	-0.89	-0.45	.652
M (non-generosity)		-	-	-	b	-10.05	-6.49	.000
constant	i ₁	1.14	5.84	.002	i ₂	92.57	13.57	.000
r ² = .21				r ² = .31				
F (1,128) = 34.20, p < .001				F (2,127) = 28.52, p < .001				

^b Unstandardized regression coefficients

Sofa (N=130)	consequent							
	M (non-generosity)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.49	3.39	.001	c'	-5.00	-2.42	.017
M (non-generosity)		-	-	-	b	-9.90	-8.28	.000
constant	i ₁	2.12	5.06	.000	i ₂	81.33	13.08	.000
r ² = .08				r ² = .42				
F (1,128) = 11.53, p < .001				F (2,127) = 46.86, p < .001				

^b Unstandardized regression coefficients

TV (N=130)	consequent							
	M non-generosity)				Y (willing. ownership sub.)			
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.85	6.27	.000	c'	-11.05	-3.83	.000
M (non-generosity)		-	-	-	b	-11.12	-6.75	.000
constant	i ₁	0.80	2.70	.008	i ₂	101.66	17.85	.000
r ² = .24				r ² = .47				
F (1,128) = 39.35, p < .001				F (2,127) = 55.77, p < .001				

^b Unstandardized regression coefficients

T-shirt (N=130)	consequent							
	M (non-generosity)			Y (willing. ownership sub.)				
antecedent		b ^b	t	p		b ^b	t	p
X (self-ext.)	a	0.21	1.96	.053	c'	0.60	0.45	.652
M (non-generosity)		-	-	-	b	-11.28	-10.35	.000
constant	i ₁	3.68	8.77	.000	i ₂	73.63	11.25	.000
r ² = .03				r ² = .46				
F (1,128) = 3.82, p = .053				F (2,127) = 54.45, p < .001				

^b Unstandardized regression coefficients

Table 25: Descriptive statistics for the variable willingness to substitute ownership, divided according to whether respondents are already familiar with access-based consumption

Access to the object at the time of the survey?		Car	Tool	Book	Kitchen Utensil	Bike	Sofa	TV	T-shirt
Yes	n	54	59	88	23	42	8	10	19
	relative frequencies	42%	45%	68%	18%	32%	6%	8%	15%
	Mean	86.76	85.86	75.15	77.00	72.38	80.00	73.50	53.84
	Std. Dev.	22.06	18.66	24.28	22.21	26.26	27.90	41.73	23.64
No	n	76	71	42	107	88	122	120	111
	relative frequencies	58%	55%	32%	82%	68%	94%	92%	85%
	Mean	50.11	75.79	54.31	48.67	49.76	31.50	51.56	20.89
	Std. Dev.	40.81	29.47	33.96	32.73	33.58	34.02	40.87	26.42