

Unveiling Consumer Perception: Exploring the Impact of Decoupling Product Ownership

Decoupling of white goods ownership

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Abstract

The sharing economy enables sustainable consumption through efficient access to products, but transitioning from ownership to a subscription-based model faces barriers. The thesis author explored how the decoupling of product ownership impact on the variables; consumer's perceptions of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance in the context of white goods. Furthermore, the thesis authors added sustainability awareness as an important variable, while discussing the decoupling of product ownership. Although, there is a lot of literature on the above-mentioned variables the relationship between the decoupling of product ownership and the mentioned variables was theoretically and empirically unexplored.

Using a quantitative and deductive research approach, an online survey consisting of 29 questions was conducted. The empirical data revealed that the decoupling of product ownership impact all the variables under study and have a significant relationship with them. The impact of decoupling of product ownership was found to be strongest on consumers' perception of - service quality, followed by brand loyalty, brand attachment, product quality and performance, and monetary value. By gaining a deeper understanding of the relationships between the variables companies can effectively develop marketing strategies, subscription plans, and pricing strategies.

Keywords: Decoupling product ownership, subscription-based services, consumer perception, circular economy.

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1. Introduction

Have you ever imagined a world full of green? We believe yes, we all will love to live in a world that is more green. But have we ever put in any effort to make it the way we want to see it? Probably not or at least not in a way it should be!

A world where waste is virtually eliminated, resources are conserved, and economic growth is separated from environmental degradation. Welcome to the world of the circular economy.

The circular economy is a framework that aims to address ongoing challenges such as climate change, biodiversity loss, waste, and pollution by eliminating waste and pollution, circulating products and materials at their highest value, and regenerating nature (Ellen MacArthur Foundation, 2022). A lot of the existing pollution we have today stems firstly from a problematic take-make-waste linear economy (EllenMacArthur Foundation, 2022) which ignores that much of the resources we have access to are finite. It is not a sustainable system in the long run. Moreover, a waste system such as the linear economy does not promote regeneration, and the value of materials and products is not retained.

While the framework of the circular economy has the potential to be applied to many industries, it is very relevant in the electronic sector (Pollard et al., 2022). In this industry, products and materials often participate in both the technological cycle (which includes reuse, repair, remanufacture, and recycling) and the biological cycle (which helps regenerate natural capital). However, many products do not fully participate in these cycles, leading to unsustainable use of resources.

According to (Sánchez-Fernández & Iniesta-Bonillo, 2006), in recent years, there has been a growing trend towards access-based consumption rather than traditional ownership-based consumption. This shift in consumer behavior is driven by several factors such as changing consumer preferences, environmental concerns, and advancements in technology.

Decoupling of product ownership which is also known as access-based consumption, is a concept that refers to the separation of product ownership from product use, where consumers can access products on a subscription or rental basis rather than owning them outright. Hence, subscription-based services promote the ownership of the product to remain with the service provider. According to Bardhi and Eckhardt, (2012), the concept refers to economic activities where people get access to a product for a short period of time while the provider still owns

it. This means that the customers have temporary access to the goods, but legal ownership stays with the service provider. For example, Electrolux is providing subscription-based product services for robot vacuum cleaners while charging a minimal fee based on the consumption frequency (Stefan, 2023).

For the purpose of this thesis, the authors apply the same concept of decoupling product ownership to white goods. White goods are the appliances, such as refrigerators, dishwashers, washing machines, etc. that people use in their everyday life. These appliances are usually expensive and are considered for long-term consumption. Hence using subscription-based services for white goods provide consumers the opportunity to have easy and affordable access using renting options, for example, pay-per-use (Khalek and Chakraborty, 2022).

The shift towards access-based consumption has implications for both consumers and businesses. From a consumer perspective, on one hand, access-based consumption may offer cost savings, convenience, and flexibility, on the other hand, it may also create uncertainties regarding the quality and availability of products. Whereas, from a business perspective, despite the long-term financial benefits that companies can get over the years after the sale of the service, still they struggle to manage their uncertain revenue streams in the short term due to fluctuations in the number of subscribers each month (Stefan, 2023).

The transition from an ownership business model towards an access-based consumption model can promote innovation within the companies (Sposato et al., 2017). This could be due to the dynamics of the model that incorporate flexibility with the switching of product models in use, thus making the customer more sophisticated and demanding. According to Asab (2020), an increase in demand supports innovation and thus stimulates customer sophistication. Accordingly, the decoupling of products allows more customers access to the products, leading to higher demand, thus encouraging companies to produce more innovative products.

The concept is characterized as economic interactions in which numerous customers obtain temporary, short-term access to the same product but legal ownership remains with the service provider (Bardhi & Eckhardt, 2012). This means that customers don't have to worry about buying a new product when they want to change/upgrade the model or maintain the existing product because the providers of the subscription services take care of such things. However, the perception of consumers can be different about the same concept. Cherry and

Pidgeon, (2018) argue that access-based consumption requires a shift in consumer mindset. Therefore, the acceptance of the idea of decoupling product ownership is an important factor. Although consumer perception differs and subscription-based consumption may be rejected by some consumers, it may lead to a new dimension in the consumption pattern of consumers (Poppelaars et al., 2018).

1.1 Research Problem & Purpose

In an effort to shift towards the circular economy, the decoupling of product ownership is an important supporting concept that can contribute to serving the purpose that the world is facing regarding sustainability. However, there are some factors that can act as barriers to the shift from the traditional ownership model to the subscription-based model. The thesis authors identified psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance as important factors for the mentioned shift.

As decoupling is a relatively new concept, there are still many aspects that are required to further research to gain a deeper understanding. Although there is literature on consumer perception, there is a paucity of research on how this perception changes in the context of the decoupling of product ownership. This research gap presents an opportunity to delve into consumers' subjective evaluations of different variables that are mentioned above. Furthermore, the authors have considered two new variables; service quality and product quality & performance which may be influenced by the decoupling of ownership, thus raising the importance of studying consumer perception in depth related to these variables.

Therefore, the main purpose of this thesis is to explore the impact of decoupling on product ownership on consumers' perception of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance in the context of white goods. Furthermore, the research results can guide the companies in understanding the perception of the consumers and areas to focus such as uncertain revenue streams. In addition, the results will allow us to generalize the results over a greater range of products and industries. Therefore, to understand the problems discussed above, the thesis authors have come to the following question.

How decoupling of product ownership can impact the consumer's perception?

As consumer perception is a very vast topic and thus can not be covered fully in the thesis, the authors decided to choose the variables that are considered to be more relevant in the context of decoupling product ownership. Therefore, the authors of the thesis choose consumers' perceptions of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance.

1.2 Contribution

The results of this research will have significant implications for white goods brands. Therefore, by gaining a deeper understanding of the impact of decoupling of product ownership on consumers' perceptions of white goods, companies can develop more effective marketing strategies (Doyle, 2009) and product offerings that better meet the needs and preferences of their customers.

In addition to that, it will provide insights into consumer attitudes and behaviors towards white goods purchases under different ownership models, and the factors that influence their decision-making processes. By exploring this topic, this thesis hopes to provide insights that can help white goods companies to understand the effects of decoupling of product ownership.

1.3 Theoretical contribution

The establishment of a conceptual framework that integrates theories of product ownership and consumer perception in the context of white goods will be facilitated by the findings of this study. Furthermore, to comprehensively understand the phenomenon of decoupling product ownership in the white goods industry, this research will bridge the literature gap by synthesizing theories from diverse disciplines such as marketing, consumer perception, and innovation management. Existing literature has explored the burdens of ownership, which encompass the risks and responsibilities associated with owning a product (Moeller & Wittkowski, 2010). However, little attention has been given to the opposite of ownership advantages, specifically whether the perceived benefits of ownership have a negative impact on the acceptance of access-based services. Consequently, this thesis aims to fill this research gap and contribute to the development of new literature in the field of consumer perception. The knowledge gleaned from this study can serve as a foundation for additional theoretical

development and experimenting in many contexts, for instance, service quality and product quality and performance in relation to decoupling of product ownership.

1.4 Practical contribution

White goods companies looking to adjust to shifting customer consumption patterns can benefit greatly from the managerial insights provided by this research. The discussion and conclusion can help decision-makers in the context of subscription-based models make decisions on product offers, pricing tactics, and marketing strategies. Furthermore, by shedding light on consumer preferences, motives, and issues with subscription-based models, the research's findings can benefit the white goods sector. This can aid business professionals in better understanding how consumers behave on the market, reacting to it, and creating inventive company models that reflect shifting customer perceptions and subsequent preferences.

1.5 Thesis Scope

This study intends to examine how customers' perceptions of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality and product quality & performance in the context of white goods are impacted by decoupling product ownership. The thesis authors also linked sustainability awareness to consumer's perception of social value which will be discussed in the following chapter.

1.6 Thesis Outline

In this section the thesis outline is presented where it explains how the thesis has been structured and what the reader will get after reading the chapter.

Introduction	The first chapter introduces the main concept of the thesis discussed in a general way, leading to the research problem identifying the research gap and highlights the main research question based on customers' perceptions of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality & performance.
Theoretical Background	The second chapter provides the reader with a deeper understanding of key concepts regarding decoupling of product ownership and the other variables discussed in the model, leading to the proposed model that will be tested.
Methodology	The third chapter focuses on the methodological rationale behind the study's chosen methods, including the research design, research approach, research strategy, data collection, and analysis.
Findings & Analysis	The fourth chapter presents the results of the survey, analyzing the data through the proposed model and assessing whether the hypotheses based on the model are supported by the collected data.
Discussion	The fifth chapter discusses the main findings and their implications, including the role of decoupling product ownership in other variables such as customer perception of brand image, brand loyalty, brand attachment, psychological value, monetary value, social value, service quality, product quality and performances, and sustainability awareness.
Conclusion	In the sixth chapter, the thesis concludes with a discussion on managerial implications, limitations, and suggestions for future research.

Note: At some places, instead of using the name of all the variables used in this thesis such as customers' perceptions of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, and product quality & performance, the authors have referred as “all the variable”.

2. Theoretical Background

This section aims to explain the concept of circular economy, access-based services, and consumer perceptions. By understanding this relationship, readers can grasp the concept of sustainable consumption through the adoption of circular economy practices. Additionally, this section discusses the impact of decoupling product ownership or access-based services on consumer perceptions based on various factors such as psychological value, social value, monetary value, brand image, brand attachment, brand loyalty, service quality, product quality & performance, and sustainability awareness. Examining these variables will help to assess the influence of the decoupling of product ownership within the context of the circular economy.

2.1 Embracing Circular Economy through Subscription-Based Services

We believe that the circular economy is a concept that was previously more theoretical but nowadays, as it gained momentum amongst individuals, it has made it more tangible and practical, and a good way forward to achieve a sustainable future. The concept of circular economy was first introduced in the 1970s however it was discussed by Pearce and Turner (1990) in their academic work, which explored the relationship between economic activities and the environment (Okorie et al., 2018). According to the Ellen MacArthur Foundation, a circular economy is described as an industrial system that aims to restore or regenerate resources intentionally and through design (EMF, 2013, p. 14). In this type of economy, a company's growth is not reliant on constantly consuming natural resources. Instead, it focuses on utilizing innovative technologies and business models to efficiently use and reuse resources (De Angelis, 2018). Resource sharing and reusing would be the key strategy to achieve this goal. Therefore, a crucial aspect of addressing the issue involves shifting ownership to utilizing sharing services (Diacono, 2016). This shift contributes to the growing trend of the circular economy.

To step into the circular economy, decoupling of product ownership or access-based consumption that reflects the sharing economy can be considered as a significant approach (Diacono, 2016). The sharing economy is the modernized version of the conventional form of usage (EMF, 2013). Therefore, access-based services refer to transactions where multiple consumers sequentially obtain temporary, short-term access to a product, while the legal ownership of the product remains with the service provider (Schaefers et al., 2015). Although, sharing does not necessarily involve monetary transactions, as it focuses only on the act of sharing itself. In contradiction, Bardhi and Eckhardt (2012), assert that access-based models are not altruistic but have an economic benefit and are reciprocal in nature. According to Belk (2007), sharing occurs under market-mediated access models when a firm owns the item being shared instead of consumer sharing of personal property. As a result, the sharing economy includes access-based services offered by market-mediated service providers. The sharing economy also helps to promote the circular economy (Sposato et al. 2017). Thus circular economy, sharing services, and access-based services are interconnected.

Going beyond the traditional approach of ownership of the product, access-based services or decoupling of product ownership allows consumers to rent, lease, or share products. In recent years, this trend of achieving a green planet has gained momentum that has forced many industries to design processes (Sposato et al., 2017) and activities in a more sustainable manner, specifically the white goods industry, which is also our main area of focus. Decoupling of product ownership or access-based consumption services allows the potential for the product life cycle to extend over a longer period thus reducing waste and usage of resources (Mugge, 2018). In addition, this phenomenon will provide economic benefits to both companies and individuals in the long run that will ultimately contribute to a green planet.

As mentioned earlier, individuals or consumers need to contribute towards the concept of sustainability, leading to a requirement to understand the factors that concern consumers in terms of sustainability. Therefore, it is important for companies to understand consumer behavior towards a brand that makes them rate a particular brand more sustainable or not. Consumer behavior refers to the actions and decisions people make when purchasing or using products (Holbrook & Hirschman, 1982). Consumer behavior towards a product includes everything from the initial decision to buy it, how they use it, and whether they will continue

to buy it in the future. In addition, consumer behavior can be defined as the analysis of all factors that influence consumer preferences, actions, and attitudes toward any product (Cialdini, 2006). Holbrook & Hirschman (1982) suggest that consumer behavior is influenced by experiences, and consumers may be willing to pay for an experience rather than ownership (Zhuo, 2015). Furthermore, the focus on consumer behavior is essential because it helps companies better understand their customers which leads to more significant sales and profits. Consumer behavior is a significant factor in sustainability awareness (Kostadinova, 2016). Consumer attitudes and behaviors toward product ownership are influenced by a variety of factors such as perceived quality, price, and environmental concerns (Oke et al., 2016). Additionally, consumer awareness and engagement with decoupling of product ownership is limited, and effective communication of the benefits of decoupling of product ownership is needed to increase consumer engagement with this practice (Machado et al., 2019).

Strategies for promoting decoupling of product ownership include product design and reparability, convenient and accessible channels, and effective communication of the benefits of decoupling of product ownership (Jaafar et al., 2007). Incorporating design features that make products more easily repairable and recyclable can contribute to a circular economy and reduce resource consumption (EMF, 2022; Taranic et al., 2016). According to Machado et al. (2019), unfolding the process of preferring subscription-based products that is more convenient and accessible for consumers, can increase consumer engagement with the decoupling of product ownership. Furthermore, Machado et al. (2019) argue that consumer attitudes and behaviors toward product ownership are influenced by a variety of factors, and effective communication of the benefits of product ownership is needed to increase consumer engagement with the brand (Mellens et al., 1996) to promote decoupling of product ownership.

Moreover, Zhang and He (2019) claim that items with limited life cycles age more quickly. Electronic devices, laptops, mobile phones, and household appliances are a few examples of such things. As a result, the product should be used to the fullest extent feasible during its useful life. Thus subscription-based consumption will allow the product to stay in the user circle for a long period hence extending the product life cycle which will consequently reduce emissions and energy use. In addition, renting the item will preserve profitability for the companies while also impacting the environment positively.

However, decoupling product ownership through subscription-based services may require consumers to share their personal information while subscribing. This may raise concerns about data privacy and security. According to Sangani (2010), improper handling of data could make it susceptible to cyber attacks or misuse, causing consumers to worry about who has access to their data and how it is being used.

Nevertheless, businesses may find it tough to communicate that products on rent have the same long lifespan and quality as brand-new ones, and also contribute to the environment in an effort to make the product circularly economical. Businesses may respond to the issue by emphasizing the concepts' positive effects on the environment in an effort to spur customers' interest in renting the goods. Despite the efforts from the businesses, the absence of consumer approval for rented goods raises barriers to a sustainable economy (Kabel et. al., 2020), suggesting that persuading customers is crucial.

Although there is obvious resistance to the acceptance of the idea of subscription-based consumption, there are societies, cultures, or individuals who are more aware and concerned about sustainability than others (Garbie, 2015). Yilmaz and Beldag (2016) assert that green customers are those who are most likely to consider having ecologically friendly products and there has been a significant movement in recent decades toward an increasing number of individuals becoming green consumers (Panda et al., 2020).

2.2 Delving into Consumer's Perception

This section provides background information on how customer perception has evolved based on various factors such as psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, product quality & performance, and sustainability awareness. Understanding this background is crucial as it forms the foundation for addressing the research questions through a model that examines the impact of decoupling. Additionally, it aims to provide readers who are new to the topic with the necessary knowledge to understand access-based services' impact on consumer perception.

The main purpose of the thesis is to develop a model that conceptualizes consumers' perception of psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, product quality & performance by focusing on the concept of decoupling product ownership. In order to understand the development of such a model, it is important to discuss the relationship of the main variable (decoupling product

ownership) with the other variables and how they evolved. Decoupling of product ownership is considered a key driver in the model, and as such, its impact and relationship to other variables have been presented in the model.

The authors initially aim to present an introduction to the consumer's perceptual evaluation of value to the readers. Customer perceived value is important in access-based services or decoupling of product ownership because businesses can use the concept to predict how a consumer might view a product (Sánchez-Fernández & Iniesta-Bonillo, 2006). According to Dovaliene et al., (2015), when the perceived value of an item increases which leads to satisfaction, the business or company can price it higher which increases profits. Consumer behavior is influenced by many factors that have a great influence on decoupling product ownership on the consumers' perceptions of monetary value (Hamzaoui Essoussi & Linton, 2010) social value, and psychological value (Kunkel et al., 2021; Belk, 2014).

Moreover, according to Hamzaoui Essoussi and Linton (2010), perceived value is measured by the price customers are willing to pay for a product or service. Ben-Bassat et al., (2006), argued that perceived value can be enhanced if the product has aesthetic design, accessibility, or convenience. This suggests that companies need to focus on the product appearance to maintain the presentation even if the product is used it should not look so. Mugge (2018), suggests that it is important to assess consumer preferences for products so that companies can design products to be reusable with a focus on the circular economy to bring about a sustainable world. According to Baek and Kim (2022), in transitioning from a traditional ownership model to a subscription-based model, understanding consumer perception is important and derived from factors such as the monetary, psychological, and social value of the consumer, which we aim to investigate in this study.

Furthermore, decoupling of product ownership has a significant impact on customer-perceived value (Sánchez-Fernández & Iniesta-Bonillo, 2006). Nevertheless, Moeller and Wittkowski (2010) argue for convenience and opportunity to access a wider range of products that subscription-based service offers without the burden of ownership. As a result, customers may perceive a higher value in subscription-based products than in the traditional ownership model. Accordingly, this perceived value can translate into higher prices and increased profits for companies with subscription-based products (Dovaliene et al., 2015). Additionally, Hartmann and Apaolaza-Ibáñez (2012), argue that understanding consumer

preferences and factors influencing their decision is important when analyzing consumer perception towards shifting to subscription-based products.

Nevertheless, Lichtenstein et al. (1993) argue value consciousness refers to consumers' awareness of the price they paid in relation to the quality they received. When it comes to value, consumers prioritize perceived price against the money they budget for a product. Razak et al. (2016) depict that customers' purchase intentions for a product or service are greatly influenced by their perception of whether the product price is high or low. Moreover, consumers also prioritize the psychological and social factors connected with their perception of a product or a brand. Therefore, consumers' perception of value is influenced by various factors such as price, quality, and convenience.

Further, the authors endeavor to offer an elucidation for the reader's understanding concerning the consumer's perception of the brand. According to Woodside et al. (2008), the brand is the overall measure of the strength that attracts consumers toward any brand or product. It can be defined as consumers' attachment to the brand, the description of their association with the brand, or their beliefs about the brand (Wood, 2000). According to Ailawadi and Keller (2004), a brand is an essential aspect to influence customer perception that ultimately affects their choice. Decoupling of product ownership might influence consumers' perception of the brand by changing their relationship with the product brand or the brand of service provider.

According to Battle (2018), access-based consumption may create new opportunities for brands to offer value-added services thus enhancing customer loyalty. However, the authors emphasize that when referring to the brand, service-providing companies are more under discussion than the companies providing products. Notwithstanding the opportunities that access-based services present for companies, they also render businesses susceptible to customer skepticism regarding the quality of the product or service. However, according to Munteanu et al., (2014), the quality of the product or service can affect the overall perception of the Brand. Schembri et al. (2010) emphasize brand consumption by showing how consumers go above and beyond to make logical decisions when purchasing a certain brand that connects them with the brand through signs, symbols, etc.

Additionally, the authors strive to provide some explanation for readers' comprehension regarding the consumer's perception of service quality. Moreover, Mittal (2016) argues that a

business model gains popularity through customer satisfaction resulting from high-quality service and subsequent customer loyalty. However, Podgayetsky (2019) expresses concern about loyalty within the service industry. While many consumers may prefer the new access-based service model's flexibility and convenience over ownership models in order to save money, there is a chance that ownership advantages might erode customer loyalty to the service business. Decoupling of product ownership may influence consumers' perception of value by offering cost savings, convenience, and access to newer and better models. Moreover, studies have shown that consumers are willing to pay more for products that offer value in terms of convenience and ease of use (Luchs et al., 2010).

Finally, the authors aim to provide some explanation that enhances readers' understanding of the consumer's perception of product quality and performance. Consumer perceptions of product performance and quality are vital in determining how satisfied they are with the goods that businesses sell. The functionality and efficiency of the items are included in product quality and performance. Despite some research conducted on the subject, a dearth of evidence exists establishing a correlation between product quality and performance and the decoupling of product ownership. Customers must evaluate a product's quality and performance whilst using it, underscoring the importance of quality in the context of product use (Nwachukwu et al., 2019).

2.3 Building Theory and Respective Constructs

2.3.1 Psychological value

The thesis authors define psychological value in terms of decoupling product ownership as the emotional and psychological benefits that individuals derive from using access-based services. It encompasses the subjective experiences, feelings, and perceptions associated with the act of accessing and using a product or service rather than owning it outright (Gal, 2006). According to Shu and Peck (2011), psychological value relates to the emotional connection consumers have with a product. It can stem from various factors, such as feeling attached to a product that has been used by their parents for a long time or considering it a part of their family tradition. This emotional attachment makes it challenging for them to let go of the ownership aspect, as it has been a familiar pattern throughout their lives. On the other hand, some customers find psychological value in the comfort and security they experience when subscribing to white goods (Van Dyne & Pierce, 2004). This sense of comfort and security

contributes to higher satisfaction for these customers. Consequently, these individuals find a subscription-based model more appealing than the traditional ownership model.

Furthermore, Lai (1995), depicts that psychological value refers to the subjective worth or importance that an individual places on something based on their beliefs, emotions, and personal preferences. It is often associated with the emotional and social benefits that a person derives from an object, experience, or relationship, rather than its practical or monetary value (Shu & Peck, 2011). Consumers who consciously opt to purchase products that have more drawbacks than advantages, benefit from the value-enhancing effects of psychological ownership (Morewedge et al. 2021).

Nevertheless, the impact of decoupling of ownership on customer perceived value may also be influenced by psychological ownership (Morewedge et al. 2021). According to Pierce et al. (2003), psychological ownership can be defined as the feeling or perception that individuals have when they consider something as if it is their own or belongs to them in some way whether it is a physical object or an intangible concept. Owning an item that is sentimental or has a personal meaning may also contribute to a sense of identity and self-expression. Additionally, on one hand, the act of acquiring and owning a product may activate reward centers in the brain, leading to feelings of pleasure and satisfaction (Li & Atkinson, 2020). On the other hand, subscription-based products can offer the benefit of novelty and variety since some people seek novelty and fun (Kahn, 1995) in their consumption, which may contribute to shifting the market towards subscription-based products (Lawson et al., 2016). For example, a person may place high psychological value on a particular piece of jewelry, not because of its monetary worth, but because it was given to them by a loved one and has sentimental value (Givi & Galak, 2017).

Psychological value can also be influenced by factors such as cultural background, personality, and social norms (Belk, 1988). Furthermore, a person's cultural background may shape their beliefs about what is important or valuable in life, while their personality may influence their preferences for certain activities or possessions, thus the value of possessions vests in the meaning to the consumers (Richins, 1994). Consumers may feel a sense of attachment and identity with products they own, which could reduce their perceived value of access-based products. Companies that wish to promote access-based consumption should consider the impact of psychological ownership and find ways to mitigate its negative effects (Li & Atkinson, 2020).

Decoupling of product ownership impacts the consumer's perception of psychological value thus authors consider it as an important construct. The authors believe that convenience and flexibility add to the psychological value of consumers as they release them from the responsibilities of ownership (Khalek & Chakraborty, 2022), and thus they are more likely to choose access-based services which consequently turns into customer satisfaction. This leads to increased repurchase level, sales, and consequently market share for the company which is supported by several studies (Cronin et al., 2000). This suggests consumers who use subscription-based services are likely to perceive a higher psychological value than those who own the goods. In addition, (Moeller and Wittkowski, 2010) argued that consumers who own a product may feel a sense of pride or attachment to their possession, but they may also feel the burden of maintenance, repairs, and eventual replacement, which could negatively affect their satisfaction with the product. Based on these arguments, the thesis authors expect decoupling of ownership to have a significant influence on psychological value. Therefore, the authors propose the following hypothesis:

H1: Consumers using subscription-based services for white goods perceive higher psychological value than the consumers who own them.

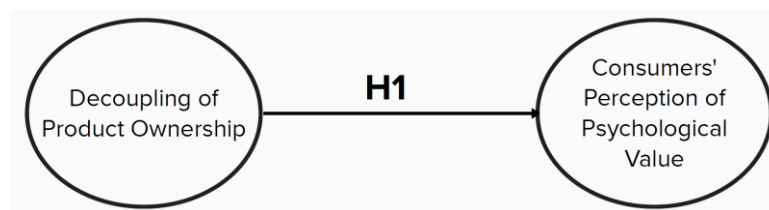


Figure 1: Hypothesis 1

2.3.2 Social Value

In this section, the thesis authors explain the perception of the consumer of social value based on literature theories. According to Bardhi and Eckhardt (2012), social value, in the context of access-based consumption, refers to the perceived benefits and positive outcomes that individuals derive from engaging in shared or collaborative consumption practices. It encompasses the social aspects and interactions that occur within access-based services, such as renting or sharing goods or services with others. Additionally, Gadeikienė and Švarcaitė (2021) depict that social value can arise from the environmental benefits associated with

access-based consumption. Therefore, by sharing resources and utilizing them more efficiently, individuals contribute to sustainability efforts, reducing waste and promoting a more sustainable lifestyle. This sense of environmental responsibility and collective action can enhance the social value experienced by consumers. According to Dillahun and Malone (2015), access-based services provide opportunities for increased affordability and access to resources that may have otherwise been out of reach for some individuals. Accordingly, social value can also be derived from the sense of empowerment experienced by individuals when they have access to a wider range of goods and services through sharing platforms.

Benjaafar et al., (2019) suggest that owning a product provides more social benefits than subscribing to it depending on the individual circumstances and the specific products or services. In some cases, owning a product may provide more social benefits, while in other cases, subscribing may be more socially beneficial. For instance, some products are expensive and thus out of reach for many customers, subscription-based consumption provides the opportunity for the consumer to have access to such products and use them subsequently. Having access to expensive products, consumers' social standing is impacted, and their moods and emotions are altered (Malhotra, 2019). This helps them to achieve the social status that previously restrained the customer to limited access to products. Consumers who value exclusivity and status may be attracted to subscription-based services that offer access to high-end or deluxe products (Mason, 1984). This aspect of decoupling product ownership can impact consumers' preferences to choose subscription-based models instead of traditional ownership.

Furthermore, Felson and Spaeth (1978) state that by promoting the sharing and pooling of resources, access-based consumption can also foster a sense of community and social connectedness, leading to a more cohesive society. In addition, consumers are more concerned regarding their surroundings where they live and the activities related to how the products are being manufactured by the companies, which adds to their perception of social value. Consumers prefer to choose a product that is environmentally friendly over a product that has a negative impact on the environment (Seitz & Razzouk, 2001). Thus companies need to focus on sustainable and environmentally friendly products.

Consumer behavior is also the response that depends on the surroundings and the living standards of the societies around them. Consumption behavior in response to rising living standards has an extraordinary effect on the natural surroundings (white et al., 2019).

According to White et al. (2019), consumers' psychological perception connects them with the product's value which turned into engagement for a sustainable environment. Shao and Ünal, (2019) say that consumers value the environment more, rather than the quality and low price of the product which triggers companies to focus on sustainable and environmentally friendly products.

According to Svensson and Hölder (2016), consumers utilizing subscription-based services perceive higher social value compared to those who own the goods outright. The authors believe that the importance of considering social value as a significant factor in the decoupling of product ownership, shedding light on the potential benefits of access-based models in enhancing social connections and fostering sustainability. Therefore, the social value construct is considered as a part of the proposed model as it is expected that decoupling of product ownership has a significant effect on it. This is essentially important for the thesis because the authors aim to gain insights from the consumers' perception of social value in white goods and how they perceive the subscription-based service which in turn influences their ownership decision. Based on the previous literature, authors also believe that consumers who opt for a subscription-based service for white goods perceive a higher social value compared to those who own the goods outright. By decoupling ownership and embracing access-based services, individuals may experience enhanced social value through various mechanisms. According to Auger et al. (2003), understanding the relationship between subscription-based services, product ownership, and social value can provide insights into consumer preferences and behaviors. It can inform businesses and policymakers about the potential benefits of access-based models in fostering social connections, promoting sustainability, and creating a sense of community among consumers (Lawson *et al.*, 2016). According to the research discussed above, the thesis's authors formed the following hypothesis:

H2: Consumers using subscription-based services for white goods perceive higher social value than the consumers who own them.

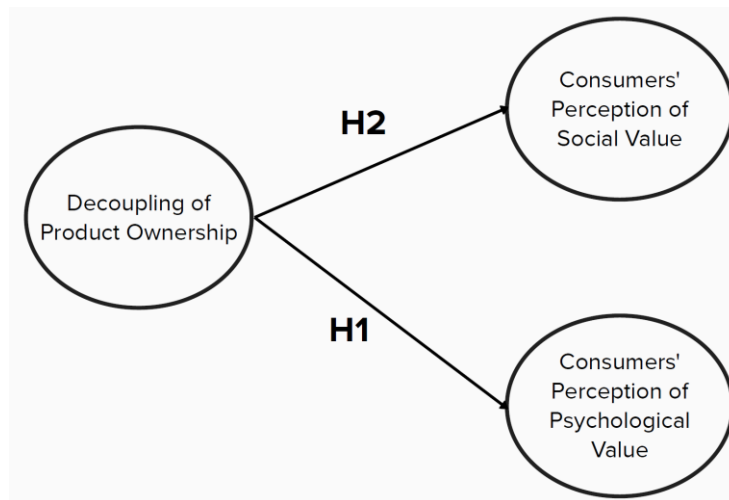


Figure 2: Hypothesis 2

2.3.3 Monetary Value

The authors describe monetary value as the financial benefits that consumers perceive when engaging in access-based consumption. It relates to the cost-effectiveness and economic value associated with accessing goods or services temporarily instead of owning them outright. According to Moeller and Wittkowski (2010), consumers who opt for access-based services often find them more economically advantageous compared to traditional ownership models. This is because access-based services typically offer lower upfront costs, reduced maintenance expenses, and the ability to pay only for the actual time or usage of the product or service (Schaefer et al., 2021). Thus, the monetary value of access-based services reflects the financial benefits and cost savings that consumers perceive by choosing temporary access over long-term ownership.

Bei and Chiao (2001), argue that whether subscribing to a product or service provides better monetary value than owning it outright depends on the individual circumstances and the specific products or services. In some cases, subscribing may be more cost-effective than owning, while in other cases, owning may be more economical. According to Schaefer et al. (2021), subscription-based products offer several monetary benefits that ownership-based products do not. For example, a subscription service may offer lower upfront costs, as consumers can pay for the service on a monthly or quarterly basis rather than having to make a large initial investment to purchase the item outright. Additionally, subscription-based

services may offer discounts or special promotions for subscribers, which can provide additional monetary benefits.

Furthermore, there are many other monetary benefits of subscription-based products, for instance, access to premium features that would be more expensive to access or purchase individually (Bei & Chiao, 2001). Factors that may influence consumers' decision to subscribe to a product or service that provides monetary benefits include the perceived value of the subscription, the overall cost of ownership, the availability of payment plans or financing options, and the level of flexibility and customization offered by the subscription service (Yao et al., 2012; Chikweche et al., 2010).

According to the research conducted by Parida et al. (2019) found that consumers are willing to pay a premium price for sustainable consumption, which they perceive as offering long-term cost savings for both companies and consumers. Decoupling of product ownership may impact consumers' perception of value by offering cost savings and flexibility (Kenneth, 1973). For instance, rental and leasing options may offer a more affordable alternative to buying a new appliance, particularly for those who do not require frequent use of the product. In contradiction, Arianii et al. (2019), argue that decoupling product ownership creates uncertainties and increases the total cost of ownership.

Although different researchers talk about cost-savings differently, thus there is no consensus about the results. However, according to Malhotra (2019), more so than "cheap price" and "excellent items," consumers' profoundly disguised emotional and psychological aspirations are what drive their decisions to buy. This is the major obstacle that consumers are still convinced with buying/owning the product instead of renting to meet their needs. Consumers also consider the financial advantages of using subscription-based services very highly. According to Edbring et al. (2016), compared to product purchases, subscription-based services provide higher value than the money that consumers invest. According to Zeithaml (1988), perceived price is defined as the value a customer sacrifices or gives up to obtain a product or service, with the price being categorized as a "give" element rather than a "get" element from the consumer's viewpoint. Lichtenstein et al. (1993) define price consciousness as the extent to which consumers prioritize paying low prices above everything else, thus pricing is crucial to them. These customers may find subscription-based service models to be an appealing alternative because they can get high-quality goods for less upfront cost (Akbar & Hoffmann, 2016). In addition, according to Nazari et al. (2012), while maintaining the

perceived monetary value, companies are required to take into account additional factors that affect customer perception, such as product quality, sustainability, and usage of service. These aspects, along with monetary value, should be given priority by companies if they want to build long-term brand loyalty.

The authors have included monetary value as a construct in the proposed model due to its significant relationship with decoupling of ownership. The authors believe that when consumers experience lower upfront costs while engaging in any kind of purchase and get financial benefits, they are more likely to choose access-based services. Authors also predict that consumers who opt for subscription-based services for white goods perceive a higher monetary value compared to those who own the goods. According to (Schaefers et al., 2018), subscription-based services offer financial advantages. Therefore, by subscribing to the service, consumers can enjoy the benefits of using the product without the financial burdens of ownership. Based on the above literature, the thesis authors expect decoupling of ownership to have a significant influence on monetary value. Therefore, the authors propose the following hypothesis:

H3: Consumers using subscription-based services for white goods perceive higher monetary value than the consumers who own them.

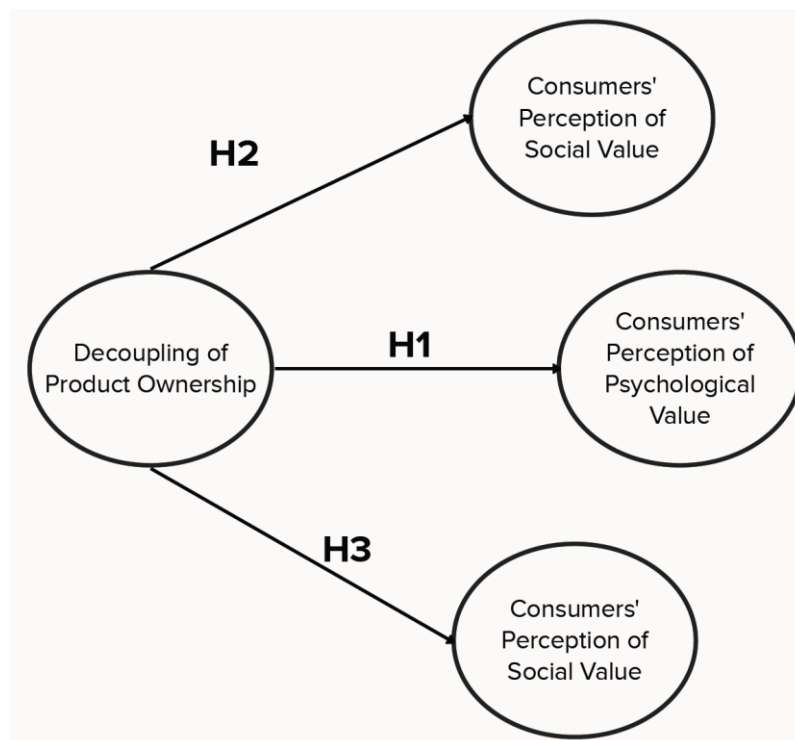


Figure 3: Hypothesis 3

2.3.4 Brand Image

In this section, the thesis authors explain the perception of the consumer of brand image based on literature theories. The concept of brand image is closely connected with the consumers' perception that is how they perceive a company's products and services. This perception is based on consumers' experiences and interactions with the brand. According to Wijaya (2013), brand image is crucial to the growth of a brand since it determines the company's reputation and credibility, which subsequently serve as the consumer's 'guideline' for trying to utilize a product or service. Brand recognition can be created through a strong brand image which facilitates the creation of a loyal client base. As a consequence of experience, it will be determined whether the customer will be a brand loyalist or an opportunist (Wijaya, 2013).

Moreover, the brand image represents the overall consumer's perception that is generated from the information and knowledge that the consumer has of the product (Wijaya, 2013). Farhat and Khan (2012) depict that consumers' belief is closely related to a brand image that helps to generate their preference for a brand. When consumers make a decision to buy a product, a complete picture of the brand comes spontaneously that connects with their belief in the brand. Thus, brand image shapes consumers' attitudes to choosing the product based on their perception (Wijaya, 2013).

According to Park et al. (1986), brand connotations that are in the minds of customers are also referred to as brand image. Brand image is the thinking or feeling of consumers that they get when they hear or see a brand or it's an impression that is left in the minds of the consumer (Wijaya, 2011). According to Post (2005), brand image is the sum of an entity, a mental connection that establishes a bond of loyalty with the customers and it contains the perceived additional value. Furthermore, Keller (1998) explains brand image as an important concept in marketing. The brand is more than simply a name; it needs to have a distinct purpose that makes it easy to distinguish it from other brands. In addition, the brand's identity needs to be appealing and noticeable (Wijaya, 2013; Nilson, 1998). In another way, it can be said that developing a brand image is the process of leaving behind a distinct trail in the minds and hearts of consumers through a variety of communication techniques and methods in order to produce particular meaning and emotion that have an impact on consumers' lives (Wijaya, 2013; Wijaya, 2011).

Decoupling of product ownership may have an impact on brand image. Cretu and Brodie (2007) discuss that the way a brand is perceived by its consumers shapes how it influences the market with its goods and services at every step. Thus, customers who care about the brand may always support it on the basis of their preferences. According to Laroche et al. (2001), environmentally conscious customers who care more about the environment will find the brand more appealing and want to support society through their purchases. For instance, consumers who used subscription-based services for environmentally friendly practices had more positive perceptions of the brand image that started these services to focus on sustainability. This suggests that decoupling of product ownership may positively impact brand image, particularly when the service or product is associated with sustainability or other positive social or environmental values.

Advertisements help to create a better brand image for the companies. Some firms employ techniques to advertise their brands to improve their brand image by collaborating with well-known individuals like celebrities and public figures (Aaker, 1997). Through advertisement, consumers may quickly know and recall the brand. Aaker (1997) contends that rather than the many viewpoints of people on a single brand, customers react to and recognize the brand's characteristics. Customers select brands based on their recognizable attributes. Brand marketing and advertising have an impact on consumer behavior, such as friendliness, faith, and environmental, psychological, and emotional characteristics (Azoulay & Kapferer, 2003). Therefore, to promote the brand image, advertising is arguably a significant tool.

There are several benefits of creating a brand image in the mind of consumers. Campbell and Keller (2003), suggest that if a brand has already an established image, it becomes easier for the company to introduce new products in the market under the same brand and with the same level of expectation of the product to become successful. Thus companies that are already known in the market and have a positive image will have a competitive edge over the other service providers who want to enter the market for the access-based service industry. Nevertheless, as the brand image is already created in the market, and as a consequence, it boosts the confidence of the customers to rely on the products or services. Having a good brand image provides the opportunity for companies to retrain their customers. Accordingly, decoupling of product ownership can be considered as a driver for brand image, because if there is a positive brand image of access-based services over the traditional ownership model, customers would form a preference towards access-based services. Though there is not much

research on the direct relationship between brand image and access-based services, the authors are convinced of the connection between the two. Therefore, based on the above literature, the thesis's authors formed the following hypothesis:

H4: Consumers using subscription-based services for white goods perceive a more positive image of the brand than consumers who own them.

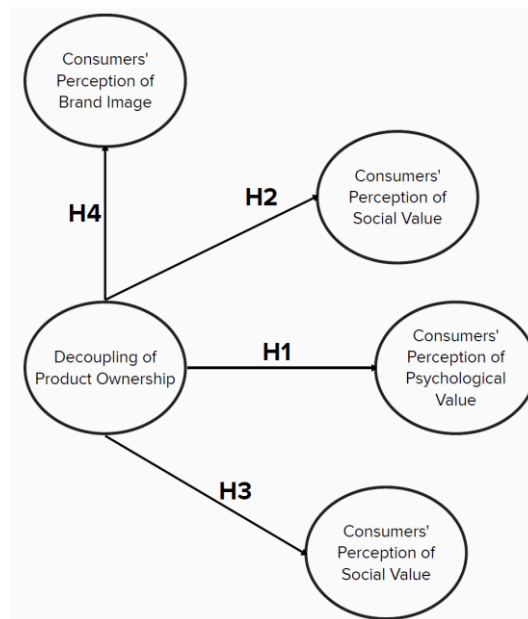


Figure 4: Hypothesis 4

2.3.5 Brand Attachment

In this section, the thesis authors explain the perception of the consumer of brand attachment based on literature theories. According to Schmalz and Orth (2012), brand attachment can be described as an emotional bond that consumers create with a brand, which includes feelings of devotion, fondness, and connection with the brand. It goes beyond admiration or having a favorable opinion of a brand that entails a profound and intimate connection (Park et al., 2008) with the brand, which is frequently based on the consumer's self-image and principles. Brand attachment can result in long-term commitment and endorsement with consumers who are willing to pay more for the brand and promote it to others (Dennis, 2016).

Moreover, it is the consumer's deeper level of relationship where a consumer sees the brand as a part of their identity, which is based on their beliefs, feelings, and behavioral intentions towards the brand. Brand attachment can be characterized as consumer's appreciation and fondness of a brand (Dolbec & Chebat, 2013). A positive brand attachment indicates that the

consumer has a favorable evaluation of the brand, while a negative brand attachment indicates an unfavorable evaluation. Measuring brand attachment is an important part of brand research as it helps companies to understand how their brand is perceived by consumers and develop effective brand strategies to improve their overall brand performance.

Nevertheless, brand attachment is an emotional aspect of the consumer that a company can influence within a shorter time span (Dolbec & Chebat, 2013). Thus, the marketing efforts should be considered by the companies with a focus on short-term implications that might change in the long term. It will help the companies to conduct cost-benefit analyses hence guiding them on how much they need to spend to gain market share in a shorter time span. In contradiction, according to Vlachos et al. (2010), consumers who are emotionally attached to a brand are more likely to remain connected to it over time, despite the competition or changes in the marketplace. Hence based on Vlachos et al. (2010) argument which is also supported by Park et al. (2008), brand attachment gives the company a competitive edge over other firms over a longer period of time, especially in times of severe competition and recession.

Furthermore, brand attachment is a term that has gained significant attention in recent years due to its ability to explain the consumer's relationship with brands (Pourazad & Pare, 2014; Park et al., 2010). Brand attachment is important in assessing the impact of decoupling of ownership because it reflects the deeper level of relationship that consumers have with a brand. When consumers opt for subscription-based services, they engage with the brand, relying on the brand's offerings and services for their needs. This continuous interaction builds a sense of familiarity and connection with the brand over time (Park et al., 2008). Furthermore, consumers can try different products or models using subscription-based services, allowing them to experience a range of offerings from the brand. According to Bardhi and Eckhardt (2012), the nature of access-based services promotes a sense of exploration and variety. This variety and flexibility contribute to the development of brand attachment as consumers appreciate the opportunities provided by the subscription-based service.

It is also important to note that brand attachment is not a one-way relationship. While consumers may develop strong emotional connections to a brand, the brand itself can also play a role in shaping and reinforcing those connections. Companies that have created positive experiences for their customers, deliver on their brand promises, and maintain a

consistent brand identity are more likely to build strong brand attachments. However, brand attachment is not always a positive thing for companies, while strong brand attachment can lead to long-term connection; it can also make consumers less receptive to changes in the brand or product (Japutra et al., 2014; Fedorikhin et al., 2008), which makes it difficult for companies to introduce new products or make changes to existing ones (Lambert-Pandraud & Laurent, 2010). Thus based on the above literature, the thesis authors formed the following hypothesis:

H5: Consumers using subscription-based services for white goods perceive to be more attached to the brand than consumers who own them.

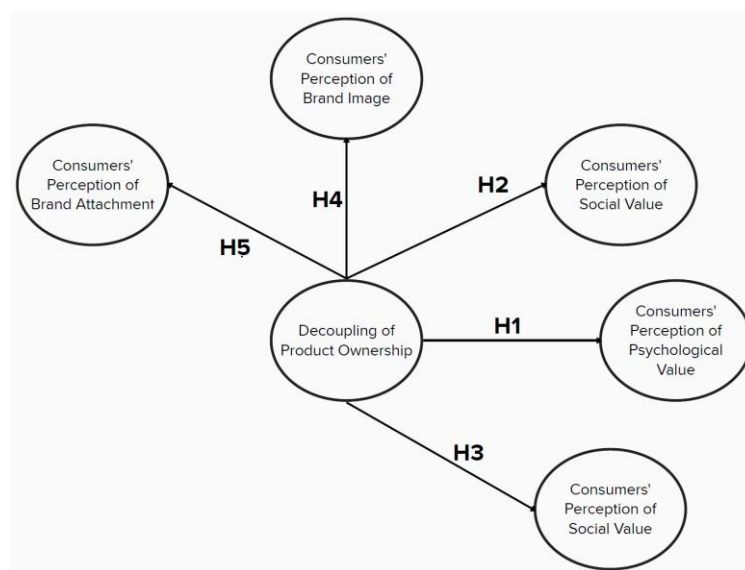


Figure 5: Hypothesis 5

2.3.6 Brand Loyalty

The authors define brand loyalty as the extent to which consumers consistently choose and purchase a particular brand over others (Oliver, 1999; Oliver, 1997). It is a measure of the strength of the relationship between the consumer and the brand which is characterized by repeat purchasing behavior, positive attitudes, and emotions towards the brand, as well as a desire to pay more for the brand (Alhaddad, 2014). Although contented consumers are more likely to be loyal, loyal customers are not necessarily satisfied (Fornell, 1992). Nevertheless, a weak correlation exists between loyalty and satisfaction (Van Looy et al., 1998). While

satisfaction is a '*prerequisite*' for loyalty, it's not the sole determinant for repeat purchases (Bloemer & Kasper, 1995).

Loyalty is essential to businesses as it leads to decreased costs, increased long-term sales, and confidence in the brand (Yang & Peterson, 2004; Dowling & Uncles, 1997). Consequently, loyalty helps to retain customers with the brand (Andreassen, 1995). Furthermore, Reichel and Sasser (1990) argue that a small change in the retention rate can have significant impacts on future revenues. Therefore, loyalty is crucial for both marketing practitioners and academics.

According to (Dick and Basu, 1994), customers develop a strong emotional connection with the brand and have a favorable attitude toward it that represents their loyalty to the brand. Subscription-based service model may increase the likelihood of trying a product or service, leading to increased brand loyalty if the consumer has a positive experience. Moreover, the factors of convenience and flexibility are valued by customers which may increase customer satisfaction and subsequently brand loyalty (Ishak and Abd Ghani, 2013). On one hand, reduced ownership attachment resulting from decoupling product ownership can also lead to lower brand loyalty towards the products, as consumers may switch to a competitor's product (Farley, 1964). On the other hand, loyalty toward the service provider may increase due to increased service quality (Gefen, 2002). Hence, decoupling of product ownership may have both positive and negative impacts on brand loyalty.

According to Quester and Lin Lim (2003), owning a product can strengthen brand loyalty more than subscribing to it because it fosters a sense of ownership and personal connection with the product or brand. When consumers own a product, they feel a greater sense of control and attachment to it, which can lead to a stronger emotional connection with the brand. However, subscription-based products offer several benefits for brand loyalty that ownership-based products do not. For example, subscription-based products can offer exclusive content, rewards, and personalized experiences, this diversity of offers will help to foster a sense of loyalty. Additionally, subscription-based products can provide ongoing value and engagement, keeping the brand top-of-mind and building a strong relationship with customers over time if the subscription-based services are offered by the same company as the product is of (Yao et al., 2012).

Furthermore, there is a growing trend towards subscription-based products that emphasize brand loyalty. Companies are recognizing the value of building ongoing relationships with

customers, rather than focusing solely on one-time purchases (Uлага, 2003). By offering subscription-based models that provide ongoing value and engagement, companies can strengthen brand loyalty and create an inflexible but sustainable revenue stream. In addition, subscription-based programs that highlight brand loyalty are becoming increasingly popular. Instead of concentrating only on one-time transactions, businesses are beginning to see the benefit of developing long-term connections with their clients. Businesses may increase customer brand loyalty and build a rigid but sustainable income stream by providing subscription-based models that give continuing value and interaction.

Moreover, it is important to elaborate that why brand loyalty is important to incorporate as a construct into the proposed model. The relationship between brand loyalty and decoupling of ownership is significant. Consumers who prefer subscription-based services for white goods are more likely to exhibit higher brand loyalty compared to those who own the goods outright because of their contracts of subscription that are expected to last longer given that customers are satisfied. This relationship underscores the significance of providing exceptional experiences and value through subscription models to cultivate long-term loyalty and maximize the benefits of access-based consumption for both consumers and brands. The authors believe that consumers who opt for subscription-based services for white goods exhibit increased brand loyalty compared to those who own the goods outright. The consistent positive experience builds trust and reinforces their commitment to the brand, resulting in brand loyalty. Therefore, the authors bring forward the following hypothesis:

H6: Consumers using subscription-based services for white goods perceive to be more loyal to the brand than consumers who own them.

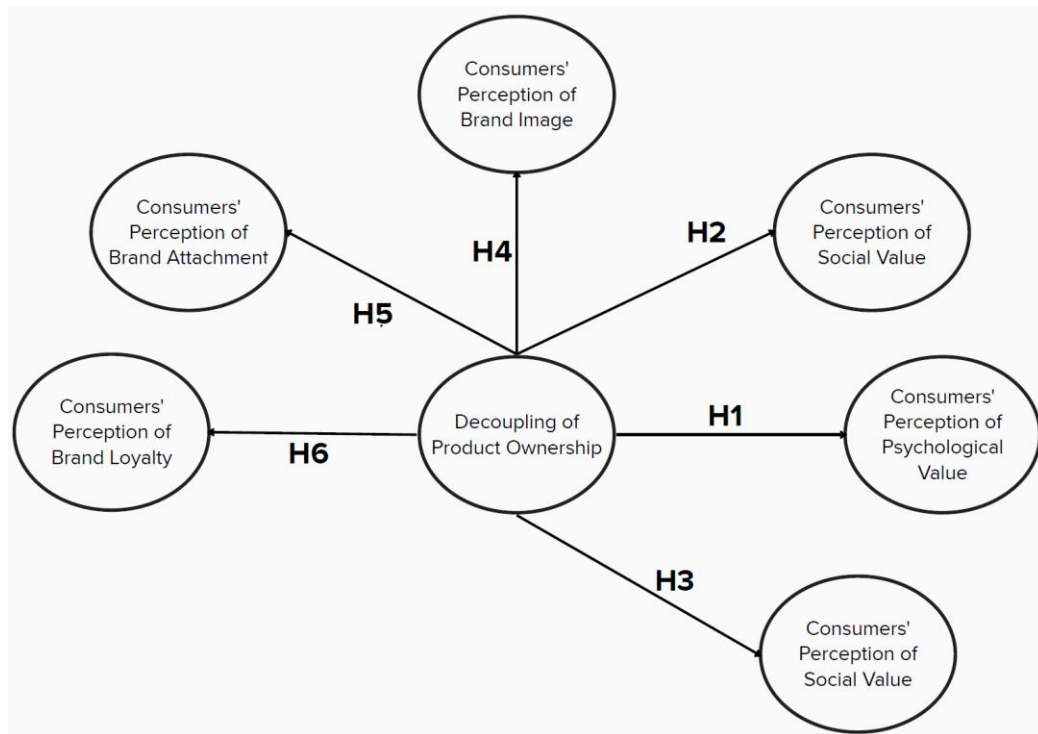


Figure 6: Hypothesis 6

2.3.7 Service Quality

Authors define service quality as the overall level of excellence and satisfaction that customers experience throughout their engagement with the service provider (Ali, 2015). It encompasses the maintenance services, overuse of products (frequency of use), innovation in subscription packages plan, and early obsolescence of product model due to easy availability and accessibility due to new demand and increased customer satisfaction. Furthermore, service quality plays a crucial role in ensuring customer satisfaction and engagement with the service provider (Guo et al., 2017; Ali, 2015).

The authors figure out that one aspect of service quality in access-based services can be maintenance services. It involves the service provider's commitment to ensuring the proper functioning and upkeep of the products offered. This includes regular maintenance, repairs, and replacements to keep the products in optimal condition for customer use. By providing reliable maintenance services, the service provider ensures that customers can enjoy uninterrupted access to the desired products and have a positive experience throughout their subscription period (Bolton, 1998). On the other hand, another factor contributing to service

quality is the consideration of overuse of the product, which refers to the frequency of product usage allowed within the subscription plan (Bolton, 1998). It also can be defined as how customers perceive the product in terms of use or performance or quality when it is already being used by other people before they have subscribed for it. Although there is not much research done in relation to service quality and decoupling of product ownership, in fact, this can be said that the mentioned concept is quite novel in the literature. The authors will discover the factors that will influence the customer's perception of service quality (Bolton & Drew, 1991) as defined above in the context of decoupling of product ownership.

According to Danjum and Rasli (2012), innovation in subscription-based services is also a significant component of service quality. Subscription-based service providers need to continuously enhance their offerings by introducing innovative subscription plans (Miles, 2010). These plans can include new features, flexible pricing options, or additional benefits that cater to evolving customer needs and preferences. By staying responsive to customer demands and adapting their subscription packages, service providers can demonstrate their commitment to delivering value and meeting customer expectations. In addition, decoupling of product ownership will enable companies to look for innovation in their products and to embrace new business models to beat the competition (Danjum & Rasli, 2012). To provide the best services to their customers, companies will develop new business models thus it will facilitate innovation and competition.

Furthermore, service quality in access-based services is influenced by the early obsolescence of product models due to easy availability and accessibility (Parasuraman et al., 1985). With access-based services, customers have the advantage of accessing the latest product models without the need for ownership. In contradiction, according to Arianii et al. (2019), decoupling of product ownership may create uncertainties regarding the availability of products.

Nevertheless, service providers that prioritize offering new and updated product models to subscribers ensure that customers have access to cutting-edge technology and features which enhances customer satisfaction (Johnson & Fornell, 1991) and loyalty by providing them with a sense of being at the forefront of product innovation. According to Gefan (2002), better service quality increases customer loyalty directly and also through increased trust. In contradiction, Woolhandler (2012) argues that decoupling of product ownership can reduce quality control and accountability of services, as providers may have less incentive to

maintain or improve the services over time. For example, open-source software projects that decoupled ownership from development had lower quality and user satisfaction compared to closed-source projects with centralized ownership and control.

Moreover, by providing competitive characteristics of the services related to access-based subscriptions, service providers can enhance customer satisfaction, build strong relationships, and differentiate themselves in a competitive market (Hu et al., 2009). Prioritizing service quality (Bolton & Drew, 1991) leads to increased customer satisfaction, retention, and positive word-of-mouth, contributing to the success and growth of access-based service providers. Therefore, the thesis authors highlight service quality as an important construct in the proposed model and believe that decoupling has a significant impact on service quality. Thus, based on the background literature authors formed the following hypothesis:

H7: Consumers using subscription-based services for white goods perceive to get higher service quality than the consumers who own them.

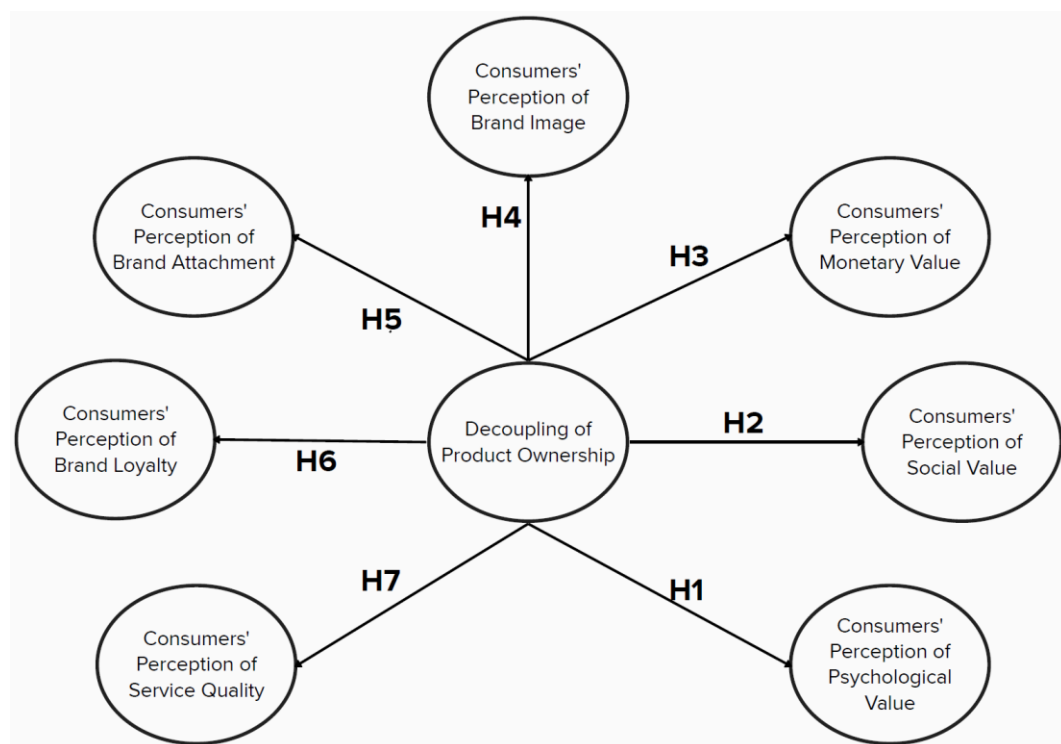


Figure 7: Hypothesis 7

2.3.8 Product Quality and Performance

Product quality and performance refers to the functionality and effectiveness of the products offered to customers. Thus the perception of the consumer of product quality and performance will define their satisfaction with the products provided by the companies. Although there is a lot of research in the literature about product quality and performance, there is a shred of limited evidence that relates product quality and performance with the decoupling of product ownership. For using the products, customers assess their quality and performance (Nwachukwu et al., 2019), which reflects the importance of quality with the usage of the product. This evaluation is not solely based on individual instances or specific evidence but takes into account the overall experience with the product over time. Accordingly, customers consider factors such as reliability, durability, ease of use, and how well the product meets their needs and expectations (Nwachukwu et al., 2019).

Furthermore, Swan and Combs, (1976) argue that customer satisfaction is influenced by both product quality and performance of the product. It is important to mention that product quality and performance, in particular, are important in influencing customer satisfaction, specifically for the subscription-based service industry mainly because of the fact that products can be assumed to be old and used by other clients. A product that is assumed to be old will definitely impact the perception of its quality in the minds of customers (Jalali Naini & Shafiee, 2011). According to Patterson (1993), the durability of the product impacts the purchase decision of the customer. If the products consistently meet or exceed customer expectations in terms of functionality and performance, it enhances the overall satisfaction level. Patterson (1993) argues that product performance is the significant determinant in measuring customer satisfaction. Customers are more likely to continue using the service and recommend it to others based on their positive experiences with the quality of the products given by the service providers. By ensuring high product quality and performance, access-based service providers can enhance customer satisfaction and build long-term relationships with their customers.

Nevertheless, Dabholkar (1995) argues that satisfaction is the result of product quality and perceived price and that it affects a customer's likelihood to use the service again and recommend it to others. Furthermore, Battle (2018) suggests that access-based consumption may create new opportunities for brands to offer value-added services and enhance customer loyalty. However, it exposes businesses to increased expectations from customers about the

quality of the product. According to Munteanu et al. (2014), the quality of the product can affect the overall perception of the Brand.

According to Cohen (2012), subscription-based services might offer greater flexibility and adaptability to changing user needs in terms of product performance. For example, if someone only needs a product or service for a limited time or on an intermittent basis, subscribing to it can be more economical and practical than owning it outright. Moreover, the decoupling of product ownership may offer greater flexibility and convenience, as consumers can rent or lease products for a specific period (Khalek & Chakraborty, 2022; Cohen, 2012). For instance, consumers may prefer to rent a washing machine for a short period instead of purchasing one due to temporary living arrangements (Stefan, 2023).

However, it may also create uncertainties regarding the availability and quality of products, which may negatively impact usage. Research has shown that the perceived risk of usage may be influenced by factors such as the frequency of use, the duration of the rental, and the reliability of the service provider (Bardhi & Eckhardt, 2012). Brand loyalty is developed when consumers are satisfied with a product or service quality and perceive little or no risk associated with it. It is important to understand that the perceived quality of a service experience depends not only on the actual performance but also on the expectations of the consumer (Anderson, et al., 1994). Therefore, the thesis authors highlight product ‘quality and performance’ as an important construct in the proposed model and believe that decoupling has a significant impact on this variable. Therefore, based on the background literature authors formed the following hypothesis:

H8: Consumers using subscription-based services for white goods perceive to get higher product quality and performance than the consumers who own them.

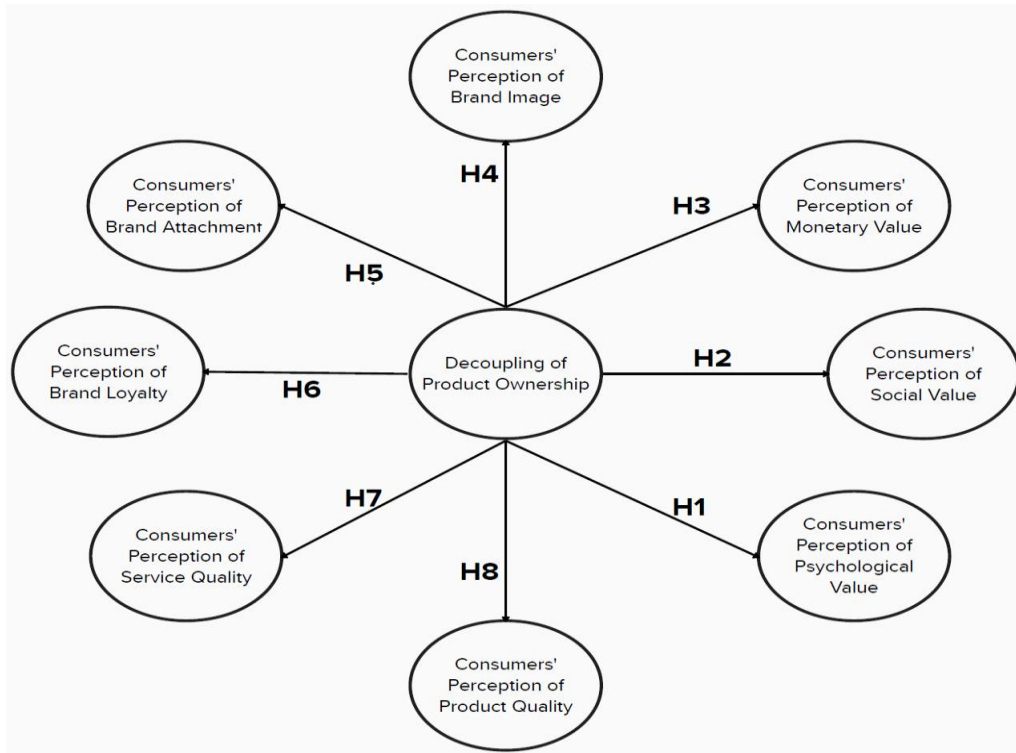


Figure 8: Hypothesis 8

2.3.9 Sustainability Awareness

Consumers are increasingly recognizing the significance of sustainability in their purchase decisions. They are more conscious of their consumption habits and how they affect the environment, so they seek out brands that prioritize sustainable practices (Panda et al., 2020). According to D'Anolfo (2015), companies can improve their brand image and loyalty by showcasing their commitment to sustainability. As environmental awareness is becoming more significant to consumers, customers tend to support socially responsible and sustainable companies. According to Galbreth and Ghosh (2013), a sustainable firm can directly impact the overall level of awareness of the consumers. By implementing sustainable practices in products and operations, companies can contribute to social responsibility and enhance consumer loyalty and positive brand attitudes (Nastanski & Baglione, 2014). In contradiction, purchase intention is substantially predicted by consumer behavior and attitude, but not by subjective norms (Paul et al. 2016). Nevertheless, consumers may prioritize other factors like price or convenience over sustainability, and their awareness and understanding of

sustainability issues may differ according to their demographics, which companies need to consider (Shao, 2019; McDonald & Oates, 2006).

Sustainability has become an important issue for consumers worldwide. In order to increase the accessibility of sustainable products in both established and emerging markets, sustainability factors, and positioning strategies are promising (Gassler et al., 2016). The growing awareness of the environmental impact of consumer habits has led to a shift in consumer preferences toward brands that prioritize sustainability (Panda et al., 2020). Companies that are aware of this trend are implementing sustainable practices in their products and operations to meet consumer demands and contribute to social responsibility (Panda et al., 2020).

In addition, decoupling of product ownership may discourage a throwaway culture as consumers may develop an emotional attachment to the products they use and may be likely to dispose of them instead of throwing them (De Ferran et al., 2020). Disposing of the product means that it is being transferred to someone else who can use it. This can lead to a decrease in waste generation and a reduction in environmental harm.

One way that companies can showcase their commitment to sustainability is by decoupling product ownership (Crilly et al., 2016). This model has the potential to positively impact sustainability awareness by promoting social responsibility. For example, instead of owning a dishwasher, a consumer can subscribe to a dishwasher service that provides access to a dishwasher when needed. This not only reduces the overconsumption by customers but also helps to reduce the number of dishwashers produced by the companies leading to a positive impact on the environment and triggering the circular economy (EMF, 2022).

In addition, to promote social responsibility, decoupling can also have a positive impact on brand loyalty. Consumers who subscribe to the decoupling of product ownership are more likely to stay loyal to the brand. This is because subscription-based service models provide convenience, flexibility, and value for money, leading to higher customer satisfaction (Khalek & Chakraborty, 2022). Decoupling of product ownership allows companies to present themselves as eco-friendly and socially responsible.

Furthermore, the decoupling of product ownership is influenced by the level of sustainability awareness of consumers. Moreover, environmental awareness among customers is based on the country of origin (Shao, 2019; Paul et al., 2016; McDonald & Oates, 2006). While some

consumers are highly aware of sustainability issues, others may not (Blake, 1999). Companies need to be transparent in their sustainability messaging to build trust with consumers. This means that disclosure is required by the companies to provide clear and accurate information about the environmental impact of their products and services and how they are contributing towards sustainability. Companies that prioritize transparency and authenticity are more likely to build long-term brand loyalty among consumers based on sustainability. In contradiction to that, Crilly et al. (2016) add that the sustainability practices of the firms may be decisive and may not be detected by consumers.

Although the relationship between decoupling of product ownership and sustainability awareness is intertwined thus influencing each other. However, consumers may prioritize other factors such as price or convenience over sustainability. Some consumers are willing to pay more for sustainable products, while others do not care about sustainability and prioritize price over sustainability (Paço et al., 2021). Therefore, companies need to consider other factors, for instance, price, when implementing the decoupling of the product ownership model in relevance with sustainability.

According to Nyadzayo and Khajehzadeh (2016), a subscription-based service model can enhance brand image and brand loyalty and lead to higher customer recommendations. However, Tascioglu (2019), argues that companies need to consider both price and sustainability when implementing decoupling of product ownership models since several factors need to be considered which will be more appealing to the consumers and transparent in their sustainability messaging to build trust with consumers. Last but not least, the sustainability concerns related to the decoupling of product ownership depend on the type of product or service being offered, and companies need to explore alternative sustainable practices to meet consumer demands in cases where decoupling of product ownership is not feasible.

The authors presented sustainability awareness as a mediating construct in the proposed model. Authors believe that sustainability awareness has a mediating effect on social value. Thus, the decoupling of product ownership has a significant impact on social value. Therefore, based on the background literature the authors bring forward the following hypothesis:

H9: Consumers who are environmentalists prefer to use subscription-based services for white goods rather than owning them.

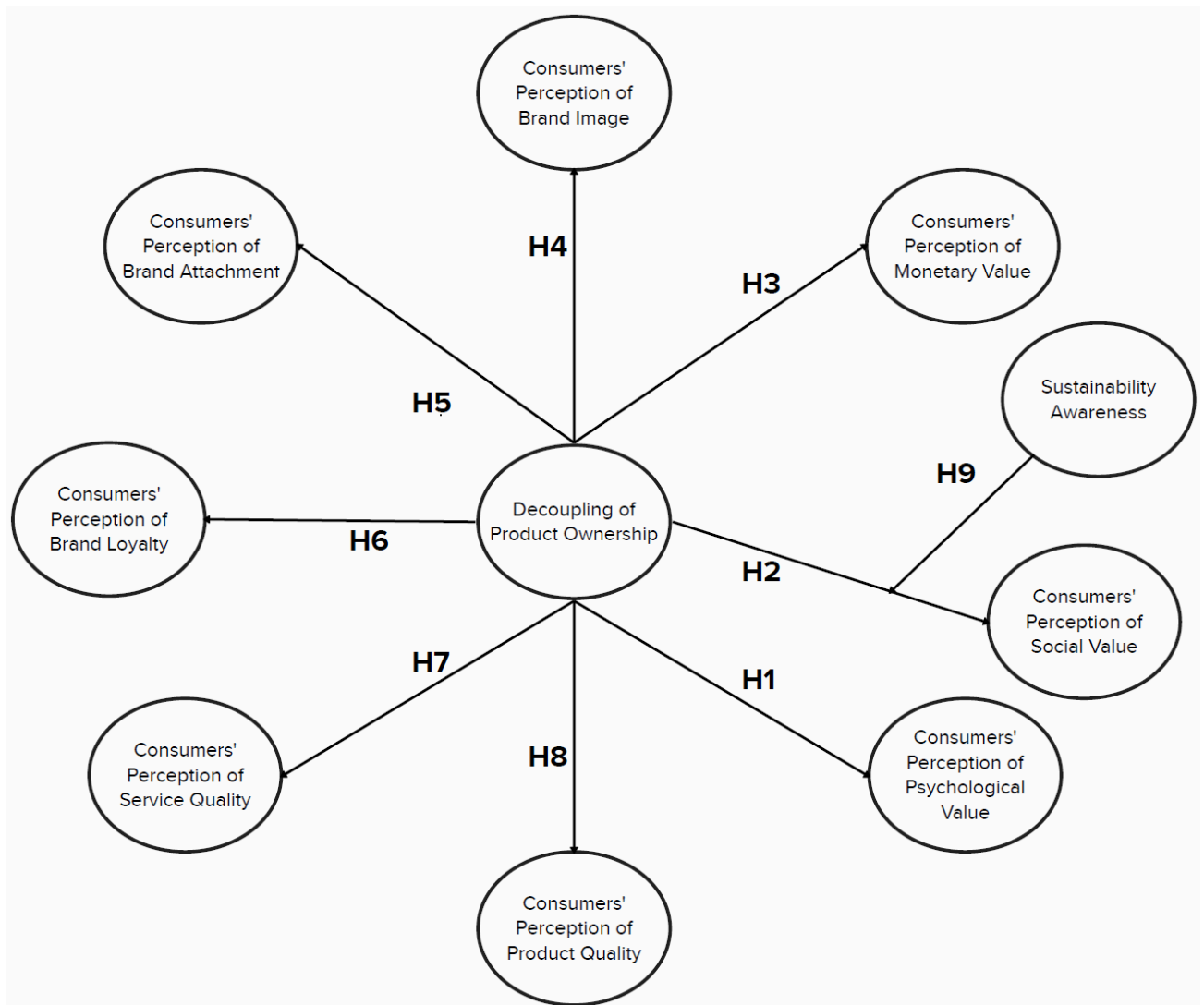


Figure 9: Hypothesis 9

3. Methodology

This chapter explains the methodological approach chosen by the authors for this study which includes research design, research methodology, and the strategy for how to collect the data and then analyze it. It also outlines the process and methodology for this research study, aimed at addressing the research question. First, in this chapter, the authors introduce the research approach and then explain the research strategy and design. Then the continuation of this part has been gone through by discussing the survey instrument development, sample, and the collection of the data. For further progress it has been highlighted how the data has been analyzed and based on that data analysis, the authors have represented the result and findings in the following chapter. The authors have concluded this chapter by focusing on the methodological limitations and ethical considerations of the study.

Note: The authors took a couple of interviews with senior officials of Electrolux who already have been providing access-based services for robot vacuum cleaners. These interviews were held to understand the concept of decoupling of product ownership, and how the access-based model works for the companies. Although the research methodology is based on the quantitative method, the authors have used references from the interviews only to support their views and discussions.

3.1 Research Approach

The main focus of the authors in this research approach is to connect the theoretical framework, research design, data collection methods, and analysis techniques that have been implemented to address the research questions (Saunders, et al., 2009), that is the impact of decoupling of product ownership. To analyze the impact, the authors have decided to conduct a deductive study. As per Saunders et al. (2009), the deductive approach is a method of conducting research that involves starting with a theory or hypothesis and then testing it through empirical observations and data collection. This approach begins with a general idea or hypothesis and moves towards specific observations and testing. In this thesis, the authors first developed the theory, and based on the theory of decoupling of product ownership, they developed nine hypotheses that focus on existing knowledge and previous research.

According to Saunders et al. (2009), the deductive research approach is associated more with quantitative research methods, where data is collected using standardized measures and analyzed using statistical techniques to test the hypothesis. The process moves from general ideas or hypotheses towards specific observations and testing, as opposed to starting with specific observations and drawing general conclusions (Soiferman, 2010). Based on the statement of Saunders et al. (2009), the authors preferred to consider a quantitative approach that helps to focus on the impact of decoupling of product ownership on all the variables presented in the model to investigate research problems.

By using the theoretical model and considering the impact of each of the constructs, the authors have created the model to visualize the research problem. Aiming for connecting the theoretical concept with the model to represent the data, the authors have used empirical data that helped to investigate the hypothesis (Bell et al., 2019). Here, the authors have intertwined the theory with the empirical data that helped to figure out the solution to the research problems developing the hypothesis. However, this thesis tends to focus on the relationship between theory and empirical observations from a deductive approach perspective (Bryman, 2016).

3.2 Research Strategy

The authors designed this research based on a quantitative approach. The quantitative approach is effective as a research strategy when the research is supposed to be conducted through online surveys to collect the data. The authors have chosen the quantitative strategy because the research required statistical data that has been focused on numbers and the use of figures in the collection of the data (Eyisi, 2016; Creswell, 2014) to analyze the impact of decoupling of product ownership on consumers' perception. According to Eyisi (2016), qualitative research is better suited for exploring complex phenomena and understanding subjective experiences. The authors have chosen a quantitative strategy based on the research question and the goal of the study.

Creswell (2014), argues that the quantitative research method is used to measure and analyze the data based on objectivity that helps to conduct the research without researcher bias or interpretation, as a result, it is more trustworthy and less prone to mistakes. Quantitative research often involves collecting data from a large sample size, which can provide a representative view of the population being studied. This makes it possible to generalize

findings to a wider population with a high degree of confidence (Eyisi, 2016). Furthermore, the authors designed quantitative research to test hypotheses that were constructed based on theories (Stebbins, 2001). It used statistical analysis to identify the impact of decoupling product ownership on consumers' perception of - brand image, brand attachment, brand loyalty, monetary value, psychological value, social value; service quality, and product quality and performance (Parasuraman, 1988). In addition, quantitative research involves using standardized methods and instruments, which has made this research easier to analyze in the context of decoupling product ownership and consumers perception that authors implemented on different populations based on their age, country, and gender.

3.3 Research Design

This research has been designed based on the research problem and then the problem has been investigated by using a survey design. According to Saunders et al. (2012), the research design is a plan that guides the study and helps to address the research questions. According to Bell et al. (2019), there have been five classifications of research design and in this research, the authors have used the survey that has been conducted online. Check and Schutt (2012), states that survey research involves gathering information from a group of people by asking them questions. This method is used to collect primary data and typically involves a questionnaire. In this research study, the survey has been conducted using a questionnaire that covered all the key aspects of the proposed model. The questionnaire has been designed to gather data on various constructs that are relevant to the research question. This method is good for collecting data from many people to test the constructs.

The authors designed this research based on a survey involves administering a questionnaire to a sample of consumers to gather data on their perceptions, behaviors, and experiences (Daniel, 2019) related to decoupling of product ownership and its impact on their perception of brand image, brand attachment, brand loyalty, physiological value, monetary value, social value, service quality and product quality & performance of white goods. This design is well-suited for gathering data from large sample sizes and testing hypotheses (Malhotra, 2019). Accordingly, the authors have decided to conduct the quantitative research methodology to gather numerical data from large sample sizes to test hypotheses and generalize findings to a larger population (Saunders et al., 2009).

The research design connects with the research problem by providing a structured approach to addressing the research question and testing the hypotheses. The research design determines the methods, techniques, and procedures that will be used to collect and analyze data to address the research problem (Stebbins, 2001). The choice of research design depends on the specific research objectives, research questions, and the type of data needed to address the research problem. Furthermore, the questionnaire will be used to collect the data that will help us to establish links for the hypotheses. Thus, the authors believe that the research design for this thesis is well-suited to conduct the research till the end.

3.4 Survey Instrument Development

To correspond with the theoretical framework authors designed the questions based on nine constructs proposed in the model. The authors have used introductory text at the beginning of the survey questionnaire to make the survey more comprehensible. Though everyone is not familiar with access-based services as well as white goods, the authors have added a brief definition of this terminology to make the survey questions more understandable. The survey started with a general explanation of decoupling of product ownership/subscription-based services and white goods. The authors categorized the survey questions based on each construct used in the model. Every construct has almost the same number of questions that provide equal weighing to each construct. A total of 29 survey questions were generated that were related to the different constructs. The first three questions were more generalized in nature and other questions were segmented as per each construct to analyze the impact of decoupling of product ownership on consumers' perceptions of all the variables mentioned above and also sustainability awareness as the last variable which is impacting the consumer perception of social value as a mediator.

To identify the response of each of the constructs very specifically the authors designed the questions based on each of the constructs focusing on the theory. The authors designed 2-5 questions to measure each of the constructs (Zhou & Zhang, 2019; Barbu et al., 2018). Most of the literature reviews used between 2 to 5 measurement questions for their constructs, that is why the authors considered these numbers sufficient to measure each of the constructs.

The questions were segmented based on the constructs. In the survey, authors used a 7-point Likert scale that is [(1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neither agree nor disagree, (5) somewhat agree, (6) agree, and (7) strongly agree] (Wong, 2013).

Some measures were taken as general and some were from different literature based on subscription-based services/access-based services relevant to the research.

3.5 Sample

The sample should be representative of the population of interest, which in this case is consumers who use or own white goods. All the data is based on a survey questionnaire which has been converted into an Excel sheet and used as input to the software, that is PLS-SEM to complete the analysis. Furthermore, to ensure the reliability and validity of the research findings, it is important to have a representative sample of the population of interest. In this research, authors have targeted consumers of white goods to analyze the data on their perception and the impact of the decoupling of product ownership. Therefore, a sample that reflects the characteristics of the larger population has been selected. Accordingly, the authors chose to conduct a quantitative analysis based on the target sample size of 280 participants.

3.6 Data Collection

The target population for this research includes both users and non-users who are familiar or unfamiliar with subscription-based services. The authors targeted respondents according to their age: 18-25, 26-30, 31-35, 36-40, 41-45, and 46 plus and country of residence which mainly was Sweden. By including a diverse range of participants, the research aims to ensure that the findings can be applied to a wider population of subscription-based service users and non-users, regardless of their age, gender, or place of residence.

To collect data from the targeted sample, a survey questionnaire has been designed as mentioned in the earlier paragraph and the responses have been listed and entered into an Excel sheet so that it can be used for the analysis. This data has been then analyzed by using PLS-SEM software to identify the impacts of decoupling of product ownership on consumers' perception of all the variables mentioned above and the generated hypothesis has been tested as per the constructs of the model. The process of selecting a representative sample and using a survey questionnaire to collect data, and analyzing it using PLS-SEM software helped in this research to obtain reliable and valid research findings. The authors have used PLS-SEM software as a primary tool to analyze the results. This has enabled the research to draw

conclusions and make connections that are relevant to the population of interest and have practical implications.

Several techniques have been used to contact potential participants to reach a broader range of people regardless the age, gender, and place of residence in order to ensure a demographically diverse sample. These included focusing on people from various backgrounds and occupations, such as students, housewives, managers, social media managers, software developers, teachers, etc. In addition, Facebook, Instagram, Whatsapp, Messenger, online survey-sharing services, etc., different kinds of platforms have been used to share the survey link. These platforms were chosen due to their convenience and efficiency in reaching the target customers swiftly and easily. Also, the survey link was shared in different groups on social media sites like Facebook and WhatsApp. This approach allowed the authors to connect with a diverse group of respondents from different countries, improving the generalizability of the research. During the 15-day data-gathering period, a total of 285 replies were received.

In the survey there may be a downside, that is the sample may not accurately represent the entire population of subscription-based service users and non-users. Also, the participants who voluntarily choose to participate in the survey may have certain characteristics or preferences that differ from the broader population.

3.7 Data Analysis

PLS-SEM is a suitable analytical tool for testing complex models, especially when sample sizes are small, and theoretical support is limited (Hair et al., 2021). In this research, PLS-SEM was chosen since the complex constructs have been used to analyze the perceptions, opinions, and dispositions about the subscription-based service. The authors have chosen to utilize PLS-SEM as the primary analytical tool to analyze the research results. By employing PLS-SEM, the authors aimed to ensure a robust and comprehensive analysis of the data.

SmartPLS is a widely used software for Partial Least Squares Structural Equation Modeling, which is commonly employed by marketing researchers to test linear and causal models (Wong, 2013). PLS-SEM is considered as an effective analytical technique for some specific types of study because it offers a reliable and adaptable method for modeling complex interactions in data (Ringle and Sarstedt, 2016). The tool was used to observe the impact of

decoupling of product ownership on consumers' perception of the chosen variables of this thesis model.

Though authors tried to incorporate the concept of decoupling product ownership and finding out its impact on other indicators; psychological value, social value, monetary value, brand image, brand attachment, brand loyalty, service quality, and product quality & performance. PLS-SEM is well-suited for this analysis since the impact of decoupling of product ownership on consumers' perception cannot be observed or measured directly, but can be inferred or estimated through observable indicators. In this research, the authors used SmartPLS to identify the cause-and-effect relationships between decoupling of product ownership and its other constructs.

3.8 Methodological Limitations

The main limitation of this research is the way the sample was collected. The online survey was shared in digital spaces, which mostly results in non-probability samples. This means that the researchers did not have control over who answered the questionnaire, leading to self-selection bias. Random samples are less costly and less time-consuming which makes it easier to develop hypotheses for exploratory research. The next paragraphs will discuss limitations based on the authors' own logic and reasoning.

As mentioned earlier, the model aims to analyze the impact of decoupling of product ownership on consumers' perception of subscription-based services, however, despite the service being similar across different countries, there may be variations in customer experiences based on demography. These differences may be due to customers' perceptions varying at different age ranges and occupations. Furthermore, there may be concerns regarding the accuracy of the sample. Ideally, the authors would want participants who complete the survey with altruistic intentions and without any hidden motives. However, when distributing the survey through multiple online channels, such as Facebook groups, Whatsapp, etc., there may be validity issues with certain responses. For instance, individuals may fill out the survey without paying attention to the questions or ask the survey owner to suggest a response for any question. This could lead to biased responses, as individuals may act selfishly without considering the implications on the survey's validity.

3.9 Ethical Considerations

Certain ethical considerations were taken into account while designing the survey. The survey was kept completely anonymous to ensure confidentiality. Additionally, the survey participants were informed about the research's purpose, and confidentiality, and were asked for their consent to use their anonymous responses for research purposes.

4. Findings/Results

This chapter will focus on the obtained results from the survey. The authors will analyze the perceptions of the customers of the brand, value, and use if ownership is decoupled from the product, by using the data. First, it will focus on the general information that we received related to demographics, later followed by the assessment of the model with the help of the measures that we received using PLS. Furthermore, it will test nine hypotheses in turn and in detail, including an analysis of their significance in relation to the variable which is the decoupling of product ownership. In addition, the authors will analyze the effect of sustainability awareness as a mediator on the relationship between decoupling of product ownership and social value.

4.1 General Examination of Data

First of all, the authors have examined the data to ensure the removal of unreasonable response patterns. To identify that, the authors looked for odd responses for instance responses including the same name or email address or same response value for all the questions. Based on the mentioned criteria, such responses were deleted. The questionnaire shared for the survey had all questions marked as compulsory, thus there were no missing responses that otherwise could be a concern (Hair et al., 2017). Furthermore, the normal distribution is defined by the population means and standard deviation which helps to find the actual population mean (Malhotra, 2019), and by using the bootstrapping function of PLS, problems with data distribution have been addressed that were further away from the normal distribution were removed which could have reduced the significance of the variables (Hair et al., 2011). According to Hair et al. (2021 & 2017), the measure of kurtosis and skewness should be between +1 and -1, in contradiction to this, many researchers agree on the normal range for skewness as +2/-2 which is regarded as acceptable for proving a normal univariate distribution (Demir, 2022; Field, 2013 & 2009; Hair et al. 2011; Bryne, 2010), and kurtosis values between -7 and +7 are considered to be normal (Hair et al., 2011; Bryne, 2010). Accordingly, our data is reasonably within the limits of -2 and +2, suggesting it was fairly distributed and the responses are well answered.

4.2 Sample's Demographic

There were 285 respondents in total, of which 4 respondents were been removed due to some irregularities in the responses. Of the remaining 281 respondents, 128 have already used subscription-based access to white products whereas 153 respondents had never subscribed to such services. Based on the sample who responded to the survey, a quite high percentage of 46% have already used the subscription-based service at some point in time considering the novelty of the concept. Furthermore, this also suggests that there is great potential in the market that can be exploited which is 54%, of which 73% (39% of the total respondents) of the participants responded positively to subscribing to such a service in the future. While there is a very low percentage of the population who has responded that they might not want to use subscription-based services in the future in place of the ownership model.

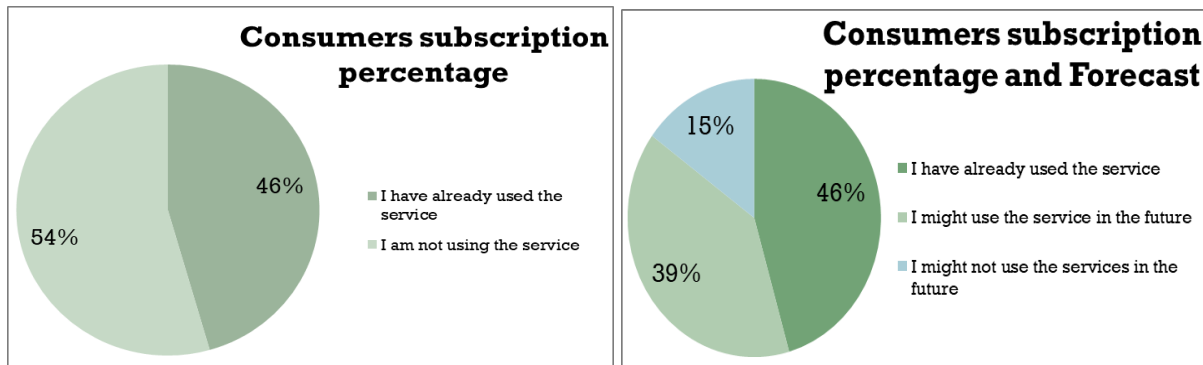


Figure 10: Consumers subscription percentage

Figure 11: Consumers subscription percentage and forecast

Of the response received from the survey, 54% of the respondents were male, 45% of the respondents were female whereas 1% chose not to mention their genders. Table 1 below demonstrates the user and non-user demographics of the respondents.

Continent	Number of respondents	User	Non-User
Europe	180	79	101
Asia	88	44	44
Africa	6	2	4
Middle East	5	2	3
Australia	1	1	0
North America	1	0	1

Table 1: Geographical locations for users and non-users of the service

The country wise table for geographical locations is provided in appendix below.

The majority of our population was between the ages of 18 to 35, which is almost 80% of the population. Although, this suggests that people within this range have mostly attempted the survey but this could also be a general guideline for the companies to focus on as it can be assumed that people within this age group might be more interested in the modern idea of subscribing to the product services. However, the remaining population still constitutes around 20% of the population and thus can not be ignored. Our results also reflect that the majority of the responses were from Europe and thus for generalizing the findings, it will be a better representation of the European population.

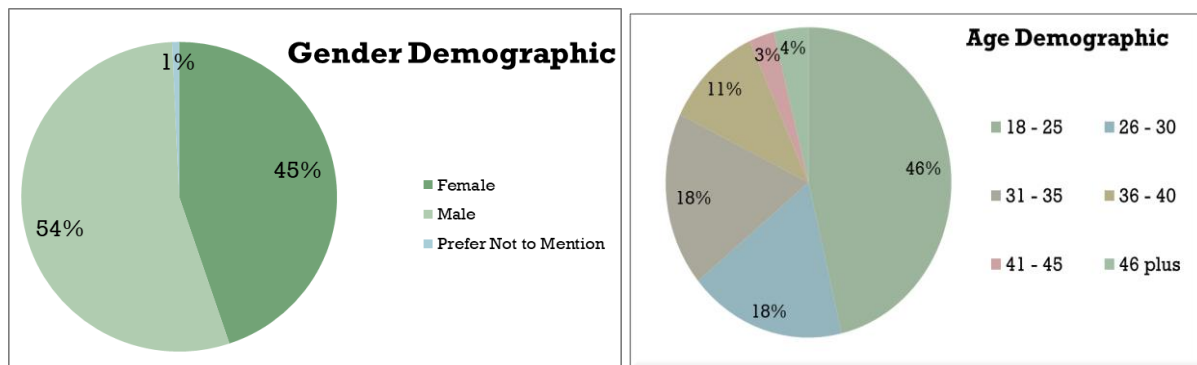


Figure 12: Gender demographic

Figure 13: Age demographic

4.3 Validity and Reliability - Reflective Measurement Model

It is critical to check the validity and reliability of the data before analyzing the results to ensure the quality of the data. With the help of the book recently written by Hair et al. (2021) named, “Partial least squares structural equation modeling (PLS-SEM) using R: A Workbook” is specifically used to check the validity of the data. It is a complete and comprehensive guideline for the reader on the use of the PLS-SEM software and has many updates that can make the reader understand the tools used to analyze the data as well as the updates available to the tools. The authors of this thesis have used mainly this book as a guideline to assess the data in further sections.

As already mentioned in the above section, based on the guidelines provided by Hair et al., (2021 & 2017) the authors have already examined the data for accuracy and missing information. The authors have chosen an outer model also known as the reflective

measurement model to represent the relationship between the variable and the constructs through an online survey questionnaire for each construct. According to Hair et al. (2017), the evaluation of validity and reliability is very critical for the accurate interpretation of the results. The next step is to review the path coefficients to check if they are statistically significant, for which authors used the outer model to evaluate the relationship between different latent variables or constructs in the model.

To start with the analysis of the outer model that comprises both validity and reliability, to be a good fit, the outer loadings or also called indicator loadings (Hair et al., 2021) should be at least 0.7. The outer loading is the degree to which a test is unrelated to other tests that assess distinct constructs is referred to as discriminant validity. A construct is a behavior, attitude, or notion that is not immediately observable in this context. The two tests reflecting distinct constructs should not be substantially connected to one other. If they are, you cannot be positive that they are not measuring the same thing. Thus, discriminant validity indicates the magnitude of the difference between constructs. Because the two constructs are unconnected, there should be no statistically significant association between the two test results. Accordingly, if there is a correlation, it is possible that both tests are assessing the same construct. This indicates a lack of discriminant validity. Discriminant validity is evaluated with convergent validity, which is analyzed in the later part of the same chapter. As already mentioned, the value should be at least 0.7, values between 0.4 and 0.7 can also be acceptable, however, according to Hair et al. (2017), it should be considered for removal when the composite reliability will increase above the recommended threshold value as a result of the removal. Although, as a general measure guideline, the recommended range for reflective indicators loadings should fall between 0.7 to 0.9, however, the values between 0.4 to 0.7 and 0.9 to 0.95 are also acceptable depending on the case. Accordingly, the results of outer loadings for this thesis model fit within the recommended range of 0.7 to 0.9 for the majority of the loadings. However, many of the loadings are within the acceptable range of 0.9 to 0.95 as shown in table 1. It is important to mention that the results for loadings 2.1 and 3.1 were not in the normal range and thus were been removed to increase the reliability of the model (see the questionnaire in the appendix). The reason for the inconsistency of the mentioned loadings could be that respondents may have misunderstood the question within the context.

Variables	Item label	Outer loadings
Decoupling Product Ownership	1.1	0.799
	1.3	0.953
Sustainability Awareness	10.1	0.859
	10.2	0.895
	10.3	0.887
Consumer's Perception of Psychological Value	2.2	0.932
	2.3	0.703
Consumer's Perception of Monetary Value	3.2	0.923
	3.3	0.919
Consumer's Perception of of Social Value	4.1	0.871
	4.2	0.901
Consumer's Perception of Brand Image	5.1	0.885
	5.2	0.856
	5.3	0.838
	5.4	0.779
Consumer's Perception of Brand Loyalty	6.1	0.904
	6.2	0.878
Consumer's Perception of Brand Attachment	7.1	0.952
	7.2	0.882
Consumer's Perception of Service Quality	8.1	0.769
	8.2	0.833
	8.3	0.769
	8.4	0.869
	8.5	0.866
Product Quality and performance	9.1	0.948
	9.2	0.945

Table 2: *Reflective indicators*

The internal consistency of a scale or composite score is measured by composite reliability, which is determined based on the intercorrelations between the items or indicators that form the scale. It is a typical reliability estimate in structural equation modeling (SEM) and is frequently presented in conjunction with other reliability estimates such as Cronbach's alpha. The authors have followed the composite reliability values as a primary indicator to assess the results and Cronbach's alpha in conjunction. Although there is no universally accepted recommended range for composite reliability and Cronbach's alpha, both follow the same range, which is values greater than 0.70 are generally considered acceptable for research purposes, and values greater than 0.80 are considered good or excellent (Hair et al., 2017). However, depending on the specific research context and the nature of the construct being measured, the recommended range may vary. The values of the results for composite reliability and Cronbach's alpha are above the acceptable value of 0.7, except for the

consumer's perception of psychological value. In addition, many of the values are above 0.8 which are considered to be good or excellent (Hair et al., 2017). Despite the removal of 2.1 loadings (questionnaire in the appendix) from the model that was related to consumer's perception of psychological value, the results are still below the accepted value which could be for the same reason as mentioned in the above paragraph.

Variables	Cronbach's alpha	Composite reliability
Consumer's Perception of Brand Attachment	0.820	0.927
Consumer's Perception of Brand Image	0.867	0.941
Consumer's Perception of Brand Loyalty	0.742	0.748
Consumer's Perception of Monetary Value	0.821	0.822
Consumer's Perception of Psychological Value	0.570	0.747
Consumer's Perception of Service Quality	0.881	0.903
Consumer's Perception of Social Value	0.727	0.735
Decoupling Product Ownership	0.734	0.982
Sustainability Awareness	0.855	0.857
Product Quality and performance	0.884	0.885

Table 3: *Internal consistency reliability*

The convergent validity evaluation comes next. Convergent validity is a sort of construct validity that describes how multiple measures of the same construct are connected to one another. In other words, convergent validity is established when expectedly linked measurements are found to be connected in a consistent and meaningful way (Hair et al., 2017; Kline, 2016; Campbell & Fiske, 1959). The required range for convergent validity varies depending on the study environment and the measures utilized, but a correlation value of 0.50 or above is typically seen as evidence of strong convergent validity (Hair et al., 2017). Convergent validity assesses how well a measure captures the same construct as other measures of that construct. It is significant because it demonstrates that a measure is measuring what it is supposed to measure and not simply random or unimportant parts of the concept. Convergent validity results are evaluated by computing the correlation coefficients between the measure in issue and other measures of the same concept (Hair et al., 2017; Kline, 2016; Campbell & Fiske, 1959). If the correlation coefficients are high and statistically significant, this indicates that the convergent validity is good. Convergent validity has a

shortcoming in that it does not offer information about how distinctive or distinct a measure is from other measures of the same concept. Another disadvantage is that it implies all measures of the same construct are equally valid, which is not necessarily true (Kline, 2016). As mentioned above, according to Hair et al. (2017), a correlation value of 0.50 or above is typically seen as evidence of strong convergent validity, the variables are above the threshold value in the proposed model.

Variables	Average variance extracted (AVE)
Consumer's Perception of Brand Attachment	0.842
Consumer's Perception of Brand Image	0.706
Consumer's Perception of Brand Loyalty	0.794
Consumer's Perception of Monetary Value	0.848
Consumer's Perception of Psychological Value	0.682
Consumer's Perception of Service Quality	0.677
Consumer's Perception of Social Value	0.785
Decoupling Product Ownership	0.773
Sustainability Awareness	0.776
Product Quality and performance	0.896

Table 4: *Convergent validity*

Discriminant validity is a sort of construct validity that relates to how closely distinct concept measurements are associated with one another. In other words, discriminant validity is proven when measurements that should be unrelated are found to be unconnected in a consistent and meaningful way (Hair et al., 2017; Kline, 2016; Campbell & Fiske, 1959). The suggested range for discriminant validity varies depending on the study environment and measurements utilized, but a correlation value of 0.30 or below is typically seen as evidence of high discriminant validity (Hair et al., 2017). Discriminant validity is used to determine how dissimilar a measure is from other measurements of other constructs. It is significant because it demonstrates that a measure is not just assessing random or unimportant characteristics of other constructs. The discriminant validity of the results is evaluated by calculating the correlation coefficients between the measure in question and measurements of other constructs. If the correlation coefficients are low and statistically insignificant, this indicates

that the discriminant validity is excellent (Hair et al., 2017; Kline, 2016). One weakness of discriminant validity is that it implies all measurements of distinct constructs are equally valid, which is not necessarily true. Another shortcoming is that it does not tell you how closely a measure is connected to other constructs theoretically related to the construct of interest (Kline, 2016). However, different researchers have different opinions about the recommended range of the measure, for instance, based on the work of Fornell and Larcker (1981), the square root of the AVE should be more than 0.50, ensuring that the construct explains at least 50% of the variation of its indicators and has a high degree of internal consistency.

Although there is no universal agreement, a good rule of thumb is that high correlations between scales or scale items are problematic for discriminant validity. When it comes to discriminant validity, a basic rule of thumb is that values between $r = 0.85$ to 0.90 are regarded as high (Henseler et al., 2015). To keep things simple, remember that correlations with unrelated constructs should always be weaker than those with related ones. Based on the results, the table below (Table - Discriminant Validity) demonstrates a good fit according to the criterion. The diagonal line is drawn to highlight the values of the related constructs which should be greater than the other values below that are unrelated constructs. For instance, the value for the consumer's perception of brand attachment which in this case is 0.918 with the related construct should be greater than the values of 0.593 , 0.678 , 0.285 , etc. of unrelated constructs as indicated by the downward direction of the vertical arrow.

	Consumer's Perception of Brand Attachment	Consumer's Perception of Brand Image	Consumer's Perception of Brand Loyalty	Consumer's Perception of Monetary Value	Consumer's Perception of Psychological Value	Consumer's Perception of Service Quality	Consumer's Perception of Social Value	Decoupling Product Ownership	Sustainability Awareness	Product Quality and performance
Consumer's Perception of Brand Attachment	0.918									
Consumer's Perception of Brand Image	0.593	0.840								
Consumer's Perception of Brand Loyalty	0.678	0.694	0.891							
Consumer's Perception of Monetary Value	0.285	0.412	0.412	0.921						
Consumer's Perception of Psychological Value	0.175	0.130	0.081	-0.028	0.826					
Consumer's Perception of Service Quality	0.707	0.740	0.745	0.444	0.051	0.823				
Consumer's Perception of Social Value	0.607	0.585	0.620	0.416	0.089	0.645	0.886			
Decoupling Product Ownership	0.320	0.255	0.325	0.274	0.175	0.333	0.301	0.879		
Sustainability Awareness	0.565	0.678	0.669	0.347	0.100	0.742	0.688	0.236	0.881	
Product Quality and performance	0.474	0.492	0.527	0.302	0.021	0.650	0.387	0.299	0.459	0.947

Table 5: *Discriminant Validity*

4.4 R Square and Q Square

R-square is known as a way to interpret the observed data. It reflects how appropriate is the regression model in explaining data under observation. For instance, an r-squared of 60% indicates that the regression model explains 60% of the variability seen in the target variable. R-squared values less than 0.5 are prevalent in any discipline that seeks to predict human perception or behavior. According to Falk and Miller (1992), R-square values must be equal to or more than 0.10 in order for the variance explained of a certain endogenous concept to be considered appropriate (Streukens & Leroi-Werelds, 2016). Following the mentioned approach, the model of the thesis fits well within the recommended range of 0.1 to 0.5, except for the consumer's perception of psychological value which based on the above rules shows no correlation between the construct.

Variables	R-square
Consumer's Perception of Brand Attachment	0.1
Consumer's Perception of Brand Image	0.1
Consumer's Perception of Brand Loyalty	0.1
Consumer's Perception of Monetary Value	0.1
Consumer's Perception of Psychological Value	0.0
Consumer's Perception of Service Quality	0.1
Consumer's Perception of Social Value	0.5
Product Quality and performance	0.1

Table 6: *R2 values*

According to Stone (1974), q-square predicts whether a model has predictive relevance or not (> 0 is good), and Q2 establishes the predictive relevance of endogenous constructs. According to Falk and Miller (1992), Q-square values larger than zero signify that your values are accurately rebuilt and that the model has predictive relevance. According to the criterion mentioned above, for the majority of the constructs, the results establish that values are well reconstructed and that the model has predictive relevance. The blindfolding procedure estimates the omitted data points and uses the estimations as input. This measure combines in-sample prediction with out-of-sample prediction since the Q2 value does not rely

on holdout samples but rather on a single omitted and imputed data point (Shmueli et al., 2019).

Variables	Q ²
Consumer's Perception of Brand Attachment	0.078
Consumer's Perception of Brand Image	0.038
Consumer's Perception of Brand Loyalty	0.078
Consumer's Perception of Monetary Value	0.059
Consumer's Perception of Psychological Value	0.013
Consumer's Perception of Service Quality	0.070
Consumer's Perception of Social Value	0.377
Decoupling Product Ownership	0.000
Sustainability Awareness	0.000
Product Quality and performance	0.073

Table 7: *Q2 values*

4.5 Hypotheses Testing

Path coefficient with +1 indicates a strong positive relation whereas -1 indicates a negative relation. Path coefficients close to zero are frequently statistically significant. However, in order to determine whether a path coefficient is statistically significant, the standard of error must be obtained. This is accomplished through the bootstrapping procedure. Bootstrapping is a resampling strategy used in partial least squares structural equation modeling (PLS-SEM) to assess the significance level of route coefficients. Bootstrapping is a non-parametric approach that can yield reliable estimates of standard errors, confidence intervals, and p-values without requiring assumptions about the distribution of the data (hair et al., 2017). Bootstrapping processes the data by repeating number of draws equal to original sample that results in one bootstrap sample. To calculate the significance level, 5000 bootstrap samples are typically generated. The typical threshold of relevance in marketing is 5%. p-values are commonly used to assess the level of significance. When using a 5% significance threshold,

the p-value must not be greater than 0.05. Table 8 below demonstrates that the hypotheses developed for the purpose of this research are proven to be significant.

Hypotheses	Proposed Relationship	Original sample	Sample mean	Standard deviation	P values
H1	Decoupling Product Ownership -> Consumer's Perception of Psychological Value	0.175	0.184	0.063	0.005
H2	Decoupling Product Ownership -> Consumer's Perception of of Social Value	0.154	0.156	0.048	0.001
H3	Decoupling Product Ownership -> Consumer's Perception of Monetary Value	0.274	0.278	0.065	0.000
H4	Decoupling Product Ownership -> Consumer's Perception of Brand Image	0.255	0.264	0.056	0.000
H5	Decoupling Product Ownership -> Consumer's Perception of Brand Attachment	0.320	0.325	0.053	0.000
H6	Decoupling Product Ownership -> Consumer's Perception of Brand Loyalty	0.325	0.330	0.058	0.000
H7	Decoupling Product Ownership -> Consumer's Perception of Service Quality	0.333	0.340	0.055	0.000
H8	Decoupling Product Ownership -> Product Quality and performance	0.299	0.300	0.058	0.000
H9	Sustainability Awareness -> Consumer's Perception of of Social Value	0.657	0.656	0.041	0.000

Table 8: *Testing Hypotheses Significance*

Furthermore, according to Hair et al. (2017), the bootstrapping approach enables determining a path coefficient that is significantly different from zero (Hair et al., 2017). It may be validated by looking at the confidence interval, which offers information on the path coefficient range based on data variance and sample size. With the use of confidence intervals, we may determine how inaccurate a point estimate could be by placing a margin of error around it. The sample mean and standard deviation parameters are typically constrained using the confidence interval. This allows researchers to assess the predictability of the calculated coefficient (Danks et. al., 2020). The shorter interval of hypothesis reflects significant effect whereas a longer interval suggests the non-significant effect. Table 9 shows that hypotheses H1, H2, and H3 show non-significant effects.

Hypotheses	Proposed Relationship	Origin sample	Sample mean	2.50%	97.50%
H1	Decoupling Product Ownership -> Consumer's Perception of Psychological Value	0.175	0.184	0.069	0.300
H2	Decoupling Product Ownership -> Consumer's Perception of of Social Value	0.154	0.156	0.061	0.250
H3	Decoupling Product Ownership -> Consumer's Perception of Monetary Value	0.274	0.278	0.149	0.404
H4	Decoupling Product Ownership -> Consumer's Perception of Brand Image	0.255	0.264	0.162	0.372
H5	Decoupling Product Ownership -> Consumer's Perception of Brand Attachment	0.320	0.325	0.221	0.427
H6	Decoupling Product Ownership -> Consumer's Perception of Brand Loyalty	0.325	0.330	0.211	0.439
H7	Decoupling Product Ownership -> Consumer's Perception of Service Quality	0.333	0.340	0.229	0.441
H8	Decoupling Product Ownership -> Product Quality and performance	0.299	0.300	0.186	0.413
H9	Sustainability Awareness -> Consumer's Perception of of Social Value	0.657	0.656	0.571	0.732

Table 9: Confidence Interval

When deciding whether the magnitude of the path coefficient is significant, the research context is crucial (Lohmöller, 1989). Therefore, in addition to interpreting individual results from structural models, researchers should also consider total effects, which are calculated as the sum of all direct effects (if any) and all indirect effects that connect one construct to another in the model. A more thorough understanding of the structural model linkages may be obtained by looking at the total effects between constructs, which includes all of their indirect effects (Aguirre-Urreta & Rönkkö, 2018). Based on the given criterion, decoupling product ownership has the strongest total effect on consumer's perception of service quality (0.333) followed by consumer's perception of brand loyalty (0.325), consumer perception of brand attachment (0.320), consumer's perception of product quality and performance (0.299), consumer's perception of monetary value (0.274), consumer's perception of brand image (0.255), consumer's perception of psychological value (0.175), and consumer's perception of social value (0.154). However, the mediator of sustainability awareness in this model has the strongest total effect on the consumer's perception of social value (0.657).

Hypotheses	Proposed Relationship	Origin sample
H1	Decoupling Product Ownership -> Consumer's Perception of Psychological Value	0.175
H2	Decoupling Product Ownership -> Consumer's Perception of of Social Value	0.154
H3	Decoupling Product Ownership -> Consumer's Perception of Monetary Value	0.274
H4	Decoupling Product Ownership -> Consumer's Perception of Brand Image	0.255
H5	Decoupling Product Ownership -> Consumer's Perception of Brand Attachment	0.320
H6	Decoupling Product Ownership -> Consumer's Perception of Brand Loyalty	0.325
H7	Decoupling Product Ownership -> Consumer's Perception of Service Quality	0.333
H8	Decoupling Product Ownership -> Product Quality and performance	0.299
H9	Sustainability Awareness -> Consumer's Perception of of Social Value	0.657

Table 10: Proposed relationship

5. Discussion

This discussion focuses on the online survey conducted by the authors accompanied by the PLS analysis. This thesis is aimed to examine the impact of decoupling product ownership on consumers' perception of brand image, brand attachment, brand loyalty, psychological value, social value, monetary value, service quality, product quality & performance, and sustainability awareness. In this chapter, the authors discuss the Results/Findings (above chapter) and connect them to the theoretical background of the research. The authors will start this chapter with a summary of the findings followed by a detailed discussion of the result for individual constructs and finally answer the research questions based on the findings.

5.1. Summary of Findings

After analyzing the survey findings, it has been found that the decoupling of product ownership for white goods has a statistically significant effect on the constructs of consumer's perception of brand image, brand attachment, brand loyalty, psychological value, social value, monetary value, service quality, product quality & performance, and sustainability awareness having a p-value below 0.05. Consumers' perception of service quality and consumers' perception of brand loyalty are the two dominant variables that customers consider while subscribing to the product service. Based on the results decoupling product ownership has the strongest total effect on consumer's perception of service quality (0.333) followed by consumer's perception of brand loyalty (0.325), consumer's perception of brand attachment (0.320), consumer's perception of product quality and performance (0.299), consumer's perception of monetary value (0.274), consumer's perception of brand image (0.255), consumer's perception of psychological value (0.175), and consumer's perception of social value (0.154). However, sustainability awareness which is the mediator in this model has the strongest total effect on the consumer's perception of social value (0.657).

H1	H2	H3	H4	H5	H6	H7	H8	H9
Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Decoupling of Product Ownership	Sustainability Awareness
+	+	+	+	+	+	+	+	+
Consumer's Perception of Brand Attachment	Consumer's Perception of Brand Image	Consumer's Perception of Brand Loyalty	Consumer's Perception of Monetary Value	Consumer's Perception of Psychological Value	Consumer's Perception of Service Quality	Consumer's Perception of Product Quality and performance	Consumer's Perception of Social Value	Consumer's Perception of Social Value

Figure 14: Hypothesis significance

These findings give a clear understanding that decoupling product ownership impacts consumer perceptions of brand image, brand attachment, brand loyalty, psychological value, social value, monetary value, service quality, and product quality & performance, thus has the potential for the companies to mold the perceptions of the customers. Furthermore, the introduction of sustainability awareness as a mediator to the consumer's perception of social value has strong effects and is therefore considered significant to shape consumer's perception.

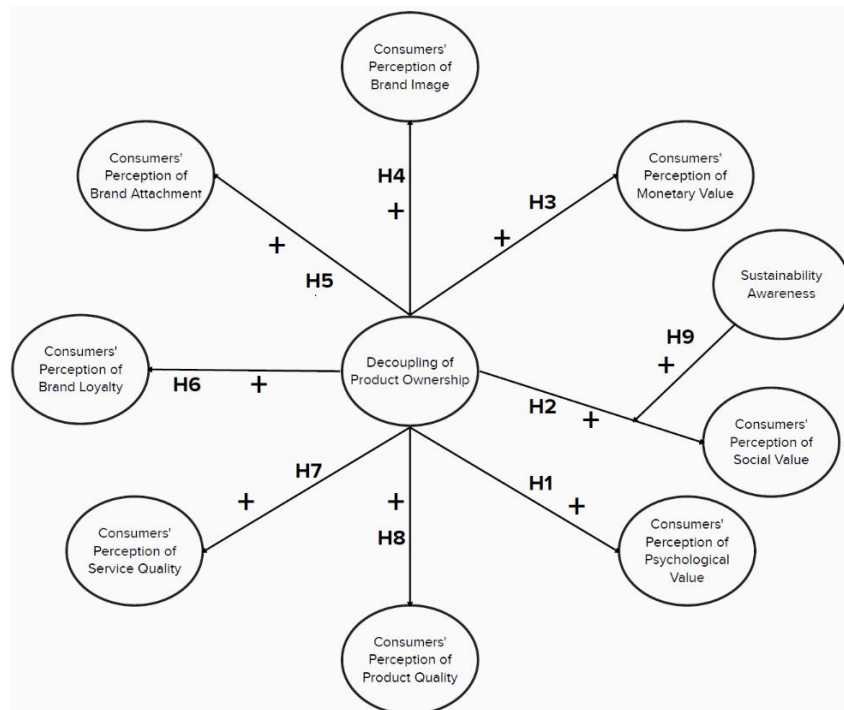


Figure 15: The proposed model

5.1.1 General discussion of the results

The authors of this thesis used a total of nine constructs to understand the impact of decoupling product ownership on consumers' perception of the selected variables. The results of the survey made it easy to understand how each variable is influenced by the effect of the decoupling of product ownership. Brand and value are broader concepts in the market research field and therefore thesis authors choose to define them into further categories. However, it is important to mention the categories made from the variables of brand and value are considered individual constructs and thus do not impact each other in any way in the model. Accordingly, the consumer's perception of the brand is categorized as brand image, brand loyalty, and brand attachment, whereas the consumer's perception of value is categorized as psychological value, monetary value, and social value. The other constructs in the model are service quality, product quality and performance (functionality), and sustainability awareness. Decoupling of product ownership and sustainability awareness are the independent variables. Information on each of these variables will be provided in the following subsections.

The first part of the survey questionnaire was very generic. It was to get the idea of the general perception of the respondent towards the decoupling of product ownership irrelevant of the white goods. This was to reflect on the overall perception of the customer about this novel concept. The results showed that 70% of the people are familiar with these services and 46% of the people have at some point used the service. However, 39% of the respondents showed positive responses that they might shift from an ownership model to a subscription-based approach specifically for white goods products in the future. Trendiness can be an important factor for people as 63% of the respondents thought that innovation is an important factor in relevance to decoupling of product ownership.

Several variables have an interdependency on each other but for this thesis, the authors are only discussing individual effects of decoupling of product ownership on the other variables. However, there is only one exception which is sustainability awareness acting as a mediator and having an effect on the consumer's perception of social value. The authors will discuss all the variables in detail further in this section.

5.2 Sustainability Awareness

Theoretically, the concepts of the circular economy focus largely on encouraging the creation of shared business models that have reduced reliance on primary and energy resources, to promote environmentally friendly solutions (Barbu et al., 2018). Although there is plenty of evidence in the theory and the supporting research on the importance of sustainability for consumers that affects their buying behavior, the results from this thesis survey are a bit different from the mentioned theories. Based on this thesis survey, only 32% of the respondents consider sustainability awareness as an important factor for their choice to opt for the subscription-based service to use white goods. In addition, 30% of the respondents thought that if they are going for decoupling product ownership they may contribute to the circular economy model. This could be a guiding factor for the companies as they can promote sustainability while promoting the subscription-based model for white goods to enhance the effects on consumers' perception of their subscription-based services. Consumer sustainability concern is not uniform, and sustainable business may have a direct impact on the general level of awareness. The magnitude of a company's sustainability advantage is also under the control of the sustainable business (Galbreth & Ghosh, 2013). Thus, it is important to convey to consumers that by taking the subscription-based services they are making the right choice for themselves while contributing to environment-friendly practices. Stefan (2023) endorses that although many of the consumers opted for subscription-based service out of their concerns for sustainability there are other factors that are more relevant for them.

Furthermore, the consumption behavior of customers is influenced by their intention to contribute towards conserving resources and their degree of environmentalism (Moeller and Wittkowski, 2010). Therefore, sustainability awareness is a significant factor that has a positive effect on the choice of using subscription-based services for white goods. According to Hwang and Griffiths (2017), millennials are more thoughtful of their choices that support environment-friendly practices. The same is reflected in the results of the survey, where 67% of the millennial range, 47% of the respondents showed an interest in subscription-based services for white goods. This suggests that if a customer is more concerned about sustainability, it is more probable that they will choose the sustainable consumption model. Moreover, this strengthens the statement of Moeller and Wittkowski (2010) that declare that the choice of non-ownership methods of consumption depends on the level of environmentalism of the consumer.

5.3 Consumer's Perception of Service Quality

Service quality also plays a vital role to promote subscription-based services for white goods. Based on the survey questionnaire, innovation is one of the factors of service quality. Being innovative and trendy might look appealing to people. Accordingly, 63% of the respondents thought using subscription-based products is an innovative concept. According to Moeller and Wittkowski (2010), consumers are more likely to go with trendy ideas that associate them with some symbolic power and strengthen their social identification. Nowadays, green is also a trendy concept, and behaving in a socially responsible way can provide the consumer with a feeling of social identity and a degree of trendy orientation. However, fashion is short-lived, and too much reliance on trends for future predictions can be deceitful. Furthermore, there could be many factors that attract customers towards subscription-based services but the quality of service is the most relevant for existing customers (Stefan, 2023; Hu et al., 2009).

In addition, there are several other factors that comprise the service quality based on our questionnaire. Convenience is also one of the main factors of the construct service quality. Strategies for promoting the decoupling of product ownership include product design and reparability, convenient and accessible channels, and the benefits of decoupling product ownership (Jaafar et al., 2019). Accordingly, the thesis authors defined convenience as hassle-free maintenance that will be done by the services providing company. According to Stefan (2023), "...maintenance is the key to our continued relationship with the customers". The questions were designed to ask how important it is for customers that they don't need to bother about the maintenance of the product. The responses show that people are likely to attract to the service also because of the fact that they will be provided with the scheduled cleaning and maintenance services. Stefan (2023) argues that the subscription for white goods might prove expensive in the long term, but the convenience of maintenance services counters that. Furthermore, Stefan (2023) also argues for the time-saving advantage that comes with maintenance services that allow customers to have flexibility with their schedules. Accordingly, the authors suggest that exceptional customer service is the key to attracting and retaining customers.

The other important factors of the construct service quality were accessibility, availability, and flexibility of the services. Participants of the survey valued these factors as significant when making the choice to subscribe to the service of providing white goods on rent. The factors taken into account here are actually associated with the burden of ownership,

according to Moeller and Wittkowski (2010), the factors that are associated with the burden of ownership are for instance risks and responsibilities. According to Stefan (2023), using subscription-based services allows the consumer to have access to luxury or expensive products which is also a driving force for decoupling product ownership. Thus, for the variable of service quality, all the factors that were selected by the thesis authors were found to be relevant and significant for the consumers when choosing subscription-based services to access the product. However, the easy access to the products with a minimum price of subscription fees implies that consumers can change the subscription and switch to another model of the product at any time could lead to consumers over switching to a newer model thus making the older products obsolete. This might motivate the manufacturing companies to be more innovative and produce new models more frequently, thus destroying the phenomenon of the circular economy that is also one of the main focuses of the access-based subscription model or decoupling of product ownership.

The last factor to discuss in the service quality is the usage frequency of the product. About 65% of the respondents responded to the survey that they expect to use the product more frequently if they get the product on subscription. Again it refers back to the hassle of cleaning and maintaining the product and suggests that consumers think of cleaning and maintaining the product as a great hassle, given that it will be done by the company may encourage them to overuse the product. Furthermore, this puts forward that overuse of the product can lead to overconsumption of energy resources and a product's shorter life span. As a consequence, it will drive in contradiction to the concept of circular economy and sustainability. Furthermore, it also suggests that companies need to design the product's subscription services very carefully which could address the dilemma of over-usage of the product.

5.4 Consumer's Perception of Product Quality and Performance

Consumers' perception of product quality and performance is another valuable construct. The effect of decoupling product ownership on customers' perceptions of the product's quality and performance is also an important factor in influencing consumers' happiness with the service that they are receiving. Although the factor itself is about the product, the quality and performance of the product depend on how the service providers maintain the product so that the consumers get the same quality as they perceived to get from a new product. The results show that the decoupling of product ownership has a significant relationship with the

consumer's perception of product quality and performance. The values are shown in the total effect table (see Results/Findings) reflect that its absolute contribution to the construct to which it is allocated is strong.

Consumers may be more willing to consider decoupling product ownership as a choice if they believe subscription-based services would offer them a better performance than owning the product outright due to the fact that it is maintained by the company. To make this happen companies providing subscription-based services should maintain the product quality and presentation to make the product as new in performance and appearance. Service providers can also take the opportunity to build the perception of consumers towards the product as more contemporary in technology and carefully maintained by the company which is better than if the customer would have to maintain himself. This will give confidence to the consumer in product reliability and better performance.

According to Stefan (2023), customers take less care of the product until it starts affecting the quality of performance. Sometimes consumers don't clean the product or use it as recommended which leads to poor performance results. That demands a careful approach from companies not just to maintain the product regularly but also to educate the clients for cautious use of the product. The thesis authors argue that accountability is an important factor that can help make customers more responsible in using the product consequently maintaining the product and resulting in a better perception of the quality of used products because the customer will assume the same level of care has been taken as been asked from them. However, this should be done carefully and thus does not imply any burden on the customer (burden of ownership by Moeller & Wittkowski, 2010). It is important to understand that any perceived drop in quality and performance of the product is likely to impact consumer happiness and desire to renew the subscription and thus future prospects for the service provider. The higher the perception of product quality and performance the happier and more satisfied will be the customer which would consequently result in increased profit and more sustainable financial streamlines for the companies.

5.5 Consumer's Perception of Monetary Value - Short-term Vs Long-term

There is a significant relationship between the decoupling of product ownership and consumers' perception of monetary value. It also has a high value for total effect in comparison to the many other constructs in the model. To start with, it is important to

understand that the shift from the traditional ownership model towards the subscription-based model has monetary implications for the consumer as well as for the customers. Consumers need to be aware of the fact that the subscription-based model follows a completely different financial structure.

There are several factors in the survey that were observed against this construct. Starting with the factor of paying more for the subscription-based service, consumers are not willing to pay more for the service. They want an efficient payment plan that might allow them to save money apart from the convenience of paying in installments (Hamzaoui Essoussi & Linton, 2010). This could be guiding for the companies when designing the monthly rent plans, keeping in view the importance of the plan that should be both cost-effective and cost-efficient. Further, consumers want the services to be cheaper in both the short run and long run. According to Schaefer et al. (2021), access-based services typically offer lower upfront costs, reduced maintenance expenses, and the ability to pay only for the actual time or usage of the product or service. Similarly, Stefan (2023) explains that subscription-based service is a “good financial deal” for consumers. He further explains the subscription-based service as an operating lease where one can borrow the product for use but ownership is not transferred (decoupling product ownership) (Schaefer et al., 2015). However, the perception of the monetary value of the service as understood from the survey is that consumers expect these services to be more expensive than if they buy the product outright. This could be due to the fact that they do not relate here to the hassle-free maintenance advantage that comes in a later phase of the product life-cycle if one owns the product or it could be that consumers simply want to pay less for more value that may be added to their lives through products or services. In addition to that the authors of this thesis argue that the participants of the survey found it difficult to differentiate between the short-term and long-term financial benefits of the subscription-based model. Subsequently, based on survey results when it comes to monetary value consumers are only concerned about paying less money irrelevant of the time period of paying it.

Furthermore, the perception varies from customer to customer as some thought switching to the subscription-based model would be cost-effective for them in the short run while others thought it would be cost-effective in the long run. However, many of the consumers understood the fact that a subscription-based model would save them money at least in the long run, for instance by not spending on the maintenance of the product when it becomes

due in the later phase of the product life-cycle (Long-term). This is the part where more than 80% of the respondents agreed. Stefan (2023) argues that the subscription for white goods might prove expensive in the long term, but the cost of maintenance services counters that. This is a clear indication for the companies that maintenance services are very important for the consumers and thus should be focused on delivering the best to the customer in terms of maintenance of the product. This would be a positive addition to their perception of the monetary value of the subscription-based model.

Moreover, companies may be able to attract new customers and maintain existing ones by giving more monetary value through subscription-based services, that is if they can successfully develop the perception of the consumer that they are getting more value for money. This might result in increased earnings for businesses. Nevertheless, it might be claimed that subscription-based services are beneficial to both businesses and customers. On one hand, customers can obtain their desired specific white goods by paying less than the full amount for the product, and on the other hand, this could result in increased sales volumes for the companies, leading to additional benefits associated with higher sales, such as bulk discounts from their suppliers. Despite the financial benefits for the companies, there may be many other implications of the transition from traditional ownership to a subscription-based model. For example, when a company sells white goods directly to consumers or business clients, e.g. landlords, the company receives cash for every unit sold, whereas in subscription-based business models, companies must wait years before receiving a return on their investment (Stefan, 2023), resulting in an increase in cash payback period. Furthermore, the subscription-based model exposes companies to many other factors such as fluctuations in returns, uncertainties with cashflows, difficulty in forecasting, etc. that subsequently add to financial risks for the companies. According to Arianii et al. (2019), decoupling product ownership raises the total cost of ownership and causes uncertainty. Therefore companies need to be careful of the transition from the ownership model to the subscription-based model so as not to jeopardize their existence.

5.6 Consumer's Perception of Brand Loyalty

According to research findings, the decoupling of product ownership also has a significant impact on brand loyalty. Customers' perception of brand loyalty is influenced by their engagement with subscription-based services and their experience with the brand. Although the effects of decoupling product ownership on brand loyalty may vary, there is evidence to

suggest that it can positively influence certain aspects such as customer satisfaction, trust, and commitment. Brand loyalty becomes essential in the emerging trend when consumers switch from a traditional ownership model to more adaptable and sustainable alternatives like renting, sharing, and subscription-based services, as it enables brands to keep a loyal customer base even as the concept of ownership changes (Mellens et al., 1996). The study indicates that consumers who engage with subscription-based services tend to develop a sense of trust and commitment toward the brand. By offering flexible and sustainable alternatives, brands can enhance customer satisfaction and provide a convenient and hassle-free experience, which in turn fosters loyalty. Customers who perceive a brand as being dedicated to the circular economy and environmentally responsible are more likely to maintain their loyalty and continue their subscriptions.

Moreover, the convenience and personalized experiences in terms of price-efficient subscription plans provided by subscription-based services can contribute to customer loyalty. When customers feel that a brand understands their needs and preferences, they are more inclined to remain loyal and continue their subscription. Additionally, brands that prioritize customer engagement, communication, and address concerns effectively are more likely to cultivate brand loyalty. Therefore, by consistently delivering value and meeting customer expectations, brands can foster a loyal customer base that sees the benefits of the subscription model and remains engaged with the brand over time.

It is important for brands to recognize that while sustainability and environmental responsibility are influential factors in brand loyalty, they should also consider other factors such as product quality, pricing, and convenience in their overall business strategies. Thus, by balancing these elements and consistently delivering value, brands can effectively strengthen brand loyalty in the context of decoupling product ownership. Furthermore, companies can introduce loyalty programs that reward customers for their ongoing subscriptions and engagement. Other incentives that a company can offer are for instance exclusive discounts, early access to new releases, or special perks for long-term subscribers. This not only encourages customers in the short term but also incentivizes customers to remain loyal to the brand.

5.7 Consumer's Perception of Brand Image

According to the findings of the study, decoupling of product ownership has a substantial association with customer perception of brand image, indicating that decoupling of product ownership would affect the consumer's overall perception of the brand. However, the effects of decoupling of product ownership on the variable are considerable, but low, except for consumer perception of - psychological value and social value. The questions were focused on the brand reputation, image, and commitment criteria. The majority of respondents said that employing subscription-based services made a brand appear more favorable and reputable to them. In addition, as compared to the old linear economic model, consumers perceive a business to be more socially responsible and dedicated to the circular economy if it offers subscription-based services, thus improving the consumer's perception of brand image.

To attract new customers and retain existing clients, brand image can be a crucial factor. Customers prefer to subscribe to a product if they think the brand is favorable to the environment (Pickett-Baker & Ozai, 2008). Therefore, white goods companies can enhance their brand image by emphasizing their commitment to environment-friendly practices and offering subscription-based services, further enabling them to retain existing customers and attract new ones (Laroche et al., 2001). Nevertheless, it is important for brands to consider that sustainability is just one of many factors that shape customer perceptions, and they must also reflect other factors such as price, quality, and convenience (Jaafar et al., 2019) when developing their business strategies.

5.8- Effect of Decoupling of product ownership on consumer perception

The results of the survey show that decoupling product ownership or access-based consumption has been found to have an overall positive impact on consumer's perception of - psychological value, social value, monetary value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance for white goods over the traditional ownership model. The authors of this thesis will now discuss all the constructs in detail excluding the constructs that have been already discussed in this chapter.

5.8.1 Consumer's Perception of Brand Attachment

According to the results, the construct of consumer's perception of brand attachment is significantly affected by the decoupling of product ownership. It is the third important

construct in the model after consumers' perception of service quality and consumer's perception of brand loyalty. The questions asked of the participants of the survey include factors like attachment and trust. The majority of respondents stated that using subscription-based services will increase their attachment to the brand and also the reliability of the brand. Additionally, respondents are found to see the company more favorably if it delivers subscription-based services than they did under the previous linear economic model because they believe it to be more committed to the circular economy.

Nevertheless, brand attachment plays a significant role in the context of decoupling product ownership. In an emerging trend, when consumers are shifting from a traditional ownership model to more flexible and sustainable alternatives such as renting, sharing, and subscription-based service, brand attachment becomes crucial as it enables brands to maintain a loyal customer base even when the concept of ownership is changing. When consumers develop a strong emotional connection with a brand, they are more likely to choose that brand's offerings, regardless of whether they physically own the product or simply have access to it temporarily. confident in their choice to opt for a brand's shared or rented products. Furthermore, strong brand attachment encourages consumers to actively engage with the brand, provide feedback, and even advocate for it, contributing to the brand's growth and success in the decoupled ownership landscape.

5.8.2 Consumer's Perception of Psychological Value

The survey results demonstrate that consumers' perception of psychological value is a significant variable that is directly impacted by the decoupling of product ownership. Psychological value relates to the consumer's emotions; in other words, it might be to some extent the consumer's emotional attachment to the product and the emotional component of possessing something. The construct is significant but decoupling of product ownership has a very low effect on the variable among all the other variables, except for the consumer's perception of social value, which has the lowest effect.

Psychological value relates to the emotional connection consumers have with a product (Shu and Peck, 2011). Consumers usually feel connected with the product or the way the product is being used, for instance, consumers might feel emotional about the product that is being used by their parents for a long time and they might have grown up using those products or see them as part of their family tradition to use a specific brand or product model in a certain

way. The subject under consideration is how tough it is for them to separate themselves from the ownership element (Catulli et al., 2013) since it is the pattern they have observed to be followed throughout their lives in their surroundings. On the contrary, some consumers might not feel the same way and are more concerned with present experiences or the experiences of the people around them. Their focus would be the upgradation of the product and the way they are being used. Therefore, to them, the psychological value may include the feelings of comfort when subscribing to the white goods, which consequently leads to increased user satisfaction. Therefore, choosing a subscription-based model over a traditional ownership model would be more attractive to such consumers.

Depending on the opinion of the buyer, whether they choose to pay outright or go for a subscription to utilize the product, this will also vary with the type of goods. As our research is limited to white goods but in the case of other products it can be different. For instance, purchases like homes and vehicles are seen as long-term investments and hence might be valued differently. Most people may opt to go for owning the apartment in the long-term but their decision might be otherwise for the short-term choices. Thus, the perception of psychological value would also depend on the type of purchase. Accordingly, in the long term, the perception to possess would exceed the apparent advantages of economic models based on subscriptions and temporary usage.

5.8.3 Consumer's Perception of Social Value

According to the results, consumers' perception of social value is a significant variable that is directly impacted by the decoupling of product ownership, though it is the least affected by decoupling of product ownership. Sharing resources and utilizing them more efficiently contribute to sustainability efforts and promote a sustainable lifestyle, enhancing the social value experienced by consumers (Bardhi & Eckhardt, 2012; Gadeikienė & Švarcaitė, 2021). Therefore, the authors of the thesis also used sustainability awareness as a mediating construct that has increased the total effects of decoupling of product ownership on social value. Thus it is crucial to understand that the perception of the consumers changes with the level of awareness about sustainability. However, although subjective norm does not substantially predict purchase intention, consumer attitude and perceived behavioral control do (Paul et al., 2016). Nevertheless, many of the participants of the survey showed less interest in sustainable practices. Therefore, the results reflect that customers liked the idea of having access to the products, empowering them and widening their range of goods and

services (Dillahun & Malone, 2015). However, the easy availability of products can contribute to a phenomenon known as overconsumption, where individuals consume more than they actually need. Overconsumption often occurs when products are readily accessible, affordable, and marketed effectively. The convenience and abundance of products can lead to impulsive buying behaviors and a culture of excessive consumption. Customers might feel more socially valued using and switching between models and products (Benjaafar et al., 2019; Mason, 1984). The thesis authors argue for sustainability and suggest companies to highlight the importance of sustainable practices to save the environment. Nevertheless, consumer behavior and the perception of value are influenced by living standards, emphasizing the importance of sustainability and environmentally friendly offerings (White et al., 2019; Shao & Ünal, 2019).

Additionally, if customers often replace their white goods through subscription-based services, it might shorten the products' useful lives and eventually increase the amount of waste produced. White goods companies may need to rethink how they handle subscription-based services in order to counter this issue. They may provide more environmentally friendly choices, such as subscription programs that encourage the upkeep and repair of current products as opposed to continually replacing them with new ones. Additionally, they should provide incentives to clients who recycle their old goods and buy new items made of environmentally friendly materials. White goods companies may lessen their impact on the environment and increase client brand loyalty by adopting a more sustainable approach to subscription-based services.

6. Conclusion

With efficient access to products and services, the sharing economy, which is a component of the circular economy, has encouraged and empowered consumers to engage in sustainable consumption. The importance of decoupling product ownership can not be ignored in the context of the circular economy. The authors tried to develop the model in an effort to capture the importance of the driver of decoupling of product ownership for the variables of consumer's perception of - psychological value, social value, monetary value, brand image, brand attachment, brand loyalty, service quality, and product quality and performance.

The results have shown that all the variables will be influenced by the decoupling of product ownership and have a significant relationship with it. Nevertheless, the result of the decoupling of product ownership has the strongest effect on consumers' perception of service quality, followed by consumers' perception of - brand loyalty, brand attachment, product quality and performance, and monetary value. However, other variables of consumer's perception of - brand image, psychological value, and social value are also important in the context of decoupling of product ownership but are comparatively less significant than the variables mentioned in the preceding sentence. However, the mediator of sustainability awareness in this model has the strongest effect on the consumer's perception of social value.

Nevertheless, all of the variables of the model are significant since they paint a clear picture when taken together in relation to the decoupling of product ownership. However, results reflect that the construct consumers' perception of monetary value is less important than many of the other constructs in the model, the authors take the view that monetary value is crucial for the customers, and as explained in the discussion part of this chapter.

Furthermore, the result also reflects that service quality is the most important construct of the model. The effect of decoupling product ownership is significant on service quality, which encompasses the elements of maintenance, convenience, accessibility, and availability. Nevertheless, the authors consider these elements as a burden of ownership, which subsequently is being removed by shifting to a subscription-based model. The participants of the survey perceived the construct's elements as important while considering the subscription-based services. Therefore, the thesis's authors suggest managers pay attention to the construct, and improving consumers' perception of service quality is the key to the retention of customers which may consequently attract new customers by word of mouth.

Although the current research suggests that the decoupling of product ownership may result in a loss in quality control and accountability (see *Discussion*), empirical evidence through which this impact occurs is scarce. Nevertheless, the authors of the thesis contend that accountability is a crucial element that can encourage customers to use a product responsibly, thereby maintaining it and improving the perception of the quality of used products because the customer will assume the same level of care has been taken as has been requested of them. Furthermore, the thesis authors recommend adopting practices by the managers that businesses may use to ensure good product quality through increased accountability in subscription-based models. For example, proper guidelines should be given by the service providers to the clients on how to use the product and when to ask for support from the company to clean it. However, this should be done cautiously and should not imply any burden on the customer (burden of ownership).

To sum up, the findings of this study highlight the significance of decoupling product ownership in the context of the circular economy and its impact on various variables based on consumers' perceptions. While variables such as brand image, psychological value, and social value also play a role, they are comparatively less significant. Nevertheless, sustainability awareness acts as a strong mediator for consumers' perception of social value. However, the perception of service quality emerges as the most important construct, emphasizing the importance of maintaining convenience, accessibility, and availability in the shift toward subscription-based models. Furthermore, accountability is identified as a crucial element that can enhance customers' perception of product quality in subscription-based models, and managers should adopt practices to ensure accountability without burdening the customer. Overall, this research contributes to understanding the impacts of decoupling product ownership on various variables and underscores the role of the sharing economy in promoting sustainable consumption.

The thesis authors have tried to build a model to conceptualize the impacts of decoupling product ownership of the variables that were not studied earlier and believe that successfully contributed to serving the research that was intended at the beginning in theoretical and practical contexts. In conclusion, sharing economy facilitates following the principles of the circular economy and offers a promising path toward a sustainable future, where resources are preserved, waste is minimized, and economic growth is decoupled from environmental degradation.

6.1 Managerial Implications

This section of the thesis focuses on the discussion of some of the key management implications. Based on the results of the research, the management implications in this section have been drawn.

The results demonstrate that sustainability awareness is an important factor that affects the perception of consumers in the context of the decoupling of product ownership. Consumers who are environmentalists have shown more interest in shifting towards a subscription-based model. Thus, managers of subscription-based service companies should promote their sustainable practices in order to attract an increased number of customers, at least the ones who are more concerned about environmental factors. Nevertheless, the authors also found that sustainability awareness is also dependent on demographics, specifically geographical distribution (country of origin). According to empirical data, consumers in developed nations care more about the environment than customers in developing nations (Paul et al., 2016). It suggests that managers should set the priority to target the customers. However, the detailed discussion on demographics does not fall under the scope of this thesis and will not be discussed further.

Furthermore, the results reflect that many participants are unfamiliar with the subscription-based services specifically for white goods (see *Discussion*) signifying the marketing requirement to capture the potential market. Managers can focus on both groups of consumers who are unfamiliar with the services and also who perceive that subscription-based services are less cost-effective and design marketing strategies accordingly.

As mentioned in the first part of the discussion, based on the results consumers' perception of monetary value is of less importance compared to the other constructs in the model. The authors argue that the transition from the traditional ownership model to the subscription-based model might not be perceived as cost-effective by the participants. Managers of service-providing companies need to consider marketing activities that can promote the price advantages of the subscription plans apart from the other advantages of the model. In addition, this generates a need to design effective plans that can offer flexibility in the selection of suitable options according to consumers' needs and frequency of use. Furthermore, the authors suggest that managers should focus on the millennial generation to

offer discounts as the majority of the participants of the survey who are using or have shown their interest in using the subscription-based service in the future are between this age range.

Nevertheless, managers also need to consider the relative novelty of the idea of subscription-based service for white goods and need to focus on pricing strategies. Yao et al. (2012) argue for the importance of pricing strategy for new ideas. Accordingly, by offering inexpensive price plans for the service they can attract more customers consequently leading to high market share. Furthermore, considering new entrants in the market, price penetration is arguably a good strategy, which may be increased depending on the later phases of the industry life-cycle. However, the authors argue that in the case of subscription-based models, the price will be more elastic. Thus, managers need to be mindful of the potential negative effects that come with increasing prices, which may cause customers to stop using the service altogether. To sum up, the authors of the thesis contend that managers should concentrate on raising overall customers' perceptions of monetary value by focusing on the decisions on product offers, pricing tactics, and marketing strategies.

In conclusion, the management implications derived from this research highlight several key considerations for companies operating in the realm of subscription-based services for white goods. Firstly, Sustainability awareness emerges as a significant factor influencing consumers' willingness to shift towards a subscription-based model, particularly among environmentally conscious individuals. The geographical distribution also plays a role, with consumers in developed nations showing higher environmental concern. Additionally, while the monetary value may be perceived as less important than other factors, managers should still emphasize the cost advantages of subscription plans and offer flexibility in options to cater to consumers' needs and usage patterns. Furthermore, there is a need for effective marketing strategies that target both consumers unfamiliar with such services and those who perceive subscription-based models as less cost-effective. The millennial generation presents a valuable target market for discounts and promotions. Moreover, managers must navigate the relative novelty of the subscription-based service concept and employ appropriate pricing strategies to attract customers while considering the elasticity of prices. Ultimately, by focusing on product offers, pricing tactics, and marketing strategies, managers can enhance customers' overall perception of monetary value and drive the success of subscription-based models in the white goods industry.

The authors of the thesis took each construct individually and attempted to research the effects of decoupling product ownership on each variable individually, whereas in real-world scenarios, many of the variables are interconnected with one another and a change in one will have an impact on other variables. This is an important point for managers to think through.

6.2 Limitations & Future Research

In this part the authors will highlight the limitations of the research and also focus on the area of future research.

To generalize the limitations related to the context of decoupling of ownership of this study, there are several factors that should be considered when evaluating the results of this research. However, the authors took into consideration different relevant aspects found in the literature such as consumers' perception of - psychological value, monetary value, social value, brand image, brand attachment, brand loyalty, service quality, product quality & performance, sustainability awareness and tried to connect all these factors with the decoupling of product ownership in order to gain an understanding of its impact and how the impact is considered by the customers as well as companies. To be specific, the authors have considered service quality and product quality & performance that will be influenced by the decoupling of product ownership. Although the above-mentioned factors have been studied earlier by the scholars, there is little evidence in the literature that connects these factors with the decoupling of ownership. Consequently, since the decoupling of product ownership is quite new, and there are still many aspects that are not well-researched or understood. Therefore, more research is required to gain a clear understanding of its implications.

The thesis authors focused on nine variables to understand the impact of the decoupling of product ownership related to the white goods industry. While these variables provided valuable insights, it is important to acknowledge that there could be other factors that also play a significant role in determining the effects of the decoupling of product ownership. Therefore, the authors suggest exploring additional factors that may be influenced by the decoupling of product ownership. By broadening the scope of the study to encompass additional variables, other researchers can paint a more comprehensive picture of the impact of the decoupling of product ownership in the white goods industry.

Moreover, existing literature has looked at the concept of ownership burden, focusing on the challenges and drawbacks associated with owning goods. However, there is a noticeable gap

in research concerning the potential advantages brought about by the decoupling of product ownership. This novel concept shifts attention toward customers' psychological perspectives, particularly their perceptions of owning goods outright instead of renting or leasing. By combining observations on customers' ownership perceptions with insights from academic literature on ownership burden, the concept of ownership advantage has emerged, opening up exciting avenues for future research. This novel concept highlights the potential benefits and opportunities that arise from the decoupling of product ownership, and therefore, future research should focus on further exploring the concept of ownership advantage.

Furthermore, the thesis authors have given limited attention to the relationship between service quality, product quality & performance, and decoupling of product ownership. These aspects were not broadly explored in the thesis, due to limitation of scope, leaving room for further investigation. It is worth considering whether the relationship between service quality and decoupling of product ownership, as well as product quality & performance and decoupling of product ownership, aligns with the findings of the study or otherwise. This research gap presents an opportunity for future studies to delve deeper into these relationships and provide a more comprehensive understanding of the impact of the decoupling of product ownership on service quality and product quality & performance.

In addition, the authors also found that sustainability awareness is influenced by demographics, particularly the geographical distribution (country of origin) of the customers. This finding implies that managers should prioritize their target customers based on these demographic factors. However, the detailed discussion of demographics does not fall under the scope of this thesis and has not been further explored.

Based on the above limitations and future research directions the authors believe that these future research directions will help to address the existing gaps in knowledge and contribute to a more comprehensive understanding of the topic. By investigating additional factors influenced by the decoupling of product ownership and further examining the relationship between service quality, product quality & performance, and decoupling of ownership, researchers can enhance the depth of knowledge in this field. These endeavors will not only provide valuable insights but also contribute to the development of effective strategies and approaches in the context of the decoupling of ownership.

7. References

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8. Appendix

Continent	Country	Number of respondents	User	Non-User
Europe	Sweden	163	73	90
Asia	Bangladesh	60	32	28
Asia	Pakistan	24	8	16
Europe	United Kingdom	7	3	4
Africa	Ghana	4	1	3
Europe	France	2	0	2
Europe	Germany	2	1	1
Middle East	United Arab Emirates	2	1	1
Australia	Australia	1	1	0
Europe	Belgium	1	0	1
North America	Canada	1	0	1
Europe	Italy	1	1	0
Asia	Japan	1	1	0
Asia	Malaysia	1	1	0
Asia	Nepal	1	1	0
Europe	Netherlands	1	0	1
Europe	Norway	1	0	1
Middle East	Qatar	1	0	1
Middle East	Sharjah	1	1	0
Europe	Spain	1	1	0
Africa	Sudan	1	1	0
Middle East	Syria	1	0	1
Africa	Tanzania	1	0	1
Asia	Thailand	1	1	0
Europe	Ukraine	1	0	1

Country wise geographical locations for users and non-users of the service

Questionnaire of Survey	
1.1	I am familiar with the subscription or access-based product services.
1.2	I have subscribed to subscription-based services for products at some point in time.
1.3	I think I will switch from an ownership approach to subscription-based services for white goods products in the future.
2.1	I think subscribing to a white goods service can provide the same level of satisfaction as owning the product outright.
2.2	I think the sense of ownership is important when making a decision to purchase or subscribe to white goods.
2.3	I think owning white goods provides you with a higher status compared to subscribing to them.
3.1	I am willing to pay more for subscription-based products compared to owning white goods.
3.2	I think I will save money (e.g. reduced upfront cost) in the SHORT RUN by subscribing to a product instead of owning it.
3.3	I think I will save money (e.g. lower maintenance expenses) in the LONG RUN by subscribing to use the product instead of owning it.
4.1	I feel socially responsible for choosing a subscription-based service for white goods.
4.2	I believe that choosing a subscription-based product service reflects positively on the social image of an environmentally-conscious consumer.
5.1	I think of brands positively if they offer a subscription-based product service for white goods.
5.2	I think subscription-based product service influences positively the consumer's perception of brand image.
5.3	I think subscription-based product service for white goods influences positively brand reputation.
5.4	I think the brand's commitment to a circular economy influences the decision to choose a subscription-based product service for white goods.
6.1	Based on my experience; I will recommend a white goods brand for subscription-based product service to others.
6.2	As long as I am satisfied, I will continue to use the subscription-based product service from the same brand for white goods.
7.1	I feel emotionally attached to a white goods brand that offers a subscription-based product service.
7.2	I feel a sense of trust toward a white goods brand that offers a subscription-based product service.
8.1	I value the convenience of subscribing to a white goods service (e.g. hassle-free maintenance) compared to managing the product yourself.
8.2	I think a white goods brand is more innovative if they offer a subscription-based product service.
8.3	I use or expect to use the white goods more frequently after subscribing to them.
8.4	I feel subscription-based product service has impacted or will impact positively, the ability to access white goods.
8.5	I think my experience with the usage has been or will be improved by the subscription-based product service in terms of flexibility and availability.
9.1	I think the QUALITY of white goods under a subscription-based service will be as good as the product that I will buy myself.
9.2	I think the PERFORMANCE of white goods under a subscription-based service will be as good as that of the product that I will buy myself.
10.1	I believe that customer awareness about sustainability will promote access-based subscriptions of white goods.
10.2	I believe that by subscribing to white goods, I can contribute to the circular economy.
10.3	I think a white goods brand that offers a subscription-based product service is environmentally friendly.

Hypotheses	Hypotheses Description
H1	Consumers using subscription-based services for white goods perceive higher psychological value than the consumers who own them
H2	Consumers using subscription-based services for white goods perceive higher social value than the consumers who own them
H3	Consumers using subscription-based services for white goods perceive higher monetary value than the consumers who own them
H4	Consumers using subscription-based services for white goods perceive a more positive image of the brand than consumers who own them
H5	Consumers using subscription-based services for white goods perceive to be more attached to the brand than consumers who own them
H6	Consumers using subscription-based services for white goods perceive to be more loyal to the brand than consumers who own them
H7	Consumers using subscription-based service for white goods perceive to get higher service quality than the consumers who own them
H8	Consumers using subscription-based services for white goods perceive to get higher product quality and performance than the consumers who own them
H9	Consumers who are environmentalists prefer to use subscription-based services for white goods than owning them