Rental Commerce in Consumer Electronics: Understanding Consumers' Attitudes and Intention to Rent

The Case of Wearables in Austria

Beatrice Hackl

Dissertation written under the supervision of Professor Miguel Fontes Rita

Dissertation submitted in partial fulfilment of requirements for the **MSc in Management with Specialization in Strategic Marketing**, at the Universidade Católica Portuguesa, January 2026.

Abstract

Title: Rental Commerce in Consumer Electronics: Understanding Consumers' Attitudes and Intention to Rent. The Case of Wearables in Austria.
Author: Beatrice Hackl

Over the last decade, consumer interest in rental commerce has increased. In categories such as fashion rental or car sharing, consumers increasingly choose temporary access over ownership, paying a fee to use products for a defined period. Despite this growing popularity in other categories, it remains unclear whether rental models could gain wider acceptance in consumer electronics, especially the wearable industry. Wearables face rapid innovation cycles and technological obsolescence, which can make ownership increasingly costly and short-lived. At the same time, rising sustainability awareness and concerns about electronic waste are changing how consumers relate to their tech.

This study therefore investigates what shapes consumers' attitudes towards renting wearables and how these attitudes translate into rental intention. Building on a Theory of Planned Behavior-inspired framework, this study combines eight semi-structured interviews with an online survey of 108 Austrian consumers.

Results show that rental intention is primarily driven by attitude and social influence. Knowledge of rental commerce, however, does not significantly predict intention once these other factors are considered. Attitudes are strengthened by perceived economic benefits and sustainability perceptions, while ownership concerns reduce attitudes. Flexibility and perceived performance risks did not add any explanatory power in the model. From a managerial perspective these findings suggest that providers should highlight tangible cost advantages and credible sustainability benefits and design offers that reduce perceived loss of control associated with not owning the device.

Keywords: rental commerce, access-based consumption, sharing economy, Theory of Planned Behavior, consumer behavior, sustainability, consumer electronics, wearables

Sumário

Título: Comércio de aluguer de produtos eletrónicos de consumo: compreender as atitudes e a intenção dos consumidores em alugar. O caso dos dispositivos vestíveis na Áustria.
Autor: Beatrice Hackl

Na última década, o interesse dos consumidores pelo comércio de aluguer aumentou. Em categorias como aluguer de moda ou car sharing, o acesso temporário substitui a propriedade, mediante o pagamento de uma taxa por um período definido. Apesar desta evolução, permanece incerto se modelos de aluguer podem ganhar aceitação na eletrónica de consumo, sobretudo em wearables. Estes dispositivos enfrentam ciclos rápidos de inovação e obsolescência, o que pode tornar a propriedade mais cara e de curta duração. A crescente consciência ambiental e as preocupações com resíduos eletrónicos estão também a alterar a relação dos consumidores com a tecnologia.

Este estudo investiga o que molda as atitudes face ao aluguer de wearables e como essas atitudes se traduzem em intenção de aluguer. Com base numa estrutura inspirada na Teoria do Comportamento Planeado, combina oito entrevistas semiestruturadas com um inquérito online a 108 consumidores austríacos.

Os resultados mostram que a intenção de alugar é impulsionada principalmente pela atitude e pela influência social. O conhecimento sobre comércio de aluguer não prevê significativamente a intenção quando estes fatores são considerados. As atitudes são reforçadas por benefícios económicos percebidos e por perceções de sustentabilidade, enquanto preocupações com a propriedade as reduzem. A flexibilidade e os riscos percebidos não acrescentaram poder explicativo ao modelo. Do ponto de vista da gestão, os fornecedores devem salientar vantagens tangíveis de custo e benefícios credíveis de sustentabilidade e desenhar ofertas que reduzam a perda percebida de controlo associada a não possuir o dispositivo.

Palavras-chave: comércio de aluguer, consumo baseado no acesso, economia partilhada, Teoria do Comportamento Planeado, comportamento do consumidor, sustentabilidade, eletrónica de consumo, dispositivos vestíveis

Acknowledgements

This dissertation marks the end of a very exciting chapter in my life. Moving to Lisbon, taking time away from work, pursuing my master's degree abroad. This step really influenced my personal and academic growth. Balancing this dissertation with work was challenging at times but the process has taught me resilience and commitment. I am deeply grateful to everyone who supported me along the way.

First, I would like to thank Professor Miguel Rita for his continuous support, motivation and guidance. His feedback was crucial for the development and quality of this thesis.

My heartfelt thanks go to my boyfriend Constantin, who supported me unconditionally every step along the way. His patience, encouragement and love helped me navigate the most demanding moments. Moreover, I would like to thank my parents, who made this whole academic journey possible. Thank you for always believing in me, encouraging me to take the next step and giving me the confidence to pursue my dreams. I would also like to thank my friends for their encouragement and kind words, which provided me motivation whenever it was needed.

Finally, I extend my appreciation to everyone who participated in this research. Those who took part in my interviews, completed the survey or supported my work in any other way. Your contribution was invaluable.

Thank you all.

Table of Contents

Table of Figures

Table of Tables

Table of Appendices

Glossary

B2B	Business to Business
B2C	Business to Consumer
SE	Sharing Economy
TPB	Theory of planned behavior
CE	Consumer Electronics
IoT	Internet of Things
VR	Virtual Reality
AR	Augmented Reality
AI	Artificial Intelligence
PSS	Product Service Systems
E-Waste	Electronic Waste
ANOVA	Analysis of Variance

1 Introduction

1.1 Background

Consumption models are shifting away from permanent ownership towards more flexible and sustainable forms of access. Rifkin already argued that the importance of ownership is decreasing while the use of the objects themselves is becoming more relevant than their possession (Rifkin, 2000). The sharing economy has introduced new forms of consumption, such as car sharing (e.g. ShareNow), accommodation platforms (e.g. AirBnB) or fashion rentals (e.g. Rent the Runway), demonstrating that consumers increasingly value access over ownership (Bardhi & Eckhardt, 2012; Lee & Chow, 2020). A study by PwC indicates that almost half of consumers in Austria have made use of sharing economy services over the past year. Sectors with the highest levels of engagement are Media and Entertainment, Accommodation and Transportation. Retail and Consumer Goods represent the fourth most frequently used category (Beutin, 2017). Recent research by the Austrian Retail Association points to a further shift in consumption patterns. The second-hand market is expanding three times faster than general retail. A large majority of consumers have already purchased used goods. This mainstreaming of re-use shows a growing openness to alternative consumption models beyond traditional ownership (Handelsverband Österreich, 2025). Moreover studies show that drivers such as economic value, flexibility, trust and sustainability but also barriers such as hygiene concerns, lack of ownership and risk perceptions shape the adoption in access-based consumption (Fota et al., 2019; Fritze et al., 2020). While especially the mobility and fashion industry have been extensively studied, the area of renting consumer electronics remains understudied, despite the rapid diffusion and frequent innovation cycles of such products. At the same time, the environmental urgency of electronic waste continues to increase. Global e-waste has almost doubled since 2010, while only about one-fifth is formally collected and recycled (Statista 2024a). This reinforces the need for more sustainable consumption patterns. In this context access-based consumption models such as renting offer a promising approach, as they extend product lifetimes and facilitate refurbishment as well as reuse. This overall shift highlights the relevance of investigating consumer acceptance of rental models in the consumer electronics sector.

1.2 Problem Statement and Research Questions

Considering the broad scope of the whole consumer electronics industry, this thesis will focus on the category of wearables. The potential of rental commerce for wearables remains unclear.

Understanding if and why Austrian consumers would choose renting over owning such devices, addresses both a theoretical gap and a practical question for established producers (such as Apple, Garmin or Oura) as well as for new firms entering the market. This study therefore aims to determine the key drivers and barriers influencing Austrian consumers' rental intention for wearables. Additionally, it examines how sustainability perceptions influence consumers behavioral (rental) intentions. To explain consumers rental intention towards wearables, this study adopts a Theory of Planned Behavior (TPB) inspired model by Ajzen (1991) as its theoretical foundation. In addition to the core TPB constructs of attitude and subjective norms, the model incorporates a control-belief (knowledge of rental commerce) as well as several context-specific beliefs relevant for rental decisions. By exploring how these factors shape consumer's attitudes towards renting wearables and in turn their rental intention, this research contributes to a better understanding of consumers openness towards access-based consumption in the electronics industry. In that sense, the research questions that guide the following thesis and strive to solve the research problem are: *Which factors shape Austrian consumers' attitudes towards renting wearables and their intention to rent and how does perceived sustainability influence this relationship?*

Research Question 1: Which drivers positively influence Austrian consumers' attitudes towards renting wearables and their rental intention?
Research Question 2: What factors act as barriers by lowering Austrian consumers' attitudes towards renting wearables and their rental intention?
Research Question 3: Does perceived sustainability influence consumers attitudes' towards renting wearables?

1.3 Dissertation Outline

This dissertation consists of five chapters. Chapter one introduces the research topic, outlines the problem statement and presents the research questions. Chapter two provides an overview of relevant academic literature offering a comprehensive understanding of the key variables used in this study. Additionally, this chapter presents the conceptual model derived from literature findings and outlines corresponding hypotheses. Chapter three describes the research methodology used to adequately address the research questions, applying a mixed-method approach. Chapter four presents the empirical results and evaluates the proposed hypotheses using statistical tests in SPSS. Finally in chapter five, a conclusion will be drawn and limitations as well as further research gaps will be identified.

2 Literature Review and Conceptual Framework

2.1 Sharing Economy

In recent years the "sharing economy" (SE) has gained considerable popularity and established itself as an increasingly relevant phenomenon across various industries. SE covers a wide range of behaviors and business models which makes it difficult to capture the concept within a single definition. Numerous attempts have been made to define the term and within academic literature a variety of related concepts and terminologies are often used as synonyms. From access-based-consumption (Bardhi & Eckhardt, 2012; Rifkin, 2000) to collaborative consumption (Benoit et al., 2017; Botsman & Rogers, 2010; Heinrichs, 2013) and rental commerce (Fota et al., 2019). Those models are consumer facing and emphasize temporary access rather than ownership. Other closely related models such as leasing, subscription-based services, product service systems (Mont, 2002) or hardware as a service extend this logic to business contexts where they highlight the integration of tangible products and value-adding services.

In contrast to traditional market models, which are based on ownership, the concept of the sharing economy refers to the access of using products and services among individuals. The business model itself is not entirely new, as its origins can be traced way back to business-to-business (B2B) models (like the use of machinery in agriculture and forestry) as well as business-to-consumer options (B2C) like laundries, ski- or video rentals or even public libraries (Puschmann & Alt, 2016).

PwC identified four key drivers behind the rapid expansion of the sharing economy model. These include the spread of advanced digital platforms and devices, the efforts to use material resources more efficiently, new consumer needs and changing behavior as well as social changes. Advanced digital platforms have enabled on demand transactions with lowered costs and allowed for a more efficient match of supply and demand. The sharing economy is also driven by the rational use of resources, since consumers can avoid the high cost of ownership, while providers can make income from underutilized assets. Moreover, consumers increasingly prefer flexible access over ownership and are becoming more conscious about sustainability. Finally, globalization makes it easier to spread sharing models, as diverse products and services are more easily accessible (Osztovits et al., 2015). Further benefits of collaborative consumption models include the extension of the useful life of products, maximizing the

utilization of each individual product, promoting durable products or postponing purchases (Leismann et al., 2013).

As we can see, there is a fundamental shift from an ownership-centric consumer behavior to one defined by the access itself and sharing. Especially in the digital age consumers are increasingly expressing identity and achieve utility without owning products. Consumers seem to be motivated by the desire for use-value and experiences over ownership (Belk, 2014). *Instead of buying and owning things, consumers want access to goods and prefer to pay for the experience of temporarily accessing them* (Bardhi & Eckhardt, 2012; Belk, 2014). This clearly shows a cultural shift where owning is no longer seen as necessary or even desirable. In the case of car ownership for example, younger generations view this as "prohibitively expensive" and burdensome, preferring convenient short-term access that frees them from the hassles of maintenance and storage. Besides that broader societal trends (like economic downturns, environmental concerns and urbanization) have impacted these attitudes (Belk, 2014). These developments indicate that consumer interest in access-based business models is given. Considering these broader cultural and societal shifts, rental and subscription models can be regarded as a future-oriented field of consumption.

2.2 Rental Commerce

Rental Commerce refers to a specific type of business model within the Sharing Economy, which has not yet been generally defined. Nevertheless, as mentioned above several studies have examined closely related concepts such as access-based services or collaborative consumption, all of which provide valuable entry points for this topic. While commercial retailers typically charge a fee for the temporary use of products, rental commerce is characterized by consumers entering into a tenancy agreement for the duration of the use. Consumers pay a fee for the duration of the use and are granted with full access to the product, with a minimum rental period defined by the retailer (Fota et al., 2019). This form of consumption is further characterized by its reliance on information and communication technologies to facilitate access to products and services. Moreover, this practice refers to pseudo-sharing, which does not describe sharing in a traditional sense but rather hypothetical since it more accurately describes short-term rental activities (Belk, 2014). A study by Fota et al (2019), describes six characteristics which are specific to rental commerce: (1) it is characterized as a business-to-consumer model where retailers offer consumer products for a temporary use, (2) via digital platforms, (3) involving consumer durable goods (for example

phones, refrigerators or clothing) used several times over a longer period of time, (4) may include a purchase option after the rental term, (5) with no community aspect (other than peer-to-peer sharing models) and (6) usually provide a broad assortment of product categories. This thesis will follow on the definition of rental commerce, while excluding peer-to-peer forms of exchange. As described the examined business model represents access-based rental platforms, in which the platform itself either owns or intermediates the products offered.

In such consumption models, there are usually three different actors: the platform provider, the peer service provider and the consumer. In the case of rental commerce platforms, there is a platform provider, who provides the technological infrastructure (including transactions and matchmaking between supply and demand). The peer service provider would be the manufacturer or brand that provides the original products, which the platform makes available for rental. And finally, there is the consumer who receives temporary access to the products in exchange for a recurring payment. This structure refers to a triadic framework, which was defined by Benoit et al. (2017), where ownership remains with the provider while the consumers benefit from flexible access and the platform coordinates the interaction between both sides.

2.2.1 Definition and characteristics of Consumer Electronics

The consumer electronics (CE) industry represents one of the most dynamic and innovation-driven sectors of the global economy. Consumer electronics encompass a range of electronic devices and gadgets intended for everyday use by individuals (smartphones, laptops, wearables, televisions, audio devices and household appliances). These products serve communication, productivity and entertainment purposes and include personal computing devices, audio- and video systems, mobile phones and smart home technology. The market is characterized by high product turnover rates and innovation cycles leading to shorter product life spans and high replacement demand. Besides that, changing consumer behavior and preferences as well as high demand for cost-effective, easy-to-use and high-performance devices shapes the market (Statista, 2024c). Digitalization and the Internet of Things (IoT) contribute to the dramatic development of the industry. They even open up new product categories like virtual reality (VR) headsets, augmented reality (AR) glasses or other artificial intelligence (AI) enabled gadgets. Despite economic fluctuations as well as supply-chain challenges the industry showed high resilience. Experts even predict further growth in the industry in upcoming years. For example, wearables have developed rapidly from niche products to mainstream consumer devices. Apple

and Samsung are the leading companies in the CE Industry. With it's iPad and the famous Apple Watch, Apple dominates the tablet market and the wearable industry (Sherif, 2025).

In the CE industry, there are multiple forms of obsolescence (from functional, psychological to economic) which together drive shorter product lifespans. Smartphones for instance are typically replaced after an average of two years. But not because they fail but due to rapid innovation cycles and consumers desire for the latest models (Proske et al., 2016). Indrawati et al. (2024) propose a model which links innovation adoption to obsolescence, where they demonstrate that frequent product launches and marketing stimuli trigger cognitive and affective responses that drive consumers to replace functioning devices. This cycle of innovation and replacement intensifies resource use and e-waste.

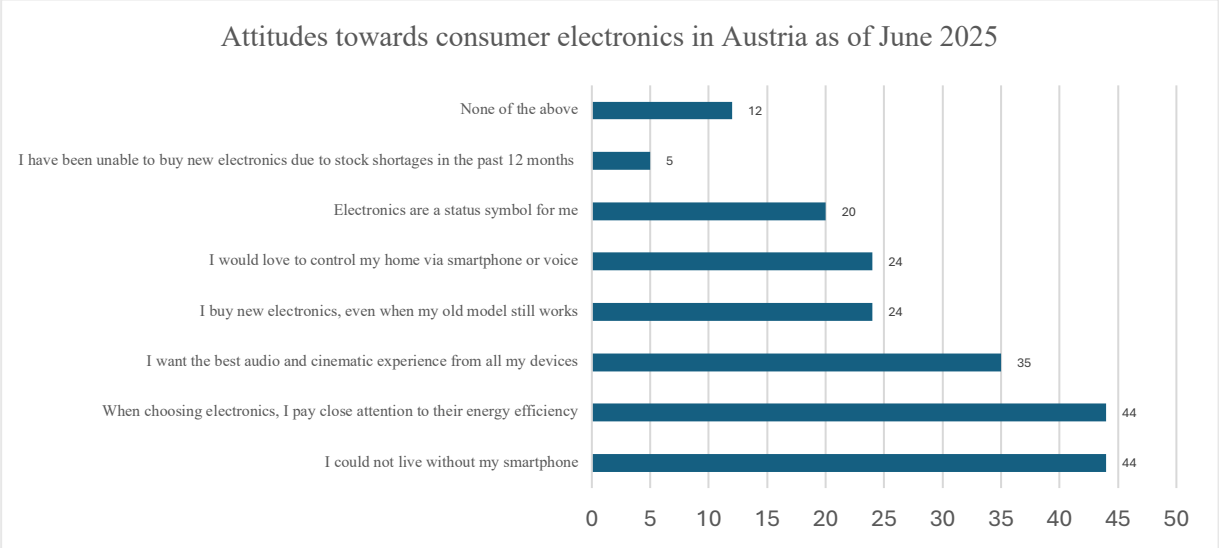


Figure 1: *Attitudes towards consumer electronics in Austria (Source: Statista, 2025)*

As illustrated in figure 1 above, 24% of Austrian Consumers state that they buy new electronics even when their old model still works and 20% consider electronics as a status symbol. Those findings not only reflect consumers emotional attachment to technology as a form of identity expression but also shows why ownership remains deeply embedded in this category, which highlights both a challenge of promoting sustainable consumption and the potential relevance of rental models.

2.2.2 Wearables as a Product Category

Given the broad scope of the whole consumer electronic industry, the present thesis will focus exclusively on Wearables. Therefore, it is essential to clarify the precise meaning of the term for this study. Wearables as a part of the consumer electronics industry are defined as small electronic devices that are integrated into clothing and other accessories that can be worn on the body. Examples include watches, glasses, jewelry (like rings or earrings) and headbands designed to include functional technology seamlessly into people's everyday lives. Wearables typically include smart sensors and scanning features, enabling the collection of biometric and activity data. Wearables evolved significantly over the last years from bulky and uncomfortable devices to easy portable and even stylish items (Wright & Keith, 2014). For this study the focus will be on Smartwatches, Smart rings or other fitness trackers. They can track activity/health and also offer features like notifications, calls, payments and apps. The wearable market today includes several devices and many different manufacturers which entered the market. From Apple, Xiaomi, Huawei, Samsung or Fitbit. With Apple and their Apple Watch being leader of the smartwatch industry (Statista, 2024b). In early years of commercialization, wearables faced significant challenges regarding consumer adoption and long-term use. Studies showed that a substantial proportion of users discontinued using their devices within only a few months (J. Lee et al., 2016). Similar to smartphones it can also be assumed that wearables are characterized by short innovation cycles and frequent replacements, often driven by fashion trends and technological upgrades (Proske et al., 2016) While the market has matured since then, such findings highlight an underlying issue of short product lifecycles and fluctuating user engagement. Factors that make wearables a particularly relevant product category for alternative access models such as renting.

2.2.3 The European Consumer Electronics Rental Landscape

In recent years a few companies emerged that adopted rental-based business models for CE. Those platforms show how rental commerce has entered the CE sector, enabling consumers to rent rather than buy electronic devices. The following section introduces selected examples of such platforms operating in Europe.

Grover

A prominent player in the market for access-based rental for consumer electronics is the start-up, Grover. It is a platform that makes it possible to rent a wide range of consumer electronics (from smartphones, laptops or wearables to household appliances such as coffee machines).

The company was founded in Berlin in 2015 and offers a B2C and B2B rental model in which the platform acts as an intermediary between products and consumers. The business model allows users to rent electronic devices for a specific period of time, with the option to extend the rental or purchase the product at the end. Consumers pay a monthly rental fee that covers the complete usage of the product and includes insurance and maintenance which thereby reduces ownership risks and responsibilities. Grover mentions several advantages of their business model: low monthly prices compared to purchasing, access to latest technology and the contribution to waste reduction through circular reuse of devices. By combining elements of the rental and subscription economy, Grover makes it possible to rent high-end devices instead of buying them (Grover, n.d.).

OttoNow

Another noteworthy example of a rental commerce initiative in Europe was Otto Now, a project launched in 2016 by German retail giant Otto Group. The platform allowed consumers to rent a wide range of household and consumer electronics for a monthly fee (similar to Grover) instead of buying them. Otto Now was conceived as an internal start-up within the corporate company and reflects Ottos attempt to try out new business models in response to changing consumer behavior. The model was able to draw on existing logistics and service infrastructure, with a modern, subscription like approach. Despite positive media attention and consumer interest, the platform was closed in early 2021. According to the Otto Group, the concept proved to be a successful innovation experiment but was not given further strategic priority within the group's core business (Otto, 2022). Nevertheless, Otto Now remains an important example of how even traditional retailers have tried out access-based consumption models and experimented with the growing shift from ownership towards usage. Data from Otto Now from 2019 already indicated the growing consumer interest in renting wearable devices. In 2019 wearables were the third most rented product category on the platform, followed by smartphones and drones (Jäger, 2019). This shows that even within a broad product portfolio, wearables were among the most in-demand items, supporting the relevance of investigating this category in the context of rental commerce.

Raylo

Raylo is an example of a UK-based tech rental platform, which was founded in 2018. They originally started with Smartphone subscriptions, which serve to make mobile lease-and-reuse models simple, affordable and sustainable. When consumers are ready to change their

smartphone, they simply return their old product to Raylo, which then get refurbished and resold, thus becoming part of Raylos Circular Process for a maximum lifespan and sustainability. The business model has since expanded and now offers more tech to rent than just smartphones. Raylo emphasizes that returned products are refurbished, reused or recycled, and therefore maximized in their usage and ultimately contributing to less electronic waste. By combining device renting with full lifecycle management, Raylo offers another example of a company that provides rental and subscription services for electronic devices (Raylo, n.d.).

2.3 Theory of planned Behavior

The TPB framework has been used to understand collaborative consumption (Roos & Hahn, 2019) and also attitudes and intentions towards renting (S. H. N. Lee & Chow, 2020). Since this thesis deals with rental intention, it became evident that attitudes, subjective norms and behavioral control play an important role in this construct. Following the TPB (Ajzen, 1991), consumers intention to rent wearables is assumed to be influenced by attitudinal, normative as well as control-related factors. In this thesis, I conceptualize Knowledge (H1) of rental commerce as a control belief (which refers to a belief that underpins perceived behavioral control by increasing familiarity). Perceived behavioral control is not measured as a separate construct. Instead, this study focuses on knowledge as a specific proxy that is assumed to increase individuals' sense of control over engaging in rental commerce. This represents a simplified, TPB inspired operationalization. Previous knowledge about a service or product also plays a role in renting intention, since it reduces uncertainties. Research shows that brand knowledge has a direct and positive effect on the intention to buy from a retailer (Chen & He, 2003). Brand knowledge is defined within the framework of the associative network memory model as a node stored in memory that is connected to a range of associated meanings and attributes (Keller, 1993). One challenge mentioned in literature about collaborative consumption is the general lack of awareness. Many people still remain unfamiliar with the concept, although it seems widely discussed (Barnes & Mattsson, 2016). Therefore it can be assumed that, similar to brand knowledge, higher knowledge of a new business model (like rental commerce) may increase the intention to rent from such platforms (Fota et al., 2019).

H1: Knowledge of rental commerce has a positive influence on the intention to rent wearables.

In TPB attitude toward the behavior is the overall favorable or unfavorable evaluation of performing the behavior (Ajzen, 1991). In this context attitude refers to consumers overall judgment of rental commerce for wearables. Which is formed from beliefs about outcomes and possible negative consequences.

H2: Attitudes towards wearable renting have a positive impact on rental intention for wearables.

Besides attitudes Subjective Norms is defined by the perceived social pressure to perform or not to perform a behavior (Ajzen, 1991). This leads to believe that social influence might play a significant role in shaping somebody's intention to perform a given behavior. Evidence from online fashion renting also shows that subjective norms have a strong direct effect on intention (S. H. N. Lee & Chow, 2020).

H3: Social Influence has a positive effect on the rental intention towards wearables.

2.4 Drivers and Barriers of the Business Model for Consumers

This chapter aims to explore the possible beliefs why consumers would opt for renting electronics instead of buying them. While the concept of access-based-consumption has gained growing academic attention, most existing studies have focused on other product categories, such as fashion and apparel (Lang, 2018; S. H. N. Lee & Chow, 2020), mobility and transportation (Bardhi & Eckhardt, 2012), accommodation platforms (Belk, 2014) or collaborative consumption in general (Benoit et al., 2017; Fota et al., 2019). In contrast, the consumer electronic sector and especially wearables remain largely unexplored. This means that assumptions for the wearable industry will be made. In line with the theory of planned behavior, drivers and barriers can be understood as behavioral beliefs that shape consumers' overall attitude towards renting wearables (Ajzen, 1991). Positive beliefs, such as perceived economic benefits or flexibility are expected to contribute to a more favorable evaluation of rental commerce, whereas negative beliefs such as ownership concerns or perceived performance risks, should reduce the attractiveness of renting. Attitudes formed this way are in turn assumed to be a central determinant of rental intention.

Economic Benefits

Previous research indicates that temporary access allows consumers to experience high quality products at a lower cost and risk. Consequently, rental commerce offers cost advantages by lowering upfront investments and allowing use-based pricing (Fota et al., 2019; Lawson et al., 2016). Some literature even states, that economic drivers (referring to sharing or reducing costs) play the most important role for customers when deciding to take part in collaborative consumption (Barnes & Mattsson, 2016). Therefore, the following hypothesis has been derived:

H4a: Perceived economic benefits have a positive effect on attitudes towards renting wearables.

Convenience and flexibility

Consumers consider access-based consumption not only for economic benefits but also for various psychological and practical reasons. One important driver refers to flexibility, variety seeking and trialability. Studies show that consumers are motivated to experience products in the short term (such as testing or upgrading) without exposing themselves to long-term commitment. Outsourcing maintenance further raises convenience and categories with rapid innovation cycles are particularly attractive for consumers to rent (Gullstrand Edbring et al., 2016; Lawson et al., 2016). In addition to that, online rental procedures mirror familiar e-commerce flows and therefore free users from burdens like disposal, which again reinforces perceived convenience (S. H. N. Lee & Chow, 2020). Therefore, the following hypothesis can be assumed:

H4b: Perceived flexibility has a positive effect on attitudes towards renting wearables.

Psychological Ownership

Despite the benefits of rental commerce, several psychological as well as practical barriers hinder adoption. Lawson mentioned barriers like possessiveness and materialism, as individuals who equate ownership with identity and status are less likely to use access-based services (Lawson et al., 2016). Individuals with a high degree of psychological ownership tend to place greater value on the possession of products compared to those with lower psychological ownership. In the context of online fashion renting, such consumers may perceive rental practices as inconvenient or even risky, since they prefer to have control and the security that comes with ownership (S. H. N. Lee & Chow, 2020). It can be assumed, that this reasoning can

also be extended to other product categories, such as electronic devices or wearables. Consumers who strongly identify with ownership may view renting these products less desirable. Therefore, it can be derived that:

H5a: Perceived ownership has a negative effect on attitudes towards renting wearables.

Performance Risk

Performance risk is defined as the uncertainty that a device will function or feel as expected. Alongside performance risk, financial and social risks are core dimensions that shape adoption decisions (Schaefers et al., 2016). Previous studies concerning renting fashion apparel show that performance risk (which is often intertwined with cleanliness and hygiene in this context) significantly reduces attitudes towards renting intention and decreases enjoyment (Lang, 2018). In rental commerce for consumer electronics, especially with refurbished products, one can assume that perceived performance risk (also covering cleanliness and hygiene) plays an important role and refers to the uncertainty about whether a product will perform as expected.

H5b: Perceived performance risk negatively affects attitudes towards renting wearables.

To conclude it is observed that changes in consumer values, economic pressure as well as rapid technological advancements lead to a shift in consumption which might make ownership less appealing than it once was. The change from owning to access-based-consumption seems to be more than an economic decision. It refers to an attitudinal change, including further psychological considerations.

2.5 Sustainability & Circular Economy in Consumer Electronics

Global consumption of electronic devices has been rising for years, due to rapid technological advances and growing consumer interest for connectivity, mobility and digital convenience. In 2023 the consumer electronics market counted over 3.5 billion computing devices, 2.3 billion multimedia products and 2.05 billion telephones (Statista, 2024a). In addition to this development the wearable segment (which includes smart watches, fitness trackers and hearables) is also expanding drastically. Global shipments of wearable devices have passed 540 million units in 2024, representing 6% growth (Statista, 2024b). However, the constant growth in production and consumption also has its downsides, namely the high amount of electronic waste (e-waste) that is generated as a result. Since 2010, global e-waste production has almost

doubled, reaching 62 million tons in 2022 and is expected to rise to 82 million tons in 2030. In 2022 small electronic devices accounted for the largest share of e-waste. Despite the urgent need, only 22% of global e-waste is formally collected and recycled. The rest is disposed improperly or exported to countries with inadequate waste management infrastructure (Statista, 2024a). The environmental consequences of this consumption are serious, ranging from the mining of rare earth materials to toxic emissions treated improperly. As a result, the consumer electronics industry is under increasing pressure to implement more sustainable and circular business models (Statista, 2024a). Existing research shows that the sharing economy principle represents a potential new path to sustainability, as it promotes alternative forms of ownership that can reduce resource consumption and environmental impact. By promoting access rather than ownership, the sharing economy can contribute to a more efficient use of resources and support broader social change towards sustainable consumption (Heinrichs, 2013). Environmental motives in access-based-consumption show mixed evidence. Some studies emphasize normative motives, which reflect consumers moral obligations to act in environmentally and socially responsible ways (Roos & Hahn, 2019). Whereas other studies find environmental concern (sustainability) of minor importance in the context of collaborative consumption (Barnes & Mattsson, 2016). In rental commerce devices are ideally used multiple times rather than just once, this ensures that each device is utilized to its full potential which ultimately contributes to greater sustainability (Lawson et al., 2016). Accordingly, the following hypothesis is proposed:

H6: Perceived sustainability has a positive effect on attitudes towards renting wearables.

This data illustrates that the sharing economy is among other things, also driven by the need of a more rational use of resources. In this context rental commerce platforms such as Grover or Raylo show how circular economy can be integrated into the consumer electronics sector by maximizing product usage and ensuring that devices are reused or refurbished after each rental cycle. This paradigm shift (from ownership to access) seems to be a promising step toward reducing the environmental footprint of consumer electronics while meeting consumers changing expectations for responsible and convenient consumption.

2.6 Conceptual Framework

Based on the literature review and the developed hypotheses the following conceptual model can be derived:

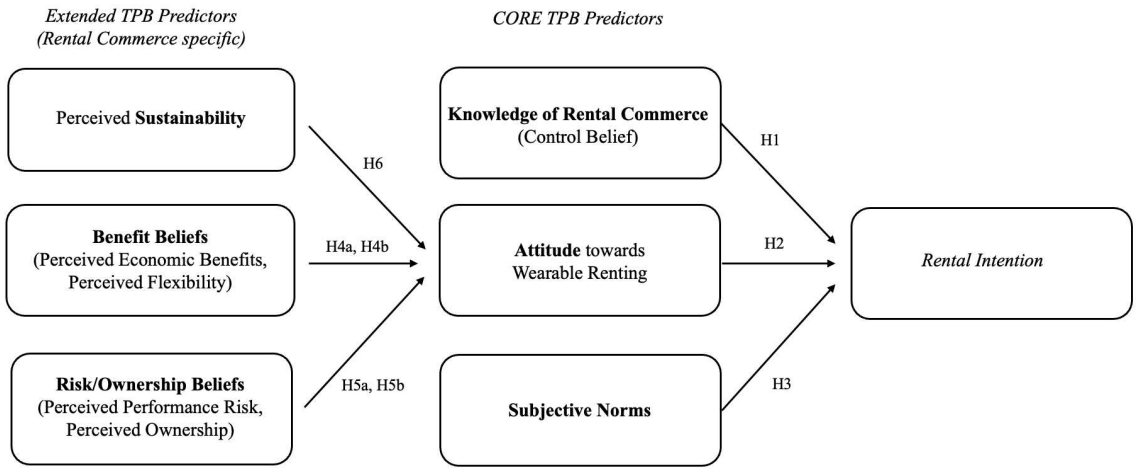


Figure 2: *Conceptual framework (Source: own representation)*

The model distinguishes between core constructs of the TPB and additional belief-based predictors that are specific to rental commerce to provide additional explanatory value and conceptualize rental-specific benefit and risk beliefs as behavioral beliefs that shape attitudes towards renting.

3 Methodology

3.1 Research approach

The present study strives to assess drivers and barriers of consumers rental intention in the Austrian market, specifically analyzing the category of wearables within the consumer electronics industry. It will be investigated what consumer motivations might be and what barriers might hinder them to rent wearables instead of buying them. To answer the research questions and to accomplish the research objective the research began with the collection of secondary data. A detailed literature review was undertaken, focusing on peer-reviewed top-tier academic journals and publicly available sources such as company websites alongside industry, market and consumer trend reports to contextualize findings with current data and broader market dynamics. After that, primary data collection was conducted in two stages, following a mixed-method approach:

i) Qualitative semi-structured interviews to gain in depth-knowledge about consumers perceptions and validate driver/barriers that were found in literature review

ii) A quantitative online questionnaire to explore research questions and hypotheses

3.2 Qualitative Research – Semi Structured Interviews

To gather an initial understanding of Austrian consumer behaviors and perceptions, semi-structured in-depth interviews were conducted using a guideline with predefined core topics. This format offers comparability across cases without constraining participants to fixed answer categories and is therefore well suited for exploratory phases that can inform subsequent survey design (Döring & Bortz, 2016).

3.2.1 Sample and Results

To further understand motivations and potential barriers of renting wearables eight individuals were interviewed, including 5 females and 3 males, all currently living in Austria, as this is the market relevant for this research. Ages ranged from 24 to 66 years to get different perspectives from people in different stages of life. The participants were recruited via convenience sampling due to lack of resources and time constraints. The interviews took place in person or via video call. Each interview took around 20-30 minutes and was recorded and summarized as seen in Appendix 2. The interview guide (Appendix 1) consisted of different sections, each covering a specific purpose in producing findings and consisting of mainly open-ended questions with the goal of allowing participants to discuss the topic in the most natural way possible. The

interviews first assessed participants understanding of renting consumer electronics in order to determine basic knowledge and control beliefs. Feelings and attitudes were then explored as well as spontaneous advantages and disadvantages of the model. Next motivations and barriers were investigated with the goal of verifying any further factors that were not already found in literature. Finally, the environmental and sustainability impacts were examined to determine whether circular use and the reduction of electronic waste influences willingness to rent. At the end a brief scenario translated perceptions into rental intention.

3.2.2 Qualitative Data Analysis

Across the eight semi-structured interviews, awareness of rental platforms for electronic devices proved to be limited. Most participants initially associated the idea either with refurbished purchases or with familiar contract models (like leasing or mobile carrier plans). Once the neutral definition was provided, the concept was largely perceived as plausible. Openness varies considerably, some respondents reacted with clear curiosity, while others measured interest dependent on pricing and terms. When asked to express the likelihood to rent a wearable under a standardized service scenario, reported intentions spanned from low to very high scores, indicating the importance of how the service is configured and communicated. A very strong and often mentioned point was the benefit of trialability in this business model. Several interviewees framed rental primarily to test a device without committing, particularly valuable for wearables where comfort, fit and usefulness can only be evaluated when tried in everyday use. In that sense, rental was not necessarily seen as a long-term access mode but as short and evaluation-oriented before deciding whether to buy (or to return). Trialability was linked closely to a second benefit, which refers to flexibility. Participants repeatedly emphasized short minimum terms, the option to swap/upgrade and the ability to pause or cancel. Moreover, it became clear that accessible human support is valued and needed in such a model.

The economic discussion revealed a more differentiated perspective, rather than a straightforward preference for lower monthly payments. For some spreading the costs over time lowered the entry hurdle and made trying a device feel affordable. For others accumulating monthly debits was undesirable and a one-off payment remained the preferred model. What mattered most though was cost predictability and perceived fairness versus buying. Along with transparent information about any fees, liability rules or automatic renewals. To sum it up, the “lower cost” framing can be a facilitator but only when the total cost logic is convincing.

On the barrier side two wearable specific concerns came through clearly. First, privacy and data security, where some participants worried about data wipe, potential access to personal or health data and the general handling of information on devices that circulate between users. The importance of this concern varied, younger interviews were sometimes less worried, but the theme recurred often enough to justify adding a dedicated hypotheses on privacy/data risks reducing rental intention. Secondly, hygiene and condition were mentioned. Because wearables are worn on the skin, respondents asked for reassurance about cleaning, refurbishment standards, scratches and general device history. Closely related were performance expectations (battery capacity) where participants requested credible quality checks and transparent grading (new vs. like new) on the condition of the device. Some expressed a preference for new devices, after negative experiences with refurbed quality elsewhere. Ownership considerations were mixed for wearables. Several participants preferred to own while others were indifferent to owning a smartwatch or ring for its own sake.

The role of sustainability was supportive rather than decisive. Most participants welcomed the idea that refurbishment and repeated use of the device could extend device lifetimes and therefore reduce e-waste. Particularly when paired with evidence of cleaning, testing and end-of-life handling. At the same time, some mentioned compensating doubts (like transport emissions, the risk that rental encourages frequent upgrades, consumerism). Overall, sustainability tended to reinforce a positive view, when other value elements (like price fairness, flexibility and transparency) were already in place, rather than substituting for them. Finally, interviewees described rental of electronic devices rather uncommon in their circles. Car, Bike or E-Scooter leasing served as the closest analogue. While one participant mentioned she has heard of renting drones as well. The participants agreed that seeing successful cases among friends would make them more comfortable and aware, suggesting that subjective norms may gain influence as the market matures.

To conclude, the interviews largely supported the hypotheses that were derived from academic literature. Therefore H1-H6 will be kept as they were previously formulated. Based on the additional information gained from the interviews one further hypothesis can be formed regarding data ownership, security and privacy. Given the intimate nature of health and usage data which is collected through wearables and the scarcity of prior work on this specific product category, the following hypothesis is added:

H7: Perceived privacy and data concerns negatively affect attitudes towards renting wearables.

The conceptual Model was revised adding a Privacy/Data Concern hypothesis within the perceived risk and ownership beliefs component.

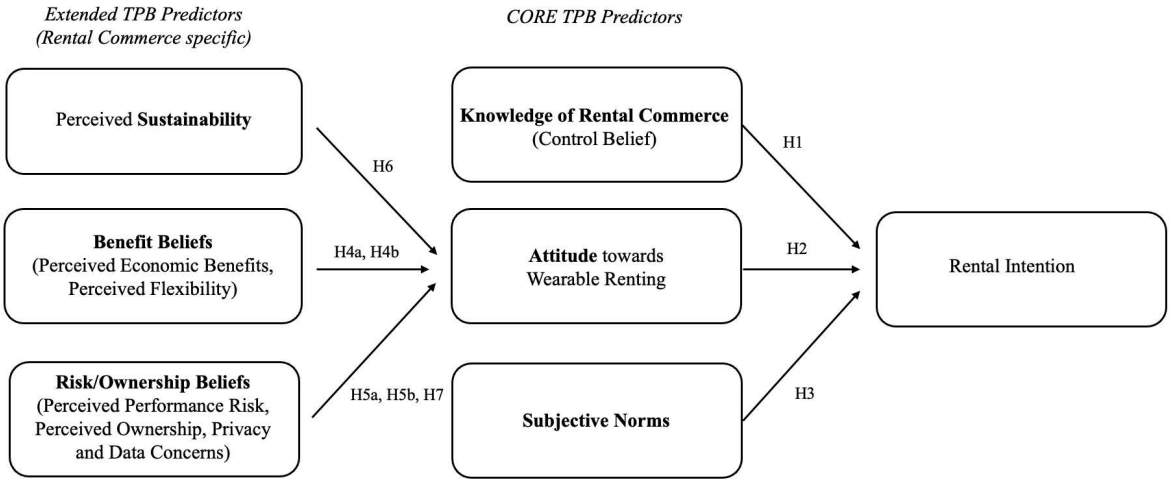


Figure 3: *Conceptual framework after qualitative research (Source: own representation)*

3.3 Quantitative Research – Online Survey

Following the qualitative research, a structured online questionnaire was developed. This research method was chosen because it allows a rapid distribution and it is possible to collect a large number of responses with little to no costs (Brosius et al., 2016). The survey was pre-tested by 5 participants to ensure that the questionnaire was consistent and user-friendly. Findings from the pre-test were used to improve clarity, while ensuring validity and reliability. The survey was published on the 16th of November 2025 and answers were collected until the 27th of November 2025.

3.3.1 Data Collection

In order to collect quantitative data, the platform Qualtrics was used to publish the questionnaire. Online surveys offer time- and location independence but risk self-selection. Snowball sampling can reduce this bias, therefore the survey was distributed via various channels such as Whatsapp and Instagram (Döring & Bortz, 2016). In line with common practice in online research, the study used a non-probabilistic convenience sampling method. It's important to mention that this kind of sampling limits representativeness and therefore results cannot be generalized to the full population. Nevertheless this sampling approach is

acceptable for exploratory, resource-constrained studies and hypothesis testing, especially when combined with snowball sampling (Döring & Bortz, 2016).

The survey was published in English and German. It consisted only of closed-ended questions and took approximately 6-8 minutes to complete. The questionnaire included 24 questions and was divided into 10 different sections, which were designed based on the research questions and hypotheses, to ensure the necessary variables for further statistical analysis were generated. The sections included: Introduction and screening question, knowledge and awareness of rental commerce, a short scenario description and then drivers towards renting wearables, barriers towards renting wearables, perceived sustainability, attitudes, social norms, rental intention and demographics. A detailed overview of the survey can be found in Appendix 3.

The questionnaire opened with a brief introduction to the study, followed by one screening question which assessed whether the respondents are living in Austria, as this was the focus market of this study. After this short warm-up questions on consumers habits and technology as well as wearable usage were asked. After that prior rental experience and rental knowledge assessed previous awareness regarding the topic. A rental scenario for wearables was then presented. The subsequent sections then captured the study's main constructs using 7-point Likert Scales and each question consisting of three to four items about perceived economic benefits and flexibility (drivers), ownership feelings and performance/hygiene risks (barriers), perceived sustainability, attitude (with semantic differentials), subjective norms and rental intention. Between the block of barriers and perceived sustainability an attention check question was used, where respondents were asked to choose "option 2" to support data quality. The questionnaire finished with demographic data on age, gender, occupation and gross monthly household income.

3.3.2 Measurement/Indicators

The constructs used to measure each variable were carefully selected based on their relevance to the research questions and hypotheses as well as their established use in prior literature. All Items presented in the survey are measured using a seven-point Likert Scale from "strongly disagree" to "strongly agree". Using validated measurement constructs enables a comprehensive evaluation of the relationships between variables while maintaining validity and reliability. Table 1 provides an overview of the mentioned constructs, their scales and the scientific papers they were adapted from. The privacy and data risk scale was developed by the

author as no suitable existing scale was identified in prior literature. The items were informed by qualitative interview insights and tailored to the specific context of wearable rental service.

Table 1: *Operational Model*

Construct	*Items*	*Scale*	*Adapted from*
Knowledge of rental commerce	3	7-Point Likert Scale	Fota et al (2019), Flynn et al (1996)
Perceived economic benefits	3	7-Point Likert Scale	Fota et al (2019), Bock et al (2005)
Perceived flexibility	3	7-Point Likert Scale	Gulstrand Edbring (2016), Lawson (2016)
Perceived ownership	3	7-Point Likert Scale	Lee/Chow (2020)
Perceived performance risk	3	7-Point Likert Scale	Lang (2018)
Perceived sustainability	3	7-Point Likert Scale	Lee/Chow (2020), Fota et al (2019)
Attitude towards renting	4	7-Point Likert Scale	Lang (2018), Lee/Chow (2020)
Social influence	3	7-Point Likert Scale	Ajzen (1991), Lee/Chow (2020)
Rental intention	3	7-Point Likert Scale	Ajzen (1991), Lee/Chow (2020)
Perceived Privacy & Data Risk	3	7-Point Likert Scale	Authors own scale

3.3.3 Quantitative Data Analysis

The data collected from the questionnaire was analyzed using the statistical software SPSS. Qualtrics allows for an export file of the collected data which could be easily transferred into SPSS. With the gathered quantitative data from the survey and the use of the appropriate statistical tests the hypothesis mentioned in Chapter two can be tested to gain a deeper understanding of the factors that shape consumers' attitudes towards renting wearables and their rental intention, to identify key drivers and barriers of wearable rental and to assess the role of perceived sustainability within this relationship. All statistical tests were conducted at a 5% significance level. This means that hypotheses were tested with an accepted error probability of 5%, corresponding to a 95% confidence interval (Döring & Bortz, 2016).

4 Results

4.1 Data Preparation Process

Initially a total of 120 responses were collected in Qualtrics. First, all responses from participants who indicated that they do not currently live in Austria were removed (9 respondents) based on the screening question. In a second step only fully completed questionnaires were retained, using the Qualtrics "Finished" Status. Three respondents did not finish the survey and were therefore excluded. Respondents who failed the attention check (Q14) would have been removed. In this dataset all remaining respondents passed the check, which left 108 valid responses left for analysis. Finally new variables for the constructs Knowledge, Economic Benefits, Flexibility, Ownership, Performance Risk, Sustainability, Attitude, Social Influence, Rental Intention and Privacy and Data risk were computed by calculating the mean of the items within each construct.

4.2 Sample Characterization

The total valid sample of this study consists of 108 participants living in Austria. Participants demographic characteristics are summarized across several variables, including age, gender, occupation and monthly gross income (Appendix 4). In terms of gender, females represented the majority of the sample, accounting for 63.9% of respondents, while male constituted 36.1%. Regarding age, the largest proportion of respondents fell into the 25-34 years category (63.9%), followed by the 18-24 age group (10.2%) and 35-44 years (9.3%). Smaller shares of participants were aged 45-54 years (4.6%), 55-64 years (11.1%) and 65-74 years (0.9%). Looking at the occupational status, the majority of respondents were employed (70.4%). Moreover, 13% were students, 6.5% were working students, 7.4% were self-employed and 2.8% were retired. This indicates that the sample consists predominantly of individuals who are active in the labor market. Regarding monthly gross income, the distribution was relatively broad. Around 36.1% respondents earning 1,500-3,999 €, while 25% indicated an income between 4,000-5,499 €. A further 20.4% fell into the 1,000-2,499 € income bracket, whereas 8.3% earned more than 5,500 € and 4.6% less than 1,000 €. Additionally, 5.6% of participants preferred not to disclose their income. Overall, it can be said, that the sample is characterized by a relatively young and economically active population with mid- to higher range income levels. As the sampling relied on a non-probability technique, the findings may not be fully representative of the broader Austrian population. Figure 4 summarizes the demographic characteristics of the sample.

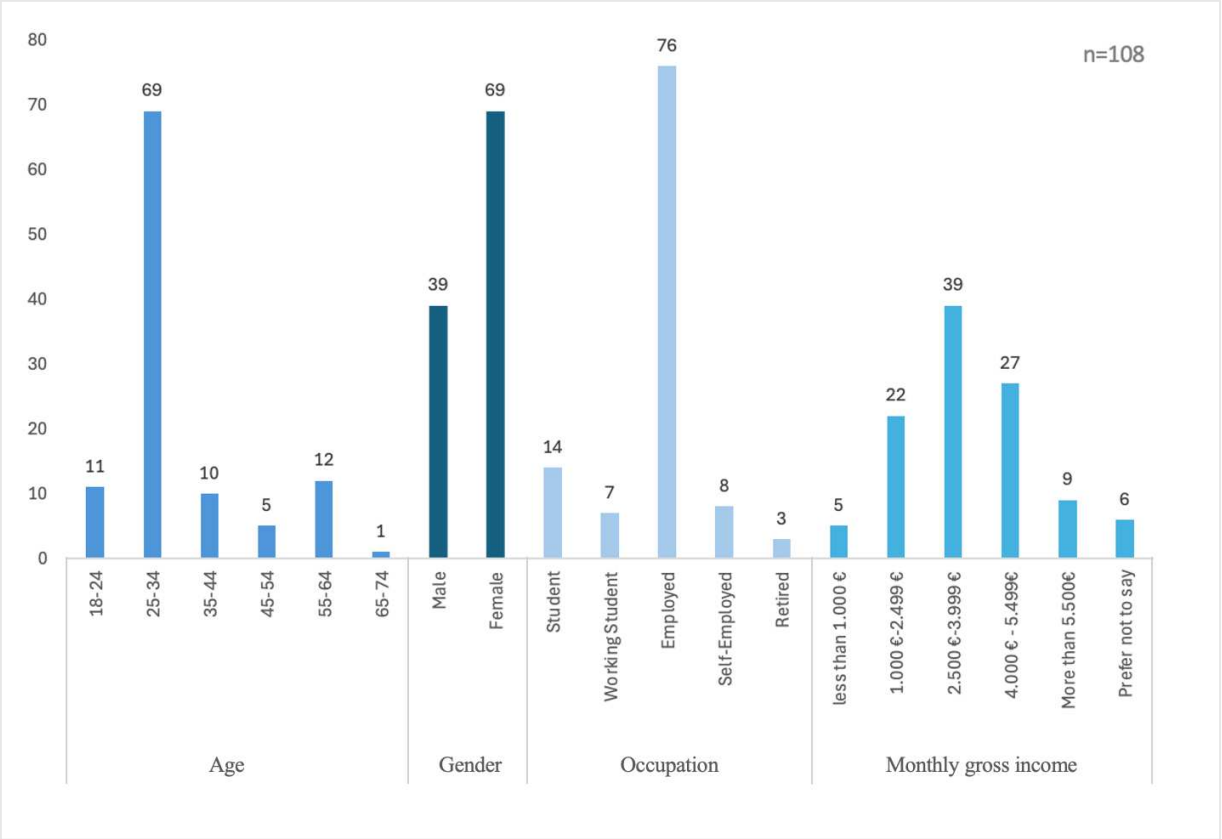


***Figure 4**: Demographic makeup of the survey sample (Source: own representation)*

4.3 Measurement Reliability

The constructs used in this study have been mostly used from established literature (see Table 1) and, in some cases, adapted to better suit the specific context of this research. Although the original constructs had already been validated in previous studies it is crucial to verify their reliability within the current sample. Consequently, the Cronbach's alphas coefficient was used to validate internal consistency of the items. This coefficient typically ranges between 0 and 1 (George & Mallery, 2019), where values closer to 1 indicate higher internal consistency. In general values above 0.7 are considered acceptable, those around 0.8 good and values higher than 0.9 reflect excellent reliability. The analysis demonstrated that all items were reliable ($\alpha >$ 0.7), which ensured satisfactory internal consistency and reliability for this study. The results of Cronbach's Alpha can be found in Table 2.

Table 2: *Reliability Analysis*

Construct	*Items*	*Scale*	*Cronbach's Alpha (α)*
Knowledge of rental commerce	3	7-Point Likert Scale	0.812
Perceived economic benefits	3	7-Point Likert Scale	0.816
Perceived flexibility	3	7-Point Likert Scale	0.878
Perceived ownership	3	7-Point Likert Scale	0.747
Perceived performance risk	3	7-Point Likert Scale	0.799
Perceived sustainability	3	7-Point Likert Scale	0.839
Attitude towards renting	4	7-Point Semantic Differential	0.887
Social influence	3	7-Point Likert Scale	0.867
Rental intention	3	7-Point Likert Scale	0.837
Perceived Privacy & Data Risk	3	7-Point Likert Scale	0.828

4.4 Descriptive Statistics

To get an initial understanding of the outcome, descriptive statistics can be analyzed (Appendix 5). In addition to socio-demographic information, several questions captured participants general technology usage and experience with wearables and rental models. In the last two years, almost all respondents (95.3%) had bought at least one tech device such as a phone, laptop, headphone or wearable (Q2). On the other hand, recent purchase of wearables was more balanced. About half of the sample (47.7%) indicated having bought a wearable device in the last two years, whereas 52.3% had not (Q3). Among users of wearables smartwatches were by far the most common category (46.3%), followed by smart rings (9.3%) and fitness trackers (5.6%). 38.9% did not use any wearable device at the time of the survey. Participants general openness towards new technology was measured by asking them to rate how strongly they agreed with the statement "*I am usually among the first to try new tech devices*" on a 7-point Likert scale (Q5). The distribution was centered around the middle categories, showing that the sample does not consist mainly of early adopters. Only around one fifth of respondents selected one of the two highest scale points (5 or 6), while a similar share chose the two lowest points, suggesting a rather heterogeneous level of innovativeness. Moreover, the survey assessed the typical device replacement cycle. The majority reported replacing their tech devices relatively infrequently (Q6). 36.1% stated that they typically replace devices only if they stop working and 33.3% do so less often than 2-3 years. Another 27.8% replace their devices every 2-3 years, whereas only 2.8% indicate replacing them about once a year. This pattern shows that

respondents are generally cautious about technology replacement. Finally, awareness and experience with rental models for tech devices was examined (Q7). While 44.4% of participants had heard of renting tech devices instead of buying them, a slightly larger proportion (55.6%) was not familiar with this concept. However, actual usage of rental services was non-existent in this sample, since none of the respondents reported having rented a tech device before (Q8).

The descriptive statistics of the main constructs used in this study, show clear differences in respondents' perception of various aspects of wearable rental services. Participants reported knowing little about rental commerce (M=2.33, SD=1.23), which suggests that most respondents are not yet fully familiar with rental options for technology devices. Perceived economic benefits were moderately high (M=4.52, SD=1.28), showing that participants generally recognize potential cost benefits associated with renting. Perceived flexibility received one of the highest ratings of all constructs (M=5.83, SD=0.88), indicating strong agreement regarding the convenience and flexibility of renting wearables. In contrast, perceived ownership concerns were in the middle range (M=4.42, SD=1.18), while perceived performance risk was comparatively lower (M=3.48, SD=1.25), indicating moderate concerns about device reliability. Privacy and Data Concerns were moderate (M=4.11, SD=1.51), while perceived sustainability was rated relatively high (M=5.25, SD=1.05), reflecting that respondents associate rental models with environmental benefits. Attitudes towards renting were generally positive (M=4.69, SD=1.20) and social influence was at a moderate level (M=4.30, SD=1.10). Finally rental intention was moderate (M=3.06, SD=1.31) as well, indicating that respondents were neither strongly inclined nor strongly opposed to renting wearables. The comparatively low mean of the rental intention scale seems to be influenced particularly by the first item ("*I intend to rent a wearable in the next 12 months*"), which captures a very specific and time-bound intention. The two more conditional items ("*If I needed a wearable soon, I would consider renting instead of buying it*" and "*It is likely that I would rent a wearable if the opportunity arises*") show higher average scores. This pattern suggests that respondents are more open to renting wearables in hypothetical or situational contexts than when asked about a specific rental decision within the next year. However, this mid-level overall intention of the item leaves room for the tested predictor variables to explain possible deviations in the subsequent hypothesis testing section. Figure 5 provides an overview of the mean values of the main constructs used in this study.

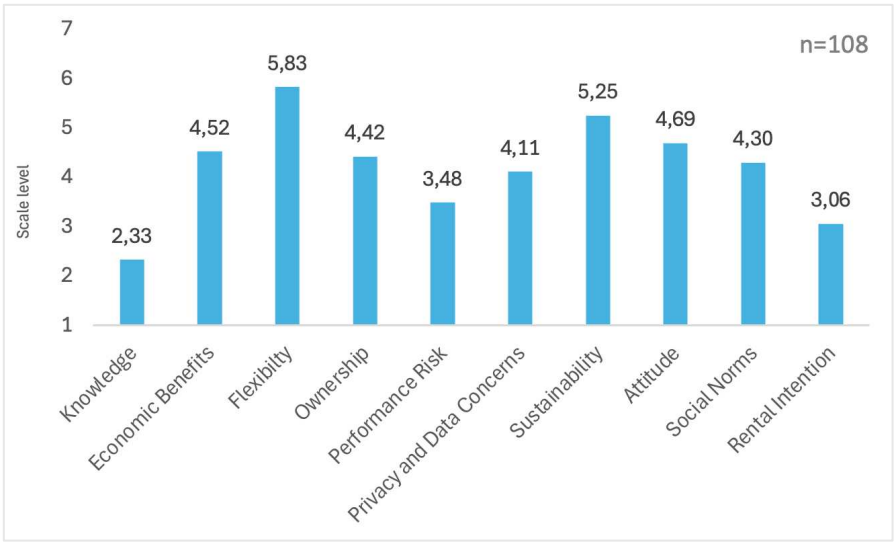


***Figure 5**: Descriptive Statistics of the Main Constructs - mean value (Source: own representation)*

4.5 Hypothesis Testing

In the descriptive statistics the questions relevant for testing the hypotheses were already presented with their mean values. In the following subchapter, the theoretically established hypotheses will be tested using statistical tests in order to subsequently answer the research questions. To test the hypothesis and to facilitate further interpretation the formerly created variables will be used. Since all constructs were measured on 7-point metric scales, linear regression was the appropriate method for hypothesis testing.

To examine which TPB-inspired factors directly drive consumers rental intention, a first multiple regression was conducted with rental intention as the dependent variable and knowledge, attitude towards renting wearables and social influence as independent variables (Appendix 6). The overall model was significant ($p<0.001$) and explained 53.4% of variance in rental intention ($R^2=0.534$). The Durbin-Watson statistic of 1.96, the approximately normally distributed residuals and the absence of problematic multicollinearity (all VIF values between 1.04 and 1.51) indicate that the main assumptions for linear regressions are met.

***Table 3:** Multiple Regression Coefficient Results for Rental Intention Predictors*

Predictor	*B*	*SE*	*Beta (β)*	*t*	*p*
Knowledge	0.119	0.073	0.111	1.632	0.106
Attitude	0.637	0.090	0.584	7.106	<0.001
Social Influence	0.278	0.098	0.233	2.838	0.005

H1: Knowledge of rental commerce has a positive influence on the intention to rent wearables.
In the regression model, knowledge of rental commerce showed a small but non-significant effect on rental intention (B=0.119, β= 0.11, p=0.106). Higher knowledge about rental commerce did not significantly predict rental intention when attitude and social influence were controlled for. Therefore, H1 is not supported. The items measuring knowledge captured respondents' familiarity with the general idea of renting technology devices, including awareness of how such services work and whether they know specific rental offers. Descriptively the low mean level of knowledge indicated that most respondents are still rather unfamiliar with rental offers, however simply knowing about them does not yet translate into action to actually rent.

H2: Attitudes towards wearable renting have a positive impact on rental intention for wearables.
Attitude towards renting wearables emerged as by the strongest predictor of rental intention. It showed a large, positive and significant effect (B=0.64, β=0.58, p<0.001). This means that more favorable evaluations of wearable renting are associated with substantially higher intentions to rent. H2 is therefore clearly supported, which underlines the central role of attitudes in explaining consumers' willingness to adopt rental models. The attitude items represented a semantic differential whether renting is perceived as good or bad, appealing or unappealing, wise or unwise. These semantic differentials capture the emotional and evaluative component of behavioral intention, which is the heart of Ajzen's TPB.

H3: Social Influence has a positive effect on the rental intention towards wearables.
Social influence also had a significant positive effect on rental intention (B=0.28, β=0.23, p=0.005). Respondents who perceived that important others would approve of renting wearables reported higher intentions to rent. H3 therefore is supported, indicating that perceived social approval plays a meaningful, though smaller role alongside personal attitudes.

Overall, the regression model including attitude, social influence and knowledge as predictors accounted for more than half of the variance in rental intention. Attitude is the dominant driver of intention, alongside social influence. Knowledge in contrast did not significantly predict intention once the other predictors are taken into account. These findings are consistent with TPB assumptions where behavioral intentions are primarily shaped by attitudes and perceived social norms. As a robustness check, rental intention was recalculated excluding the time-bound

item ("*I intend to rent a wearable within the next 12 months*"). The pattern of results remained unchanged, and the model explanatory power was nearly identical.

To examine which belief-based factors act as drivers or barriers of consumers attitudes towards renting wearables, a second multiple linear regression analysis was conducted with attitude towards renting wearables as the dependent variable and perceived economic benefits, perceived flexibility, perceived ownership, perceived performance risk, privacy and data concerns and perceived sustainability as independent variables (Appendix 7). The overall model was significant with $p < 0.001$ and explained 52.1% of variance in attitude (R^2=0.521). The Durbin-Watson statistic of 2.10, the approximately normally distributed residuals and the absence of problematic multicollinearity (all VIF values between 1.12 and 1.39) indicate that the main assumptions for linear regressions were met. Table 4 presents the coefficient results of the multiple regression analysis.

Table 4: *Multiple Regression Coefficient Results for Attitude Predictors*

Predictor	***B***	***SE***	***Beta (β)***	***t***	***p***
Perceived Economic Benefits	0.349	0.076	0.371	4.568	<0.001
Perceived Flexibility	0.165	0.111	0.120	1.487	0.140
Perceived Ownership	-0.157	0.075	-0.154	-2.110	0.037
Perceived Performance Risk	-0.078	0.073	-0.081	-1.071	0.287
Perceived Privacy & Data Risk	0.068	0.060	0.086	1.139	0.257
Perceived Sustainability	0.406	0.085	0.356	4.807	<0.001

H4a: Perceived economic benefits have a positive effect on attitudes towards renting wearables.
In the regression model, perceived economic benefits showed a strong positive and statistically significant effect on attitude (B=0.35, β= 0.37, p<0.001). The items for economic benefits assessed whether respondents believe renting can save money, reduce upfront investment or allow flexible short-term access at lower cost. Respondents who perceived renting as financially advantageous evaluated wearables renting significantly more favorably even when all other belief-based predictors were controlled for. Therefore, H4a can be supported.

H4b: Perceived flexibility has a positive effect on attitudes towards renting wearables.
The flexibility construct captured beliefs that renting allows more freedom, such as switching models easily, avoiding long-term commitments or accessing the newest technology without

owning the device permanently. Respondents rated flexibility high on average, indicating that they generally perceive rental as convenient. Perceived flexibility also showed a positive but non-significant effect on attitude once the other beliefs were included in the model (B=0.17, β=0.12, p=0.14). Although the bivariate correlation between flexibility and attitude was moderate, flexibility did not explain additional variance in attitude beyond the other factors which were controlled for. Which means that H4b cannot be supported.

H5a: Perceived ownership has a negative effect on attitudes towards renting wearables.
Perceived ownership concerns had a significant negative effect on attitudes (B=-0.16, β= -0.15, p=0.037). A stronger desire to own and keep devices and to maintain control over them, was associated with less favorable evaluations of wearable renting, even after controlling for all other beliefs. H5a is therefore supported, suggesting that ownership preferences act as a psychological barrier by lowering consumers attitudes towards rental models. The negative coefficient indicates that the stronger ownership preference is, the lower the attitudes towards wearable rental.

H5b: Perceived performance risk negatively affects attitudes towards renting wearables.
In contrast, perceived performance risk did not significantly predict attitudes towards renting wearables in the multivariate model (B=-0.08, β= -0.08, p=0.29). Concerns that rented devices might be in poor condition or malfunction did not explain a meaningful share of variance in attitude once the other factors were considered. H5b is therefore not supported. The items which measured performance risk asked participants whether they worry that rented devices might not work as good, be less reliable, have shorter battery life or be damaged. Despite these concerns existing somewhat on a descriptive level they do not translate into a measurable effect.

H6: Perceived sustainability has a positive effect on attitudes towards renting wearables.
Perceived sustainability showed a strong positive and significant effect on attitudes (B=0.41, β=0.36, p<0.001). Respondents who believed that renting wearables is environmentally beneficial evaluated the concept substantially better. The items referred to beliefs, that renting represents a more sustainable form of consumption and that rental commerce is environmentally friendly. Together with economic benefits, sustainability perceptions emerged as one of the strongest belief-based drivers of attitude. H6 is clearly supported.

H7: Perceived privacy and data risk negatively affect attitudes towards renting wearables.
Privacy and data concerns did not show a significant effect on attitudes (B=0.07, β=0.09, p=0.26). The regression coefficient was small and positive and the bivariate correlation with attitude was essentially zero. This indicates that, in this sample, worries about data security and privacy do not systematically lower attitudes towards renting wearables. H7 is therefore not supported.

Overall, the regression model including all belief-based constructs as predictors of attitude was highly significant and explained more than half of the variance in attitudes towards renting wearables. Perceived economic benefits and perceived sustainability emerged as the strongest positive drivers of attitudes, while ownership concerns had a significant negative effect. Flexibility, performance risk and privacy and data concerns did not contribute significantly once other beliefs were controlled for. These findings suggest that consumers form their attitudes towards wearable rental primarily based on perceived economic and environmental value and the extent to which rental models fit or conflict with their desire for ownership.
All of the findings from the tested hypothesis, can be found in Table 5:

Table 5: *Results of hypotheses testing*

RQ1	*Which drivers positively influence Austrian consumers' attitudes towards renting wearables and their rental intention?*	***Findings***
H1	Knowledge of rental commerce has a positive influence on the intention to rent wearables.	not supported
H2	Attitudes towards wearable renting have a positive impact on rental intention for wearables.	supported
H3	Social Influence has a positive effect on the rental intention towards wearables.	supported
H4a	Perceived economic benefits have a positive effect on attitudes towards renting wearables.	supported
H4b	Perceived flexibility has a positive effect on attitudes towards renting wearables.	not supported
RQ2	*What factors act as barriers by lowering Austrian consumers' attitudes towards renting wearables and their rental intention?*	***Findings***
H5a	Perceived ownership has a negative effect on attitudes towards renting wearables.	supported
H5b	Perceived performance risk negatively affects attitudes towards renting wearables.	not supported
H7	Perceived privacy and data risk negatively affect attitudes towards renting wearables.	not supported
RQ3	*Does perceived sustainability influence consumers'attitudes towards renting wearables?*	***Findings***
H6	Perceived sustainability has a positive effect on attitudes towards renting wearables.	supported

4.6 Exploratory Findings

Beyond the hypotheses, which were the central part of this research, a few additional analyses were conducted to gain further insights regarding the potential adoption of wearable rental services in Austria (Appendix 8).

An independent-samples t-test was conducted to see if rental intention differed between male and female respondents. The results showed no statistically significant difference between the two groups. Although females reported a slightly higher rental intention (M=3.15, SD=1.35) than males (M=2.88, SD=1.24), this difference was not significant (p=0.299). Levene's test indicated equal variances, so the standard t-test was used. Gender does not meaningfully influence consumers rental intention regarding wearables in this sample.

A one-way ANOVA was conducted to examine whether rental intention differed across age groups. The test of homogeneity of variances was not significant (p=0.643), indicating that the assumption of equal variances was met. The ANOVA results though showed no statistically significant effect of age on rental intention (p=0.721). This suggests, that within the sample, rental intention does not systematically differ by age, although some age categories contained comparatively few respondents and should therefore be interpreted with caution.

Another independent-samples t-test was used to explore whether rental intention differs between respondents who had purchased a wearable in the last two years and those who had not. Participants who had bought a wearable in the last two years reported a slightly lower rental intention (M=2.83, SD = 1.30, n=51) than those who had not bought a wearable (M=3.26, SD=1.32, n=56). The difference between the two groups though was not statistically significant (p=0.096), suggesting that recent wearable purchase behavior explains only a limited amount of variation in rental intention.

5 Conclusion and Limitations

5.1 Main Findings & Discussion

The aim of this research was to understand which factors shape Austrian consumers' attitudes towards renting wearables, their intention to rent and whether perceived sustainability plays a role in this process. Using a mixed-method approach, a TPB inspired framework was tested in which rental specific beliefs (economic benefits, flexibility, ownership, performance risk, privacy and data concerns and sustainability) were modeled as antecedents that shape consumers attitudes. Meanwhile attitude, social influence and knowledge of rental commerce represented the direct predictors of rental intention. Overall, the results show a rather moderate rental intention but at the same time identify clear psychological drivers and barriers that operate largely through consumers attitudes.

Research Question 1: Which drivers positively influence Austrian consumers' attitudes towards renting wearables and their rental intention?

Results show that attitude towards renting wearables is by far the strongest direct driver of rental intention, followed by social influence whereas knowledge of rental commerce does not have a significant unique effect once the other predictors are taken into account. Respondents who evaluated renting as good, appealing and wise reported substantially higher intentions to rent a wearable. This underlines the central role of affective and evaluative reactions. How people feel about renting is more important than what they know about it. This pattern is fully in line with the TPB which typically identifies attitude as the strongest predictor of behavioral intention. Social influence also proved to be a significant positive predictor of rental intention. Respondents who assumed that important others would approve of renting or who perceived rental as socially accepted in their environment reported higher willingness to rent a wearable. This suggests that rental decisions are influenced not only by personal cost-benefit considerations but also by social norms and comparisons with others.

On the belief level, perceived economic benefits and perceived sustainability stand out as the most important drivers of attitude. Both constructs show strong, significant positive effects on attitude, even when all other beliefs are controlled for. That means, that respondents who see renting as financially attractive and as environmentally beneficial evaluate wearable rental much better. On the other hand, perceived flexibility does not show a significant unique effect in the multivariate model. While respondents appreciate the idea of flexibility at a descriptive

level, it does not add explanatory power once other factors are taken into account. Similar findings appear in prior literature where flexibility is described as an attractive feature of access-based offers, but typically works in tandem with economic, experiential and sustainability-related motives (Bardhi & Eckhardt, 2012; Lawson et al., 2016; S. H. N. Lee & Chow, 2020). The non-significant effect of flexibility, despite its high average rating, indicates that flexibility may function as a hygiene factor in this context. Which means that it is an expected benefit of the model rather than a differentiating driver of rental intention. Most respondents agree that renting provided flexibility. But the construct shows limited variance and therefore contributes little to explaining individual differences.

Overall, the results for RQ1 show that rental intention for wearables is primarily driven by attitudes and social norms. Those attitudes are in turn shaped most strongly by economic and environmental benefits. Knowledge on the other hand seems to be a necessary background condition but not a sufficient driver of intention. Simply being aware of rental options does not translate into higher intentions if consumers do not perceive major advantages and do not hold favorable attitudes.

Research Question 2: What factors act as barriers by lowering Austrian consumers' attitudes towards renting wearables and their rental intention?

Among the belief-based barriers, perceived ownership clearly stands out. Respondents who expressed a stronger preference to own their devices, to have full control over them and to see wearables as personal possessions, showed significantly less favorable attitudes towards renting. Since attitude is the strongest predictor of intention, ownership concerns may indirectly translate into lower rental intention. This also supports prior work on psychological ownership (Fritze et al., 2020) and supports the view, that especially for access-based consumption this seems to be a key barrier since the desire to have and keep products remain deeply rooted. On the other hand, interestingly perceived performance risk and data concerns did not significantly affect attitudes. Although respondents expressed some concerns about potential wear and tear, device condition or the handling of data are concerns which do not seem to lower attitudes in the multivariate model. One interpretation could be that consumers either trust professional rental providers to properly refurbish and maintain devices, or they do not perceive wearables as extremely high-risk products. It might be that privacy worries are somewhat generalized and do not specifically seem to target the renting context here, consumers may express privacy worries across digital services, but these worries do not strongly shape their rental intentions.

Overall, it became clear that the key barrier is not functional risk but the importance of ownership for many consumers. Wearables as personal and body-related technologies are still perceived by a substantial part of consumers as products that should be owned rather than temporarily accessed.

Research Question 3: Does perceived sustainability influence consumers' attitudes towards renting wearables?

The findings show that perceived sustainability has a strong, positive and statistically significant effect on attitudes towards renting wearables. Respondents who associate rental models with environmental benefits, waste reduction and more efficient use of resources evaluate wearables rental way more positively. Since attitude is the main proximal driver of intention, these sustainability beliefs indirectly support rental intention. This is in line with prior research which highlights sustainability as an important driver in rental commerce and collaborative consumption and emphasizes that repeated share use can increase resource efficiency and reduce environmental impact (Fota et al., 2019; Heinrichs, 2013; Lawson et al., 2016). Sustainability does not replace economic or ownership considerations but adds a clear "green" dimension of motivation. Seeing rental as an environmentally responsible way of consuming technology reinforces openness towards the business model, especially when combined with perceived economic value and weak ownership attachment.

Across all three research questions, the findings indicate that rental intention for wearables in Austria is still moderate but can be meaningfully explained by a combination of attitudinal drivers, ownership-related barriers and sustainability perceptions. Attitudes towards renting and social influence directly support rental intention. Whereas perceived economic benefits and sustainability shape these attitudes in a positive way. Strong preference for ownership on the other hand lowers attitudes and thereby hinders intention, whereas knowledge, perceived performance risk, flexibility and privacy concerns do not show independent effects once these core variables are considered.

5.2 Academic and Managerial Implications

From a theoretical perspective, this study expands current literature on rental commerce by applying a TPB inspired framework to the product category of wearables within consumer electronics. Previous studies have mainly focused on fashion rental and mobility services such as car sharing, leaving consumer electronics and especially wearables understudied. By

empirically testing a model that links rental-specific beliefs to attitudes and in turn to rental intention, this study shows that attitude, social norms, perceived ownership, economic benefits and sustainability perceptions are key determinants in this context.

From a managerial perspective, the results offer several implications for companies considering or operating rental models for wearables, including specialized rental platforms, consumer electronics retailers and manufacturers. First, the strong effect of attitude and social influence on rental intention shows that communication strategies should focus on shaping positive emotions around renting. Storytelling, lifestyle-oriented campaigns and endorsements by influencers or satisfied users can help present rental as modern, smart and attractive way to access technology. Providers could operationalize social proof through referral incentives, visible user reviews with verified rentals and community-based features ("*X people are currently renting this model*" or a "*most rented devices"* section). Such mechanisms make the model socially observable and can reduce perceived uncertainty.

Second, the results show that perceived economic benefits and sustainability are the most important belief-based drivers of attitude. Providers should therefore clearly communicate the financial value proposition (like lower upfront costs, predictable monthly payments or other included services) and at the same time credibly highlight the environmental advantages (like extended product lifetimes, reduced overall e-waste through refurbishment and reuse). Firms could communicate the total cost logic transparently, with showing comparison tables of renting versus purchasing. Environmental claims on the other hand could be shown through simple impact metrics such as estimated e-waste avoided per rental cycle. Transparency about what happens after returns (refurbishment standards, quality checks and second-life use) can further increase trust and make sustainability claims more credible.

Third, the importance of ownership concerns as a barrier suggest that rental models are best positioned as a complementary option rather than a full replacement of ownership. Rental could be framed as an extended trial phase or as a low-risk way to experiment with new technologies before deciding whether to buy (Lawson et al., 2016). This aligns with the idea of rental as a part of the information search process and may be especially attractive for early adopters who regularly upgrade devices.

Finally, the low average familiarity with rental options indicated that the market is still in an early awareness stage. While knowledge alone does not directly increase rental intention, transparent information about how the models work, what is included and what happens at the end of the contract is a crucial foundation for building trust and therefore more positive attitudes and social acceptance.

For manufacturers and retailers integrating rental as an additional access channel, can help tap into new customer segments, extend product lifecycles and support broader circular economy strategies. While this requires additional logistics and maintenance requirements for the business, it may become an increasingly attractive strategic option in light of the rapid pace of technological obsolescence, growing demand for more sustainable ways to consume and the increased consciousness of consumers environmental footprint. Overall, rental models could have the potential to gradually complement traditional ownership, especially if providers work actively on shaping attitudes, addressing ownership concerns and clearly communicating both the economic and environmental value of renting.

5.3 Limitations and further Research

Overall, this study provides valuable insights in the field of rental commerce for wearables but like every empirical study it is restricted to certain limitations that should be acknowledged when interpreting the results. Firstly, the findings are limited to Austrian Consumers, which restricts the generalizability of the results to other countries and cultural contexts. Additionally, the chosen sampling method limits the representativeness of the study. Since data was collected through a non-probability sample and the sample size was relatively small (n=108), the findings are not representative to the entire Austrian population. The approach led to a random distribution of demographics, where most respondents were between 25-34 years old. Further research could replicate the research in other countries and use stratified or random sampling methods to ensure a more balanced demographic distribution.

Secondly the study's focus was on wearables. As product characteristics strongly influence drivers, barriers and sustainability evaluations, the results cannot simply be transferred to other categories within the same sector of consumer electronics (like smartphones or laptops) nor to entirely different industries. Future research could therefore apply the same model to other product categories to compare whether similar drivers and barriers emerge. Besides that, one must mention that Hypotheses were primarily drawn from literature of rental commerce on

fashion apparel, since academic literature on consumer electronics is rare. Therefore, not all relevant aspects of the consumer electronics and especially wearable segment may be covered.

Moreover, the topic of sustainability is socially sensitive and may have been affected by the social desirability bias (Brosius et al., 2016). Respondents might have rated sustainability related items more positively to align with socially accepted norms. Another limitation concerns the use of behavioral (rental) intention instead of actual behavior. Although intention is commonly used as a strong predictor of behavior, it does not always translate into real actions. This discrepancy is also known as the "attitude-behavior-gap" and should be considered when interpreting the results. Prior research on sustainable consumption shows a gap between what consumers express and how they finally act, where attitudes and intentions often fail to result in the corresponding behavior (Park & Lin, 2020). These findings should also be considered in the context of rental models for wearables, meaning that the identified determinants of rental intention cannot be transferred to actual uptake of rental services. As actual rental behavior is difficult to capture in survey-based research, this study focused on attitudes and intentions as the most realistic indicators of behavioral tendencies.

Lastly there are additional variables beyond the scope of this work that could be examined to gain a more comprehensive understanding of rental commerce for wearables. For example, future research could segment consumers based on their prior wearable usage to explore potential differences in rental readiness or perceived barriers. Extending the work by developing consumer profiles could also help companies to better target potential renters. In addition, this study did not explicitly model price or specific cost levels as predictors of rental intention. Given that consumers are likely to compare the total cost and perceived value of renting instead of buying, future studies should incorporate price perceptions to see how sensitive rental intentions are to different pricing schemes. Moreover, although this study distinguished between belief-based predictors of attitudes and TPB-inspired predictors of rental intention, it relied on separate regression models and did not formally test indirect effects or the full structural model. Future research could therefore examine potential moderation or mediation effects more explicitly. For example, sustainability perceptions may strengthen (moderate) the relationship between attitude and behavioral intention. Or attitude may mediate the association between beliefs and intention.

Reference List

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Bardhi, F., & Eckhardt, G. M. (2012). Access-Based Consumption: The Case of Car Sharing. *Journal of Consumer Research*, *39*(4), 881–898. https://doi.org/10.1086/666376

Barnes, S. J., & Mattsson, J. (2016). Understanding current and future issues in collaborative consumption: A four-stage Delphi study. *Technological Forecasting and Social Change*, *104*, 200–211. https://doi.org/10.1016/j.techfore.2016.01.006

Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, *67*(8), 1595–1600. https://doi.org/10.1016/j.jbusres.2013.10.001

Benoit, S., Baker, T. L., Bolton, R. N., Gruber, T., & Kandampully, J. (2017). A triadic framework for collaborative consumption (CC): Motives, activities and resources & capabilities of actors. *Journal of Business Research*, *79*, 219–227. https://doi.org/10.1016/j.jbusres.2017.05.004

Beutin, N. (2017). *Share Economy 2017: The New Business Model*. https://www.pwc.at/de/publikationen/branchen-und-wirtschaftsstudien/share-economy-report-2017.pdf

Botsman, R., & Rogers, R. (2010). *What's Mine Is Yours: The Rise of Collaborative Consumption*. Harper Collins. https://books.google.at/books/about/What_s_Mine_Is_Yours.html?id=LiC2foFeXQYC&redir_esc=y

Brosius, H.-B., Haas, A., & Koschel, F. (2016). *Methoden der empirischen Kommunikationsforschung: Eine Einführung*. VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-19996-2

Chen, R., & He, F. (2003). Examination of brand knowledge, perceived risk and consumers' intention to adopt an online retailer. *Total Quality Management & Business Excellence*, *14*(6), 677–693. https://doi.org/10.1080/1478336032000053825

Döring, N., & Bortz, J. (2016). *Forschungsmethoden und Evaluation in den Sozial- und Humanwissenschaften*. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-41089-5

Fota, A., Wagner, K., & Schramm-Klein, H. (2019). Is renting the new buying? A quantitative investigation of the determinants of the rental-commerce intention. *The International Review of Retail, Distribution and Consumer Research*, *29*(5), 582–599. https://doi.org/10.1080/09593969.2019.1664616

Fritze, M. P., Marchand, A., Eisingerich, A. B., & Benkenstein, M. (2020). Access-Based Services as Substitutes for Material Possessions: The Role of Psychological Ownership. *Journal of Service Research*, *23*(3), 368–385. https://doi.org/10.1177/1094670520907691

George, D., & Mallery, P. (2019). *IBM SPSS Statistics 25 Step by Step: A Simple Guide and Reference* (Vol. 15).

Grover. (n.d.). *How Grover works*. Retrieved October 6, 2025, from https://www.grover.com/at-de/how-it-works

Gullstrand Edbring, E., Lehner, M., & Mont, O. (2016). Exploring consumer attitudes to alternative models of consumption: Motivations and barriers. *Journal of Cleaner Production*, *123*, 5–15. https://doi.org/10.1016/j.jclepro.2015.10.107

Handelsverband Österreich (2025). *Second-hand 2025*: Neue Studie zeigt: 73 % der Österreicher:innen kaufen Second-Hand, Presseaussendung. Retrieved November 21, 2025, from https://www.handelsverband.at/presse/presseaussendungen/secondhand-2025/

Heinrichs, H. (2013). Sharing Economy: A Potential New Pathway to Sustainability. *GAIA - Ecological Perspectives for Science and Society*, *22*(4), 228–231. https://doi.org/10.14512/gaia.22.4.5

Jäger, M. (2019). *OTTO NOW: So geht Startup bei einem Großunternehmen*. Retrieved October 6, 2025, from https://www.hamburg-startups.net/otto-now-so-geht-startup-bei-einem-grossunternehmen/

Keller, K. L. (1993). Conceptualizing, Measuring, and Managing Customer-Based Brand Equity. *Journal of Marketing*.

Lang, C. (2018). Perceived risks and enjoyment of access-based consumption: Identifying barriers and motivations to fashion renting. *Fashion and Textiles*, *5*(1), 23. https://doi.org/10.1186/s40691-018-0139-z

Lawson, S. J., Gleim, M. R., Perren, R., & Hwang, J. (2016). Freedom from ownership: An exploration of access-based consumption. *Journal of Business Research*, *69*(8), 2615–2623. https://doi.org/10.1016/j.jbusres.2016.04.021

Lee, J., Kim, D., Ryoo, H.-Y., & Shin, B.-S. (2016). Sustainable Wearables: Wearable Technology for Enhancing the Quality of Human Life. *Sustainability*, *8*(5), 466. https://doi.org/10.3390/su8050466

Lee, S. H. N., & Chow, P.-S. (2020). Investigating consumer attitudes and intentions toward online fashion renting retailing. *Journal of Retailing and Consumer Services*, *52*, 101892. https://doi.org/10.1016/j.jretconser.2019.101892

Leismann, K., Schmitt, M., Rohn, H., & Baedeker, C. (2013). Collaborative Consumption: Towards a Resource-Saving Consumption Culture. *Resources*, *2*(3), 184–203. https://doi.org/10.3390/resources2030184

Mont, O. K. (2002). Clarifying the concept of product–service system. *Journal of Cleaner Production*, *10*(3), 237–245. https://doi.org/10.1016/S0959-6526(01)00039-7

Osztovits, Á., Kőszegi, Á., Nagy, B., & Damjanovics, B. (2015). *Sharing or paring? Growth of the sharing economy*.

OTTO (2022). Miet-Shop OTTO NOW wird eingestellt. Retrieved October 6, 2025, from https://www.otto.de/unternehmen/de/kundenfokus/miet-shop-otto-now-wird-eingestellt

Park, H. J., & Lin, L. M. (2020). Exploring attitude–behavior gap in sustainable consumption: Comparison of recycled and upcycled fashion products. *Journal of Business Research*, *117*, 623–628. https://doi.org/10.1016/j.jbusres.2018.08.025

Proske, M., Winzer, J., Marwede, M., Nissen, N. F., & Lang, K.-D. (2016). Obsolescence of electronics—The example of smartphones. *2016 Electronics Goes Green 2016+ (EGG)*, 1–8. https://doi.org/10.1109/EGG.2016.7829852

Puschmann, T., & Alt, R. (2016). Sharing Economy. *Business & Information Systems Engineering*, *58*(1), 93–99. https://doi.org/10.1007/s12599-015-0420-2

Raylo. (n.d.). About Raylo. Retrieved October 6, 2025, from https://www.raylo.com/about

Rifkin, J. (2000). *The Age of Access: How the Shift of Ownership to Access is Transforming Capitalism*. Penguin. https://books.google.at/books/about/The_Age_of_Access.html?id=Vx1_QgAACAAJ&redir_esc=y

Roos, D., & Hahn, R. (2019). Understanding Collaborative Consumption: An Extension of the Theory of Planned Behavior with Value-Based Personal Norms. *Journal of Business Ethics*, *158*(3), 679–697. https://doi.org/10.1007/s10551-017-3675-3

Schaefers, T., Lawson, S. J., & Kukar-Kinney, M. (2016). How the burdens of ownership promote consumer usage of access-based services. *Marketing Letters*, *27*(3), 569–577. https://doi.org/10.1007/s11002-015-9366-x

Sherif, A. (2025). Consumer electronics - statistics & facts. Statista, Retrieved October 11, 2025, from https://www.statista.com/topics/4408/consumer-electronics/#topicOverview

Statista (2024a). *Global electronic waste: Statista dossier*. Statista Research Department. Retrieved October 6, 2025, from https://www.statista.com/study/56028/global-electronic-waste/

Statista (2024b). *Wearables: Statista dossier*. Statista Research Department. Retrieved October 6, 2025, from https://www.statista.com/study/15607/wearables-statista-dossier/

Statista (2024c). *Consumer Electronics: market data & analysis*. Statista Market Research. Retrieved October 12, 2025, from https://www.statista.com/study/55488/consumer-electronics-market-market-data-and-analysis/

Wright, R., & Keith, L. (2014). Wearable Technology: If the Tech Fits, Wear It. *Journal of Electronic Resources in Medical Libraries*, *11*(4), 204–216. https://doi.org/10.1080/15424065.2014.969051

Appendices

Appendix 1: Interview Guideline

Hi, my name is Beatrice, and this interview is conducted as part of my master's thesis at Católica Lisbon School of Business and Economics. The interview aims to explore how people in Austria think about renting tech (like phones, laptops, wearables) instead of buying them with a focus on wearables (such as smartwatches, rings or other fitness trackers). With your permission I will audio-record our conversation to help me analyze the data afterwards, your input will be anonymized, no names will appear in any report. There are no right or wrong answers, I'm just interested in your experiences and opinions. Do you consent to participate and to the recording?
Quick Introduction: Demographics: age, gender, education/occupation

Context/Knowledge & Experience of Rental Commerce:

1. How do you usually decide on new tech devices?
2. How often do you buy or replace tech devices?
3. Have you heard about renting tech devices through a platform? What do you think it involves?
4. Have you ever rented an electronic device before?
5. Do you currently own any wearables, or have you used some before?
   Please think of smartwatches, rings or other fitness trackers.
   If yes: which, how, upgrade history?
   If no: what come to mind when you think about wearables?

Okay great, let me start by quickly clarifying what I mean by renting tech devices: there are platforms/companies nowadays who let you rent tech devices on a subscription-like basis where you pay a monthly fee to use a device (like a smartwatch, phone or laptop) for a flexible period, often with options like insurance, upgrades or purchase at the end.

Feelings & Attitudes

6. After this explanation: what are your first thoughts about this business model? Are there any questions or uncertainties you would have?

Motivations

7. In what situations might renting instead of buying make sense for you personally?
8. Renting spreads the cost into smaller monthly payments instead of one large upfront payment. How valuable would that be for you? Why?
9. Which kinds of flexibility would be most important to you in such a service, and why?
10. What would a frictionless experience for you look like?
11. How common would you say renting tech is in your social circle, rare, occasional, or quite widespread?
12. Before we go into concerns: Assuming you wanted to try a wearable, how open would you be to renting it on a scale from 0–10? 10 = very likely, and 0 very unlikely.

Barriers (Risks & Concerns)

13. How important is the feeling of owning to you?
14. What concerns would have about renting in general and especially about renting wearables?

15. Would you have any performance or reliability concerns with rented wearables? Which ones?
16. What would a provider need to do to make these risks acceptable?

Environmental Impact & Sustainability

17. Do environmental or circular economy aspects matter to you in this decision of renting vs. buying? In what way?

Some sources indicate that global electronics waste has doubled over the last decade. Considering that wearables have frequent model updates and short innovation cycles.

18. If renting demonstrably extends device life and therefore reduces e-waste, would that change your view?

Rental Intention

19. Imagine you plan to get a smartwatch or ring within the next 6 months.
There is an online rental service for this where devices are either brand new or fully refurbished (data wiped, cleaned and quality-checked). This allows the device to be rented again and kept in circulation longer, helping to reduce electronic waste and conserve resources. The service offers monthly plans (you can choose the minimum term), easy returns and optional damage insurance (basic or premium). At the end of the rental period, you can either upgrade to a new device, keep the device (with a purchase option after a longer rental), or return it.
On a scale of 0-10 how likely is it that you would rent rather than buy the wearable?
10 = very likely, and 0 very unlikely.

Wrap-Up

20. Is there anything further which we have not covered yet but you would like to add?

Appendix 2: Summary Semi-Structured Interviews

Participants:
A: Female, 61 years old, Tertiary Education Teacher
B: Female, 29 years old, Media Agency Employee
C: Female, 29 years old, Media Agency Employee
D: Male, 31 years old, Lawyer
E: Male, 66 years old, Self employed
F: Female, 24 years old, Student
G: Male 24 years old, Employee Quality Manager
H: Female, 28 years old, Employee Content Production

1, How do you usually decide on new tech devices?

A: Compares, purpose-driven
B: Compares carefully, waits for deals
C: Compares models, looks/design also matter for wearables
D: Decides quickly for favorite brands but compares prices
E: Compares online, not after latest model.
F: Compares; design matters, not a latest-model chaser.
G: Compares online; not chasing newest

H: Chooses practical fit; not latest-driven

2. How often do you buy or replace tech devices?
A: Replaces when needed (functional threshold)
B: Rarely replaces, ~every 2–3 years
C: Rare replacement, example iPhone ~4–5 years
D: replaces ~every 3 years
E: Replaces when broken, comfortable buying used
F: Replaces ~3–4 years / when broken, refurbished iPad buyer
G: Replaces ~4–5 years / when needed
H: Replaces when broken/outdated

3. Have you heard about renting tech devices through a platform? What do you think it involves?
A: Unaware of rental, thought of refurbished purchase
B: Had not heard of device rental platforms
C: Has heard of renting in general (influencer mentions; drones), no platform known
D: aware of renting model (mentioned e-scooter rental)
E: Has heard of renting
F: Had not heard of rental platforms
G: Had not heard of rental platforms (beyond carriers)
H: Had not heard of rental platforms

4. Have you ever rented an electronic device before?
A: Never rented
B: Never rented
C: Never rented
D: Never rented
E: Never rented
F: Never rented
G: Never rented
H: Never rented

5. Do you currently own any wearables, or have you used some before?
A: No wearables, thinks “wrist/neck sensors.”
B: Wearables user (Garmin, daily), replaced after ~8 years, old model retained
C: No wearables yet, although interested (sleep/energy tracking), many friends use them
D: Uses Apple Watch (older)
E: uses a smartwatch (second device, current bought used)
F: Uses Apple Watch rarely, for sport only
G: Uses Apple Watch (~2y; first smartwatch)
H: Whoop trial only for health purpose, tracking stressed her

6. After this explanation: what are your first thoughts about this business model? Are there any questions or uncertainties you would have?
A: Interested, privacy concern on used devices, compared it to a gym membership where you also pay monthly.
B: Understands model, although usecase not completely clear, privacy/data top of mind, sees use for short events (like training for triathlon and therefore wanting newest model)
C: model seems simple/logical, insurance viewed as smart
D: Model clear, compares it to leasing, no conceptual concerns
E: Finds the model interesting if pricing is fair, likes purchase option after rental
F: Price-sensitive; asks if it “pays off", links to leasing (might be expensive)
G: Model plausible, compares to leasing, no conceptual issues
H: Model logical, sees use case for repair replacement or try-before-buy but prefers buying for phone/laptop.

7. In what situations might renting instead of buying make sense for you personally?
A: Try-before-you-buy (trial period), budget flexibility, life stage: later might want “just functional.” or for her mother/grand mother an older device would work
B: Makes sense for trial or time-bound needs (e.g., triathlon).
C: Try before buy, compare models until preferred one found, trialability = main benefit
D: B2C: when budget is limited & fast innovation B2B: tax/OPEX + always newest
E: Limited cash situations, try-before-buy.
F: Try before buy (compare smartwatch vs. ring), fits cash-tight months
G: try-before-commit / short needs.
H: Trial/temporary use (e.g., test Apple Watch).

8. Renting spreads the cost into smaller monthly payments instead of one large upfront payment. How valuable would that be for you? Why?
A: Monthly spread can help but asks about tax/expense, values trusted, Amazon-like experience.
B: Monthly payments not crucial for her (prefers fewer variable costs).
C: Monthly payments reduce hurdle (depends on price/term)
D: prefers buy/own generally but sees value with high prices/short cycles
E: Monthly payments valuable
F: Prefers one-off payment, monthly only helpful when liquidity low
G: Monthly split valuable only if not more expensive overall.
H: Monthly split not key, prefers one-off payment for main devices

9. Which kinds of flexibility would be most important to you in such a service, and why?
A: short/choose term, swap/upgrade, pause/cancel, tiered pricing; suitable options for elderly/older models
B: Flexibility important if renting: short term, swap/upgrade, maybe trial month
C: Flexibility wanted: short terms, pause/cancel, extend, quick delivery
D: short/choose term, new/like-new devices
E: choose term (e.g., 6–18 months), extend, upgrade, pause/cancel

F: wants very short terms (2–3 months), ability to stop/upgrade
G: prefers short terms for small devices, pause/upgrade mentioned, all-digital flow, fast shipping, good CS.
H: short minimum terms, pause/cancel anytime, insurance.

10. What would a frictionless experience for you look like?
A: fast delivery, return, insurance, human support; trust in platform.
B: easy digital contract, delivery + return, fast replacement, responsive support
C: broad selection, easy configuration (model + term + payment), option to extend; clear insurance
D: quick credit check, fast courier delivery & pickup, clear insurance/returns
E: warranty + reachable human support, simple processes.
F: fast delivery, responsive customer service, returns manageable
G: online signup, quick dispatch, user-friendly, helpful customer service
H: all-online, easy returns, low/covered return shipping

11. How common would you say renting tech is in your social circle, rare, occasional, or quite widespread?
A: not common in her circle; sees sharing logic (tools)
B: not established but could be adopted if model became more known/visible
C: low in circle, some considered renting drones, colleague looked into renting an appliance
D: rare in circle, cars/bikes more common
E: rare in his circle
F: rare/not discussed
G: rare, knows car leasing
H: low, but knows that peers buy refurbished

12. Before we go into concerns: Assuming you wanted to try a wearable, how open would you be to renting it on a scale from 0–10? Why that number?
A: implied moderate, 7/10
B: low–moderate implicitly, 3/10
C: very open to trying, 9/10
D: open to trying, 7/10
E: medium openness, 5/10
F: open to trying, 7-8/10
G: open to trying, 9/10
H: very open to trying, 10/10

13. How important is the feeling of owning to you?
A: Ownership itself not important, except data ownership/privacy.
B: Ownership important but mainly for data security (not status)
C: Ownership feeling not important
D: Ownership preference generally, but not essential for wearables
E: Ownership important (“feel more protected”)

F: Ownership feeling not important
G: Owning not important (for small items)
H: Ownership important for phone/laptop (private data), less so for wearables

14. What concerns would have about renting in general and especially about renting wearables?
A: privacy/data wipe, trust, wants physical try-on, prefers fewer monthly debits
B: privacy/data wipe, scratches/condition, loss/liability, hygiene, too many monthly costs.
C: hygiene/skin contact, prior care by others, performance/condition (scratches, accuracy), need for provider to ensure everything works
D: quality/condition (prefers new/nearly new), past refurb failure, privacy/security not major concern
E: needs warranty, wants phone/email support, otherwise trusts refurb if guaranteed
F: paying more overall with monthly plans, liability/damage (mitigated by insurance), needs good provider.
G: price/total cost, privacy not a concern for him (notes generational difference), wants condition-tier pricing (new vs well-maintained)
H: hidden fees/auto-renew, damage/liability, condition/performance of refurb; wants transparency on age/scratches/usage

15. Would you have any performance or reliability concerns with rented wearables? Which ones?
A: not primary if service/support is solid
B: wants proof of refurb checks, otherwise not a core concern
C: Performance concerns acknowledged, wants info like how many prior rentals/usage, open to refurb if cheaper for testing
D: expects like-new - then OK, wary due to refurb experience
E: Performance worries minimal if warranty exists
F: not a big worry if provider reliable
G: Performance/condition: prefers choice of new vs refurbished, accepts refurbished if priced accordingly.
H: Performance concern present (heard refurb fails)

16. What would a provider need to do to make these risks acceptable?
A: warranty, competent human help, training, clear condition grading, free trial/14-day return
B: transparent processes (what's cleaned/replaced/tested), clear data-wipe policy, warranties, easy exchanges
C: transparency (defect documentation, prior usage), clear insurance
D: trial month, transparent condition grading, return security check/data wipe
E: warranty, clear refurb/quality transparency, easy contact
F: insurance, warranty, trial period, clear pricing
G: trial week/month, transparent condition grades
H: clear grading, disclosed defects/age, straightforward insurance & returns

17. Do environmental or circular economy aspects matter to you in this decision? In what way?
A: Matters, e-waste awareness.
B: Sustainability noted but not decisive for her, long personal use already
C: Not primary driver, but recognizes renting can extend life & reduce e-waste, message should be communicated clearly
D: Not a key driver personally, believes resale keeps devices in use anyway
E: Sustainability is important, already buys used to avoid new production
F: Not primary, likes refurb for conscience
G: Values environment generally, assumes recycling, not a deciding factor here
H: Not a primary driver, already uses devices until they fail

18. If renting demonstrably extends device life and therefore reduces e-waste, would that change your view?
A: If life extension is proven, would increase willingness, social proof amplifies
B: Even with proven life extension, little change to her intention, she is cautious of the "always newest" dynamic (and does not need the newest device always)
C: When framed with e-waste facts & fast cycles, shifts view positively.
D: If life extension proven, could positively change view (attractive selling point)
E: If renting clearly extends life & reduces e-waste, it increases his willingness (with transparency & quality)
F: If life extension and e-waste reduction are proven, becomes more attractive
G: Even with e-waste framing, price still dominates his decision
H: After e-waste info: rental could help others who upgrade often, little change for her own decision

19. On a scale of 0-10 how likely is it that you would rent rather than buy the wearable?
A: 8/10, wants option to upgrade/keep/return, prefers not too many monthly debits (may like prepay/annual)
B: 3/10, would increase with very short term rentals, transparent data & condition, strong support, simple returns/swaps
C: 8/10 likelihood to rent given the described service
D: 5/10 likelihood to rent (after scenario), baseline openness earlier 7/10
E: 10/10 likelihood to rent a wearable under the described service
F: 7/10 likelihood to rent an Oura-type ring, would rent to try, likely return rather than buy after rental
G: 8/10 likelihood to rent (given new/refurb options, flexible plans, insurance, keep/upgrade/return flow).
H: 10/10 likelihood to rent Oura-type ring under the described service (to try, then likely return).

20. Is there anything further which we have not covered yet but you would like to add?
A: -

B: Adds critique: rental could fuel consumerism if focused on constant upgrades, sees value if it channelizes heavy upgraders into more circular use
C: -
D: Emphasizes B2B potential (employee devices) beyond B2C.
E: mentioned analogy to car market, used often makes more sense today
F: -
G: Would try it; views rental as good for testing; long-term ownership still favored for devices he uses regularly
H: No additional points, emphasizes need for short terms and transparent conditions

Appendix 3: Online Questionnaire

Introduction
Dear participant, welcome and thank you for taking the time to participate in this survey.

This study is part of my master's thesis at Católica Lisbon School of Business and Economics in the seminar of new product innovation. The purpose of this research is to assess individuals' attitudes, perceptions and intentions regarding the rental of wearable technology (such as smartwatches, smart rings or other fitness trackers).

The survey will take approximately 6-8 minutes to complete. Please answer honestly, there are no right or wrong answers. Participation is anonymous and your responses will be kept confidential and will only be used for research purposes.

Thank you very much for your participation!
Beatrice Hackl

Block 1: Screening Question

Q1: Are you currently living in Austria?
- Yes
- No

If Q1 = No, skip to end of survey.

Block 2: Habits, Tech, Wearable Usage
Q2: In the last two years did you buy any tech device?
In this survey, tech devices means everyday electronics like phones, laptops, tablets, headphones/earbuds, or wearables.
- Yes
- No

Q3: In the last two years did you buy a wearable?

In this survey "wearables" refers to wrist- or ring-based devices such as smartwatches, smart rings or other fitness trackers. They can track activity/health and also offer features like notifications, calls, payments and apps.

- Yes
- No

Q4: Which of the following devices do you currently use?

- Smartwatch (e.g. Apple Watch, Samsung Galaxy Watch, Garmin Venu,…)
- Smart ring (e.g. Oura, Ultrahuman, RingConn,…)
- Fitness tracker (e.g. Fitbit Charge, Garmin Vivosmart, …)
- None of the above.

Q5: Please indicate your level of agreement with the following statement.

7 Point Likert Scale (Strongly disagree to strongly agree)

- I am usually among the first to try new tech devices.

Block 3: Knowledge/Awareness Rental Commerce

Q6: How often do you typically replace your tech devices?

- As soon as a new model comes out
- About once a year
- Every 2-3 years
- Less often
- Only if it stops working
- Not sure

Q7: Have you ever heard of renting tech devices instead of buying them?

- Yes
- No

Q8: Have you ever rented any tech devices before?

- Yes
- No

Q9: Please indicate how much you agree with each of the following statements.

7 Point Likert Scale (Strongly disagree to strongly agree)

- I feel knowledgeable about renting technology devices online.
- I know how renting technology devices typically works (plans, minimum terms, returns, refurbishment, optional insurance).
- I am familiar with the main providers and offers for renting technology devices.

Please read this short scenario before answering the following sections:
Imagine an online rental service for wearables (like smartwatches/rings or any other fitness trackers).

- Devices: are new or fully refurbished (data wiped, cleaned, quality-checked) and shipped within a few days.
- After return: devices are refurbished for reuse.
- Plans: monthly plans where you can choose the minimum term.
- Returns & Protection: free returns and optional damage insurance (basic or premium).
- Flexibility: option to extend or upgrade after the term.
- Purchase Option: Some plans may include an option to buy the device after a longer rental period.

When answering the following statements, please think about renting a wearable via this service.

Block 4: Drivers towards Renting Wearables

Q10: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.
7 Point Likert Scale (Strongly disagree to strongly agree)

- Renting wearables could save me money.
- Renting would be financially beneficial for me.
- Renting can reduce upfront costs compared to buying.

Q11: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.
7 Point Likert Scale (Strongly disagree to strongly agree)

- Renting lets me use a wearable short-term without long-term commitment.
- Renting makes it easy to try/upgrade to newer models frequently.
- Renting gives me flexibility to switch between different products/brands.

Block 5: Barriers towards Renting Wearables

Q12: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.
7 Point Likert Scale (Strongly disagree to strongly agree)

- Paying monthly for a device I do not own doesn't feel worthwhile.
- Not owning the items I use would be annoying.
- I want to own the item I like and feel that it is mine.

Q13: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.
7 Point Likert Scale (Strongly disagree to strongly agree)

- I worry that a rented wearable won't perform as expected.

- I am concerned about the condition/cleanliness of rented wearables.
- The overall quality of rented wearables might be poor.

Q14: To help with data quality, please select "Option 2" in the list below.

- Option 1
- Option 2
- Option 3
- Option 4

Q15: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.

7 Point Likert Scale (Strongly disagree to strongly agree)

- I am concerned about personal/health data remaining after data wiping.
- I worry my data could be accessed by others when renting/returning a wearable.
- I would need clear information about data wiping and privacy safeguards to feel comfortable renting a wearable.

Block 6: Perceived Sustainability

Q16: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.

7 Point Likert Scale (Strongly disagree to strongly agree)

- Renting wearables can reduce electronic waste.
- Renting is a more sustainable form of consumption.
- Rental-commerce is environmentally friendly.

Block 7: Attitude

Q17: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.

(7-point semantic differential; code so higher = more positive attitude.)

- Bad … Good
- Unappealing … appealing
- Unwise … wise
- Not beneficial … beneficial

Block 8: Social Norms

Q18: Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.

7 Point Likert Scale (Strongly disagree to strongly agree)

- People important to me would think that renting wearables is a good idea.
- People whose opinions I value would approve of me renting wearables.

- My close friends/family would support me in renting a wearable.

Block 9: Rental Intention

Q19: **Please indicate your level of agreement with the statements, taking into consideration the scenario presented to you.**
7 Point Likert Scale (Strongly disagree to strongly agree)

- I intend to rent a wearable in the next 12 months.
- If I needed a wearable soon, I would consider renting instead of buying.
- It is likely that I would rent a wearable if the opportunity arises.

Q20: How likely would you be to rent a wearable?
Slider from very unlikely – very likely

Block 10: Demographics

Q21: What is your age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75 or older

Q22: What is your gender?

- Male
- Female
- Non-binary/third gender
- Prefer not to say

Q23: What is your current occupation?

- Student
- Working Student
- Employed
- Self-employed
- Unemployed
- Retired

Q24: What is your monthly gross income?

- Less than 1.000 €
- – 2.499 €

- 2.500 – 3.999 €
- 4.000 – 5.499 €
- More than 5.500 €
- Prefer not to say

Ending the survey

Thank you for your time spent taking this survey. Your response has been recorded.

Appendix 4: SPSS Output Demographics

What is your age?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	11	10.2	10.2	10.2
	25-34	69	63.9	63.9	74.1
	35-44	10	9.3	9.3	83.3
	45-54	5	4.6	4.6	88.0
	55-64	12	11.1	11.1	99.1
	65-74	1	.9	.9	100.0
	Total	108	100.0	100.0	

What is your gender?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	39	36.1	36.1	36.1
	Female	69	63.9	63.9	100.0
	Total	108	100.0	100.0	

What is your current occupation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	14	13.0	13.0	13.0
	Working Student	7	6.5	6.5	19.4
	Employed	76	70.4	70.4	89.8
	Self-Employed	8	7.4	7.4	97.2
	Retired	3	2.8	2.8	100.0
	Total	108	100.0	100.0	

What is your approximate gross monthly income (before taxes)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 1.000 €	5	4.6	4.6	4.6
	1.000 €-2.499 €	22	20.4	20.4	25.0
	2.500 €-3.999 €	39	36.1	36.1	61.1
	4.000 € - 5.499€	27	25.0	25.0	86.1
	More than 5.500€	9	8.3	8.3	94.4
	Prefer not to say	6	5.6	5.6	100.0
	Total	108	100.0	100.0	

Appendix 5: SPSS Output Descriptives

In the last two years did you buy any tech device? In this survey, "tech devices" refers to everyday electronics like phones, laptops, tablets, headphones/earbuds, or wearables.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	102	94.4	95.3	95.3
	No	5	4.6	4.7	100.0
	Total	107	99.1	100.0	
Missing	System	1	.9		
Total		108	100.0		

In the last two years did you buy a wearable?

In this survey "wearables" refers to wrist- or ring-based devices such as smart watches, smart rings or other fitness trackers. They can track activity/health and also offer other features like notifications, calls, payments and apps.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	51	47.2	47.7	47.7
	No	56	51.9	52.3	100.0
	Total	107	99.1	100.0	
Missing	System	1	.9		
Total		108	100.0		

Which of the following devices do you currently use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Smartwatch (e.g. Apple Watch, Samsung Galaxy Watch, Garmin,...)	50	46.3	75.8	75.8
	Smart ring (e.g. Oura, Ultrahuman, RingConn,...)	10	9.3	15.2	90.9
	Fitness tracker (e.g. Fitbit, Whoop, ...)	6	5.6	9.1	100.0
	Total	66	61.1	100.0	
Missing	System	42	38.9		
Total		108	100.0		

Please indicate your level of agreement with the following statement. - I am usually among the first to try new tech devices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	6	5.6	5.8	5.8
	1.00	12	11.1	11.7	17.5
	2.00	19	17.6	18.4	35.9
	3.00	26	24.1	25.2	61.2
	4.00	18	16.7	17.5	78.6
	5.00	17	15.7	16.5	95.1
	6.00	5	4.6	4.9	100.0
	Total	103	95.4	100.0	
Missing	System	5	4.6		
Total		108	100.0		

Which of the following devices do you currently use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Smartwatch (e.g. Apple Watch, Samsung Galaxy Watch, Garmin,...)	50	46.3	75.8	75.8
	Smart ring (e.g. Oura, Ultrahuman, RingConn,...)	10	9.3	15.2	90.9
	Fitness tracker (e.g. Fitbit, Whoop, ...)	6	5.6	9.1	100.0
	Total	66	61.1	100.0	
Missing	System	42	38.9		
Total		108	100.0		

Please indicate your level of agreement with the following statement. - I am usually among the first to try new tech devices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	6	5.6	5.8	5.8
	1.00	12	11.1	11.7	17.5
	2.00	19	17.6	18.4	35.9
	3.00	26	24.1	25.2	61.2
	4.00	18	16.7	17.5	78.6
	5.00	17	15.7	16.5	95.1
	6.00	5	4.6	4.9	100.0
	Total	103	95.4	100.0	
Missing	System	5	4.6		
Total		108	100.0		

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Know_Mean	108	1.00	5.67	2.3302	1.22749
Econ_Mean	108	1.00	7.00	4.5216	1.28031
Flex_Mean	108	2.67	7.00	5.8302	.87955
Own_Mean	108	1.33	7.00	4.4198	1.17730
Perf_Mean	108	1.00	6.33	3.4815	1.25248
Priv_Mean	108	1.00	7.00	4.1080	1.50722
Sust_Mean	108	2.00	7.00	5.2500	1.05323
Att_Mean	108	2.00	6.75	4.6898	1.20351
Soci_Mean	108	1.67	6.67	4.2963	1.10068
Int_Mean	108	1.00	5.67	3.0556	1.31332
Valid N (listwise)	108				

Appendix 6: SPSS Output H1, H2, H3

Multiple Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Int_Mean	3.0556	1.31332	108
Know_Mean	2.3302	1.22749	108
Att_Mean	4.6898	1.20351	108
Soci_Mean	4.2963	1.10068	108

Correlations

		Int_Mean	Know_Mean	Att_Mean	Soci_Mean
Pearson Correlation	Int_Mean	1.000	-.024	.699	.550
	Know_Mean	-.024	1.000	-.166	-.167
	Att_Mean	.699	-.166	1.000	.575
	Soci_Mean	.550	-.167	.575	1.000
Sig. (1-tailed)	Int_Mean	.	.401	<.001	<.001
	Know_Mean	.401	.	.043	.042
	Att_Mean	.000	.043	.	.000
	Soci_Mean	.000	.042	.000	.
N	Int_Mean	108	108	108	108
	Know_Mean	108	108	108	108
	Att_Mean	108	108	108	108
	Soci_Mean	108	108	108	108

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Soci_Mean, Know_Mean, Att_Mean[b]	.	Enter

a. Dependent Variable: Int_Mean

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.731[a]	.534	.520	.90956	1.958

a. Predictors: (Constant), Soci_Mean, Know_Mean, Att_Mean

b. Dependent Variable: Int_Mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	98.516	3	32.839	39.694	<.001[b]
	Residual	86.039	104	.827		
	Total	184.556	107			

a. Dependent Variable: Int_Mean

b. Predictors: (Constant), Soci_Mean, Know_Mean, Att_Mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-1.404	.465		-3.019	.003		
	Know_Mean	.119	.073	.111	1.632	.106	.965	1.036
	Att_Mean	.637	.090	.584	7.106	<.001	.664	1.505
	Soci_Mean	.278	.098	.233	2.838	.005	.664	1.506

a. Dependent Variable: Int_Mean

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Know_Mean	Att_Mean	Soci_Mean
1	1	3.741	1.000	.00	.01	.00	.00
	2	.207	4.246	.00	.75	.02	.02
	3	.026	11.993	.10	.02	.96	.48
	4	.026	12.040	.89	.22	.02	.49

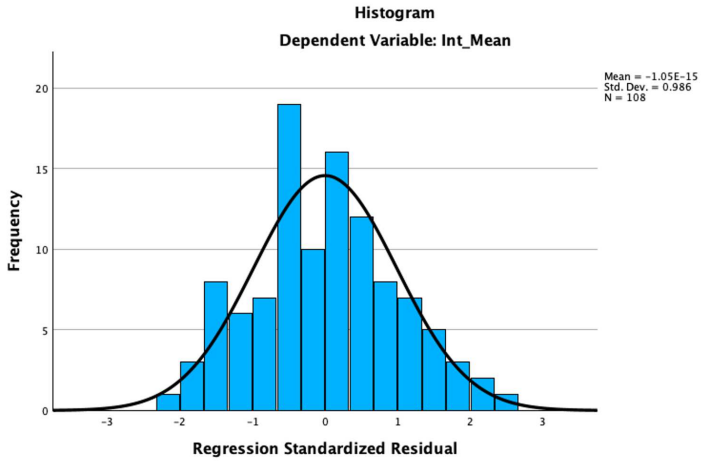
a. Dependent Variable: Int_Mean

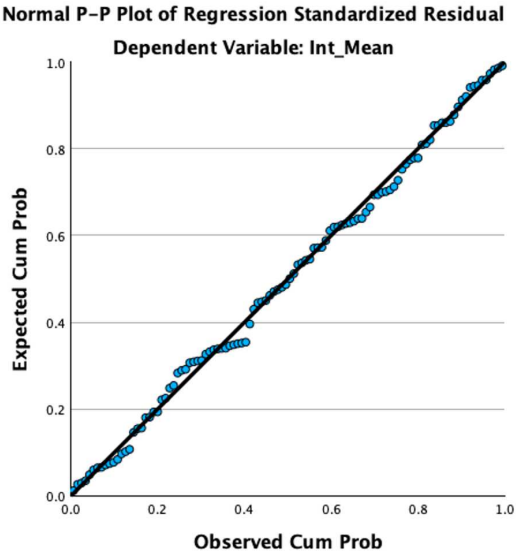
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.6110	4.8277	3.0556	.95954	108
Residual	-2.05158	2.15595	.00000	.89672	108
Std. Predicted Value	-2.548	1.847	.000	1.000	108
Std. Residual	-2.256	2.370	.000	.986	108

a. Dependent Variable: Int_Mean

Charts





Appendix 7: SPSS Output H4a, H4b, H5a, H5b, H6, H7

Multiple Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Att_Mean	4.6898	1.20351	108
Econ_Mean	4.5216	1.28031	108
Flex_Mean	5.8302	.87955	108
Own_Mean	4.4198	1.17730	108
Perf_Mean	3.4815	1.25248	108
Priv_Mean	4.1080	1.50722	108
Sust_Mean	5.2500	1.05323	108

Correlations

		Att_Mean	Econ_Mean	Flex_Mean	Own_Mean	Perf_Mean	Priv_Mean	Sust_Mean
Pearson Correlation	Att_Mean	1.000	.578	.443	-.337	-.122	.004	.537
	Econ_Mean	.578	1.000	.454	-.275	-.047	-.093	.319
	Flex_Mean	.443	.454	1.000	-.221	-.188	.013	.293
	Own_Mean	-.337	-.275	-.221	1.000	.120	.141	-.159
	Perf_Mean	-.122	-.047	-.188	.120	1.000	.357	-.035
	Priv_Mean	.004	-.093	.013	.141	.357	1.000	.007
	Sust_Mean	.537	.319	.293	-.159	-.035	.007	1.000
Sig. (1-tailed)	Att_Mean	.	<.001	<.001	<.001	.105	.482	<.001
	Econ_Mean	.000	.	.000	.002	.316	.169	.000
	Flex_Mean	.000	.000	.	.011	.026	.446	.001
	Own_Mean	.000	.002	.011	.	.108	.073	.050
	Perf_Mean	.105	.316	.026	.108	.	.000	.358
	Priv_Mean	.482	.169	.446	.073	.000	.	.471
	Sust_Mean	.000	.000	.001	.050	.358	.471	.
N	Att_Mean	108	108	108	108	108	108	108
	Econ_Mean	108	108	108	108	108	108	108
	Flex_Mean	108	108	108	108	108	108	108
	Own_Mean	108	108	108	108	108	108	108
	Perf_Mean	108	108	108	108	108	108	108
	Priv_Mean	108	108	108	108	108	108	108
	Sust_Mean	108	108	108	108	108	108	108

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Sust_Mean, Priv_Mean, Own_Mean, Flex_Mean, Perf_Mean, Econ_Mean[b]	.	Enter

a. Dependent Variable: Att_Mean

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.722[a]	.521	.493	.85730	2.102

a. Predictors: (Constant), Sust_Mean, Priv_Mean, Own_Mean, Flex_Mean, Perf_Mean, Econ_Mean

b. Dependent Variable: Att_Mean

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.752	6	13.459	18.312	<.001[b]
	Residual	74.231	101	.735		
	Total	154.984	107			

a. Dependent Variable: Att_Mean

b. Predictors: (Constant), Sust_Mean, Priv_Mean, Own_Mean, Flex_Mean, Perf_Mean, Econ_Mean

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.704	.834		.844	.401		
	Econ_Mean	.349	.076	.371	4.568	<.001	.718	1.393
	Flex_Mean	.165	.111	.120	1.487	.140	.723	1.383
	Own_Mean	-.157	.075	-.154	-2.110	.037	.892	1.122
	Perf_Mean	-.078	.073	-.081	-1.071	.287	.826	1.210
	Priv_Mean	.068	.060	.086	1.139	.257	.840	1.191
	Sust_Mean	.406	.085	.356	4.807	<.001	.866	1.154

a. Dependent Variable: Att_Mean

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Econ_Mean	Flex_Mean	Own_Mean	Perf_Mean	Priv_Mean	Sust_Mean
1	1	6.643	1.000	.00	.00	.00	.00	.00	.00	.00
	2	.141	6.858	.00	.10	.01	.01	.18	.20	.02
	3	.080	9.118	.00	.09	.00	.45	.27	.01	.00
	4	.075	9.415	.00	.00	.00	.06	.45	.73	.00
	5	.034	13.946	.01	.59	.01	.14	.00	.03	.49
	6	.020	18.210	.06	.21	.39	.13	.01	.03	.44
	7	.007	30.450	.93	.01	.60	.22	.10	.00	.06

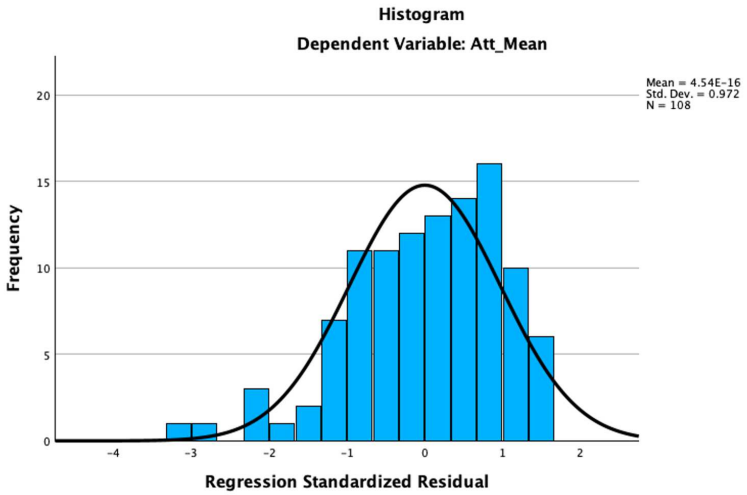
a. Dependent Variable: Att_Mean

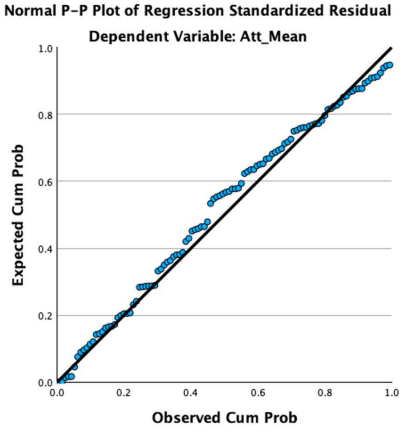
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.3728	6.8336	4.6898	.86873	108
Residual	-2.70544	1.38983	.00000	.83292	108
Std. Predicted Value	-2.667	2.468	.000	1.000	108
Std. Residual	-3.156	1.621	.000	.972	108

a. Dependent Variable: Att_Mean

Charts





Appendix 8: SPSS Output Exploratory Findings

T-Test

Group Statistics

	What is your gender?	N	Mean	Std. Deviation	Std. Error Mean
Int_Mean	Male	39	2.8803	1.24131	.19877
	Female	69	3.1546	1.35108	.16265

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Int_Mean	Equal variances assumed	.654	.421	-1.043	106	.150	.299	-.27425	.26300	-.79566	.24717
	Equal variances not assumed			-1.068	84.704	.144	.289	-.27425	.25684	-.78493	.23644

One-Way ANOVA

Descriptives

Int_Mean

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-24	11	2.9091	1.06553	.32127	2.1933	3.6249	1.00	4.67
25-34	69	3.1304	1.38056	.16620	2.7988	3.4621	1.00	5.67
35-44	10	3.2333	1.24771	.39456	2.3408	4.1259	1.33	5.33
45-54	5	2.3333	1.22474	.54772	.8126	3.8541	1.00	3.33
55-64	12	2.8333	1.29880	.37493	2.0081	3.6585	1.00	4.33
65-74	1	4.0000	.	.	.	.	4.00	4.00
Total	108	3.0556	1.31332	.12637	2.8050	3.3061	1.00	5.67

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Int_Mean	Based on Mean	.628	4	102	.643
	Based on Median	.641	4	102	.635
	Based on Median and with adjusted df	.641	4	98.109	.635
	Based on trimmed mean	.628	4	102	.644

ANOVA

Int_Mean

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.031	5	1.006	.572	.721
Within Groups	179.524	102	1.760		
Total	184.556	107			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval	
			Lower	Upper
Int_Mean	Eta-squared	.027	.000	.063
	Epsilon-squared	-.020	-.049	.017
	Omega-squared Fixed-effect	-.020	-.049	.017
	Omega-squared Random-effect	-.004	-.009	.004

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

T-Test

Group Statistics

	In the last two years did you buy a wearable? In this survey "wearables" refers to wrist- or ring-based devices such as smart watches, smart rings or other fitness trackers. They can track activity/health and also offer other features like notifications,	N	Mean	Std. Deviation	Std. Error Mean
Int_Mean	Yes	51	2.8301	1.29679	.18159
	No	56	3.2560	1.31808	.17614

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Int_Mean	Equal variances assumed	.001	.977	-1.682	105	.048	.096	-.42589	.25317	-.92788	.07611
	Equal variances not assumed			-1.683	104.362	.048	.095	-.42589	.25298	-.92753	.07576

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
Int_Mean	Cohen's d	1.30798	-.326	-.707	.057
	Hedges' correction	1.31742	-.323	-.702	.057
	Glass's delta	1.31808	-.323	-.706	.062

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.