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FACULTY OF ECONOMICS AND ADMINISTRATION

# Attitudes to Pay-Per-Use Product Service Systems

Master's thesis

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Program: Business Management

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# Abstract

The purpose of the thesis is to explore the attitudes consumers have toward pay-per-use product services in the context of the circular economy among consumers living in the Czech Republic. A mixed method approach, combining survey and focus group is used to provide a comprehensive investigation of barriers, motives, and behavioral attitudes towards these product services (laundromats and e-scooters).

# Declaration

I certify that I have written the Master's Thesis titled Attitudes to Pay-Per-Use Product Service System by myself under the supervision of doc. Ing. Alena Klapalová and I have listed all the literature and other sources in accordance with legal regulations, Masaryk University internal regulations, and the internal procedural deeds of Masaryk University and the Faculty of Economics and Administration.

Brno, .....

Ngoya, Faith

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# List of Terms and Abbreviations

| | |
|---|---|
| PPU | Pay Per Use |
| PSS | Product Service System |
| CE | Circular Economy |
| PPUPSS | Pay Per Use Product Service System |
| B2C | Business to consumer |
| USA | United States of America |

# 1 Introduction

Modern day society struggles with stressing environmental issues on a global scale resulting from human activities (Geissdoerfer et al., 2017). This has necessitated the pursuit of rethinking economic and social relations to remain sustainable (Bocken et al., 2018). Part of the ambitious approach includes moving away from conventional technologies, lifestyles, and behaviors. Sustainable transformation is not only an endless and complex process but an essential one by which the traditional socio-technical systems shift to more sustainable modes of production and consumption (Iddrisu and Bhattacharyya 2015). Hence, various forms of more resource-efficient product and service delivery systems have been implemented, for example, the product service system (PSS).

According to Tukker (2015), the product service system has been argued as an effective model that would move society towards a resource-efficient one and create a resource revolution as embraced by many firms. Again, scholars interested in sustainability have engaged in PSS over the years regarding designing need-fulfilment systems (Tukker, 2015, Annarelli et al., 2016). Other scholars conceptualize PSS models as blueprints for creating a resource-efficient society. Hence different disciplines have developed alternative terms to describe the phenomenon, including 'integrated solutions' (Annarelli et al., 2016, Li et al., 2020, Tukker, 2015), 'Servitisation' (Annarelli et al., 2016, Li et al., 2020, Kuusisto, 2018) 'smart connected products' (Porter and Heppelmann 2014, Li et al., 2020, Annarelli et al., 2016) 'Hybrid offerings' (Ulaga and Reinartz 2011). There has been a growing interest in PSS concept for environmental reasons as well in recent years due to its benefits in resource efficiency and optimization overall. However, with expected high population increase globally in the coming years, there would be a strain in resources (Tukker, 2015). In this regard, there is a need to limit resource depletion by encouraging resource decoupling. For instance, with the circular economy, products such as garments that are no longer in use or old are taken back for reuse and recycling, yielding tremendous economic and environmental benefits (Niinimäki, 2017).

Despite the popularity and adoption of the PSS model in various business markets, their presence in Business to consumer (B2C) markets is still lagging (Borg et al., 2020). The majority of B2C experiences come from long-lasting, slow-moving products like motor vehicles, or from items that are often rented for a single utilization, like formal clothes or party materials. More elementary consumer products, on the other hand, are generally regarded as undesirable for product service systems, particularly those that are affordable, used often do not require upkeep, or are significantly influenced by fashion trends or branding (Borg et al., 2020). And because consumer uptake is slow, their sustainability potential has yet to be realized (Tunn et al., 2021). There have been several extensive studies by various researchers about reasons that drive and discourage consumers from adopting product service systems (Edbring et al., 2016, D'Agostin et al., 2020, Moro et al., 2020). However, despite many years of research, the knowledge of motives and barriers of PSS adoption that are relevant to consumers is inadequate (Tunn et al., 2021). Hence more knowledge on barriers and drivers of PSS can help businesses and service providers to develop and enhance products services that provide customer satisfaction while addressing the concerns to ensure positive user experience. This not only improves customer satisfaction and service adoption but also increases competitiveness among businesses, revenue for the businesses and most importantly environmental conservation.

Consumers' attitudes are the most important factor that determines consumers' behavior and responsible consumption (Khan et al., 2020). Responsible consumption is crucial in a circular-based society and for this to be successful, the emerging sustainable models require consumer acceptance. However, several behavioral barriers are currently preventing the acceptance of these sustainable models (Muranko et al., 2018, Cherry and Pidgeon 2018, Kim and Hwang 2021). Since consumer behaviors can be influenced by consumer attitudes, there is a need to explore the consumers' attitudes to find solutions for favorable sustainable consumer behaviors. There is also little research on behavior change and attitudes with specific regard to the circular economy (Muranko et al., 2018). Therefore, this thesis will help us to investigate the attitudes that consumers have towards a pay-per-use product service system, comparing two different

products and identifying the similarities and differences in the attitudes of these products in consumers' perspective. Based on this comparative analysis, the findings can be used by marketers for marketing strategy development in the Czech market to increase pay-per-use acceptance.

## 1.1 Purpose of the study

The purpose of this thesis is to explore the attitudes consumers have toward the pay-per-use product and service system with a unique emphasis on laundromats (laundry and dry-cleaning services industry) and e-scooters (micro-mobility sector within the broader transport industry) among consumers living in Brno, Czech Republic. The target population was chosen because the product services discussed in the thesis are prevalent in urban cities and towns, and Brno is the second largest city in Czech Re-public, with many young people who exhibit pro-environment behavior (D'Agostin et al., 2020). This guarantees a high chance of getting enough responses which makes it easier to collect data while minimizing logistical challenges like costs.

## 1.2 Research Gap

Moving away from ownership-based models to more service-oriented consumption like pay-per-use has massive potential in resource optimization. However, there is a huge gap in understanding consumers' attitudes towards PPU models, and specifically, to gain insight into the similarities and differences involved in comparing two PPU products and services. (e-scooters and laundromats). Most of existing research comes from the western countries like U.S.A., China, Sweden, the Netherlands, Belgium are the countries with highest evidence on findings about consumers attitudes towards this business model (Aarekrans et al, 2022). However, for marketers with global presence and with the aim to expand their business it is important to know if there are some specificities also in other markets for instance the Czech market. There is also

a lack of studies on tangible products in sharing and collaboration economy, where PPU belongs (Kansal and Bhalla, 2023).

## 1.3 Thesis Outline

The first chapter contains the introductory part of the thesis, with a brief background regarding the topic and describing the purpose of the thesis. Chapter two entails the literature review of the academic publications about the topic and discusses in general detail sustainable consumption models, Sustainability within transport and laundry industries, consumers' attitudes, and behaviors towards PPU, factors influencing PPU. The motives and barriers of PPU are also discussed here. Chapter three illustrates the research aim research questions that the thesis seeks to answer, research methodology, data collection and the data analysis that will be used in this thesis. Chapter four provides the analysis of the research findings with a review of sample characteristics, followed by a discussion of the findings, contributions of the study, future recommendations, and limitations of the study in chapter five. Chapter six concludes the thesis.

# 2 Literature Review

## 2.1 Circular Economy

The circular economy (CE) is not a new concept, however, the research on CE is still emerging and it remains largely unexplored (Korhonen et al., 2018). As an approach to fight environmental challenges and promote sustainable and economic development, the circular economy has recently gained growing attention in different industry sectors and value chains. CE is a general term covering all activities that reduce, reuse, and recycle materials in production, distribution, and consumption processes (Blomsma and Brennan 2017). According to Kirchherr et al., (2019), a circular economy can be described as an economic system that is based on business models that replace the 'end of life' notion that is engrained in linear economies with alternatively reusing, recycling, and recovering materials in production, distribution, and consumption processes, to accomplish sustainable development. Research from Shevchenko et al., (2023), states that the CE is an economic system that aims to minimize waste and maximize the use of resources. It is viewed as a strategy for dealing with the current resource scarcity while promoting economic development and employment creation (Scheel et al., 2020).

Geissdoerfer et al. (2017) integrated various contributions. The research described CE as a reformative system that reduces waste, emission, energy, and input by closing energy and material loops. This can be realized through continuing design, manufacturing, repairing, reusing, recycling, refurbishing, and maintaining. Overall, CE integrates multiple activities of waste reduction of natural resource use, which are associated with reduction, reuse, and recycling (3Rs) (Kjaer et al,.2019). Currently, CE aims to maintain the value of products and resources in the economy for an extended period and reduce waste generation. Therefore, CE combines the reduction of resource use with business opportunities to give rise to sustainable resource utilization and consumption through innovative business models like PSS. Even though it is challenging to minimize resource consumption in businesses (Kirchherr and Piscicelli 2019). The previous idea is supported by Cristoni and Tonelli (2018) in suggesting that CE provides a new understanding

of resource and waste strategies while offering a conversational space to discuss how they are linked-based synergies. Now, since consumers' attitudes and behavior in the CE are influencing their consumption practices, this requires a conscious effort to significantly reduce resource wastage. Debates on the sustainability of circular business frameworks continue, with recent studies demonstrating that adopting circular approaches is still in novel stages (Kirchherr and Piscicelli 2019) and most businesses support the circular economy model (Schroeder et al., 2019).

## 2.2 Product Service System

The PSS concept is an emerging concept with various literature developed to try and explain it (Iddrisu and Bhattacharyya. 2015). Several definitions have also emerged over the last four decades and they similarly describe PSS as a system of products, services, and supporting infrastructure designed to satisfy customer needs in innovative ways (Bhamra et al., 2018). In research conducted by Gaiardelli et al., (2021), a product service system (PSS) is described as an innovative business model offering customers both products and services. A similar definition but with a precise perspective on consumers is the following: 'PSS consists of a mix of tangible products and intangible services designed and combined so that they jointly can fulfil final customer needs' (Tukker and Tischner, 2006). It aims to meet their individual needs while striving to be competitive and promoting sustainability. Through Product Service Systems (PSS), businesses no longer rely on traditional one-way linear product cycles but instead opt for a more sustainable approach. (Brosius et al., 2013). These systems enable firms to rent or lease products, increase product use times, and reduce consumption (Gaiardelli et al., 2021). While CE is geared towards eliminating waste, limiting resource consumption, and enhancing the value of raw materials, PSS brings about a paradigm shift where consumers move away from conventional approaches of buying and owning a product towards a service-oriented that encourages sharing or leasing of products (Bech et al., 2019). Hence PSS and CE models are aligned to similar principles.

Along with environmental sustainability often comes social benefits like the provision of services to people experiencing financial or physical limitations and improvement or stronger relationships in the value chain as producers assume greater responsibility for the products they create, and cooperation between players involved in the creation and delivery of systems becomes a standard process (Bhamra et al., 2018). Other numerous benefits of PSS include the need for fewer resources, lower production costs, and better energy efficiency that drive innovation, create new jobs, and allow the transition away from traditional linear consumption models (Mont, 2002).

Many consumers are increasingly becoming aware of the immense benefits of the circular economic model on the environment and economy. (Van et al., 2021). This includes reduced waste and pollution. However, as much as many consumers and manufacturers are aware of and wish to embrace circular approach methods like sharing, leasing, refurbishing, and reusing, it is challenging to implement the ideas of circular economy in business operations since the transition from the traditional way of doing business into a circular one requires precise creative and innovative capabilities and know-how of a network of stakeholders within and around industries (Klapalová et al., 2019).

A study by Moro et al., (2020) supports the former statement by explaining that high investment costs may be a stumbling block to PSS based businesses from offering consumer and environmental solutions because PSS is complex and it involves various activities ranging from market research, product design, and development to service delivery, maintenance, and support ensure that the product remains operational, and the customer is pleased with the product's performance (Moro et al., 2020).

## 2.3 Pay-Per-Use Product Service System (PPU PSS)

The pay-per-use is a pricing model strategy within product service system where consumers pay for the unit of service without gaining product ownership (Bocken et al., 2018). It emphasizes not only access to services but also payment based on actual usage. In other words, instead of owning a product, consumers pay for services or utility provided by the product on a usage basis. An example is paying for each wash in a laundromat.

This PSS not only aligns costs with utility but also transforms the consumer relationship (Hamwi and Lizarralde 2017), thus encouraging businesses to design products that are efficient and have long durability. Therefore, the integration of pay per use and product service system contributes to a more sustainable economy by extending products' lifespan and utility (Bocken et al., 2018). This in turn leads to more environmental conservation and proper resource management. The pay-per-use product service system is designed with a deep understanding of customer needs and preferences. This approach values user feedback and requirements to design systems that best cater to customers' needs (Reim et al., 2015). Additionally, the PPU PSS incorporates strategies and components that promote customer value to strengthen customer loyalty and satisfaction. Pay per use product service model can maintain effective control and flexibility over its operations to provide services and products that meet customers' expectations (Wang et al., 2020).

As explained in a research article by Tukker (2004), there are different types of PSS. Product-oriented PSS is geared towards selling products, but some additional services are added, for instance insurance or maintenance. Hence it is not purely service, or product based. Result-oriented PSS, where the customer and the service provider have reached an agreement on an outcome and there is no established product involved (Tukker, 2015). Activity management or outsourcing, for example, catering services and cleaning services are some of the examples. And use-oriented PSS emphasizes providing access or functionality to the product in several ways including through sharing, renting, and leasing, but the provider retains product ownership (Tukker, 2004). The thesis will focus on the latter. It will discuss pay per use product service in

e-scooters and laundromats.

## 2.4 Consumer Behavior and Attitudes Towards PPUPSS

As a new approach that is gaining popularity among users, the pay-per-use product service model is changing consumer behavior. The model makes it effortless for consumers to pay for products and services and not to own them but for the actual usage (Bocken et al., 2018). According to Sigüenza et al., (2021), PPU PSS has become a trend among consumers that puts so much value on convenience, affordability, and sustainability. Also, the model works well for customers operating on a tight budget, hence being unable to meet huge expenses to acquire the products. Essentially, consumers' attitudes towards this model are determined by various factors such as perception of the value proposition, trust, different choices, and individual preferences concerning ownership and access. All these factors are instrumental in shaping consumer choices and model adoption (Edbring et al., 2016). In other words, consumption habits determine consumer behavior toward PSS (Armstrong et al., 2015).

The concept of consumer behavior has been extensively researched in marketing for decades. Consumer behavior encompasses an individual's choices regarding acquiring, consuming, and disposing of goods, services, activities, experiences, people, and ideas. Consumers are impacted by a variety of internal and external factors evoked in settings concerning human psychology, social norms, and institutions (Vezzoli et al., 2015). This has resulted in a considerable degree of complexity in consumer behavior as opposed to the notion that consumers are just rational beings solely driven by price (Vezzoli et al., 2015). Understanding consumer behavior is crucial for businesses to develop effective marketing and design strategies and tailor their products and services to meet the needs and desires of their target audience. Additionally, in research conducted by Bocken (2018), to stimulate more sustainable consumption, it is important to change the behavior of consumers concerning how they buy, use, or dispose of products. By analyzing consumer behavior, companies can gain insight into factors that motivate customers

to make purchasing decisions and how they can improve their offerings to meet customers' needs (Edbring et al., 2016). Even so, consumer behavior is not easy to analyze or influence (Bocken, 2018).

Consumers' perceptions towards pay per use depend on the type of product or the type of service. (Tukker and Tischner 2017, Tunn et al., 2021). For example, some consumers perceive carpools to be more flexible than private cars while other users perceive private cars to be more flexible, some consumers perceive pay per wash to be more convenient, while other users perceive own washing machines to be more convenient. This means that there are users who lack the sense of ownership and control and thus they prefer personal products to shared ones (Edbring et al., 2016). All these factors are crucial in consumer choice of consumption as well as the circular economy. Hence, the dynamics of the relationship between the service provider and the consumer are the main key success factors for consumer satisfaction in services as well as environmental sustainability (Edbring et al., 2016).

## 2.5 Sustainability in the transport and laundry industry

While technology has had a huge impact on almost every sector of the economy, the transport industry is one among them that boasts multiple progressions toward a sustainable environment through the integration of product development, service provision, and innovations (Teixeira et al., 2023). For instance, the production of electric vehicles reduces fuel consumption and combustion which causes pollution. Different modes of transport are being encouraged like the use of bicycles, car-pooling, and low-carbon vehicles (Tuncer and Brown 2020). Part of the global boom of urban mobility, includes a variety of light, individual vehicles, often enabled by technological innovations such as rental bicycles or rental e-scooters are small electric vehicles normally used by one or two persons at most, mostly used within cities or short trips (Sanders et al., 2020). E-scooters have recently grown in popularity and rental e-scooters have also been deployed by companies such as Lime in the form of network-connected rental e-scooters. A shared dockless e-scooter is a short-term rental system of electric standing e-scooters that allows

a user to pick up an e-scooter where it is located and drop it off wherever he/she chooses (Moreau et al., 2020).

Since e-scooters are light, with a small footprint, and usually for short distance travel, it is referred to as 'micro' hence the term "micro-mobility" since they are solely powered by human energy, hence often described as new sustainable travel modes with low economic and environmental impacts (Tuncer and Brown 2020). Notably, they can contribute to reducing travel time on congested roads, speeding up short distance trips, and do not require any driving license (Bozzi and Aguilera 2021). They can manoeuvre buildings and tiny streets where vehicles and bicycles have limited access, they are also a faster way to move within short distances.

On the other hand, in research done by Turoń et al., (2023), many e-scooters are sometimes parked recklessly within intersections of streets and pavements, and not the expected parking perimeter. This has caused problems related to safety and minor accidents. Also, in many places, consumers have problems deciding which path to take as they are not sure if the path, they are taking is correct, thus an infrastructure challenge. Turoń et al., (2023) emphasized that some consumers use e-scooters only for fun or testing and it may not only affect the safety of users but also translate into poor technical condition of e-scooters that are often not used properly e.g., incompetent braking or riding while drunk (Turoń et al., 2023).

In the United States many people are becoming increasingly environmentally and socially conscious about their consumption behaviors (Sanders et al., 2020). E-scooters are progressively changing transportation in US cities and university campuses as a convenient and inexpensive solution for short trips. In the United States alone, e-scooters are available in over a hundred cities and used for nearly forty million trips in 2018 (Sanders et al., 2020). While there is much public discussion on e-scooters, there is somewhat less data on how they work, and attitudes consumers have towards them.

The laundromat industry cannot be overlooked either when discussing environmental impact. In research about the implications of environmental regulation in the laundry detergent industry, John-son et al., (1996) elaborated on how detergents used in washing are a huge threat

to the environment, an example is the use of phosphates as additives which act as a nutrient for plant life like algae. Excess disposal of this element in the environment leads to the eutrophication of water bodies destroying aquatic life. Additionally, laundromats consume a lot of chemical energy which is provided by the detergents, and thermal energy which is required to heat the washing water. The more the temperature the more energy is required (Johnson et al., 1996). To curb these issues, some governments like the Netherlands have sponsorship programs for research in technologies and systems for sustainable washing (Roy, 2000). This is a great incentive for manufacturers to become creative and provide excellent product services to clients while conserving the environment as well. Laundromats are more energy efficient, for instance, some use gas to heat the water. A larger market for such products may encourage the development of machines that have heat recovery to provide drying. Hence, it is likely that laundry services would require fewer machines in this sense and thus reduce the number of materials consumed as well as the number of machines requiring disposal or distribution (Roy, 2000)

Therefore, as much as sustainable consumption and production are encouraged, there are still many drawbacks affecting the shift to a more efficient society, such as consumers' attitudes. Regarding such limitations, this thesis will discuss the motives and barriers of PPU PSS and assess the attitudes towards pay per use product service systems that consumers living in the Czech Republic have towards the use of e-scooters and laundromats.

## 2.6 Drivers and Barriers of Pay-Per-Use Product Service System

Drivers and barriers to access based consumption have been researched on an extensive level in different literature to date (Arekrans et al., 2022). Currently, the drivers and barriers for the adoption of use-oriented PSS vary widely among different products (D'Agostin et al., 2020). However, cumulative knowledge on this is not organized and comprehensive overview of drivers and barriers identified is lacking (Nijssen et al., 2022). Below are some of the drivers and barriers identified in the use-oriented product service systems.

### 2.6.1 Drivers of Pay Per Use Product Services System

**Smaller risks/no risks**

With access-based services, there is little to no risk of breakdowns because there is professional maintenance provided by the service provider and due to the higher quality of the products (Cherry and Pidgeon 2018). For example, e-scooters are tracked and serviced regularly by the professional workers employed by the company to perform regular maintenance, repair, and cleaning.

**No ownership**

Elimination of ownership is regarded to offer flexibility as an individual gets rid of ownership ties. In this case, ownership is often seen as providing intangible added value (Cherry and Pidgeon 2018). Use-oriented PSS, such as renting, and leasing provide users with the right to both use products and retain the benefit from product use usually over a set period It lessens the burdens of ownership (Kuusisto, 2018) and mostly for users who need a product only temporarily or consumers who need a product but on rare occasions. Hence consumers do not have to see the effort of letting go of the product(s) after not needing them, Also, consumers accumulate things to have the sense that they are building an estate and consuming material goods to express their image and self-identity or social status.

**Getting rid of responsibility**

Owning any product calls for its maintenance and repair especially after the product wears out or gets destroyed. With access-based product services, consumers do not have to worry about such responsibilities as maintenance or repair. This is a positive motivation to participate in access-based consumption (Cherry and Pidgeon 2018). Also, ownership comes with other risks and responsibilities including risks of selecting the wrong product, maintaining, and managing the product. Hence with PPU PSS, these burdens are relieved from the users which makes the product services more attractive Cherry and Pidgeon 2018).

**No up-front cost**

Some users value PSS for its ability to provide services without the need to invest in the actual value of the product, especially for very expensive products (Edbring et al., 2013). That means consumers suffer less financial loss and they do not need to acquire a huge loan or negotiate on higher purchase terms just to purchase a product. Hence renting provides them with an opportunity to use even expensive products at only a small fee and still enjoy the same benefits that a person who owned the product did enjoy.

**Ability to test.**

The ability to test is one of the important drivers for access-based consumption. It means that users can test a product before purchasing, especially if it is an entirely new product or if it is an upgraded version of a product (Edbring et al., 2013). Testability is considered a motivation in access-based consumption especially for products that require rapid and frequent technology and design upgrades and maintenance in a relatively short time, e.g., smartphones and consumer electronics (Edbring et al., 2013).

**Saves space/Declutters the house.**

Providing home appliances with a service business model is well perceived by some users. That's because most of these home appliances are majority of the time owned because of their functionality and less of experiential (Kuusisto, 2018). One of the main benefits of using home appliances as a service is that it saves space. For example, some consumers would be motivated to use this model because they do not have to keep gadgets and machinery that they rarely use at home, occupying space in the house and they could be able to try out new machinery and gadgets with lower effort and risk through renting (Kuusisto, 2018). Additionally, in the use of clothing as a service for example, it would be very interesting to many users due to its ability to reduce burdens of ownership like space. E.g., storing of seasonal clothes, special expensive

clothing that are used in special occasions like weddings or stage performance and kids' clothes which they outgrow quickly (Kuusisto, 2018). This motive is also noticeable in individuals who are minimalistic and seek a simple and intentional lifestyle.

**It is cheaper.**

The reduced cost of product access through renting and leasing is a motivation to use oriented products (Cherry and Pidgeon 2018). This consumption method is seen to be cheaper because the user has less financial investment like no maintenance fees, and consumers can use the product services only when they need them. Also, the fact that high-value products can be accessed only at a small fee instead of paying the direct investment costs of the product (Edbring et al., 2016). And in economically challenging situations, consumers can cut costs by embracing pay-per-use services that align with their budget constraints.

**Environmental concerns/sustainable lifestyle**

In some research, the environment and healthy lifestyle have been stated by users as systematic crucial motivators in access-based service provision (Teixeira et al., 2023; Kurisu et al., 2021). The capability of these services to involve users' movement, especially in rented products like bicycles, or going to laundromats, are seen as physical activities which are beneficial to consumers (Teixeira et al., 2023).

**Community Connection**

Some user-oriented platforms foster a sense of community and collaboration, which aligns with the social aspects of a healthy lifestyle (Kurisu et al., 2021). Renting resources in a shared space within a community can enhance a sense of connection and mutual support. Sometimes it

can foster an environment where some people get acquainted. Also, consumers who are committed to sustainable living or pro-environmentalists may be motivated to campaign for sustainable consumption hence a good drive for sustainable consumption (Cherry and Pidgeon 2018).

### 2.6.2 Barriers of Pay Per Use Product Services System

**Lack of user awareness and knowledge**

User awareness is among the main barriers affecting the transition toward sustainable consumption in Europe (Camacho-Otero et al., 2018, Vezzoli et al., 2015, Tunn et al., 2021). User awareness and product knowledge mean that a consumer can assess the product's quality and the potential benefits it would yield (Grafström and Aasma 2021). This includes the economic benefits e.g., no need to worry about the direct investment costs as renting is cheaper than buying, therefore cheaper and saves them money. Flexibility is another benefit that consumers would enjoy from using access-based services, for instance, an individual can access a product and use it whenever needed and not worry about where to dispose of it when you do not need it anymore. A lack of knowledge could lead to erroneous perceptions regarding the quality and use of rented products (Edbring et al., 2016).

**Anxiety**

In research done by Edbring et al., (2016), some consumers express concern about renting products. They keep worrying and being anxious in case the product gets destroyed while they are using it. This fear is driven by the fact that they do not own the product and if it is destroyed, they will get punished for that by the service providers through paying penalties, which feels strange and something that many consumers prefer not to deal with (Cherry and Pidgeon 2018). In products like rented bicycles for example, if you return a bicycle outside the station even

within a few meters you are fined. Such things, including the fact that consumers have the feeling of being more careful with rented products, make most consumers prefer owning their own products over renting. (Edbring et al., 2016)

**Economic considerations**

This is a strong driving force behind the consumption of access-based products. When it comes to the pay-per-use model, it is hard for consumers to evaluate the ramifications of switching to a service model from ownership (Kuusisto, 2018). This is because many consumers have already invested in home appliances and not utilizing them and instead switching to the service model results in a waste of resources especially if it is a high-investment product like white goods (e.g., washing machines). Hence many consumers are less eager to switch to a service that fulfils the same need even if access-based services are cheaper. This is explained by the theory of sunk costs, which states that previous decisions cause a bias in future decision-making, which is considered a form of rational human behavior (Kuusisto, 2018)

**Hygiene**

When it comes to renting some products, some consumers are sceptical due to hygiene as well as health and safety issues (Tunn et al., 2021). Since most access-based rental products are likely to be shared by other individuals, which is a barrier since people might have different hygiene standards, this is worrying to some consumers when they want to consider rental servicers (Edbring et al., 2016). In research done by Edbring et al., (2016), for example, consumers associated hygienic issues with various health aspects and allergies, especially for product groups that contained textiles like second-hand clothes. In some cases, some consumers are afraid of using some rented services because other users do not clean after use. Also, fear of contamination of bugs and pests because of hygiene issues that may occur through sharing washing machines with strangers.

**Owning preference**

Product ownership is one of the main attributes of modern consumption culture, at the same time, ownership is one of the main barriers to access-based consumption. This barrier was evident in various research by Edbring et al., (2016); and D'Agostin et al., (2019). While some individuals find it easier not to individually own some products and be responsible for them, some individuals prefer to own their products and they do not want other people to own the things that they have. Some consumers express the emotional stress that comes with not owning their own product which means they must be extra careful and in control all the time out of concern and fear that they do not want to destroy the product because it is not yours and hence creating a feeling of being unable to relax (Cherry and Pidgeon 2018). This barrier is mostly associated with high-valued products. For instance, an individual with products that are perceived to be highly substantial in value will prefer to own such products since they depict their social status and not just merely for use. E.g., expensive cars and yachts. In other cases, some consumers prefer ownership because they associate renting or leasing of products with social stigma, as they perceive it as a solution for poorer consumers (Tunn et al., 2021).

**Lack of privacy/ Provider knows too much.**

Many consumers are concerned about whether they should share their data e.g., credit card details in exchange for services offered (Nijssen et al., 2022). In the PSS context, these concerns about sharing data are particularly related to the fear of unauthorized third-party access or hacks. Some of the platforms for pay-per-use need users to enable location access to rent the services. This can be seen as a barrier and some users become hesitant to purchase these services because they are unsure of how their personal information will be handled. There is a fear of being tracked for example, and users feel unsafe sometimes because they think service providers know a lot of information about them which makes them more vulnerable to hackers (Nijssen et al., 2022).

**Financial liability**

Giving up ownership and incurring a financial commitment is not something some consumers want to deal with (Kuusisto, 2018). Pay-per-use creates an additional financial commitment, which is stressful, as users need to have disposable money with them throughout the month to be able to use services with a pay-per-use mode. This can also be explained by uncertain costs, which can be less predictable than traditional ownership. For instance, in cases of subscription fees, usage charges, or penalties for damages can vary. If consumers have already subscribed to multiple services (e.g., streaming, software, they may experience subscription fatigue. Adding more subscriptions through access-based can be perceived as an additional financial burden. (Kuusisto, 2018). In a study carried out by Cherry and Pidgeon (2018), some users expressed concerns that owning their own product is safer even as much as pay-per-use is appealing. The users explained that when most of the products in an individual's house are rented, one is likely to suffer a lot of financial and mental damage, especially in a case where you lose your source of income, and the individual cannot access ser-vices through renting or leasing again like before. This can make consumers hesitant to engage with these services (Cherry and Pidgeon 2018).

**Too much effort is required to access the services.**

Some consumers find it hard to make the pay-per-use system work for them, as much as it would free them, they do not understand how to make it work since they fear that this consumption model requires more effort and time to acquire the PPU product service hence an extra hassle in their daily lives. In a study done by Kuusisto (2018), some users stated that trying new things and changing the status quo caused them an emotional burden which is a barrier for them to accept access-based services.

## 2.7 Factors that Influence Consumer Attitudes Towards PPU PSS

### 2.7.1 Product Characteristics

Consumers have varied needs and desires, which can be fulfilled in various ways. Product features such as degree of product involvement, use intensity, size, price, need for maintenance, and service affect consumer attitude toward access-based use (Singh & Giacosa 2019). Additionally, products should meet a specific price level to be considered a substitute for purchase because consumers cannot see the significance of leasing low-value products (Moro et al.,2022). Thus, the value of products in the PSS model influences consumer attitude, especially in the use-oriented PSS.

### 2.7.2 Service Characteristics

**Relative advantage:** According to (Singh and Giacosa 2019), comparative advantage denotes the level at which a service offer is considered better than other means of satisfying consumer needs. Tangible and intangible aspects of product service influence the perceived fulfilment of the service quality. Research further suggests consumer behavior and attitude toward access-based offerings depend on available alternatives (Mashhadi et al., 2019). Factors including satisfaction, convenience, economic value, and social prestige support the attributes of relation advantage of use-oriented and product-oriented PSS. Service attributes that offer a relative advantage in use-based PSS are related to the ability of the consumer to lease products for a given time frame, quality, careful handling, and cost redistribution for alternatives. (Vezzoli et al., 2015) found that a user-oriented PSS enables consumers to afford products they would not be able to buy. Nevertheless, (Singh and Giacosa 2019) discovered that consumers are likely to commit to a long-term regular payment for PSS mainly if the product purchase price is high. Again, the unique disparity between access-based consumption and ownership is avoiding risk, burdens, and related ownership responsibilities. (Mashhadi et al., 2019) also highlights that leasing and renting enable consumers to enjoy physical goods and facilities they cannot substantiate purchasing or prefer not to keep after use. To address the issue of ownership, PSS providers

should ensure that leasing is more cost-effective, convenient, and secure than ownership.

**Compatibility**: If an offer is not compatible with the values of the social system, it might not be adopted (Moro et al.,2022). The higher the level of change a PSS requires, the stronger the resistance. In this case, there are differences between user-oriented and product-oriented PSS. Ownership remains the common consumption mode, influencing consumers' compatibility with buying behavior. Therefore, developing convenient PSS can change the stigma of old-fashioned leasing and renting. However, consumers increasingly prefer new user experiences that the old-fashioned ownership model cannot meet. Furthermore, lifestyle trends among young generations do not have a similar perception of social status related to ownership habits as older generations. For example, Catulli et al. (2015) discovered that consumers have a positive attitude toward access-based resource use of baby equipment. Again, in their study, (Armstrong et al., 2015) found that female consumers had a positive attitude toward clothing PSS because of improved environmental advocacy, durability, and quality.

Previous literature also describes various lifestyle factors influencing consumer attitude about PSS, including environmental sensitivity, personal attachment, political consumerism innovativeness, and desire for independence or trend-oriented consumers often replace products because of the urge for fashionable, new, or innovative services and products (Armstrong et al., 2015). The trend-oriented consumers might have a stronger desire for PSS because it provides short-term renting for them to enjoy a new product regularly (Cherry and Pidgeon 2018). Nonetheless, as access-based consumption becomes trendy, these consumers can be attracted to leasing because of the related innovation. Trendy-oriented consumers are associated with service envy, making customers desire services rather than products. Service envy allows consumers to show their self-identity by renting or leasing products instead of owning them (Oskam et al., 2018). The desire for independence is linked to buying, while personal attachment reflects the perceived psychological understanding of the product.

**Complexity**: The issue of complexity occurs due to product features and the ability of the consumers to access them (Armstrong et al., 2015). Consumers' abilities lead to uncertainty and perception of complexity because of the heterogeneity of services and relative intangibility. Concerning PSS, complexity has been linked to the ability to forecast accumulating costs (Armstrong et al., 2015). The consumer complexity can be resolved by enhancing trialability. Consumers adopt new services if there is a likelihood to try the service. Therefore, in the CE, consumers' buying behavior towards PSS can be increased through trialability, which also decreases uncertainty.

**Observability**: This is the degree to which consumers can see the outcome of the service. Consumers will likely try new services if they learn that those in their social networks have tried them. Conversely, service intangibility is viewed as a hindrance to diffusion. (Singh and Giacosa 2019) also confirm that references from media and friends are essential for consumers considering PSS. Therefore, businesses should manage consumer attitudes and behaviors through marketing and advertising strategies.

### 2.7.3 Consumer characteristics (Demographics)

Demographics also influence consumer behavior in adopting PSS. Several demographic factors, such as age, gender, personality, and income, are crucial in shaping consumer behavior. For example, (He et al., 2019) found that consumers' age significantly impacts buying and consumption patterns. Younger consumers tend to be more open to trying new products and endorsing novel marketing techniques. Equally, (Armstrong et al., 2015) argue that young people could be more suitable for PSS. This is corroborated by researchers who demonstrate that age, distribution, and duration of ownership increases adversely affect consumer purchasing behavior of use-based PSS. Moreover, young consumers with above-average education are a good target market for sustainable options because they are easier to influence. In contrast, elderly consumers tend to have relatively low confidence in non-familiar brands. Similarly, gender can also have a significant impact on consumer buying behavior. For instance, women tend to focus more

on quality than price, while men prioritize function over other factors. Income, another crucial demographic factor, directly influences the consumer's purchasing power. Higher-income individuals have greater purchasing power, which enables them to buy higher-priced products more frequently.

### 2.7.4 Personal Characteristics

**Motivation:** One of the essential drivers of consumer behavior is the individual's motivation. Motivation can be triggered by personal desires such as entertainment, emotional well-being, or self-esteem. It can also result from external stimuli such as advertising, social influence, or personal circumstances. In 133 participants, Kler et al., (2022) found that motivation can be regarded as the power that stimulates purchasing decisions. Furthermore, motivational aspects such as culture, brand, place, price, society, or friends activate consumers' buying decisions to meet their needs. As a result, businesses need to understand the specific motivation of their target audience to create effective advertising messages and marketing campaigns.

**Economic value:** Another essential factor influencing consumer behavior towards PSS is the perception of value (Nemeth et al., 2019). Consumers' perceived value is based on evaluating the benefits received against the cost incurred. Primarily, if consumers perceive a product or service's benefits outweigh the price, they are more likely to purchase it. Similarly, the economic perspective of perceived monetary value should be considered to determine if consumers are willing to pay. This is supported by Sattari et al., (2020), who indicate that the perceived value should be compatible with the offering in consumers' minds. Thus, consumers are likely to use PSS if they believe they are economically better off renting or leasing a product instead of owning it. From a sustainability perspective, consumers may not recognize why a pro-environmental service or product is costly; instead, they use price as an indicator of quality. Additionally, the economic value of PSS is beyond the monetary price the consumer pays (Armstrong et al., 2015). It is associated with the value consumers receive from the price, which involves their beliefs about a desirable outcome. Factors such as time, subjective inhibition of consumer behavior, and

time influence cost and ecological benefits. Economic value is useful and positively influences consumer behavior towards PSS. Therefore, businesses must ensure that their products and services meet consumers' needs and that prices are competitive.

**Trust:** Equally, trust also plays a significant role in consumer behavior. Consumers' trust influences their preferences, habits, and purchasing decisions. Businesses can target specific consumer segments by aligning their products and services with buyers' personalities. According to Sattari et al. (2020), risk and trust often influence consumer decision formulation. Primarily, trust arises when there is uncertainty or risk. During uncertainty, trust can recompense for missing details by reinforcing a person's feelings of internal security and confidence. Thus, trust is useful in minimizing the challenge of decision-making in risky scenarios. Catulli et al. (2015) argue that consumers have to trust the providers. PSS is a new way of consumption; consumers have multiple perceived risks. Past research shows that some consumers feel the use of rented or leased product providers is interfering with their personal space. In other words, it is important to emphasize trust and openness between consumers and providers to promote a mutual relationship. Therefore, trust is important in this new business model because it positively influences consumer attitude towards adopting PSS.

**Flexibility:** A study by Edbring et al. (2016) found that flexibility is integral in successfully adopting PSS because it correlates with customer satisfaction. Moreover, flexibility allows consumers to use products when needed instead of owning them. PSS presents flexibility that lacks ownership. Nonetheless, there are several elements of flexibility in PSS that benefit consumers. For example, Sattari et al. (2020) indicate that in PSS, flexibility enables consumers to use products without commitment. An effective PSS is also symbolized by compatibility with consumers' needs, performing desirable actions, and allowing consumers to avoid undesirable activities. Under PSS, guaranteed access is a necessary attribute of flexibility. Being part of PSS without assurance to access the product or service would prevent consumers from enjoying the flexibility

that PSS offers. The flexibility of PSS enables consumers to try new products and change consumption (Edbring et al., 2016). This indicates that flexibility is a positive attribute that influences customers' behavior and attitude towards PSS.

**Peer Influence:** Social factors such as family, friends, and social networks also significantly impact consumer behavior (Kler et al.et al., 2022). For instance, an individual from a large family may emphasize family values more and prefer offerings that meet their family's needs. Similarly, the opinion of friends and other influential people in an individual's life can heavily influence their purchasing behavior. This is supported by Baek and Choo (2015), who argue that when people shop in the company of others, they rely on others' behavior to justify their own. Furthermore, the social environment impacts consumer behavior significantly. Social interactions are essential in shaping individual preferences and choices, while family, friends, and peers can influence consumer buying behavior. Individuals often seek social approval and validation for their choices and purchases. As a result, individuals may use peer influence to justify consumption and motivate them to a certain manner, for instance, by trying PSS. Previous literature shows a higher possibility of influencing consumer behavior and attitude toward PSS if peers already use this model (Baek and Choo, 2015). In this case, peer influence can influence consumers' willingness to use PSS. Thus, businesses should understand the social dynamics of their target audience to create effective marketing campaigns. However, consumption modes are linked to specific risks. For example, social risk portrays others as judging the degree of buying decisions. This is consistent with im-pressing others in the use of various PSS. But in some instances, people do not want others to know they are using leased/rented products, as it can be construed as a lack of financial ability to own products (Catulli et al., 2015).

**Desire to own:** For several decades, product ownership has been the primary factor of modern consumption (Sattari et al., 2020). This implies that there is a social norm that has taught consumers the significance of ownership. Scholars conclude that ownership is an embedded

value in modern society, influencing how individuals view owned and leased products (Edbring et al., 2016). Furthermore, lack of ownership negatively influences consumer attitudes toward PSS. They discovered that consumers negatively perceive leasing products they can use for a long period. This suggests that the desire to own negatively influences consumer attitudes toward adopting the PSS model.

**Environmental Awareness:** Past literature shows conflicting views about consumers' ecological knowledge and attitudes toward sustainable resource use. For instance, (Liu et al., (2017) demonstrate that consumers' awareness of environmental issues is likely to engage in ecological consumption practices. Additionally, general consumers' beliefs about the environment affect consumers' sustainable practices and prices they are ready to pay for green products and services. Consumers with positive ecological attitudes are willing to pay high prices to promote environmentally conscious behaviors (Sattari et al., 2020). Therefore, environmental awareness and attitude influence consumers to implement sustainable consumption behavior.

Even though the authors discuss the significance of sustainable resource use, several opposing arguments exist. (Liu et al., 2017) allege that there is a relationship between action and environmental awareness. Consequently, a gap exists between consumers' ecological knowledge and sustainable actions. Sattari et al. (2020) further shows that although consumers have environmental knowledge, it does not contribute to behavior change. As a result, environmental knowledge could impact consumer attitudes toward PSS.

## 2.8 Existing Marketing Strategies Applied in Sustainable Consumption

Current literature has investigated circular economy business models such as PSS and identified key concerns that serve as both behavior hurdles and motivators for consumer acceptance of this new model. (Mugge, 2018). There are, however, few studies that include a marketing and communications perspective on the circular economy or that focus on how businesses that pro-

vide circular products or services currently use communications to sell their products and services while influencing consumer behavior (Chamberlin and Boks 2018). When it comes to marketing circulars or sustainable consumption, it is recognized that companies have a part to play and that altering customer behavior at both the purchase and usage phases is increasingly important (Mugge 2018). Through the active development of markets by corporations employing the standard marketing mix of price, place, promotion, and product (the '4Ps') to spike attention, interest, desire, and action, marketing may be considered as both a reflection of and an impact on human culture (Rex and Baumann 2007). The market mix approach has been commonly used in the past and present. (Chamberlin and Boks 2018). When it comes to price changes, for example, companies find themselves now and then in situations when they must adjust the prices of products. This could be due to internal costs due to investments like technological advancements. Or external costs like changes in prices of raw materials increases or decreases in competitors' prices, supply and demand changes, and temporary discounts and offers among others. It is therefore crucial to address these changes in prices to consumers with all manner of transparency and comprehension (Krämer 2020).

### 2.8.1 Green Marketing

Marketing is one-to-many communication (as opposed to one-to-one sales), and a market-oriented organization stresses market knowledge and a strong client focus (Kohli and Jaworski 1990). Advertising and branding are the core of marketing (Chamberlin and Boks 2018). And branding is a powerful channel that contributes to a consumer's perception of oneself. Image, reputation, and perception are the essence of a brand. and it has been demonstrated that advertising that taps into emotive issues is more successful than merely factual forms especially where the brand's image is extremely important to the consumer, e.g., with clothing (Chamberlin and Boks 2018; Fletcher, 2010). Advertising is intended to both inform and convince. Effective advertising can affect people's desires and intents in such a way that it creates needs for items that they were previously unaware of or were not interested in obtaining. (Fletcher, 2010).

As much as green marketing provides useful frameworks for managers advocating for green customers, it has faced criticism for taking an overly behavioral approach that focuses on the psychology of the individual while ignoring social and cultural contexts In a publication conducted by Young et al. (2010), he explains what the attitude-behavior gap is which is also referred to as ‘values action gap’ as stated by Flynn et al. (2009). The 'attitude-behavior gap' or 'values-action gap' occurs when a certain percentage of consumers describe being very concerned about environmental issues but are unable to transfer this worry into purchasing because of their emphasis on access over ownership and the continuing nature of client connections, pay-per-use products service business models necessitate distinct marketing methods. Here are some of the most popular PPU marketing tactics currently in use.

### 2.8.2 Promotion

Developing educational content aimed to inform consumers about the benefits of PPU has been and is still a strategy that is used in marketing PPU products and services. This includes blog articles, mass media campaigns, seminars, and FAQs that address frequently asked questions (Chamberlin and Boks 2018). However, these educational programs do not directly target the intrinsic or extrinsic motivation of consumers. Also, such educational programs are more structural and rely heavily on procedural information. This makes them less effective, but again, if the content is delivered in a combined mode where there is room for feedback from consumers, the adoption rate of PPU product service in the market could rise. Peer recommendations have been quite instrumental in promoting the PPU product service model. Working with influencers, industry experts, and other firms while collaborating with organizations that share sustainability principles like H&M in the fashion industry, IKEA in the furniture and home furnishing business help to boost a company’s credibility. At the same time, offering referral bonuses or loyalty awards to existing customers who refer new subscribers has been important in the PPU business

and it is very crucial to improve that since it has the potential to increase word-of-mouth marketing, good image and hence promotes mindful consumption and increase adoption rate of pay per use (Frederiks et al., 2015).

### 2.8.3 Price

Transparent pricing is critical in marketing. Explaining the cost structure clearly in the PPU model, for example recuring fees, benefits, and usage charges helps to prepare consumers psychologically and economically (Jain et al 2022). On the other hand, having hidden charges, unpriced products on shelves or undisclosed prices, for example during advertisements causes reluctance and lack of trust from consumers which lowers the adoption rate of a product or model. (Frederiks et al., 2015). Also offering discounts to consumers during the trial period has proven to work well as consumers experience it without long-term commitment. Lastly, providing a cost comparison between PPU and other traditional ownership methods and explaining how PPU is the best option, in the long run, has helped consumers to adopt the PPU model.

Below is a table showing an overview of factors that influence consumer behavior and attitudes (Table 1).

**Table 1: Overview of Factors Influencing Consumer Attitude and Behavior towards PSS**

| Product | Consumer (Personal) | Service | Personal (psychological) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Product Involvement | Age | Relative advantage | Motivation |
| Use Intensity | Education | Compatibility | Economic value |
| Size | Gender | Complexity | Trust |
| Price | Income level | Flexibility | Flexibility |
| Need For Mainte- | Status | Trialability | Peer Influence |
| nance and Service | Desire for change | Observability | Desire to own |
| | Control | | Environmental |
| | Materialism | | Awareness |
| | | | Norm |
| | | | Values |
| | | | Habits |

*Source: Author's own elaboration*

# 3 Methodology

## 3.1 Research Aim and Questions

The objective of this thesis is to investigate consumer attitudes and find out consumers' perceptions related to pay per use model in the transport and laundry industries respectively. Since it will be a comparative study, the thesis will analyze and contrast the results between PPU in the transport and laundry industry to identify the similarities and differences in how consumers perceive these two distinctive pay-per-use products services.

Based on the aim of this thesis, the below six research questions will be answered.

1. What is the overall user experience of consumers using PPU services?
2. How do factors like age, gender, region of stay, and residence type influence consumers' decision to adopt PPU?
3. What are the main reasons that motivate consumers to choose the PPU model over traditional ownership in the case of laundromats and e-scooters?
4. What are the main reasons that discourage consumers from choosing the PPU model over traditional ownership in the case of laundromats and e-scooters?
5. How do environmental awareness and consciousness influence consumers' attitudes and decisions in the transport and laundry industry?
6. What are some of the general attitudes that consumers have towards pay-per-use product service systems in self-service laundromats and rented e-scooters?

## 3.2 Research Methodology

To gain insight into consumers' attitudes towards pay-per-use products services, in laundromats and e-scooters, and to be able to explore the barriers and motives that consumers have towards PPU in these services, a mixed method with a descriptive approach and quantitative approach is performed. Quantitative method generates knowledge by investigating things that

could be measured in some way, while descriptive method increases the understanding of why things are the way are they are in the social world and why people act as they do (Al-Ababneh, 2020). Descriptive study is conducted to determine and describe the characteristics of the variables in the situation. Therefore, descriptive research is recommended when aiming to report characteristics of behavioral trends of the target sample (D'Agostin et., 2020). It also aims to provide researchers with a profile or describe aspects of the phenomena being researched at different levels such as individual, industry-oriented, and other perspectives (Sekaran, 2003).
For instance, there is descriptive survey which is concerned with identifying the frequencies among participations related to specific issues for comparison, while analytical survey concerned with investigating the relationship between various variables (Al-Ababneh, 2020). In addition, using surveys tends to be used in the exploratory study and descriptive study, and therefore this allows a researcher to collect quantitative data and analyze these data quantitatively through descriptive and inferential statistics (Saunders et al., 2009).

### 3.2.1 Survey

A survey was distributed to the target population, mainly through WhatsApp. A survey is quantitative research which means obtained data is analyzed statistically, with mathematical calculations, or computational techniques are applied to obtain accurate results. Quantitative analysis is objective and controlled and thus allows for more precision in statistical analysis as the data can be quantified (Queirós et al., 2017). A survey is a systematic gathering of information from respondents to understand and predict some aspects of the behavior of the population of interest (Mohajan, 2020). A survey consist of simple descriptive designs where the data is described by measures of central tendency (mean, median, mode, standard deviation and or reported as frequencies and percentages, and it can also consist of descriptive comparative design which include both descriptive and inferential statistics which is used to look at differences between groups (Siedlecki, 2020). A survey is one of the most used quantitative techniques (Mohajan, 2020) since it allows obtaining information about a given phenomenon, through the

formulation of questions that reflect the opinions, perceptions, and behaviors of a group of individuals. A survey is important because it is less costly (Queirós et al., 2017). However, the reliability of data collected through surveys is highly dependent on the quality of answers and the structure, at the same time, it does not capture the emotions of respondents.

### 3.2.2 Focus groups.

This was the second method that was used. Focus groups is a very popular and useful qualitative analysis method used to investigate complex behavior and attitudes of the target population where the researcher can interact with participants (Queirós et al., 2017). Focus groups are used in research concerned with the deepening of understanding of and explanation of the dynamics of social relations. It works with the universe of meanings, beliefs, attitudes, aspirations, and values, among others. Focus groups are suitable for this thesis because they provide a broader range of information and they provide a platform to seek clarification during discussions. They are also cost-effective and require less time compared to interviews (Queirós et al., 2017).

However, focus groups can be hard to manage or control especially if some members of the group become personal and sensitive, sometimes it is hard to get people to participate or sometimes it is hard to get people to be responsive during the discussion and it is hard to get a representative of the population (Queirós et al., 2017). Another potential disadvantage is that it is sometimes difficult to verify the identity or even basic demographic characteristics of group participants. Therefore, a mixed-method approach will be used in this thesis to provide a thorough understanding of the topic.

## 3.3 Data Collection

### 3.3.1 Secondary Research and Primary Research

Secondary research is that which has already been collected by someone else and has already passed through the statistical process. In any research work, it is essential to review any

prior relevant academic literature (Webster and Watson, 2002). In this thesis, previous academic literature has been used to come up with the necessary content and suitable research questions for this study. Through secondary sources of data, it was possible to understand different writers' views and findings and able to identify what data was suitable for this thesis. In this thesis, books, journals, and articles were used for data collection.

Primary data is that which is collected afresh and for the first time, and thus happens to be original, unlike secondary data (Kothari, 2004). Examples of primary data include surveys, interviews, and observations. As mentioned before, this thesis will use the survey method and focus group. Since the research objective of the questionnaire and focus group align closely, similar questions were used in both methods for consistent results, with study group questions summarized and shortened to be suitable for discussion given time constraints, and the questionnaire contains both closed, semi-closed and open questions. The open-ended responses were analyzed using conceptual content analysis approach that allowed focusing on the explicit data, appearance of words and frequency of certain phrases and words. The questions used in both the questionnaire and focus group were adapted from research done by (Klapalová et al., 2019). The questions were borrowed from this research to enable building on the existing knowledge and contribute to the field of study, specifically consumers' attitudes towards sustainable consumption.

The survey consists of 23 questions in total. There were 114 participants in the survey. The survey was conducted purely online using google forms. A total of 13 individuals attended the focus group discussion. The focus group was carried out online through Google Meet. This was so because many participants thought it to be convenient instead of living to meet in a physical location, given some participants had travelled, others were busy with their personal things, and they all thought it best to meet virtually. The call started at 1600hrs on a Sunday afternoon and lasted approximately one hour. A focus group guide was prepared with the questions to be used and brief of the discussion.

However, the respondents were allowed to deviate as well to capture other details missing in the discussion plan. The focus group contained three males and three females between the ages of 25 and 40 years old. The interviewees were randomly chosen on account of their availability and experience. The participants were a diverse group, including users and non-users of both services. Two participants have experienced rented scooters before, several times. Three respondents have used laundromats and no scooters, and one user has experienced both services. It commenced with consent from participants to allow me to take a recording for reference purposes, and thereafter, there was a brief introduction on the topic, explaining briefly what pay-per-use is, and immediately delved further into the topic of discussion. The participants were approached via face-to-face interactions, telephone calls, and direct messages on WhatsApp. The survey questions and focus group questions and responses are provided in summary form in the appendix section of the thesis.

## 3.4 Pilot Study

A pilot study was carried out to validate the questionnaire of the study (Thomas, 2022). The first round was sent to 3 individuals to run through the introduction, questions and choices provided. One of the corrections made was using simple words in sentences, that is easily comprehensible by all readers. Another correction was to refine an ambiguous question which could have led to confusion. After editing, the questionnaire was sent to the intended sample for a pilot test. The questionnaire was sent to 10 people. Participants were chosen randomly to ensure the questionnaire was understandable to everyone. The participants of the pilot study comprised 6 men and 4 women. They confirmed that the questions were understandable, and therefore no further changes were made to the questionnaire.

## 3.5 Data Analysis

Data analysis refers to the technique that is used to determine and extract meaningful data from the collected data. Which involves examining, interpreting, and manipulating the data to come up with meaningful themes, relationships, and conclusions. For the survey questionnaire data, Microsoft Excel and power query were utilized. The data was presented in the form of charts and graphs representations. SPSS was also used to analyze quantitative data (frequencies and relative frequencies) especially the multiple response questions, where answers were coded and loaded on SPSS for clear analysis results. SPSS results were presented in the form of tables and interpreted. For the qualitative research (focus group), excel was used to perform content analysis, whereby the feedback was transcribed, then sorting and organizing responses according to relevant themes. The results were then incorporated into the thesis text and direct quotations was used to capture participants views and emotions as they are.

## 3.6 Ethical Considerations

Focus groups have become increasingly popular, and ethical considerations are crucial to consider in this methodology. Particularly, these have been expressed as to whether participants are subjected to harm, whether informed consent is lacking, whether an invasion of privacy is made and whether deception is occurring. This thesis paper adheres to these principles (Smith, 1995). In this thesis, a few things were done to overcome ethical issues, this includes, putting the participants at ease, ensuring the confidentiality of their information, and establishing a rapport by explaining the topic of discussion to avoid confusion (Breen, 2006). Ensuring complete confidentiality is difficult, as there is no control over participants after the focus group has been conducted, however, certain steps were taken beforehand to ensure that every individual was at ease and willing to participate at the time. (Smith, 1995). The participants were requested first to consent that a recording of the responses should be made to facilitate the analysis process. All the members consented to that. Also, the participants were requested to ask anything that they

were doubtful, unsure, or unclear about during the discussion and not have to wait to avoid missing out on anything. Participants were not asked to reveal their ages to avoid emotional distress and distorting the comfort level of the group as some of them were acquainted. For the questionnaire, the ethical considerations included consent to agree or disagree on filling in the questionnaire, and that the data acquired is solely for this thesis. Moreover, the selected participants in this thesis focus group are over 18 years of age, hence there was no need for parental consent.

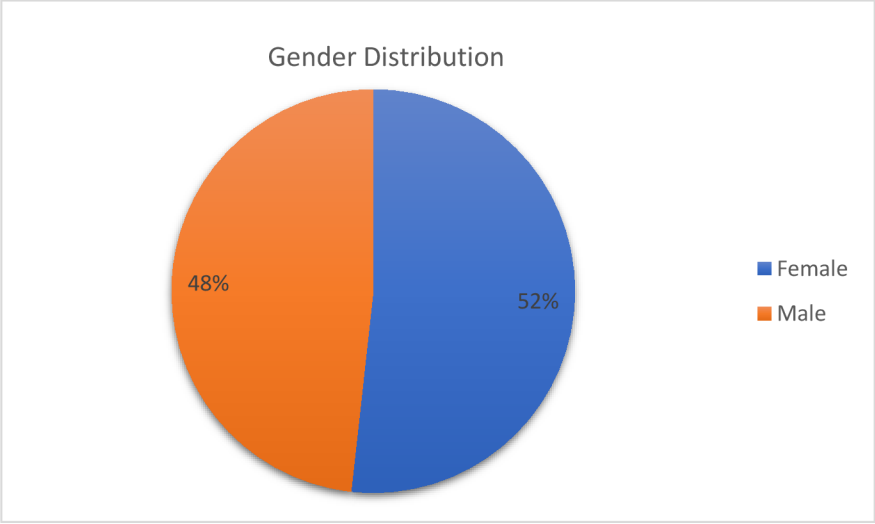
# 4 Analysis

## 4.1 Sample Description

The quantitative study represented in this section is supplementary research to the focus group discussion as well as the secondary data about attitudes towards sustainable consumption. The data provides inputs for the motivations and barriers of PPU consumption and consumers' attitudes towards self-serviced laundromats, rented washing machines and e-scooters.

There was a total of 116 respondents who participated in the survey, out of which 114 responses were included in the survey. Two responses were not included because one of them was under 18 with no consent from a guardian, and the other respondent did not agree to consent. Out of the 114 responses analyzed, the respondents were of ages between 18 and 50. In figure 1 below, the sample consists of 59 women (52%) and 55 men (48%).

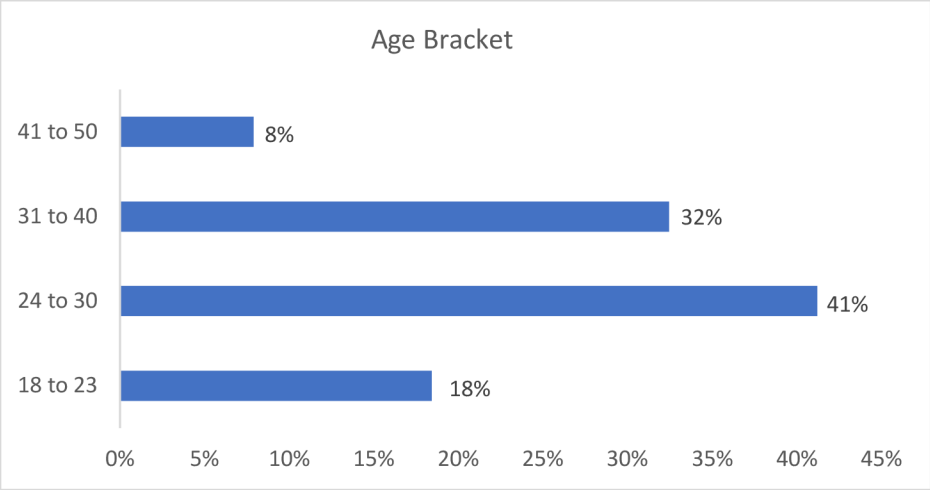
**Figure 1: Respondents who participated in the survey**




Additionally, the age groups were well represented as shown in figure 2 below. The highest number of participants were between the ages of 24 to 30, which represented 41% of the total

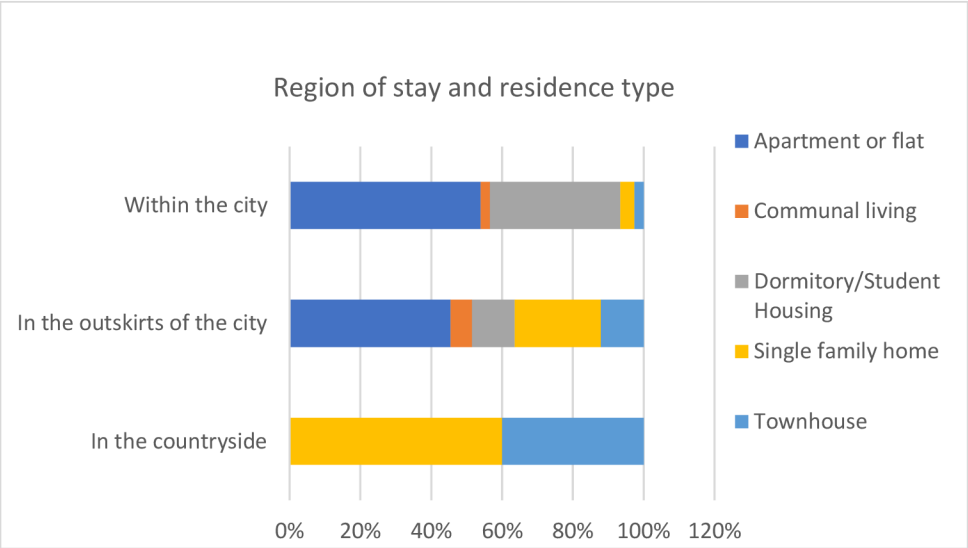
respondents. Ages 31 to 40 followed up closed with a total of 35 participants, representing 32% of the sample, ages 18 to 23 (18%), and lastly between 41 to 50 (8%). The average age of the respondents was 23 years.

**Figure 2:Age groups of respondents who participated in the survey**




According to the survey results, most of the respondents reside within the city, followed by the outskirts, with the least respondents residing in the countryside. In the figure below, many respondents who live within the city and on the outskirts of the city live in apartments. Among the participants that lives within the city, almost half of them live in dormitories or student housing, while single-family homes and townhouses record the lowest number of respondents. Whereas single-family homes and townhouses record the highest among respondents living on the outskirts of the city. All respondents living in the countryside reside in townhouses (40%) and single-family homes (60%).

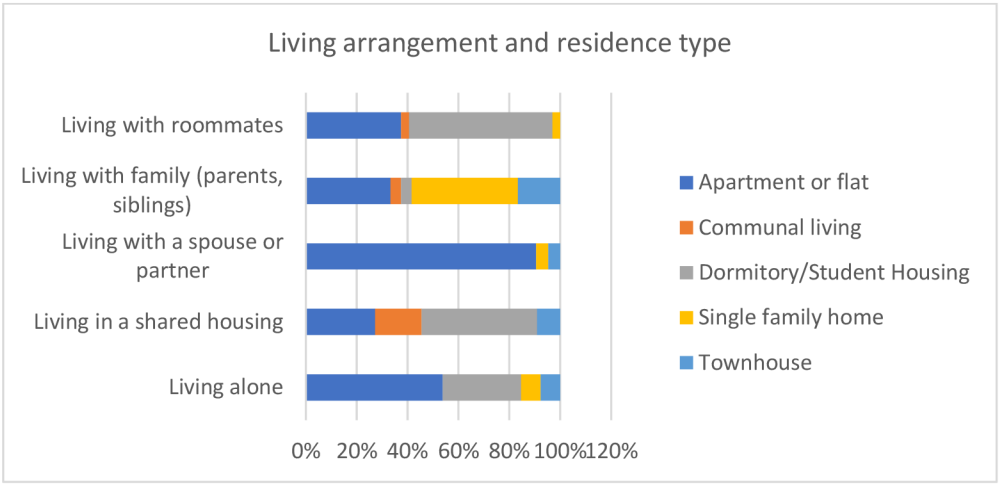
**Figure 3: Participant's region of stay and residence type**




### Living Arrangement

Following the survey responses, the below figure shows the living arrangement of the participants with the type of residence they reside in. It is evident that most of the respondents reside in apartments. Among the respondents who live with roommates, more than half stay in dormitory/student housing (56%) while 38% live in apartments. Around 90% of those participants who live with partners reside in apartments or flats, whereas more than half (54%) of participants that live alone reside in apartments. Almost half of respondents living in shared housing reside in dormitories and student housing, whereas 42% of those living with family live in single family houses. Townhouses compared to all the living arrangements recorded the least respondents.

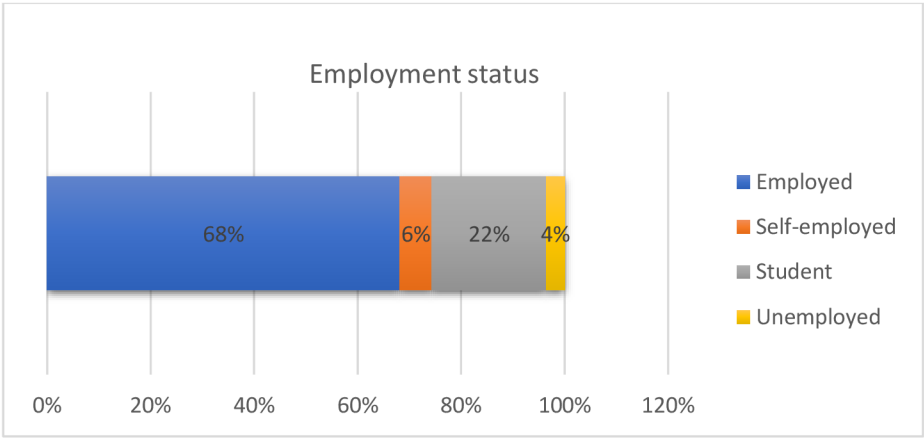
**Figure 4: Participant's living arrangement and type of residence**




**Employment Status**

As the figure below shows, almost three quarters of the respondents, 74%, are working, while 4% indicated as unemployed. And students represented 22%.

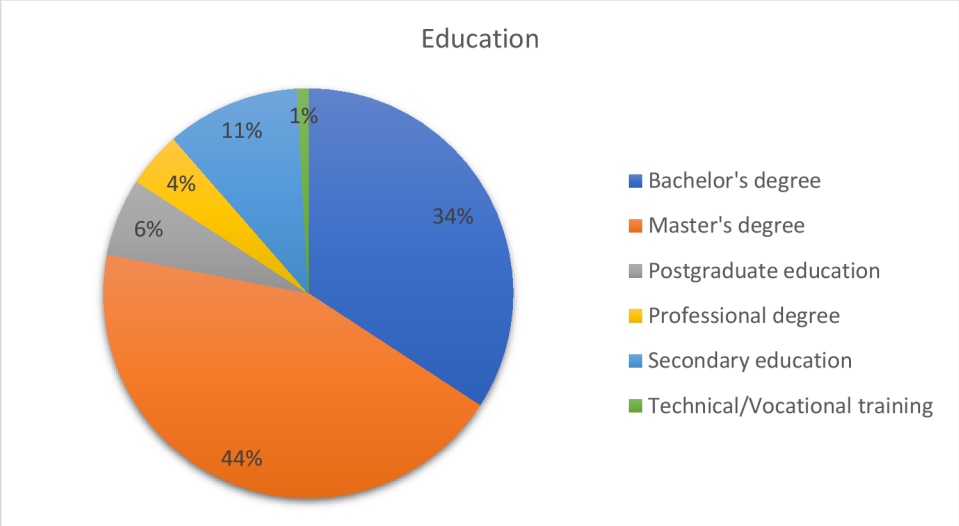
**Figure 5: Participant's employment Status**



**Education**

The chart below represents the education distribution of all the survey respondents. Respondents with master's degree represent the highest number out of the total participants, vocational training and professional degree represent the lowest count of respondents.

**Figure 6: Participant's education**




## 4.2 Statistical Results Analysis

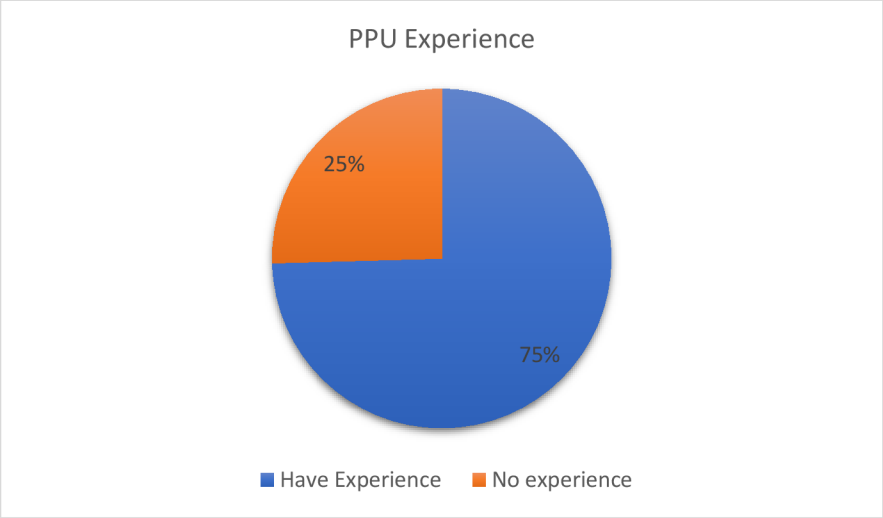
The survey's primary goal was to collect data to address research questions. The information gathered from the survey was used in this part to discuss and attempt to answer the research questions formulated.

**RQ1: What is the overall user experience of consumers using pay-per-use services?**

This research question seeks to determine the holistic usage and perception of individuals who have engaged with pay-per-use product services. It also provides an overall assessment and impression of the pay-per-use services, allowing us to gain a comprehensive understanding of the users' global assessment.

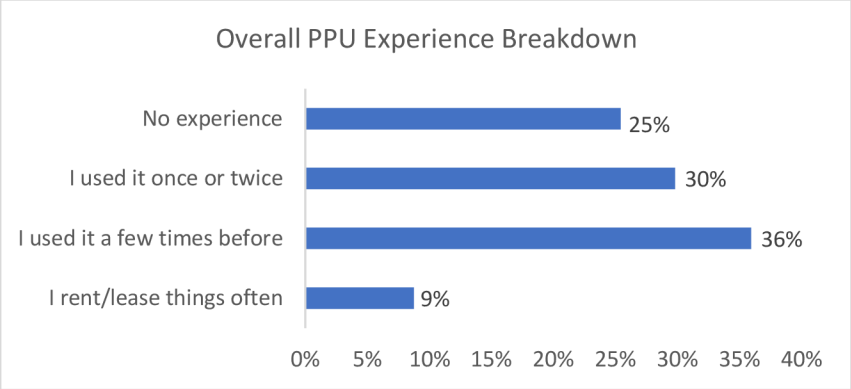
To determine this research question, it is important to find out how many consumers living in the Czech Republic have used pay per the product service system. According to the survey research, three-quarters of the participants have used pay-per-use product experience before. That includes home appliances, cars, bicycles, tools, and books among others. This is a good indication that most people are open to using pay-per-use product services. The other 25% records no experience with pay-per-use, which accounts for a quarter of the total respondents. See the below Figure.

**Figure 7: Participants' Pay Per Use Experience**



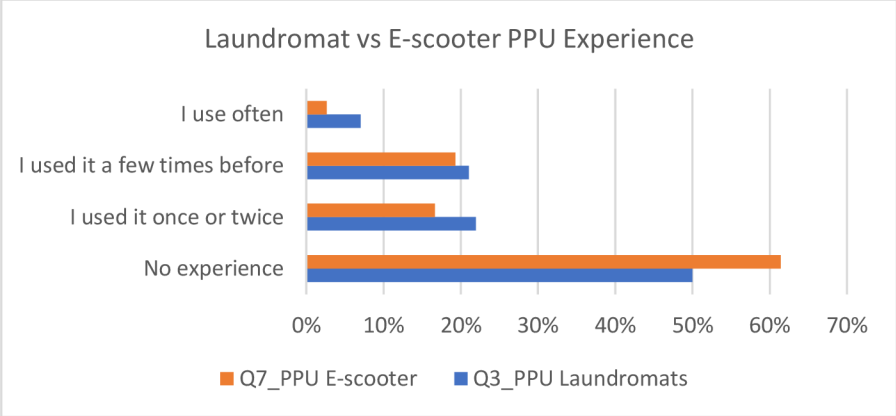

In Figure 8 below, a general representation of the pay-per-use experience is presented with how often participants have used different pay-per-use product services they encountered. Most of the participants who confirmed using pay-per-use have used it a few times before, while a good number of them have used it once or twice before and the lease percentage rent or lease often.

**Figure 8: Participants' overall Pay-Per-Use experience breakdown**




Besides that, it is important to find out how many participants have experienced pay-per-use in Laundromats and e-scooters specifically. According to the survey, most respondents have no experience in pay-per-use product services in laundromats and e-scooters. Even though around three-quarters of the respondents have generally had pay-per-use experience of other product services before, as shown above in Figure 7. Overall, out of the total sample, PPU in laundromats was reported to be higher than in e-scooters, while e-scooters recorded the highest number of respondents with no user experience. Figure 9 below shows the summary of user experience for both products.

**Figure 9: Participant's PPU experience in laundromats and e-scooters**




Also, figure 9 shows a clear representation of the frequency of the two pay-per-use product services. In both product services, more than half of the sample have not experienced pay per use in the two product services with e-scooters recording a significantly high sample size with no experience. Almost a third of the participants have used laundromats once or twice, while another 20% have used laundromats a few times before. Participants recorded similar results in e-scooters with almost 17% having used them once or twice before whereas 19% recorded using e-scooters a few times before. A very low user experience is recorded in both product services with a total of 10% of respondents who use these services often.

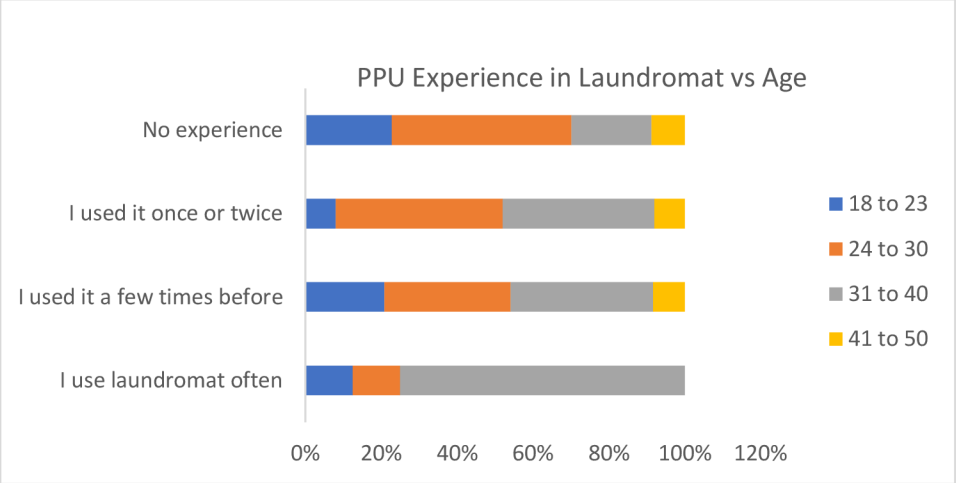
**RQ2: How do factors like age, gender, region of stay, and type of residence influence consumers' decision to adopt pay-per-use?**

This research question seeks to determine the preference of the sample to use pay per use consumption model instead of the traditional product ownership model. To answer this question, an analysis of the consumers experience with each pay per use product was compared against the mentioned demographic factors.

**Pay Per Use Experience vs Age.**

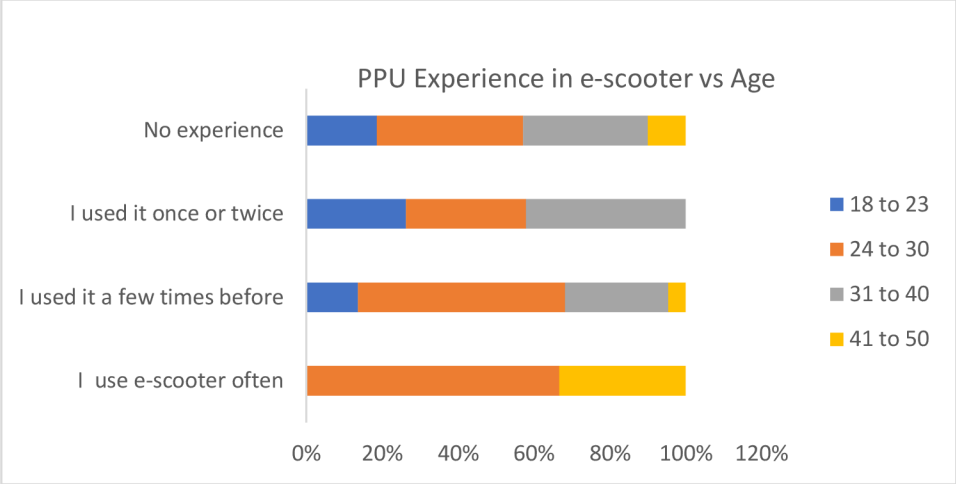
Analyzing the distribution of PPU experience by age group is important to determine whether there are differences among age groups regarding product service use. The survey results show that laundromats are mostly used by participants within the age bracket of 31 to 40 and between 24 and 30. But also, the age of 24 to 30 has the highest number of participants with no laundromats experience, this is also because this is the age group with the highest number of participants. Participants from ages between 18 to 23 and 41 to 50 record the least number of respondents.

**Figure 10: Participant's PPU experience in laundromats vs age**




According to Figure 11 below, among the consumers who have experience with e-scooters, the age group 24 to 30 has the highest pay per use experience in e-scooters. This is an age that is mostly associated with fun and curiosity. Interestingly, age group 41 to 50 indicates using e-scooters often and a few times before and ages 18 to 23 and 24 to 30 have not used e-scooters often but they have used it a few times few and others once or twice.

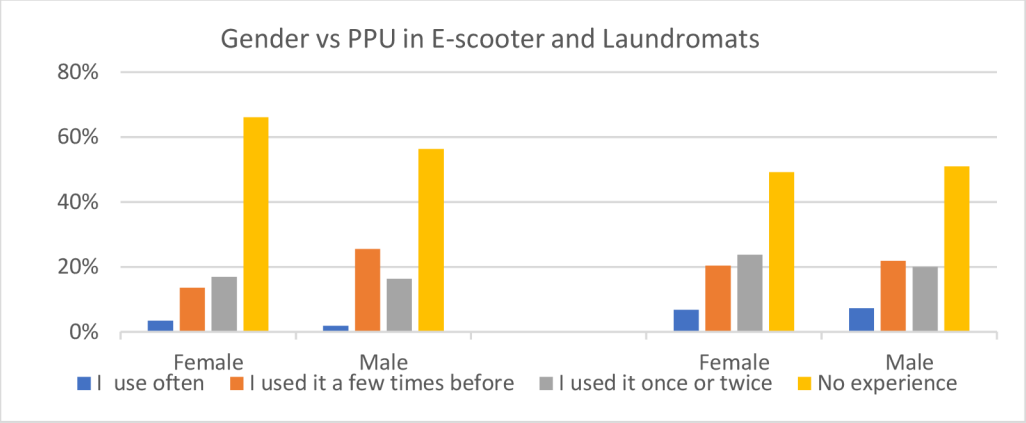
**Figure 11: Participant's PPU Experience in E-scooters vs Age**




**Pay Per Use Experience vs Gender Distribution.**

An important comparison to look at is that between the gender and the pay per use experience in both product services. The results in the survey show that both male and female consumers have similar experiences as seen in the figure below. PPU in E-scooters is mostly experienced by male while laundromats usage is equally used by both. Females are the least users of e-scooters compared to male and both genders also record a similar experience in no experience when it comes to laundromats.

**Figure 12: Gender distribution vs PPU experience in e-scooters and laundromats**

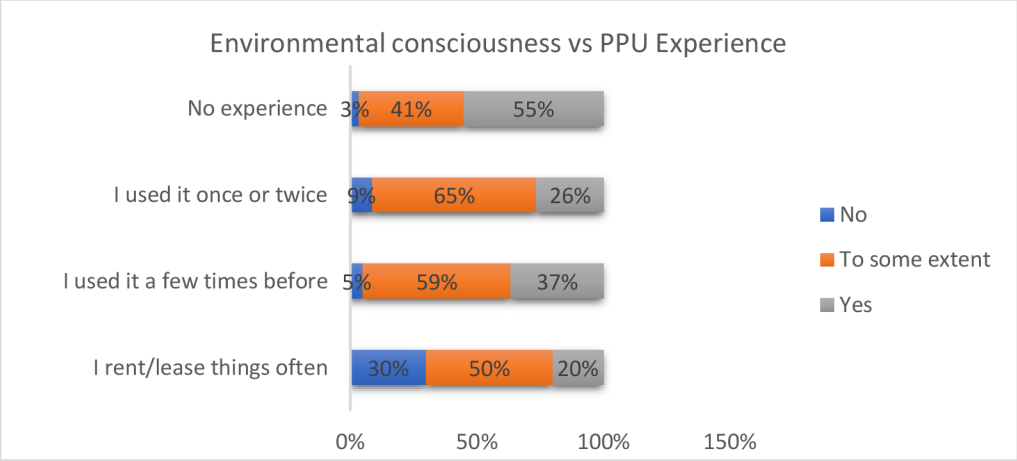



*The chart shows Gender Distribution vs PPU experience in E-scooters and Laundromats respectively.*

**Pay Per Use Experience vs Environmental Consciousness.**

The extent of being conscious about the environment is crucial to determine if the participants extent of being eco-friendly or eco campaigner or eco fan influences their choice of consuming pay per use product services. Based on the survey results, using the overall pay per use experience, presented in Figure 13 below, majority of the participants who consider themselves eco-friendly or eco fans or eco campaigners to some extend have experienced pay per use product service before. Among those who consider themselves environmentally conscious, the majority have used pay per use, but also, a good number have no pay per use experience. Interestingly, many of those who lease often do not consider themselves environmentally conscious.

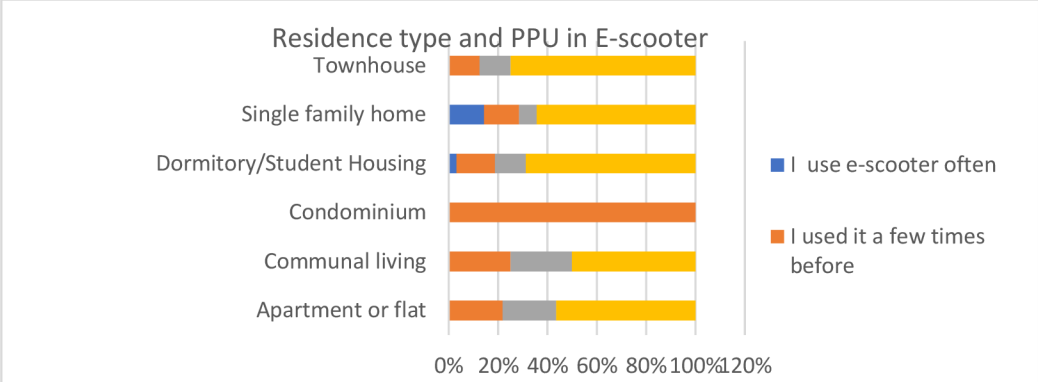
**Figure 13: Environmental consciousness vs PPU experience**




**Pay Per Use Experience vs Type of Residence.**

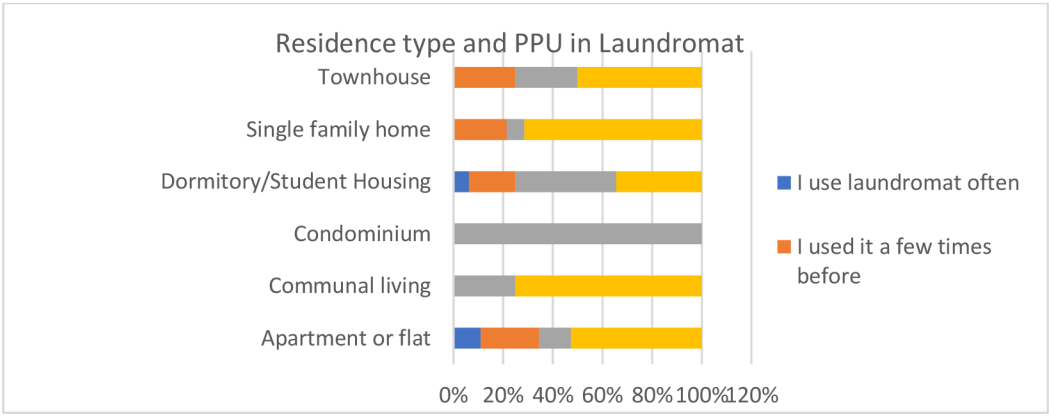
Another important aspect to look at is the residency or type of accommodation that the participants live in. It is crucial to understand if there is an impact of this factor towards respondent's choice of pay per use consumption. According to the survey findings, participants living in townhouses, single family homes, student housing and apartments have very low experience with pay per use in e-scooters, while all the other residences show a relatively small percentage of pay per use product service in e-scooters. Considering one percent of the total respondents lives in a condominium.

**Figure 14: Residence type and PPU experience in e-scooter**




Based on findings from survey, most of the participants who live in single family homes, communal living, apartment or flat and townhouses have less experience with laundromats. The respondents residing in student housing, and condominium recorded the highest pay per use experience. Again, condominiums represented only 1% of the total respondents. Half of the respondents living in townhouses and apartments also recorded a 50% laundromat experience.

**Figure 15: Residence type and PPU experience in laundromat**




Considering the results and analysis provided above, it is therefore sufficient to conclude that many participants have significant good experience in PPU product services with different

product services, however, in laundromats and e-scooters, the user experience is quite low. In both the product services, participants who use these services often are least. There has been a noticeably significant difference in the use of pay per use of these products compared with age, especially ages 24 to 30 and 31 to 40 having the highest record of pay per use experience in both services. It is also evident that factors such as type of residence and environmental consciousness impact the user experience in the laundromats and e-scooters. Gender is not so much a factor that affects the PPU experience in these product services. As far as the two product services are concerned, self-service laundromats are much more preferred compared to e-scooters.

**RQ3: What are the main reasons that motivate consumers to choose the pay-per-use model consumption over traditional ownership in the case of e-scooters and laundromats?**

This research question seeks to understand consumers' preferences when it comes to consumption models in these two product services, and whether consumers are biased toward traditional ownership, or are open to more sustainable consumption models.

**Motives of pay-per-use in laundromats and e-scooters.**

**Laundromats.**

According to the statistical results obtained from the survey, 93% of the responses recorded was on **opportunity to test** the washing machine (e.g., if it is a new brand or upgraded version), and an equal number (93%) recorded that they would be persuaded due to the **community connection** (social interactions or getting acquainted) that comes with using laundromats or using collaborative consumption. A good number of respondents believe that (85.1% of the total responses) **saving of space** (that is either by being intentional on consumption or on minimizing clutter) is a persuasive factor for them to consider pay-per-wash instead. Some indicated that they would be persuaded to use pay-per-wash if they think **it would be a cheaper** (78.9% of the

total responses) compared to having their machine. **No possibility to have a washing machine** recorded the least responses 59.6%. This means these participants are using a pay-per-use service because they cannot buy or rent washing machines due to various reasons that could include financial constraints and space limitations of temporary stays.

**Table 2: Motives of pay per use in laundromats**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Get rid of responsibility | Consider Motive | 77 | 67.5 | 67.5 |
| | Not Consider Motive | 37 | 32.5 | 100.0 |
| No need of WM | Consider Motive | 85 | 74.6 | 74.6 |
| | Not Consider Motive | 29 | 25.4 | 100.0 |
| No upfront costs | Consider Motive | 81 | 71.1 | 71.1 |
| | Not Consider Motive | 33 | 28.9 | 100.0 |
| Flexibility | Consider Motive | 82 | 71.9 | 71.9 |
| | Not Consider Motive | 32 | 28.1 | 100.0 |
| Community Connection | Consider Motive | **106** | 93.0 | 93.0 |
| | Not Consider Motive | 8 | 7.0 | 100.0 |
| Belief it would be cheaper | Consider Motive | **90** | 78.9 | 78.9 |
| | Not Consider Motive | 24 | 21.1 | 100.0 |
| No possibility to have a WM | Consider Motive | **68** | 59.6 | 59.6 |
| | Not Consider Motive | 46 | 40.4 | 100.0 |
| Opportunity to test | Consider Motive | **106** | 93.0 | 93.0 |
| | Not Consider Motive | 8 | 7.0 | 100.0 |
| Save space | Consider Motive | **97** | 85.1 | 85.1 |
| | Not Consider Motive | 17 | 14.9 | 100.0 |

**E-scooters.**

The results obtained from the survey, interestingly indicate that most of the participants (93.9% of total responses) would consider using pay-per-ride product service in e-scooters to have a **community connection** (social interactions or getting acquainted). 84.2% of the total

responses indicate that participants would be persuaded to use e-scooters if they believed that **it would be cheaper** for them. Also, in 80.7% of the total responses, many respondents say that there is **no need for them to have an e-scooter** where they live, which could be due to different reasons or factors like they have alternative mobility options, or the locations they live e-scooters are minimal, or frequency of use is minimal hence pay per use is an option once in a while or more. **Flexibility (no ownership ties)** and no upfront costs were the least favorable choices having 64.9%.

**Table 3: Motives of pay-per-use in e-scooters**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Get rid of responsibility | Consider Motive | 77 | 67.5 | 67.5 |
| | Not Consider Motive | 37 | 32.5 | 100.0 |
| No need of WM | Consider Motive | **92** | 80.7 | 80.7 |
| | Not Consider Motive | 22 | 19.3 | 100.0 |
| No upfront costs | Consider Motive | 74 | **64.9** | 64.9 |
| | Not Consider Motive | 40 | 35.1 | 100.0 |
| Flexibility | Consider Motive | 74 | **64.9** | 64.9 |
| | Not Consider Motive | 40 | 35.1 | 100.0 |
| Community Connection | Consider Motive | **107** | 93.9 | 93.9 |
| | Not Consider Motive | 7 | 6.1 | 100.0 |
| Belief it would be cheaper | Consider Motive | **96** | 84.2 | 84.2 |
| | Not Consider Motive | 18 | 15.8 | 100.0 |
| No possibility to have a WM | Consider Motive | 78 | 68.4 | 68.4 |
| | Not Consider Motive | 36 | 31.6 | 100.0 |
| Opportunity to test | Consider Motive | **89** | 78.1 | 78.1 |
| | Not Consider Motive | 25 | 21.9 | 100.0 |
| Save space | Consider Motive | **91** | 79.8 | 79.8 |
| | Not Consider Motive | 23 | 20.2 | 100.0 |

Among the motives to pay per wash and pay per ride, it is evident that participants have varying ideas with some similarities about pay per use in these two product services. It is shown

that respondents would most likely be persuaded to use pay-per-use product services both in laundromats and e-scooters if they believed that it would be cheaper. There are other similarities in both product services in terms of the other drivers like getting rid of responsibility for the products' maintenance (especially when it wears out or is destroyed) had similar counts in both product services.

**RQ4: What are the main reasons that discourage consumers from choosing the pay-per-use model over traditional ownership in the case of e-scooters and laundromats?**

This question explores what factors prevent or deter consumers from using pay per use but instead prefer traditional ownership. It helps to identify key obstacles that consumers perceive when considering pay per use models, and whether they place a high value on ownership and possession which could discourage them from adopting pay per use approach, among other concerns.

**Barriers in Laundromats**

Interestingly, many participants 101 out of the total sample indicated that **Lack of privacy** i.e., the pay per use service provider would know too much about me (e.g., uploading my credit card details) would discourage them from using pay per use instead opt to own their washing machine. 83.3% of the responses confirmed that participants would be discouraged from using pay per use or laundromats because of **anxiety** (they feel there are penalties when a machine gets destroyed. Also, a good percentage of the responses 80.7% showed that **lack awareness** or know very little about pay per use in laundromats could discourage them from trying these product services. And **sunk costs** (I have already invested in buying an e-scooter, switching to pay per use will cause me a financial loss) is also a huge concern to consumers as they find it hard to give up their products just to adopt pay per use considering the amount of loss they would

have to incur. Surprisingly, the least barrier indicated by the participants was **scepticism due to hygiene standards** (e.g., some users do not clean after use and possibilities of contamination).

**Table 4: Barriers of pay per use in laundromats**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Financial liability | Consider Barrier | 74 | 64.9 | 64.9 |
| | Not Consider Barrier | 40 | 35.1 | 100.0 |
| Lack of aware-ness | Consider Barrier | **92** | **80.7** | 80.7 |
| | Not Consider Barrier | 22 | 19.3 | 100.0 |
| Ownership pref-erence | Consider Barrier | 71 | 62.3 | 62.3 |
| | Not Consider Barrier | 43 | 37.7 | 100.0 |
| Skeptical due to hygiene | Consider Barrier | **66** | **57.9** | 57.9 |
| | Not Consider Barrier | 48 | 42.1 | 100.0 |
| Anxiety | Consider Barrier | **95** | **83.3** | 83.3 |
| | Not Consider Barrier | 19 | 16.7 | 100.0 |
| Lack of privacy | Consider Barrier | **101** | **88.6** | 88.6 |
| | Not Consider Barrier | 13 | 11.4 | 100.0 |
| Much effort re-quired | Consider Barrier | 73 | 64.0 | 64.0 |
| | Not Consider Barrier | 41 | 36.0 | 100.0 |
| Sunk costs | Consider Motive | **94** | **82.5** | 82.5 |
| | Not Consider Motive | 20 | 17.5 | 100 |

*Source: Author*

**Barriers E-scooter**

According to the survey results, **sunk costs** (I have already invested in buying an e-scooter, switching to pay per use will cause me a financial loss) records the highest count of responses (95.6%). **Sceptical due to hygiene standards** is also a highly considered barrier with a 90.4% when it comes to PPU in e-scooters. **Lack of privacy** (the pay per use service provider would know too much about me, i.e. location access enabled on the while using the product services). has a relatively high frequency with 96 responses from the survey. 79.8% of confirmed that

**Lack of awareness** where participants have minimum, or no knowledge of e-scooters discourages them from using pay per use in this product services. A relatively small number of respondents indicate that **ownership preference** is considered a barrier towards pay per use in this product service.

**Table 5: Barriers of pay per use in e-scooters**

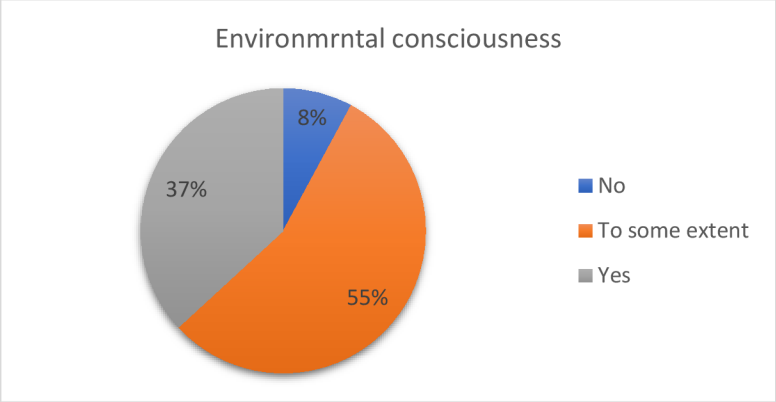
| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Financial liability | Consider Barrier | **87** | 76.3 | 76.3 |
| | Not Consider Barrier | 27 | 23.7 | 100.0 |
| Lack of awareness | Consider Barrier | **91** | **79.8** | 79.8 |
| | Not Consider Barrier | 23 | 20.2 | 100.0 |
| Ownership preference | Consider Barrier | **73** | **64.0** | 64.0 |
| | Not Consider Barrier | 41 | 36.0 | 100.0 |
| Skeptical due to hygiene | Consider Barrier | **103** | **90.4** | 90.4 |
| | Not Consider Barrier | 11 | 9.6 | 100.0 |
| Anxiety | Consider Barrier | 83 | 72.8 | 72.8 |
| | Not Consider Barrier | 31 | 27.2 | 100.0 |
| Lack of privacy | Consider Barrier | **96** | **84.2** | 84.2 |
| | Not Consider Barrier | 18 | 15.8 | 100.0 |
| Much effort required | Consider Barrier | 87 | 76.3 | 76.3 |
| | Not Consider Barrier | 27 | 23.7 | 100.0 |
| Sunk costs | Consider Barrier | **109** | **95.6** | 95.6 |
| | Not Consider Barrier | 5 | 4.4 | 100 |

Based on findings on the barriers that discourage participants from using pay per use in laundromats and e-scooters, lack of privacy, lack of awareness and, financial loss due to sunk costs are the most discouraging barriers between the two product services. The other barriers are considered discouraging in both products but with little power and influence. Skepticism due to hygiene standards and ownership preference are the least discouraging barriers towards PPU in laundromats and e-scooters respectively.

**RQ5: How do environmental awareness and consciousness influence consumers' attitudes and decisions in the transport and laundry industry?**

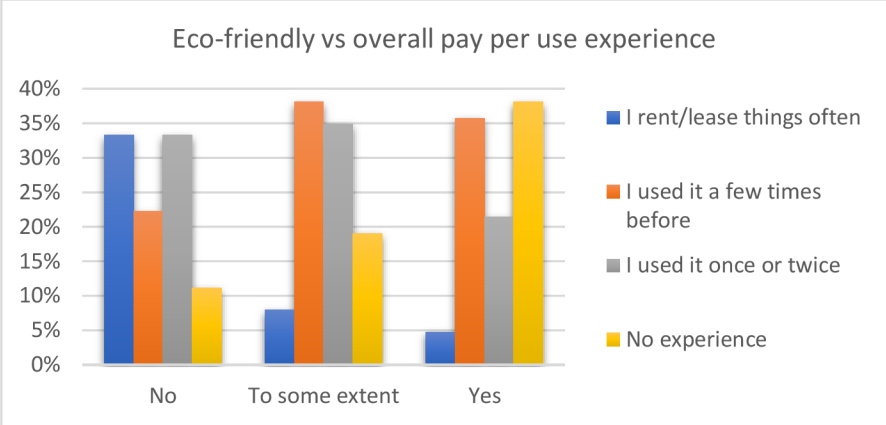
This research question seeks to understand the impact of environmental consciousness on consumers' attitudes and behavior of consumption within these two industries. It aims to explore the level of importance consumers place on environmental issues and assess whether environmental awareness impacts their choice of consumption.

**Figure 16: Environmental Consciousness of Participants**



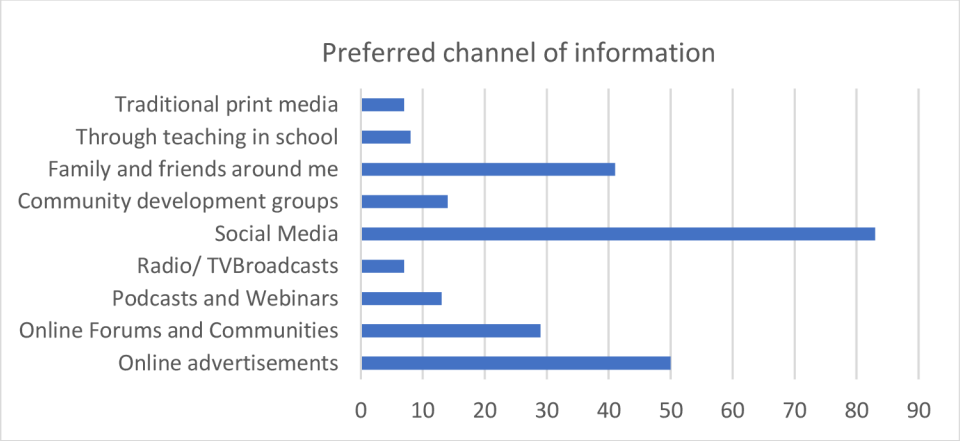

The figure above represents the extent to which participants consider themselves eco-friendly, eco-campaigners, or eco-fans. More than half of the participants (55%) consider themselves eco-friendly to some extent, while 8% do not consider themselves eco-friendly at all. It is interesting that almost 34 percent of consumers who rent or lease often do not consider themselves eco-friendly, while 38% of respondents who consider themselves eco-friendly or eco-fans have no experience in pay per use. Most respondents who consider themselves environmentally friendly and eco-fans have used pay per use a few times before or once or twice before. See details in figure 17 below.

**Figure 17: Participant's level of environmental consciousness vs PPU experience**



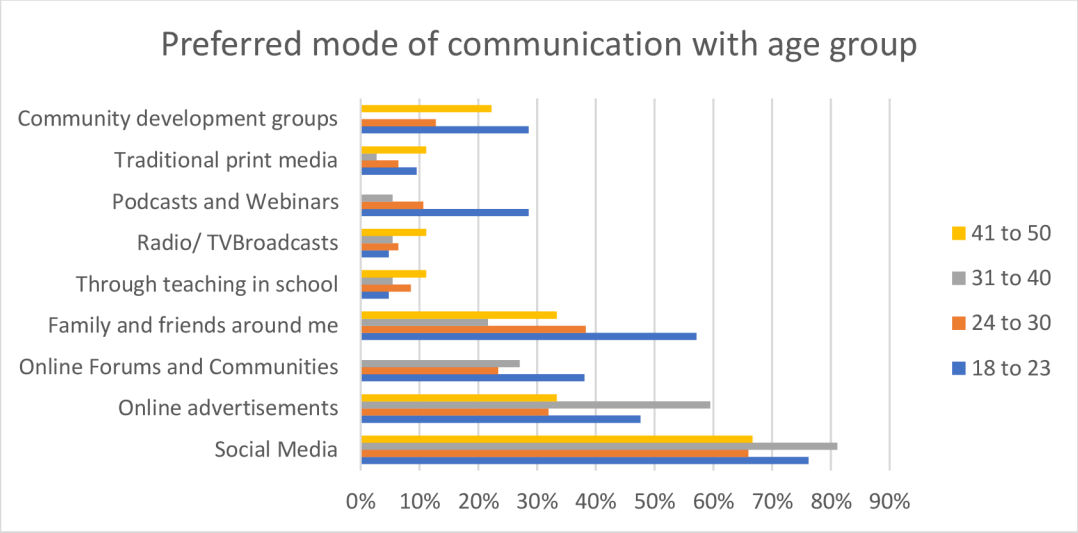

Another question was asked about how and through which channels consumers would like to find out about pay-per-use services in case they were curious. This will help to understand which communication platform is the most influential and preferred among consumers. In the figure below, most of the consumers preferred social media platforms as the best channel for communicating about pay-per-use services available. A good number of respondents also do not mind the use of online advertisements and getting to know about pay-per-use services through family and friends around them. Radio and TV broadcasts are the least favorable channels of information. Teaching in school and traditional print media such as books, articles, or newspapers are also the least preferred channels of communication.

**Figure 18: Participant's preferred channel of information**




According to figure 21 below, all age groups prefer to learn about pay per use services through social media. More than 50% of the total responses prefer to learn about pay per use services through family and friends around them with age group 18 to 23 recording the highest responses in this channel of communication. Almost 48% of the respondents prefer online advertisements. Podcasts and webinars, and community development groups were also equally preferred mostly by age group 18 to 23 again, with age group 41 to 50 having relatively high responses after age group 18 to 23 in community developments. Traditional print media like books, articles and newspapers, radio and tv broadcasts and teaching in school were the least preferred channels of information among all the age groups.

**Figure 19: Participants preferred mode of communication vs age**




**RQ6: What are some of the general attitudes that consumers have toward pay-per-use product service systems in self-service laundromats and e-scooters?**

This question tries to investigate some of the overall insights into consumers' perceptions of pay-per-use systems in the specified industries, including the general feelings and impressions towards these service models, how their attitudes are likely to shift around based on different emotions and understand how individuals' preferences, lifestyle choices impact their decision to use pay per use or traditional ownership. This question also helps to gauge whether consumers accept or resist the idea of pay-per-use in different product services. Understanding acceptance and resistance levels can help to find out the potential success of these models in the market. This was an open-ended question, and the main reason it was open-ended was so that respondents could express their thoughts and emotions as is unlike when the questions have structured, limited responses. This was also the best way so that respondents could give recommendations, if possible, based on their experiences and preferences.

**Attitudes toward self-service laundromats**

The responses to these questions were sorted to make it easy to analyze. This was done by organizing the responses in a standard format. Negative attitudes and positive attitudes were identified first and organized accordingly. The neutral responses were also identified. Then a summary of the responses was made with clear distinctions based on the contexts they represent, in the literature review. Frequency counts were also included in some contexts and direct quotations were used to capture participants' language.

Overall, 136 responses were submitted to this question. Positive attitudes towards self-service laundromats are high with 61 responses out of the total, negative attitudes were slightly higher at a rate of 32% of the total responses. Other respondents with neutral attitudes amounted to around 17%, which represents 23 responses of the total. Interestingly, 9 consumers responded with a willingness to try using these services. Some of the attitudes were explained by consumers while others were not. This analysis will only focus on the main and clear attitudes that were presented by the respondents.

**Positive attitudes**

Out of the total responses, most participants held positive attitudes towards pay-per-use in laundromats. Most participants confirmed that laundromats are **convenient** and **easy to use**. They help those who need them, especially those who travel abroad for a short time like a vacation or temporary stay for example while in school or abroad for work, for example, a respondent wrote: *'Usually I use self-service laundromats when I am somewhere on vacation for 2 and more weeks.'* Other respondents, especially those who live in communal housing and dormitories consider it to be a convenient service in case their washing machine breaks down. Besides, laundromats offer a range of washing and drying machines that customers can use, sometimes being able to complete multiple loads at once. An example of the responses include: *'Self-service laundromats are convenient for individuals who don't have access to laundry facilities at home or*

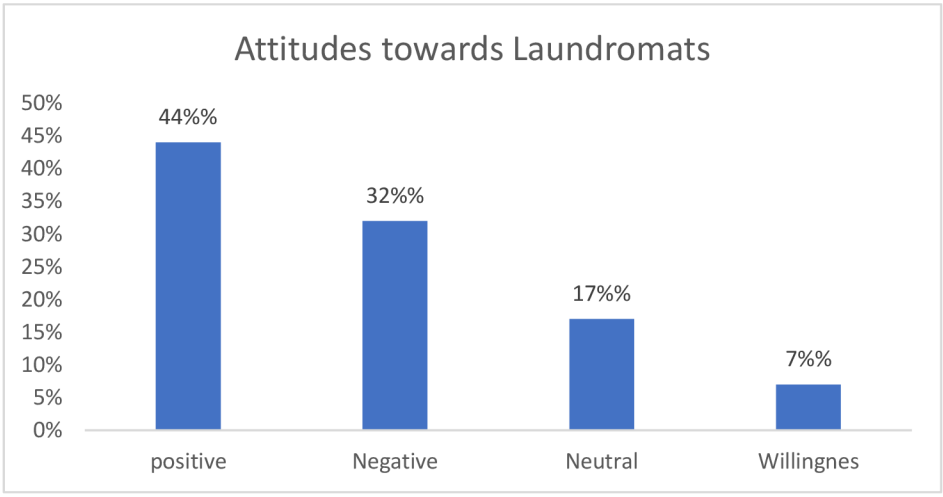
*prefer to use professional equipment. They offer a range of washing and drying machines that customers can use on their own, typically on a pay-per-use basis. Many people find them convenient and cost-effective, as they can control their own laundry process and complete multiple loads at once.'*

Some participants expressed positive attitudes, but at the same time held reservations or expressed some negative attitudes. An example of a case is where some participants write that they are convenient, but they are a **financial liability**, or they are **convenient**, but they still prefer traditional ownership. An example is: *'It's a perfect solution for people who don't have a washing machine in their apartment. But I prefer to own a washing machine. For me, it seems time-consuming to go to a laundromat plus I'll have extra bills.'* A similar response to this read: *'Alright for vacations or if we would not have one in our apartment, the main problem with it would be the logistics and effort around planning the washings as well as going to and from the laundromat with the clothes.'* This implies that as much as a respondent has a positive attitude towards pay-per-use, their choice of using the laundromats can be changed by the underlying reservations. The thought of having to use the time to go to a laundromat or thinking of the **extra bills** every other time they go to wash makes them prefer owning their washing machine instead. One respondent who has never used laundromats but considers the service to be convenient and efficient at the same time wrote, *'I haven't used one yet, though I might. I think it's a useful service in case one needs bigger/better machines than normal ones, it's convenient for people without one or even for tourists. I might be worried about the hygiene and cleanliness of the machines.'* This respondent is very positive and conversant with the benefits that come with the use of laundromats; however, he is concerned about the hygiene levels of the washing machines in the laundromats. This also shows how consumers' perceptions of pay-per-use in laundromats can determine their choice of consumption.

Some participants considered self-service laundromats to be beneficial, but they **lacked awareness and knowledge** about the services. They express a **willingness** to try the product

service if the right information is available *('Positive, more information for proper decision making')*. Others have never seen a place with self-service laundromats; hence they **do not have any place to go to access the services** (Inadequate services or less options )even if they wanted to hence, they are less inclined to use the services. Other users find no need to use the self-service laundromats since they have washing machines at home. Others consider them to be beneficial, but they do not need them or there is no reason for them to use this service. One respondent who indicated no need to use laundromats wrote: *'So far, every place I've lived already provided a washing machine for my own use. But if I moved to a place that didn't have one, I would happily use laundromat but only until I can save up for my own machine again. main reason: having to carry the laundry there and back + takes up extra time + opening hours of the laundromat.' Only one response recorded indicated* that the use of this service fosters human interaction according to one of the participants. A few responses from the survey results indicate that self-service laundromats are a good idea and cost-effective, as one can **save on initial cost and space**, hence it is more **economical** and **cost-effective** in the long run. The below figure shows the total responses regarding respondents' attitudes toward self-service laundromats.

**Figure 20: Survey participant's attitudes towards laundromats**



Based on the survey responses, almost 32% of the total responses were negative. Some respondents consider pay per use service in laundromats to be **expensive**. *'They can be cheaper in the short run but more expensive in the long run. The cost of renting over a long time can surpass the initial total capital. So makes no sense. Plus, hygiene is something I care much about and I'm a creeper out especially many people don't know how to clean after using services, while others try but the level of cleanliness is just not at par. So not my thing yet. Prefer my own laundry.'*

The most recurring attitude is **skepticism due to hygiene**. Hygiene is a worry among some of the participants. For example, one of them wrote: *'Very negative. Knowing what other people are capable of, it feels just gross to me. People´s hygiene standards can differ a lot. So, it is not hygienic, and it is just gross to me. I would rather wash by hand than use public laundromat.'* Another respondent commented *'I would never use them. I don't consider myself a germophobe, but I don't consider them "clean enough" for cleaning my laundry - my clothes, sheets, towels - things I put right on my skin.'*

**Ownership preference** was another attitude expressed. As much as some of the respondents consider this product service to be convenient and efficient in various ways, some still prefer to own theirs. A statement was written by one of the participants on the same. *'Well, I would want to have my washing machine that l hold control over.'* This respondent prefers owning products because they want control over the things they use. Another one said, *'I used it a lot before but now I don't. It was fine, but sometimes not clean. But now I prefer my own washing machine'*. Multiple emotions are expressed in this statement, where consumers prefer to own their own and express hygiene concerns while they are using the laundromats. Such could prevent a user from considering using this service again.

Finally, out of these responses, some consumers have no experience with the service, but they expressed interest and willingness to use this product service. Some expressed willingness to use but with conditions. For instance, one response read: *'I would like to use them sometimes,*

*but it should be cheaper than owning the laundry machine.'*. Some consider it an experience they would like to have but are limited by a **lack of knowledge** and information about them, hence they cannot make decisions about self-service laundromat use. Others would like to use but the services are not easily accessible to where they are *'If I had one close to where I live, I'd definitely consider using it.'*

In this section, it is evident that most of the participants (both those who have used and not used) have a positive attitude toward self-service laundromats, despite the negative reservations mentioned in some cases. Many attitudes vary differently among individuals, some attitudes are considered positive and yet considered to be negative by others. With the count of responses who are neutral which is almost half of the responses with negative attitudes, most consumers are not aware of this product's services yet. It is also notable that some participants express the willingness to explore this product service if information about it is shared and made known by them. This implies that there is potential in increased adoption of this product service in the market.

**Attitudes towards self-service e-scooters**

Unlike the use of laundromats, e-scooters have a high rate of positive responses, even though e-scooters recorded the least number of respondents who have experienced this product service. Among the positive responses recorded, participants find pay per use in e-scooters to be cheap**, practical,** and **easy to use** compared to other transport modes, especially around and within the city. They are faster and easier to use in relatively larger distances within cities, especially if there is complicated transport. A good example of the responses to these attitudes is: *'E-scooter renting offers a convenient and eco-friendly way to commute short distances, providing flexibility and accessibility in urban environments. It's a practical option for many individuals seeking efficient and sustainable transportation solutions.'* This has also been linked to the **convenience** that rented e-scooters provide. Convenience has been mentioned a lot of times in attitudes. Participants linked convenience in terms of how cheap and easy it is to move from point

to point. Another comment that supports this attitude and is also linked to **cost-effectiveness** is, *'E-Scooter is perfect for when you need to be somewhere fast if public transport takes time or doesn't go to that route. It's cheaper than taking a taxi. Also, a cheaper option if you want to go sightseeing.* Some respondents use this product service to explore the city because it provides the possibility to do so unlike cars or trams, and it is also a cheap option. Another participant wrote that they use e-scooters especially when they need to rush, and they are late for an appointment. In some cases, they rent scooters while traveling in other cities away from home.

Among the attitudes, it is notable that some respondents do not use pay-per-use services in e-scooters because they **do not need to**. Either because their place of living does not allow or they are just not interested in the product service or there is no dire need to use one. A respondent commented, *'Seems cool, I just personally don't have a use case for it. I live near the city center, so most places I want to go to are within walking distance. If something is further away, I use public transport. I don't know of any place where an e-scooter would be the most convenient form of transport to get there. Besides, if I used an e-scooter regularly, I'd just buy one. I believe that in the long term, ownership would be cheaper than renting.'*

Other participants use this product service but only for fun and sometimes when they have no alternative to get home.

**Figure 21:Survey participants attitudes towards E-scooters**

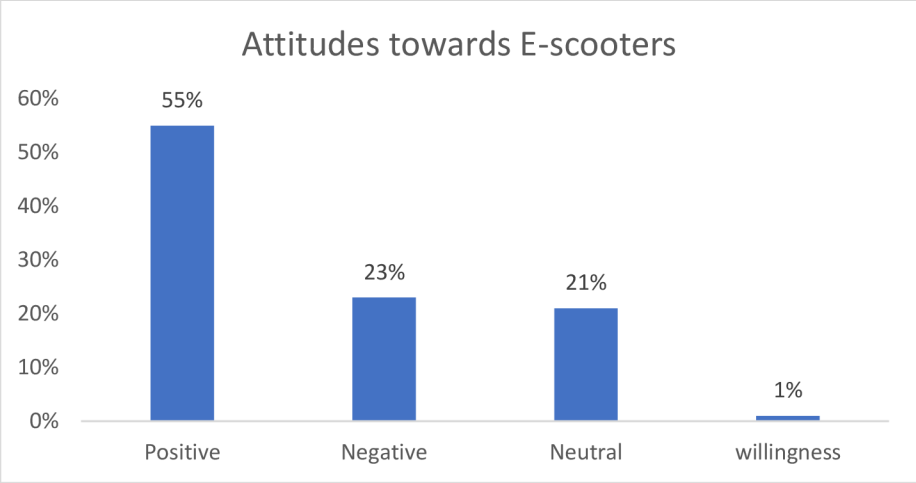



Figure 22 above shows the attitudes of the survey participants towards e-scooters. Most of the participants expressed positive attitudes towards E-scooters, whereas negative attitudes recorded almost equal number of responses. There was a 1% of the total respondents who could not express any attitude because they have never used the service before, but they expressed willingness to use the product in future, which signifies the individual's readiness and openness to experience pay per use.  experience in the future. *'I would really want to get a chance to rent one.'*

A good number of participants confirm that e-scooters are **environmentally friendly**, for both users and non-users. One response wrote that: *'I don't have many opportunities to rent a scooter, but I have nothing against it. It is a fun and ecological way of getting around, and I actually wish I used them more often.'* Another one wrote, *'It's a great way to conserve the environment since we have less waste from scooters.'*This statement shows how some consumers like to enjoy and have fun and at the same time be cautious about the environment. One other respondent commented, *'I think e scooters are good for environment and reduce traffic especially in city. It can help in exercising too. But I have not used it but given a chance I can use it but sparingly'*. This implies that the respondent is aware of some of the benefits of using this

product services, and they are willing to use them if they had a chance, but they do not express any intention to switch entirely to using pay per use. *I don't have many opportunities to rent a scooter, but I have nothing against it. It is a fun and ecological way of getting around, and I wish I used them more often.'* There were three more responses considering this service fun and helps with exploration and sightseeing. '*E-Scooter is perfect for when you need to be somewhere fast if public transport takes time or doesn't go that route. It's cheaper than taking a taxi. Also, a cheaper option for if you want to go sightseeing*.'

And lastly, some participants did not use e-scooters because they felt that *'I do not need them'*, others expressed the wish to use them but only if a need arises like if they had to do delivery jobs, then they would consider renting one. A few individuals like the idea of having to use the e-scooters for fun without having to own one, **(no ownership ties)** and that it would save them the trouble of having to take care of it (getting rid of responsibility). And like laundromats, there were a few respondents who were positive about pay per use services in e-scooters, but they know little about them and they would like to use these services with proper knowledge shared.

Out of all the responses recorded under attitudes toward e-scooters, 32 respondents had negative attitudes towards e-scooter product service. With almost half of them providing reasons as to why they think so. Many of them express the recklessness that comes with e-scooters, less care, and improper handling where e-scooters block the roads and especially pedestrian walk-ways in some areas, which leads to safety concerns and pollution of the city according to some respondents. Interestingly, there was a comment raised on inconvenience in terms of weather and less luggage space handling and it seems like a liability.

**RQ6: What are the main differences in attitudes of consumers between these two pay-per-use product services?**

Finally, a question was asked to the participants to describe the main difference(s) in their attitudes to these services (self-service laundromats and rented e-scooters) in their own words. Various responses were given in terms of frequency of use, degree of need, nature of the service, degree of safety, and extent of their attitudes towards each product service.

**Degree of need:** Many of the responses differentiate between the degree of need, where respondents perceive laundromats as an essential service, or necessity in handling household and offer practical solutions for laundry needs, and e-scooter was regarded as a not essential service but an optional one. '*Laundromat is an essential process to keep the clean, e-scooter is optional'.*

There was a comment on the **degree of safety**, where a respondent mentioned that using pay-per-use in laundromats saves them the worry of having their flat flooded after washing, and in the case of e-scooters, they won't have to worry that their e-scooter would be stolen since they are renting. *'I don't have to be scared, in the washing example that my flat will flood and in the case of scooters that it will be stolen'.* Another participant added another safety concern for sharing GPS data. '*I would rather share my GPS location data when working as a delivery driver, than enable my washing machine access to my Wi-Fi, that is highly unsafe. I just rarely connect to tv and just for short periods when I need it. At other times, tv is always disconnected. Scooter GPS locator is also a source of EMW, but it is not at home, so the amount of EMW radiation is lower than from the washing machine that is connected all the time and at my home.'*

Another difference in attitude was that some participants viewed laundromats as a service they would **use more frequently** compared to pay-per-use e-scooters. '*The laundromat may be visited once a week, but it is not frequently used. But if I rent a scooter, if my home is far away from work, I may need to use the car every day.'* This difference is to some extent linked to the first one which was a degree of need. Once a product service is essential, that means it is bound to be used frequently unlike an optional one. But it does not rule out the option that optional product service is also frequently used in some cases especially based on the use or need of the

product. E.g., users who use e-scooters for delivery jobs are bound to use e-scooters more frequently than laundromats. This is well explained in the focus group analysis where respondents provided detailed analysis on the same.

Other responses were based on the **ease of accessibility** of the product services. E-scooters were presumed to be easy to access and use as one only needs an app to unlock the e-scooter, however, self-service laundromats, as much as some need applications, sometimes there us a queue and sometimes one might need to change their plans. A respondent wrote *'It's easier to rent laundry than e-scooter. Because laundry is within the apartment, for scooters I have to go looking for it'.* Also, it's easier and more convenient to use a laundromat if it is within the place of stay, but it is not convenient for an e-scooter as one has to go looking for it. This attitude is entirely dependent on the place of stay and vice versa could be said of individuals who have e-scooter accessibility closer compared to going out to look for laundromats. There was a comment that described the extent of negative attitudes which means that respondents consider each product service useful in some way, but at the same time, they prefer to rent or pay per use of one of the products but not the other. In other cases, they do not prefer any of the product services due to various distinct reasons. '*They are different things. So, attitudes are different. Both are okay in environmental care. But laundromat sharing is not okay. Maybe renting. And e-scooters are kind of okay, but they seem scary to use on roads.'*

**The nature of the service** is another differentiating attitude that participants have towards the two product services. It was clear that most respondents perceived laundromats as an efficient and flexible routine household task providing hygiene while e-scooters were categorized as a convenient mode of transport. Some of the comments written include '*Self-service laundromats offer laundry facilities, while rented e-scooters provide short-term transportation.*' This clearly states the differences in terms of the type of service that these products services offer. I*t's all about laundry independence, where you take control of your dirty laundry destiny at self-service laundromats, versus electric scooting liberation, where you can zip around town*

*on your two-wheeled magic carpet and feel the wind of freedom in your hair (or helmet, safety first!) with rented e-scooters. One's about clean clothes, the other's about a swift and breezy ride!* One respondent wrote. Another response with a similar view that was written reads '*self-service laundromats, I see them as providing convenience and control in managing laundry tasks, while with e-scooter rentals, I view them as offering a convenient, eco-friendly mobility solution for short-distance travels in urban settings.'*

One other distinction that was mentioned by the respondent was in terms of **operational hours.** Self-service laundromats mostly have limited hours when one can access them, whereas rented or pay per use in e-scooters are usually available throughout the day and night. All you need is to get the e-scooter and unlock the mobile app. One response that is similar to this attitude is that '*self-service laundromats are less inconvenient, because you have to carry your laundry there and back, and you are often limited with opening hours. e-scooters are simply handy'.*

When it comes to **cleanliness and hygiene,** one respondent thinks that e-scooters can be easily wiped and maintain the needed health standards as compared to self-service laundromats. 'An e-*scooter is not something that is in contact with your body, just your hands. You can sanitize it or your hands, but clothes you want to have clean and sanitized to use it, so shared laundering makes no sense in this direction.'*

Finally, some respondents did not see any differences in the product services. For instance, some wrote '*Personally I see no difference, both services are of great use when on travels'*, another one commented *'To my own perspective they are similar because the main drive on my side is that they are cheap'.*

**Additional Comments**

Lastly, in the general comments section, respondents expressed various attitudes, and some provided recommendations. There were concerns that e-scooters had a lot of environmental problems and other issues compared to bicycles. Notably, different attitudes toward products

can be perceived differently by other individuals. For example, in terms of convenience, an outdoor person would prefer to own a scooter rather than use a pay-per-use because owning an e-scooter is convenient to them as they use it frequently. This shows how consumers' attitudes are diverse based on previous experiences.

*'Renting or paying per use is convenient and flexible, but in the long run, it costs you much more than owning. I'm definitely not looking to rent more stuff unless I have to cause I'm already forced to pay enough monthly bills. I'm also uncomfortable with the fact that when renting or paying a subscription, the thing can be taken away from me at any time and it's not actually mine. Also, anxiety about accidentally destroying it and having to deal with that with the owner or company.'* This respondent still expresses their concerns and conditional reasons in case they were to use any pay-per-use services.

One respondent elaborated on the pay-per-use of laundromats where they explained how attitudes among consumers would vary greatly in the case of types of washing machines if new or old. The respondent further mentioned how hygiene is a must to consider when trying to make these products and services available to clients. This is what the participant wrote: ' I *would divide rent to use washing machines into 2 categories - new and used. People will probably be quite willing to be the first ones to use the machine. The used one will be harder to "sell" to the people, but making price differentiation can make an impact on the demand of the used ones. Moreover, it is of utmost importance to sanitize completely the whole machine and all of its insides and show and prove it to the new potential renters. I think this is the only way to help this idea adoption'.*

Another participant who is willing to use pay-per-use product services commented that they would wish for this type of product service to be aligned and adopted by many other products so that users can access most product services that they need in their daily lives easily and at cheaper prices. Another related comment was *'they guarantee ease of access of services from machines we may not afford to buy'.*

Finally, a respondent who is eco-friendly wrote *'Yes this will be an incredible idea if implemented around the globe, since it will help in saving the environment. They are things you can rent after all not a must-have. Hygiene levels should be of very high standards.'*

In a nutshell, different emotions were expressed in the questionnaire, there are main and recurring attitudes that were expressed by consumers, reservations, perceptions of what they think about each product or each factor, and recommendations were also provided by some respondents which will be summarized in the conclusion.

It is also important to highlight that some of the barriers mentioned by the participants are not really barriers of this model but instead negative features that the participants feel about the product and its use.

## 4.3 Focus Group Analysis

In the focus group analysis, the referencing format of the participants will consist of e.g., participant one being denoted as 'Part_1' and so on. The full transcripts for the focus group conducted are found in the Appendix section.

**Motives of PPU in laundromats**

First, pay-per-use was defined, and an example was given for the participants to have an idea of what the discussion would cover. Respondents were asked whether they have used pay-per-use in e-scooters or laundromats, to determine the user experience of these services. Two participants confirmed to have used PPU in e-scooters, 3 confirmed using laundromats and one used both services. The first question was asked by the moderator to open the discussion. The question was about what reasons persuaded or would persuade (for those who have not yet used that service) participants to consider pay-per-use in laundromats instead of owning a washing machine. This was elaborated to ensure participants understood the context.

One of the participants (Part_5) started by expressing that she uses the laundromat simply because there is **no option** as the respondent lives in the student housing which has only common washing machines. The respondent added on to say it is the most convenient way compared to buying a washing machine. Part_2 and Part_6 supported this idea. They expressed no need to purchase a washing machine when the places of stay were temporary. They say it would be a **burden and stress** moving around with it, hence pay per use is a suitable option. This is an advantage to having **no ownership ties** and hence flexibility and less hassle. Adding on to the former comment made by Part_5, '*It is not only convenient and easiest way but sometimes we are moving from place to place and we have* ***no proper sanitation.*** *'* (Part_1) gave an example of his friend *'For example, yesterday, my friend was moving from one apartment to another apartment, in his previous apartment he had a washing machine, but in the other apartment, they have shared washing machines and no proper sanitation for the washing machines. So now he is worried because he is going to sell his machine to the market or somewhere else. After all, he has* ***no space*** *for it. So, I think the pay-per-use in laundromats is the best idea compared to getting your own.'* Echoing this response, it is evident that owning a washing machine is not the best idea, especially if one is not permanently staying in a place as it comes with other losses and struggles like the need for space. On the other hand, the friend also expresses negative emotions where they are unhappy with the hygiene conditions of the shared laundromat and the lack of space to put the washing machine as a barrier.

Part_2, in support of Part_1, added an example to reiterate why using a laundromat is the only option available for him. The participant said, *'Since I am living here temporarily, there is no need for me to spend on such, it is better for me to go to the laundromat and wash from there because* ***it is cheaper'***. However, Part_3 objected to Part_2's comment by saying, *'I beg to differ about what my colleague (Part_2) said on it being cheaper because it is more expensive in the long run than getting your machine. But then if you are just using it… maybe once a week or not too frequently, it is cheaper, but if it is using it regularly, then I don't think that is a cheap option to use.'* Part_2 replied in agreement to what Part_3 said, *'Yeah, exactly..exactly. For instance, I*

*have no family here, I am alone, I don't use it every time compared to those who, maybe ...have five people in the family or even babies…you know, (laughs) so yeah...yeah, it's cheaper for me in that sense.* This confirms that the motivating factors among consumers vary based on individual perspectives. As mentioned in Part_5, some of the respondents use the self-service laundromats simply because they have no other choice. Living in an apartment or dormitory beats logic for each room or individual to have a washing machine as it is not economically feasible and underutilization of machines in some cases. Besides that, there is the issue of space where the rooms are very small to accommodate washing machines and other things. Part_6 added onto the motive raised by Part_5 saying that *'the current place of residence is temporary for stay, and a laundry machine would be less too much of a headache because every time you have to move you have to carry it along. But when you use pay per wash, you don't own it, you pay for it when you need it and you won't have the burden of moving it around.'*. This explains the motive for having to use a laundromat because there is no possibility of having a personal washing machine where they live.

In the above response, the respondent tries to explain how the place of stay or their current living condition favors the self-service laundromats instead of owning one. Flexibility in terms of no ownership ties is also mentioned in the above comment where the respondent expresses that she does not have to worry about carrying washing machine around whenever they move from place to place which is a burden and hectic.

An interesting point was mentioned by (Part_3) who said that in the case of using laundromats **after sale services** are offered where things like fragrances are sold or given to users, which is something that some individuals might not think of using or buying with individual washing machines. Part_3 further added that he would be motivated to use PPU in laundromats because there is **no need to pay for the cost of maintaining** the washing machine since laundromats are taken care of by the service provider.

**Motives of PPU in e-scooters**

When there were no more comments and questions in the first section, the discussion proceeded to address the motives that encourage participants to use pay-per-use in e-scooters. The question was similar to that addressed in the survey questionnaire, which was; what reasons would persuade you to use a pay-per-ride service?

Participant Part 3, who has never used e-scooter before mentioned that he would want to try it out just **for fun.** Another respondent (Part_2) added to this point by saying that he only used e-scooters for food delivery with bolt, but it was because they had to, there was **no other option.** Otherwise, the respondent expressed no interest in trying it anymore, except just out of **curiosity**. To understand better why the respondent chose Bolt e-scooters as a means of transport instead of others, the moderator asked the respondent, *'Why did you choose an e-scooter instead of another means of respondent'?* The respondent answered that because they had no **affordable** alternative. This meant that the respondent considered pay per use in e-scooters a cheaper option compared to buying his scooter, considering they mentioned in previous text about laundromats that they are living in their place of stay temporarily and owning is not the cheapest option for them. The respondent further provided extra details on the pricing of the service and how the billing is done. *'There is an application you use in Brno for renting an e-scooter, and you pay around one hundred and twenty-something Czech Koruna for the whole month, if I'm not wrong,..quite cheap'.*

Another participant (Part_6) revealed that she has not used an e-scooter because there has not been any need to do so. The participant reiterated what was mentioned in Part_3 *'As earlier mentioned, if anything, it would be out of curiosity and fun. It's not something I have had any experience with. Especially because there are other equally cheaper alternatives like the trams and all that, and certainly not in this weather (winter).'*

Participant Part_4 added to the discussion by saying; *'Actually, I think this is quite interesting for me, even though I have a personal scooter, but still, I used a rented scooter before couple of times. If I want to go somewhere else, mostly I use a line scooter, because if I look at*

*the distance and see it is only 4km, if I take a bolt car, I feel it is more expensive, but on a scooter, it is* ***less expensive****. At least 10 to 20 Czk less. And if I request a bolt car, it takes time to come. Okay...so I have to wait 15 or 20 minutes just for the car, but for 4 km I do not need to wait for 15 mins because I can easily unlock a scooter and go to my destination and park at a proper place.'* This participant finds PPU in e-scooters a very **convenient** service compared to other modes of transport, especially in short distances instead of waiting for the tram which could take a longer time to arrive. Hence e-scooters can help you to save time and do something else. *'Also, when it comes to delivery jobs, there is a time-bound, you have a time limit to submit an order that you picked up, and if you must wait for the tram, it could take you longer to get to your destination, which could be detrimental to your workflow'.* Part_3 added.

Part_1 added on to mention how often he uses the e-scooters and for what reason he uses it and also provide preference for when he uses it. *'Mostly, I pay to use e-scooters late in the night because at that hour, most buses are moving in a one-hour interval or something like that, and they do not go in all the routes covered by trams, but specific routes, hence it is more* ***convenient*** *to use a scooter at this time. Also, I love to site see and enjoy the weather and the environment, which, if I take a car or tram, is something that I will enjoy the same way.'*

Based on the responses that the participants provided, most of the respondents have used e-scooters because they have no other choice, and mostly for job-related activities like food delivery. The other respondents have not used it because there is no need to do so, while one more respondent, Part_5, has not used it and had no comment to give about this product service, and expresses no interest in it whatsoever. A common thing about those who used the bike was that they all used it for job purposes, except one of the respondents who used it sometimes for sightseeing. All respondents find them to be quite useful and very convenient in various ways.

**Barriers in Laundromats**

This section was introduced with the following question: What factors would discourage you from using pay-per-use in the laundromats instead of preferring to own your washing machine?

Part 4 began by commenting on **hygiene**. The respondent further explained how hygiene can generally discourage individuals from using laundromats. Even though the laundromats or washing machines could be clean, sometimes people simply do not like to mix their clothes with others, and it is all psychological (Part_4). This is supported in an article written by Clube and Tennant (2020) which explains the concept beyond human-to-human contact in terms of contamination. There is a consensus that contamination can be real or imagined. As much as real contamination emanates from physical touches that can be objectively examined, physical contact is not necessarily needed for one to *feel* contaminated resulting in imagined contamination effects thus, these psychological biases are riddled with contradiction and yet result in avoidance and boycott behaviors which present a barrier to pay per use (Clube and Tennant 2020). This was also supported by participant Part_5 by adding that laundromats are used by different people and for example if everyone uses different types of detergents to clean their laundry, it is not good for the environment as it **pollutes the environment**.

**A lot of effort is required** in terms of time and emotional preparedness to go to the laundromat. This was mentioned and explained by Part_2 *'For me, it takes a lot of effort to go to the laundromat. I must accept that for that day I am going to the laundromat, my daily schedule for that day might change and I have to accept that when I'm going, I don't know when I'm going to be back in case things change, so I have to accept it that I have to be ready. I also need you to prepare psychologically.*

Part_6 supported the previous idea by saying: *'And I also think that compared to only one machine, you know when you normally do your laundry, you separate your colored clothes from white ones, but then in laundromats, you are looking at other people waiting to use after you and all that. So, you are trying to finish within time and make room for others. It's just like*

*that kind of convenience.'* Like Part_2, this user feels that there is a lot of emotional energy required in using pay-per-use laundromats, especially considering time and the fact that other people need to use it, which interferes with how you would otherwise have cleaned your clothes the way you want and in the order you want.

*'If you own one, you have at your premises and you can use it at your convenience, I mean, it can be as late as 10 pm you can do your laundry, but then, when you are using a laundromat, you are restricted to time and it has to be within a particular timeframe and I think time is a major disadvantage when using a laundromat'* (Part_6).This respondent feels that using laundromats can be very **inconvenient**, especially for the fact that you are only tied to having to do your laundry between certain hours. It offers no flexibility in that manner. The participant further supported her comment by saying:

In unison with Part_6, Participant Part_3 added, *'When using laundromats, you will have to wait for a cleaning cycle to be completed which is time-consuming. And the cleaning cycle might be an hour or two, when you are not around, someone else might just pick out your things and you may end up losing one or two T-shirts.* This respondent is concerned with the inconveniences caused by time, which could result in other inconveniences or loss, for example of a cloth or two. Also, when you consider some washing cycles going extra minutes on top of the scheduled time, this can be very inconvenient to consumers and time-consuming.

**Barriers in E-scooters**

Another important question was asked to the participants to determine what barriers or reasons discourage them from using pay-per-use e-scooters. A lot of comments were raised by the participants concerning this question. To support the survey findings above, the below responses were raised during the discussion and explained in detail.

Part_2 began by pointing out the **safety concerns** of using e-scooters:

*'You cannot be a hundred percent sure that the e-scooter you are going to take has no issue. Sometimes you have to wait for the next available one, such a thing can affect your timing and can cause you to miss your appointment or something like that. But if it is your own, you can take care of it and know that everything will be okay.'* To understand this issue and see if there are any other implications to this, the moderator asked if anyone who used a scooter before ever experienced renting a malfunctioned scooter and some of the participants responded, *'bad charging, there is one one-time I was out of work and I needed a scooter, and there was only one e-scooter at that time, and I rented it. I saw it had less charge, but I thought that was good for that distance. However, I didn't go far as it immediately stopped. And I could not move forward nor backward, I was stuck at that same spot.'* Again, the moderator wanted to find out what happened in that instance and how the user felt or was impacted, hence another question was asked to this participant what happens when an e-scooter loses charge and goes off while using it, and what happens with the payment, do user get charged full fee or equivalent to the miles gone and what happens to closing the trip? The respondent (Part_1) answered: *'If it stops in the middle of the way or goes off because of charge, automatically, there is a lost connection. The service provider, through an app, will later ask through the mobile app why I left the e-scooter there, and I will respond either 'I had a certain problem or battery was out of charge. In this case the company will not charge me because it is not my fault. But when the scooter loses battery, it can be inconvenient especially at night when I'm doing delivery jobs, I was forced to deliver by walking sometime because there were no other scooter stands available. Plus, at night there are less trams and/or long-time intervals for buses. And bolt taxi can take time and expensive.' Every day they collect scooters from different places, to recharge or clean*. Part_1 added.

This respondent expresses concern about time and **inconvenience** and **fear of breakage** at the same time. It is evident that some users worry or **get anxious** of breaking or destroying things that are not theirs.

*'Availability of scooter stands is a challenge, they are not available everywhere, hence it could be inconveniencing especially if you live far away'* (Part_4). This barrier was also raised by another participant who had used e-scooters before and had challenges of parking and retrieving another e-scooter because it was in the middle of the night and he had no other place to get another scooter as they had only one that stopped working (no battery), left it and could not access any other because there were **no scooter stands** or zones close by and the participant had to walk the rest of the journey.

Part_5 also supported the comment raised by Part_4 on fewer parking spaces. However, the participant digressed this barrier further by relating it to convenience. Participants mentioned that it might be a little inconveniencing to park it wherever anyone wants to, as one needs to find a designated parking place to pack it and not just anywhere that is convenient to the individual.

Part_1 confirmed the point raised by Part_5 by inconvenience due to **parking restrictions,** Part_1 mentioned that *'If you put the e-scooter somewhere else instead of at the stand, the company charges you a fine, and it doesn't matter by how far you have parked away from the designated parking area, or by how much you needed to pay first. That is the biggest barrier'.*

In this response, the respondent expresses concern about the need to worry especially when you have to park them, since service providers charge penalties for wrong parking, leave alone for damages. This can cause financial liability to the users which many are not ready to take. The penalties are directly deducted from users' credit cards, this can be inconveniencing especially if they have less funds in their account and they had budgeted for it.

Another barrier was raised concerning rented e-scooters. Part_1, who has used e-scooters several times for his job delivery business mentioned another barrier that is limiting to using pay per use in e-scooters is speed restrictions. *'Sometimes we need to go first, but e-scooters have* ***speed limits****. Hence it cannot go fast in specific places. Some places it goes 20 km/hr in other*

*places 40km/hr, in some places 10 or 15km/hr and so forth and so on. This can be inconvenient when we have orders to be delivered quickly.'*

It is also important to highlight that some of the barriers mentioned by the participants are not really barriers of this model but instead negative features that the participants feel about the product and its use.

**Attitudes consumers have towards PPU PSS**

A question was asked to the participants about how they feel about self-serviced laundromats and e-scooters. The responses were meant to be instant, what came to their mind without giving it too much thought. The responses are discussed below.

**Laundromats**

Mainly, the attitudes that were described by the respondents were positive. The main attitudes mentioned were convenience, cost effectiveness, and environmental conservation. Part_6 elaborated that this product service is **environmentally friendly** because it is considered a circular approach that is intended to minimize waste. Part_4 and Part_5 concurred with the environmental benefits. Part_4 proceeded to say that she thinks that day by day, many consumers are becoming more and more environmentally conscious, and the participant added by saying that, when people get used to something, they make themselves more comfortable with that thing, and hence companies can focus on providing more user-friendly washing machines that are acceptable to everyone, and personal **hygiene** is necessary. Many consumers would gladly resort to pay per use, after all washing machines **take up spaces** in houses, they can be noisy and **consume a lot of electricity** (Part_4).

Another response on **flexibility** was added by Part_2 that *'For me, emotion its more about 'am I going to get the quality I am looking for? Will I have it whenever I want? Having your washing machine is easy to make decisions about it. But when you try to get/use something that is not yours, there is an effort you need to put in, these are some of the stresses. But if you want to talk about the environment, the economic aspect of it, frankly speaking, I think about my pocket first, the environment aspect comes after that.'* This respondent considers various factors at once when he is asked to describe what he feels about pay per use in laundromats. He is concerned about the quality and value the product service will provide and will it be convenient. He compares this with having a personal washing machine which is presumed to be more convenient in terms of accessing it whenever they want, and less effort and stress required when one owns their own washing machine. The respondent also confirms that he prefers and consider their **economic** aspect first then environment later.

**E-scooters**

There were few attitudes towards e-scooters that were raised compared to laundromats. Participants consider e-scooters as **convenient**, however, not many respondents have had an experience with e-scooters. Another attitude that was mentioned was regarding e-**scooter maintenance** whereby **lack of proper maintenance** issues like brake failing which could cause accidents is a safety concern. Participant Part_4 elaborated her comment on maintenance by saying *'for instance there is a time I could not move it left to right, but it was very tight and it could not move. And I was less worried in that case because it was at night and there were not so many activities around. So, if it is daytime and the areas around are busy it is possible to cause an accident.*

**Differences in attitudes of consumers between the two product services.**

The respondents did not have much to say about the differences in attitudes toward the two service products, however, Participant Part_6 started by mentioning convenience. In the

case of e-scooters, they are the most convenient and fastest to use anywhere, but laundromats have time constraints when you can access them.

In terms of the **degree of need**, there are many other available options for e-scooters, like trams and other public transport vehicles, however, for the laundromat, it is an absolute necessity and does not have other viable options except washing in hand which is not feasible.

The moderator was curious to find out what the participants thought of installing mobile applications to use these services. Part_6 answered and said: '*In terms of applications and all of that, it is not something I am always comfortable downloading applications especially the ones that are not essential. Uhm ..usually when there is an alternative to use a service without a service, I prefer to go for that. Probably some applications could be a source of discouragement, not in terms of technology but more of intense of tracking stuff like cookies and all that. Other than that, I think it's fine.*

Other respondents added that instead of using applications, they would be more positive towards any of the product services if they use websites rather than applications because they simply want to save their phone memory and not get some caches or more apps.

In terms of applications, '*I would rather go for websites, just to save my phone's memory. And not to get some caches or more apps.'* Another extra comment was raised in terms of how the e-scooter cycling operated. A participant added that he finds e-scooters to be **very risky to use** as there is no control of one's ability to control one's safety on the road e.g., if one knows how to use it well or not. And it is so risky especially if you don't know how to use it. You can only go for it if there is no option unless there are restrictions and licensing on its usage.

The discussion ended with a question from participant Part_3 where he asked about the difference between the pay-per-use and pay-as-you-go service model. And is a utility bill considered a pay-per-use? The moderator responded to the participant after no other participant had no response, and asked Part_3, if possible, to have a separate call after the main call was over to

discover further, and anyone who wanted to know more was asked to join. Due to time constraints, the focus group ended at around 1700hrs, and all the participants were appreciated for their attendance and contributions. At 1702hrs the moderator and participant 3 had a separate discussion based on the raised question which lasted for about 10 minutes, no other participant joined.

# 5 Discussion

The discussion provides a summary of the analysis findings with key highlights on the overall user experience, consumers' acceptance and preferences, factors that influence consumers' attitudes including environmental awareness and consciousness, motives, and drivers of the pay-per-use together with the barriers and attitudes towards these two product services and general differences in these attitudes. The discussion will be organized according to each research question.

**Research Question 1**

Based on the analysis findings above, it can be concluded that most of the consumers living in Brno, Czech Republic have a high use experience for general pay per use consumption in products like books, bicycles, home appliances, tools etc., and it is important to note that the frequency of use experience in pay par use was less often for those who used these services before. The results of the study indicated that majority of those who used pay per use services used them a few times before or once or twice. This could mean that there is still a lot of room to explore pay per use product services. Hence companies can deploy proper target marketing strategies that focus on (responsible consumption, specifically pay per use product services to increase widespread of consumer awareness and increase PPU experience and acceptance among consumers.

As far as pay per use experience in e-scooters, it is evident that more than half of the individuals do not have e-scooter experience while laundromats users were relatively high. This also indicates that there is a very slow uptake of these product services in Brno, Czech Republic. Consumer awareness and increasing knowledge and importance of these service products is essential and crucial in this market and on global scale too in order. Global marketing is crucial here to ensure that consumers who move from other countries and regions to Brno, Czech Republic are aware of such services. This could help with PPU experience and acceptance.

**Research Question 2**

The results reveal that demographic factors like age, place of stay and type of household and age have a significant influence on the pay per use product services in e-scooters and laundromats, whereas gender is not a strong influencing factor in this case. E.g., many young peeople have the highest pay per use experience in e-scooters compared to laundromats, while most of the adult participants have the highest pay per use experience in laundromats compared to e-scooters.This shows that most young people are eager and curious to try out different things which they perceive to have an element of funness in them'. But also most of them are obliged to use e-scooters because they are more convenient and cheapest option when it comes to food delivery jobs, considering that most adults, who had a higher use experience in laundromats are active economy working individuals and have moved out of their parents homes or sharing rooms, it could be possible that most of them. Considering living arrangement, most of the participants who have experienced pay per use in laundromats live alone in a household, while those who live in shared spaces have the least PPU experience in laundromats. In e-scooters, most participants with experience in this product service live with roommates and the least participants with experience live alone. Additionally, most consumers that have experienced pay-per-use overall, reside within the city, while the least reside in the outskirts and countryside. This confirms that the afore-mentioned factors significantly influences the pay-per-use experience in both product services. This could be associated with the fact that most of those consumers who live alone live in apartments and many a times there are common laundry spaces where they pay for each wash or in student housing where there is small space and it is impractical to install a washing machine in every room. While those that live in shared spaces have the least experience because they probably have a common sharing machine that they do not have to pay for like in some student housing or shared houses. This information could be helpful for companies to organize promotions and awareness using market segmentation strategy where different groups of people with similar demographic characteristics like place of stay or age are clustered together and provide relevant information and incentives for them to increase pay per use acceptance.

**Research Question 3**

Regarding the drivers of pay-per-use in laundromats and e-scooters, it is important to note that there were similarities with slight differences identified from the focus group analysis. Participants expressed convenience as one of the main motives for them to use pay per use services in terms of flexibility and no ownership ties regarding laundromats, and another motive that was similar in both product services was the aspect of affordability. Most participants identified the believe of e-scooters and laundromats to be cheaper as one of the reasons that motivated them to use these services, and lastly, they use laundromats because they are cheaper compared to buying, or because they live in in their place of stay temporarily therefore it makes no sense to buy a washing machine, or they use laundromats because it is what the current apartment is providing and not individual washing machines. In the case of e-scooters, participants use them because it is the best fastest means available that is flexible and cheaper, especially for those who do delivery jobs. In statistical analysis, community connection and the belief that it would be cheaper and opportunity to test in both product services seemed to be the most favored as a motivating factor. It is also evident that some of the motives are highly considered in both the product services while others are least considered in some services and highly considered in the other product service. For example, many consumers would be motivated to use laundramats because they consider it saving space, while most consumers use e-scooters because there is no need for them to have own e-scooter because they are conveniently located to most places that they need or they do not need them because they travel long distance for work or they just do not fancy them. Flexibility (no ownership ties and no upfront costs was were the highest least favored motives in e-scooters. It is clear that most individuals still prefer to own their products regardless. In laundromats, no possibility to have a washing machine was the least favored. Meaning less users are influenced by this motive for various reasons like due to financial constraints they cannot even afford to buy a washing machine and therefore forced to use pay per use, there could be other reasons like ready available pay per wash services in place of stay, temporary stays or space restrictions. These motives show that consumers consider different

reasons when it comes to consumption in the two product services. This information can be used by production companies to enhance the products to be more personalized products that can accommodate all many consumers who have reservations in using some of the products services. While marketers can use this information to incentivize existing, new and potential users in order to retain and encourage pay per use in these product services and others.

**Research Question 4**

In terms of the barriers to pay per use, this thesis also reveals that the two product services had quite distinct barriers with slight similarities. In the focus group, inconvenience was a common barrier that deters participants from using these services. The inconvenience in laundromats was explained in terms of the time taken to go looking for a laundromat and having to sit at the laundromat until laundry is done, which is not the case when you own personal washing machine. Participants feel that this time could have been used to do something else. Also considering that with your own washing machine one can separate the laundry and wash in sets of black and white, laundromats can prove challenging in this case because each pay is for each wash cycle and thus can be expensive, plus there is pressure when other people are standing and waiting to wash after you. Inconvenience in e-scooters was explained in terms of renting or picking up an e-scooter at a scooter stand and finally finding out that it has a problem which you could not tell, and thus leads to time wasting which can impact your plans or missing an appointment. Too much effort was also mentioned, and the respondents explained this in terms of the mental preparedness of going to laundry, having to accept that one will have to forego other duties and decide to do laundry is considered stressful and a piece of work. Lack of space and hygiene concerns were the barriers that were severally mentioned in the responses as a barrier in laundromats, while anxiety due to fear of breakages, safety concerns, inadequate scooter stands, and parking restrictions were barriers that were mentioned in e-scooters, with the latter three being unique to e-scooters. Based on the statistical results, lack of privacy, and lack of awareness and sunk costs (financial loss) were the main reasons that discouraged users from

using pay per ride in both e-scooter and laundromats, with an exception of anxiety from the unknown like breakages, which is a less discouraging factor in e-scooters but it in laundromats.. Skepticism due to hygiene and ownership preference were the least barriers of pay per use in laundromats and e-scooters respectively. Understanding of these barriers can help service providers and production companies to better understand consumer behaviors, needs and preferences and use the concerns to tailor their products to better suit consumers preferences, needs and wants. This can be achieved if marketers and the service providers organize educational marketing especially through social media platforms, group meetings and online advertisements that give clear information regarding the prices, product features, user guidelines, help contacts and where the products are found among others. Explain with utmost transparency the costs and importance of using pay per use services. This can entice some consumers and some would find it worthy of trying these services and some would change their perspectives on the same and embrace PPU.

**Research Question 5**

According to the analysis provided above, the majority of the participants consider themselves eco-friendly or eco-fans or eco-campaigners to some extent while very few, almost 8% of total participants, consider themselves not pro-environmentalists at all. This implies that a good number of consumers are aware of environmental issues and most of them are conscious about the environment but only to some extent. And interestingly, 95% of all respondents that consider themselves eco-friendly to some extent selected environmental concerns as a motivating reason for them to rent e-scooters. This means that environmental awareness and consciousness has a profound influence on consumers attitudes towards choice of consumption. At this juncture, it is important for companies to enhance and encourage the utilization of sustainable products while also encouraging firms to focus on environmentally friendly product development. This can be made possible if incentives are also given to consumers to encourage them to use pay per use products services.

**Research Question 6**

Regarding attitudes, participants' attitudes towards self-service laundromats and e-scooters can vary based on individual preferences, needs, and perceptions. From the thesis analysis, most respondents hold a positive attitude towards both the products services. Most of the responses from both data collection methods feel more positive about these services because they think that they are convenient in many ways as explained above and in the analysis findings. Some participants find laundromats to be more economical, flexible, cost effective and they are good in terms of environmental conservation. There is a positive attitude towards laundromats too because they foster community connection through social interactions and getting acquainted as well as being environmentally friendly. However, there are negative attitudes to the laundromats because they consume a lot of electricity, at the same time e-scooters are perceived negatively because of safety concerns and lack of proper maintenance of the scooters by users which question the credibility of the service providers and behavior of fellow users and increase skepticism in adoption of the product service.

Positive attitudes towards e-scooters arise from the perception that they are environmentally friendly, cost-effective, easy to use, no need for initial upfront cost, flexible and they can also be used for fun and sight-seeing without having to own. They also provide the flexibility of no ownership ties and hence no responsibility for maintenance. The negative attitudes towards e-scooters are the safety concerns, and recklessness in handling scooters and parking them, participants had generally positive attitudes towards both products and services. There were negative attitudes noted and neutral participants who did not express any attitude towards these services mostly because they did not use them, or they do not know much about them. There was a set of participants with a positive attitude and no experience in these product services who expressed a willingness to try the pay per use in this product services given they get more knowledge and information on it.

As far as consumers' attitudes, clear, precise and transparent communication needs to be done about pricing, usage terms and policies to avoid any misunderstanding and bad image among consumers. Free testing can be made possible for users to have a hang of the product services. This can provide them some degree of comfortability and change their attitudes for the better, which eventually can lead to a habit.

**Main differences in attitudes towards PPU in Laundromats and E-scooters**

There were notable differences in attitudes between these product services. These differences are as follows:

**Degree of need** which elaborates the extent of need of these products. Laundromats were perceived to have a higher degree of need as it was considered an essential service while e-scooter was considered an optional service.

**Degree of Convenience** was perceived differently by the sample. Convenience in e-scooters was described in terms of how flexible and easy to use any time without time constraints, how easy it is to access them with just unlocking an app. While in laundromats, convenience was associated with ease of accessibility of the washing and drying facilities outside of the home, many users perceive conveniency as being able to complete a task in a centralized space without need to go looking for it.

**Frequency of use** was another difference that is noted where most participants perceived laundromats to have a higher frequency of use compared to e-scooters.

**Nature of the product:** It was noted that these two product services were different, such that laundromats are associated with cleaning and hygiene, while e-scooters are associated with bridging the gap in commuting.

**Degree of safety** was also one of the key notable differences where both product services were deemed unsafe but to different extents or degree. For example, with the use of laundromats, there is no fear of water spilling and if it happens, at least it will not be in the house, while with e-scooters, there is no fear of it being stolen because it is managed by service providers. Another key point for safety was sharing of GPS data. Some consumers would rather share their GPS location data when working as a delivery driver than enable washing machine access to their Wi-Fi which they consider highly unsafe. Additionally, e-scooters GPS locator was considered as a source of (Electromagnetic wave) EMW but with pay per use, it is not located at home, and hence the amount of EMW radiation is lower than from washing machine that is connected all the time at home.

**Operational hours** where laundromats were seen to be inconvenient or inflexible in this sense, they operate only specific hours, whereas e-scooters are operated any day and time.

**Cleanliness and hygiene** Most participants' attitudes in laundromats are determined by how clean they are, but in e-scooters, cleanliness was not mentioned a lot, except in a case where one respondent thought e-scooters have less hygienic concerns since they can be cleaned easily and no direct contact with the body, only hands, and can be easily sanitized, unlike laundromats where there is a higher degree of contact as clothes are wholly placed in laundry machines and they are directly worn on the body.

## 5.1 Contribution of the Study

The thesis provides insights into consumer's attitudes and preferences for essential domestic services and micro mobility services in urban areas (laundromats and e-scooter respectively), and it further provides a comparative analysis between laundromats and e-scooters within the pay per use consumption model by examining the differences and similarities in the attitudes, barriers, and motives that consumers have towards these two product categories in the context of circular economy.

## 5.2 Marketing Implications

According to the analysis findings and discussions, there are various approaches that can be taken to increase the pay per use acceptance in the market. Service providers can increase the laundromats places in cities and especially in at least every street, so that there are many options available for users. As for e-scooters, increasing the scooter stands within largely populated places like outside hostels or apartment buildings can motivate people to use them over trams and cars as they will be easily accessible. For pay per wash to be made possible and practical to those who own washing machines and e-scooters, implementing a return policy where users are allowed to return their washing machines and e-scooters at reasonable prices to the service providers could be a better solution. This must be done in such a way that the consumers will still have the same conveniency similar to when they had their own product services, and that means easily accessible at any time, place, no waiting in line and most importantly cost effective. Which leads to the recommended solution below on price differentiation.

On the other hand, sustainability researchers argued that if one were to focus on final user needs or service wants, rather than focusing on the product, it would become much easier to design product services that provide consumer satisfaction and sustainable at the same time (Niinimäki, 2017, Tukker, 2015). Therefore, introducing a price differentiation strategy whereby the old machines in laundromats and the old e-scooters are priced differently and lower compared to the new products so that consumers are motivated to pay a smaller fee for old machines and scooters and those who do not mind paying the standard price for new machines and e-scooters can work magic. This is accommodating to all consumers considering the financial constraints or those who do not care about anything but service delivery and those who feel that they want to experience the value of the services they are getting or have other concerns to consider. This, in addition to the above- mentioned recommendations, will increase the pay per use acceptance, and change consumers' perspectives and attitudes positively.

## 5.3 Recommendations for future research.

Future research could delve deeper into the research with longitudinal method to continuously understand the attitudes of consumers towards these product services distinctively to provide concrete ideas on how these two product services can be designed to suit consumers' needs and preferences. Also, investigating the changes in consumer in consumer perceptions of drivers and barriers in the two product services is further recommended.

## 5.4 Limitations of the research

Certain limitations of the study must be acknowledged in this thesis. For instance, in the survey questionnaire, given the cultural diversity within the target audience, the survey could have used another language to reach a wider audience, this could have reduced potential biases in participants' demographics. Also, there were less respondents which could not give accurate results or conclusion as compared to a larger sample which provides exhaustive data. Lastly, concerning the reliability of the data, the writer cannot assess the accuracy and correctness of the information provided and some respondents may provide inaccurate information which does not reflect their real ideas or attitudes.

A key limitation of focus group research is that it is difficult to identify, recruit, and assemble a group of the intended sample in a space at a given time and conduct a focus group (Stewart and Shamdasani 2017). Some of the reasons for this are that some of the respondents are global, or pre-occupied, unable to move around due to physical or economic reasons, unavailable at fixed times and dates, or otherwise difficult to schedule to participate in a focus group at a fixed time and location (Stewart and Shamdasani 2017). However, with technology, this has been made easier and possible by providing flexibility and focus group discussions can be carried out online with agreeable time, but in the comfort and convenience of the participants. But again, with the virtual discussions, there is less intimacy in the group which makes the group to be less open and less spontaneous (Stewart and Shamdasani 2017).

# 6 Conclusion

At the conclusion of this thesis, particularly in the domain of laundromats and e-scooters, multiple consumer perceptions have emerged. There have been evolving changes in consumer behaviors, attitudes, and preferences as a result of technological advancements which have changed how individuals approach daily routine tasks and urban mobility. The research into attitudes towards pay per use product service systems in laundromats and e-scooters unearthed various attitudes into consumer preferences and attitudes. As an essential household chore, laundromats are considered a routine task. And consumers demonstrate a great deal of acknowledgement for the convenience, flexibility and cost-effectiveness offered by self-service laundromats. The communal nature that laundromats display provides an environment that fosters togetherness among users while completing a routine and necessary chore. Consumers also acknowledge the reduced environmental pollution that is as a result of using laundromats. However, concerns due to hygiene and a lot of effort required to use this product service stands out and continue to impact consumers views and attitudes about this product service.

The attitudes towards pay per use product service system in e-scooters revealed various attitudes into consumer preferences. E-scooters are positively perceived as a modern alternative of forms of commuting that is eco-friendly, easy to use, cost effective. Moreso, convenient in many ways. Different attitudes and tastes among consumers depict this product service as not just an option in the mobility sector but also associated with fun and leisure activities like sightseeing, and most importantly, it is the best available option for many consumers who use them for job delivery services. However, concerns regarding safety and lack of proper handling remain key considerations that shape perceptions and attitudes of consumers.

There are significant interconnected attitudes that consumers have towards pay per use in these product services. Convenience, cost-effectiveness, flexibility, environmental conscious-

ness, fear due to anxiety in case of breakages, financial liability (sunk costs) and lack of awareness stand out as the most common drivers and barriers that affect consumers' attitudes towards pay-per-use experience in both products services. The pay-per-use product service system as demonstrated above is not just an exchange or sustainable business model, there is more to it in terms of consumption behaviors among users. Consumer attitudes are dynamic and influenced by various factors. At the same time, similar factors influence consumers differently hence yielding distinct attitudes among consumers. This immensely determines the acceptance of pay-per-use services by consumers. Overall, as confirmed in the literature review, pay per use to services is more considered over traditional ownership for various reasons, but with some reservations which can be adressed. The thesis overall revealed a good lpositive attitude and reception of the pay-per-use product service system in both e-scooters and laundromats.

# References

Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179-211.

Ajzen, I. (2006). Constructing a theory of planned behavior questionnaire.

Al-Ababneh, M. (2020). Linking ontology, epistemology and research methodology. Science & Philosophy, 8(1), 75-91.

Annarelli, A., Battistella, C., & Nonino, F. (2016). Product service system: A conceptual framework from a systematic review. Journal of cleaner production, 139, 1011-1032.

Arekrans, J., Sopjani, L., Laurenti, R., & Ritzén, S. (2022). Barriers to access-based consumption in the circular transition: A systematic review. Resources, Conservation and Recycling, 184, 106364.

Armstrong, C. M., Niinimäki, K., Kujala, S., Karell, E., & Lang, C. (2015). Sustainable product-service systems for clothing: exploring consumer perceptions of consumption alternatives in Finland. Journal of Cleaner production, 97, 30-39.

Baek, E., & Choo, H. J. (2015). Effects of peer consumption on hedonic purchase decisions. Social Behavior and Personality: an international journal, 43(7), 1085-1099.

Bech, N. M., Birkved, M., Charnley, F., Laumann Kjaer, L., Pigosso, D. C., Hauschild, M. Z., ... & Moreno, M. (2019). Evaluating the environmental performance of a product/service-system business model for Merino Wool Next-to-Skin Garments: The case of Armadillo Merino®. Sustainability, 11(20), 5854.

Bhamra, T., Hernandez, R. J., Rapitsenyane, Y., & Trimingham, R. (2018). Product Service Systems: a sustainable design strategy for SMEs in the Textiles and Leather sectors. She Ji: The Journal of Design, Economics, and Innovation, 4(3), 229-248.

Blomsma, F., & Brennan, G. (2017). The emergence of circular economy: a new framing around prolonging resource productivity. Journal of industrial ecology, 21(3), 603-614.

Bocken, N. (2017). Business-led sustainable consumption initiatives: Impacts and lessons learned. Journal of Management Development, 36(1), 81-96.

Bocken, N. M., Mugge, R., Bom, C. A., & Lemstra, H. J. (2018). Pay-per-use business models as a driver for sustainable consumption: Evidence from the case of HOMIE. Journal of Cleaner Pro-duction, 198, 498-510.

Bocken, N. M., Weissbrod, I., & Antikainen, M. (2021). Business model experimentation for the circular economy: definition and approaches. Circular Economy and Sustainability, 1(1), 49-81.

Borg, D., Mont, O., & Schoonover, H. (2020). Consumer acceptance and value in use-oriented product-service systems: lessons from Swedish consumer goods companies. Sustainability, 12(19), 8079.

Bozzi, A. D., & Aguilera, A. (2021). Shared E-E-scooters: A review of uses, health and environmental impacts, and policy implications of a new micro-mobility service. Sustainability, 13(16), 8676.

Breen, R. L. (2006). A practical guide to focus-group research. Journal of geography in higher education, 30(3), 463-475.

Brosius, N., Fernandez, K. V., & Cherrier, H. (2013). Reacquiring consumer waste: Treasure in our trash? Journal of Public Policy & Marketing, 32(2), 286-301.

Camacho-Otero, J., Boks, C., & Pettersen, I. N. (2018). Consumption in the circular economy: A literature review. Sustainability, 10(8), 2758.

Catulli, M., & Brennan, R. (2015, August). Innovation for a circular economy: exploring the adoption of PSS by UK companies in the baby products sector. In IMP Conference. University of Southern Denmark.

Catulli, M., & Reed, N. (2017). A personal construct psychology based investigation into a product service system for renting pushchairs to consumers. Business strategy and the Environment, 26(5), 656-671.

Ceschin, F. (2013). Sustainable product-service systems: Between strategic design and transition studies. Springer Science & Business Media.

Chamberlin, L., & Boks, C. (2018). Marketing approaches for a circular economy: Using design frameworks to interpret online communications. Sustainability, 10(6), 2070.

Cherian, J., & Jacob, J. (2012). Green marketing: A study of consumers' attitude towards environment friendly products.

Cherry, C. E., & Pidgeon, N. F. (2018). Why is ownership an issue? Exploring factors that determine public acceptance of product-service systems. Sustainability, 10(7), 2289.

Clube, R. K., & Tennant, M. (2020). Exploring garment rental as a sustainable business model in the fashion industry: does contamination impact the consumption experience?. Journal of Consumer Behaviour, 19(4), 359-370.

Cristoni, N., & Tonelli, M. (2018). Perceptions of firms participating in a circular economy. European Journal of Sustainable Development, 7(4), 105-105

Dangelico, R. M., & Vocalelli, D. (2017). "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. Journal of Cleaner production, 165, 1263-1279.

Edbring, E. G., Lehner, M., & Mont, O. (2016). Exploring consumer attitudes to alternative models of consumption: motivations and barriers. Journal of Cleaner Production, 123, 5-15.

Elzinga, R. (2018). Consumer behavior in a circular economy: Testing consumer willingness to participate in circular business models (Master's thesis).

Fletcher, W. (2010). Advertising: A very short introduction. OUP Oxford.

Flynn, R., Bellaby, P., & Ricci, M. (2009). The 'value-action gap'in public attitudes towards sustainable energy: the case of hydrogen energy. The Sociological Review, 57(2_suppl), 159-180.

Frederiks, E. R., Stenner, K., & Hobman, E. V. (2015). Household energy use: Applying behavioral economics to understand consumer decision-making and behavior. Renewable and Sustaina-ble Energy Reviews, 41, 1385-1394.

Gaiardelli, P., Pezzotta, G., Rondini, A., Romero, D., Jarrahi, F., Bertoni, M., ... & Cavalieri, S. (2021). Product-service systems evolution in the era of Industry 4.0. Service Business, 15, 177-207.

Geissdoerfer, M., Savaget, P., Bocken, N. M., & Hultink, E. J. (2017). The Circular Economy–A new sustainability paradigm? Journal of cleaner production, 143, 757-768.

Grafström, J., & Aasma, S. (2021). Breaking circular economy barriers. Journal of Cleaner Production, 292, 126002.

Hamwi, M., & Lizarralde, I. (2017). A review of business models towards service-oriented electricity systems. Procedia CIRP, 64, 109-114.

He, Q., Duan, Y., Wang, R., & Fu, Z. (2019). Factors affecting consumers' purchase intention of eco-friendly food in China: The evidence from respondents in Beijing. International Journal of Consumer Studies, 43(5), 457-470.

Iddrisu, I., & Bhattacharyya, S. C. (2015). Sustainable Energy Development Index: A multidimensional indicator for measuring sustainable energy development. Renewable and Sustainable Energy Reviews, 50, 513-530.

Jain, R., Jain, K., Behl, A., Pereira, V., Del Giudice, M., & Vrontis, D. (2022). Mainstreaming fashion rental consumption: A systematic and thematic review of literature. Journal of Business Research, 139, 1525-1539.

Johnson, M. T., Marcus, B., & Carlin, A. (1996). Competitive implications of environmental regulation: in the laundry detergent industry. Management.

Khan, M. S., Sangun, P., Alganad, A. M. N., Chongcharoen, D., & Farrukh, M. (2020). Consumer green behavior: An approach towards environmental sustainability. Sustainable Development, 28(5), 1168-1180.

Kirchherr, J., & Piccioli, L. (2019). Towards an education for the circular economy (ECE): five teaching principles and a case study. Resources, Conservation and Recycling, 150, 104406.

Kirchherr, J., Ahrenshop, M. P., & Charles, K. (2019). Resettlement lies: Suggestive evidence from 29 large dam projects. World Development, 114, 208-219.

Kjaer, L. L., Pigosso, D. C., Niero, M., Bech, N. M., & McAloone, T. C. (2019). Product/service-systems for a circular economy: the route to decoupling economic growth from re-source consumption? Journal of Industrial Ecology, 23(1), 22-35.

Klapalová, A., Kapa, R., de Sousa, C., Vaceková, G., Švecová, J., Štangová, R., ... & Van Dam, S. (2019). D2. 1-Demonstrator baseline and market characteristics report.

Kler, R., Prasad, S., Prasad, A. B., Goswami, R., & Mitra, G. S. (2022). Factors affecting consumer buying motivations: An empirical study in the behavioral economics perspectives. Journal of Positive School Psychology, 6(2), 711-717.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. Journal of marketing, 54(2), 1-18.

Korhonen, J., Nuur, C., Feldmann, A., & Birkie, S. E. (2018). Circular economy as an essentially contested concept. Journal of cleaner production, 175, 544-552.

Kothari, C. R. (2004). Research methodology: Methods and techniques. New Age International.

Krämer, A. (2020). The Strategic Value of Price Communication. Archives of Business Review–Vol, 8(5).

Kurisu, K., Ikeuchi, R., Nakatani, J., & Moriguchi, Y. (2021). Consumers' motivations and barriers concerning various sharing services. Journal of Cleaner Production, 308, 127269.

Kuusisto, M. (2018). Consumer preferences in adopting product-service systems with a subscription revenue model.

Li, A. Q., Kumar, M., Claes, B., & Found, P. (2020). The state-of-the-art of the theory on Product-Service Systems. International Journal of Production Economics, 222, 107491.

Liu, Y., Yang, D., & Xu, H. (2017). Factors influencing consumer willingness to pay for low-carbon products: A simulation study in China. Business Strategy and the Environment, 26(7), 972-984.

Mashhadi, A. R., Vedantam, A., & Behdad, S. (2019). Investigation of consumer's acceptance of product-service-systems: A case study of cell phone leasing. Resources, Conservation and Recycling, 143, 36-44.

Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. Journal of Economic Development, Environment and People, 9(4), 50-79.

Mont, O. K. (2002). Clarifying the concept of product–service system. Journal of cleaner production, 10(3), 237-245.

Moreau, H., de Ajmaline de Meux, L., Zeller, V., D'Ans, P., Ruwet, C., & Achten, W. M. (2020). Dockless e-scooter: A green solution for mobility? Comparative case study between dockless e-E-scooters, displaced transport, and personal e-E-scooters. Sustainability, 12(5), 1803.

Moro, S. R., Cauchick-Miguel, P. A., & de Sousa Mendes, G. H. (2022). A proposed framework for product-service system business model design. Journal of Cleaner Production, 376, 134365.

Moro, S., Cauchick-Miguel, P. A., & de Sousa Mendes, G. H. (2020). Product-service systems benefits and barriers: an overview of literature review papers. International Journal of Industrial Engineering and Management, 11(1), 61.

Mugge, R. (2018). Product design and consumer behavior in a circular economy. Sustainability, 10(10), 3704.

Muranko, Z., Andrews, D., Newton, E. J., Chaer, I., & Proudman, P. (2018). The pro-circular change model (P-CCM): proposing a framework facilitating behavioral change towards a circular economy. Resources, Conservation and Recycling, 135, 132-140.

Nemeth, N., Rudnak, I., Ymeri, P., & Fogarassy, C. (2019). The role of cultural factors in sustainable food consumption An investigation of the consumption habits among international students in Hungary. Sustainability, 11(11), 3052.

Niinimäki, K. (2017). Fashion in a circular economy (pp. 151-169). Springer International Publishing.

Nijssen, E. J., Van der Borgh, M., & Totzek, D. (2022). Dealing with privacy concerns in product-service system selling: Value-based selling as fair treatment practice. Industrial Marketing Management, 105, 60-71.

Oskam, J., van der Rest, J. P., & Telkamp, B. (2018). What's mine is yours but at what price? Dynamic pricing behavior as an indicator of Airbnb host professionalization. Journal of Revenue and Pricing Management, 17, 311-328.

Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. Harvard business review, 92(11), 64-88.

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. European journal of education studies.

Reim, W., Parida, V., & Örtqvist, D. (2015). Product Service Systems (PSS) business models and tactics–a systematic literature review. Journal of Cleaner Production, 97, 61-75.

Rex, E., & Baumann, H. (2007). Beyond ecolabels: what green marketing can learn from conventional marketing. Journal of cleaner production, 15(6), 567-576.

Roy, R. (2000). Sustainable product-service systems. Futures, 32(3-4), 289-299.

Sanders, R. L., Branion-Calles, M., & Nelson, T. A. (2020). To scoot or not to scoot: Findings from a recent survey about the benefits and barriers of using E-scooters for riders and non-riders. Transportation Research Part A: Policy and Practice, 139, 217-227.

Sattari, S., Wessman, A., & Borders, L. (2020). Business model innovation for sustainability: An investigation of consumers' willingness to adopt product-service systems. Journal of Global Scholars of Marketing Science, 30(3), 274-290.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students. Pearson education.

Scheel, C., Aguiñaga, E., & Bello, B. (2020). Decoupling economic development from the consumption of finite resources using circular economy. A model for developing countries. Sustainability, 12(4), 1291.

Schroeder, P., Anggraeni, K., & Weber, U. (2019). The relevance of circular economy practices to the sustainable development goals. Journal of Industrial Ecology, 23(1), 77-95.

Shevchenko, T., Saidani, M., Ranjbari, M., Kronenberg, J., Danko, Y., & Laitala, K. (2023). Consumer behavior in the circular economy: Developing a product-centric framework. Journal of Cleaner Production, 384, 135568.

Siedlecki, S. L. (2020). Understanding descriptive research designs and methods. Clinical Nurse Specialist, 34(1), 8-12.

Sigüenza, C. P., Cucurachi, S., & Tukker, A. (2021). Circular business models of washing machines in the Netherlands: Material and climate change implications toward 2050. Sustainable Production and Consumption, 26, 1084-1098.

Singh, P., & Giacosa, E. (2019). Cognitive biases of consumers as barriers in transition towards circular economy. Management decision, 57(4), 921-936.

Smith, M. W. (1995). Ethics in focus groups: A few concerns. Qualitative health research, 5(4), 478-486.

Stewart, D. W., & Shamdasani, P. (2017). Online focus groups. Journal of Advertising, 46(1), 48-60.

Teixeira, J. F., Diogo, V., Bernát, A., Lukasiewicz, A., Vaiciukynaite, E., & Sanna, V. S. (2023). Barriers to bike and e-scooter sharing usage: An analysis of non-users from five European capital cities. Case Studies on Transport Policy, 13, 101045.

Thomas, C. G. (2022). Research methodology and scientific writing. Springer.

Tukker, A. (2015). Product services for a resource-efficient and circular economy–a review. Journal of cleaner production, 97, 76-91.

Tukker, A., & Tischner, U. (2006). Product-services as a research field: past, present and future. Reflections from a decade of research. Journal of cleaner production, 14(17), 1552-1556.

Tukker, A., & Tischner, U. (Eds.). (2017). New business for old Europe: product-service development, competitiveness and sustainability. Routledge.

Tukker, A., 2004. Eight types of product–service system: eight ways to sustainability? Experiences from SusProNet. Business strategy and the environment, 13(4), pp.246-260.

Tuncer, S., & Brown, B. (2020, April). E-E-scooters on the ground: Lessons for redesigning urban micro-mobility. In Proceedings of the 2020 CHI conference on human factors in computing systems (pp. 1-14).

Tunn, V. S., Van den Hende, E. A., Bocken, N. M., & Schoormans, J. P. (2021). Consumer adoption of access-based product-service systems: The influence of duration of use and type of product. Business Strategy and the Environment, 30(6), 2796-2813.

Turoń, K., Kubik, A., Folęga, P., & Chen, F. (2023). Perception of Shared Electric Scooters: A Case Study from Poland. Sustainability, 15(16), 12596.

Ulaga, W., & Reinartz, W. J. (2011). Hybrid offerings: How manufacturing firms combine goods and services successfully. Journal of marketing, 75(6), 5-23.

van Langen, S. K., Vassillo, C., Ghisellini, P., Restaino, D., Passaro, R., & Ulgiati, S. (2021). Promoting circular economy transition: A study about perceptions and awareness by different stakeholders groups. Journal of Cleaner Production, 316, 128166.

Vezzoli, C., Ceschin, F., Diehl, J. C., & Kohtala, C. (2015). New design challenges to widely implement 'Sustainable Product–Service Systems'. Journal of Cleaner Production, 97, 1-12.

Wang, N., Ren, S., Liu, Y., Yang, M., Wang, J., & Huisingh, D. (2020). An active preventive maintenance approach of complex equipment based on a novel product-service system operation mode. Journal of Cleaner Production, 277, 123365.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. MIS quarterly, xiii-xxiii.

Yang, M., & Evans, S. (2019). Product-service system business model archetypes and sustainability. Journal of Cleaner Production, 220, 1156-1166.

Young, W., Hwang, K., McDonald, S., & Oates, C. J. (2010). Sustainable consumption: green consumer behavior when purchasing products. Sustainable development, 18(1), 20-31.

D'Agostin, A., de Medeiros, J. F., Vidor, G., Zulpo, M., & Moretto, C. F. (2019). Sustainable Production and Consumption.

D'Agostin, Andressa, Janine Fleith de Medeiros, Gabriel Vidor, Maikielli Zulpo, and Cleide Fátima Moretto. "Drivers and barriers for the adoption of use-oriented product-service systems: A study with young consumers in medium and small cities." Sustainable Production and Consumption 21 (2020): 92-103.

# Appendix A: Questionnaire (Final Version)

**Dear respondents,**

Thank you for agreeing to take part in this survey dedicated to finding out the motives and barriers that consumers feel towards one of the circular economy solutions which is using pay per use model to access self-service laundromats and to rent e-scooters.

**Background**

The current state of society, characterized by environmental concerns and resource scarcity, sustainable consumption has gained significant attention. In the circular economy model, products are reused/recycled/redesigned/reduced rather than being disposed of after a single use to improve resource efficiency and optimization. A key component of the circular economy is the transition from a personal ownership model to service-based ownership like pay-per-use (PPU)

**Pay Per Use**

Pay-per-use is where a consumer pays for a unit of service based on actual usage without gaining ownership. The payment is made at the time they use the service or after utilizing the service. This consumption model can minimize waste and conserve resources while providing consumers with greater flexibility and cost-effectiveness in acquiring the products and services they need, while the service providers are responsible for product life cycles like maintenance, upgrading, repair, etc. An example of pay per use system is (using rented bicycles or construction tools instead of buying your own)

**Confidentiality**

Please note that all collected data is strictly confidential. Your responses will be anonymized, and any personal information you share will be used solely for research purposes.

**Thank you!**

I understand your time is valuable, and I genuinely appreciate your participation in this survey. By sharing your views, you are contributing to a more sustainable and responsible future.

The survey will take up to 10 minutes to complete.

Let's get started! Please click 'Next' to begin the survey.

**Questionnaire Consent**

By agreeing to proceed with this survey, you consent to participate in this research.*

- o Agree
- o Disagree

**Demographics**

Please select your gender*

- o Female
- o Male
- o Prefer not to say

Please select your age*

- o Under 18
- o 18 to 23
- o 24 to 30
- o 31 to 40
- o 41 to 50
- o 51 and more

What type of residence do you currently live in*

- Apartment or flat
- Single family home
- Townhouse
- Condominium
- Communal living
- Dormitory/Student Housing
- Other:

Please select your main region of stay*

- Within the city
- In the outskirts of the city
- In the countryside

What is your current living arrangement?*

- Living alone
- Living with a spouse or partner
- Living with family (parents, siblings, etc.)
- Living with roommates
- Living in a shared housing arrangement (not family or roommates)

Please select your highest level of education*

- Professional degree
- Postgraduate education
- Master's degree
- Bachelor's degree
- Associate's degree
- Technical/Vocational training
- Secondary/High school diploma or the equivalent (for example: GED)
- Primary education

- No formal education

Please select your employment status*

- Employed
- Unemployed
- Self-employed
- Retired
- Student
- Unable to work

Please indicate your country of origin*

Your answer…….

**Experience with access-based consumption**

What is your experience with pay per use for products (e.g. any home appliance, car, bicycle, tool, book etc.) *

- No experience
- I used it once or twice
- I used it a few times before
- I rent/lease things often

**Renting washing machine**

Please select that which applies.

Do you have any experience with self-service laundromats?*

- No experience
- I used it once or twice
- I used it a few times before

- I use laundromat often

What reasons would persuade you to use a pay-per-wash service? Pay per wash means that you pay and use a washing machine for each washing either in the laundromat or in a collaborative consumption). If you already use this possibility, please, tick what persuaded you). You can choose more answers.*

- ☐ To get rid of the responsibility for washing machine maintenance (especially when it wears out or is destroyed)
- ☐ No need to have a washing machine in the place where I live
- ☐ No upfront purchasing costs (no need to have money to buy it or to buy it on credit or on hire purchase)
- ☐ Flexibility – No ownership ties
- ☐ Community connection (social interactions or getting acquainted)
- ☐ The belief that it would cost me cheaper
- ☐ No possibility of having a washing machine in the place where I live
- ☐ Opportunity to test the washing machine (e.g., if it is a new brand or upgraded version)
- ☐ Save space (intentional on consumption and minimize clutter)

When it comes to pay per wash instead of owning the washing machine, would these factors discourage you from pay per wash? (pay per wash requires installing a module that connects the machine over the internet with the provider and enables to offer different functions)*

- ☐ Pay per wash creates another financial liability for me, which is stressful (e.g., I do not want to see billing every month)
- ☐ I have never heard, or I know minimum about pay per wash system
- ☐ I prefer to own things
- ☐ I am skeptical of the hygiene standards (e.g., some users do not clean after use and possibilities of contamination)

- ☐ Anxiety from the unknown (I feel there are penalties when I destroy the washing machine)
- ☐ The pay per wash provider would know too much about me (e.g., uploading my credit card details and location access)
- ☐ A lot of is effort required to use pay per use (e.g,, time and emotional preparedness to go to the laundromat
- ☐ I have already invested in buying a washing machine, switching to pay per use will cause me a financial loss.

**E-scooters renting**

Please select that which applies

Do you have any experience with e- scooter renting?*

- o No experience
- o I used it once or twice
- o I used it a few times before
- o I use e-scooter often

What reasons would persuade you to use a pay-per-ride service? Pay per ride here means that you pay and use an e-scooter for each mile you ride and return the scooter to the parking spot for another user to access it). If you already use this possibility, please, tick what persuaded you). You can choose more answers. *

- ☐ To get rid of the responsibility for e-scooter maintenance (especially when it wears out or is destroyed)
- ☐ No possibility of having an e-scooter in the place where I live
- ☐ No upfront purchasing costs (no need to have money to buy it or to buy it on credit or on hire purchase)

- ☐ Flexibility – No ownership ties
- ☐ Community connection (social interactions or getting acquainted)
- ☐ The belief that it would cost me cheaper
- ☐ No need to have an e-scooter in the place where I live
- ☐ Opportunity to test the e-scooter (e.g., if it is a new brand or upgraded version)
- ☐ Save space (intentional on consumption and minimize clutter)

When it comes to pay-per-use instead of owning the e-scooter, would these factors discourage you from pay-per-use? (pay per use in e-scooters requires installing an application on your phone that connects the e-scooter over the internet with the service provider and it enables to unlock the e-scooter ready for your ride) *

- ☐ Pay per use creates another financial liability for me, which is stressful (e.g., I do not want to see billing every month)
- ☐ I have never heard, or I know minimum about pay per use in e-scooters.
- ☐ I prefer to own things.
- ☐ I am skeptical of the hygiene standards (e.g., some users do not clean after use and possibilities of contamination)
- ☐ Anxiety from the unknown (I feel there are penalties when I destroy the e-scooter)
- ☐ The pay per use provider would know too much about me (e.g., uploading my credit card details and location access enabled)
- ☐ A lot of effort is required to use pay per use (e.g., time and emotional preparedness to go to the e-scooter parking and use it)
- ☐ I have already invested in buying an e-scooter, switching to pay per use will cause me a financial loss.

**Additional Feedback and Comments**

How would you describe your attitude to self-service laundromats? *

Your answer…….

How would you describe your attitude to e-scooter renting? *

Your answer…….

How would you describe the main difference(s) of your attitudes to these services in your own words? (self-service laundromats and rented e-scooters) *

Your answer…….

Do you consider yourself an eco-friendly person, an eco-fan or an eco-campaigner? *

- o Yes
- o To some extent
- o No

If you would be curious or would like to know more or to find out where the pay-per-use services are (washing machine to rent, laundromat, and e-scooter) available, which channel of information would you prefer? *

- ☐ Radio/ TVBroadcasts
- ☐ Social Media
- ☐ Online advertisements
- ☐ Traditional print media ( Books/ articles/ newspapers
- ☐ Through teaching in school
- ☐ Through community development groups
- ☐ Podcasts and Webinars
- ☐ Online Forums and Communities
- ☐ Through parents/guardians/family and friends around me

Do you have any additional comments or feedback about Pay-per-Use Product-Service Systems that you would like to share? *

Your answer……

## Appendix B: Focus Group

Hello ….

I trust you are well.

I am preparing a focus group discussion about my thesis topic. Do you think you can manage to join the discussion? It will be on this coming Sunday at around 4PM. It would be online. Please let me know if you will make it.

Thank you

**Demographics**

| Focus grou | Gender | Age | Employment | Region of stay | Living arrangement | Participant Name | Denoted Initial |
|---|---|---|---|---|---|---|---|
| | F | 30 to 40 | Employed | Within the city | Living with roommates | Ali | Part_1 |
| | F | 24 to 30 | Employed | Within the city | Living with roommates | Bryce | Part_2 |
| | F | 25 to 30 | Employed | Within the city | Living with roommates | Gilbert | Part_3 |
| | M | 24 to 30 | Employed | Within the city | Living with roommates | Jannatul | Part_4 |
| | M | 30 to 40 | Employed | Within the city | Living alone | Samara | Part_5 |
| | M | 30 to 40 | Employed | Within the city | Living alone | Stephanie | Part_6 |

**Questions used in focus group.**

1. What reasons would persuade you to use pay per wash or use a laundromat instead of owning a washing machine? If you already use this product service what motivated you?
2. What factors would discourage you from using pay per use in laundromats?
3. What reasons would persuade you to use pay per ride or rent an e-scooter instead of owning one? If you already use this product service what motivated you?
4. What factors would discourage you from using pay per use in e-scooters?

5. What emotions come to your mind when you think about Laundromats? Please, just say what you feel, what just jumps into your mind – 2 or three emotions at least?
6. What emotions come to your mind when you think about E-scooters? Please, just say what you feel, what just jumps into your mind 2 or three emotions at least?
7. What are the differences in attitudes that you perceive towards these two products? Please, again, spontaneous. Just say what jumps into your mind.
8. Do you have any other questions or comments or concerns?

**Transcription**

The meeting began at 1600hrs on Sunday. And it ended at 1657hrs. The discussion group had 5 attendees. The participants were a diverse group, including users and non-users of both the services. 2 participants have experienced rented scooters before, several times. Three respondents have used laundromats and no scooters, and one user has experienced both services. It commenced with a consent from participants to allow me to take a recording for reference purpose.

| | Motivations for pay per use in Laundromats |
|---|---|
| | **Part_5** |
| | She uses laundromats because she has no apartment, and for students who live in dormitory or hostels, it is the most convenient way than buying a laundry machine |
| | **Part_3** |
| | They have after sale services like fragrances added which individual might nnot think of using or buying with owned washing machines |
| | You don't have to pay the cost of maintaining the machine because the laundromat takes care of that. When using pay per service, maintainance cost will not come into play |
| ***Dialogue*** | Part_3 had an objection regarding the laundromats being cheaper "I beg to differ aout what Part_2 said on it being cheaper because it is more expensive in the long run than getting your own machine. But then if you are just using it ….maybe once in a week or not too frequently, it is cheaper, but if it is someone who is using it on a regular basis, then I dont think that is a cheap option to use. |
| ***Dialogue*** | Part_2 concurred with the point Part_3 said "Yeah exactly exactly, for instance I have no family here, I am alone, I don't use it everytime compared to those who maybe …have 5 people in the family or even babies…you know, hahaha so yeah yeah its really cheaper for me in that case. |
| | **Part_2** |
| | Part_2 backs up Part_6s Idea nd gives his own example "Since I am leaving here temporarily, there is no need for me to spend on such, it is better for me to go to the laundromat and wash from there because it is cheaper. |
| | **Part_1** |
| | It is not only convenient and easiest way but sometime we are moving from place to place and we have no proper sanitation. Part_1 gave an example of his friend "For example, yesterday, my friend was moving from one apartment to another apartment, in his previous apartment he had a washing machine, everything is okay, but in the other apartment they have no prope sanitation fpr the washing machine. So now he is worried because he is going sell out his machine to the market or somewhere else because he has no space for this kind of thing. " So I think the pay per use in laundromats is the best idea compared to getting your own. |
| | **Part_6** |
| | Part_6anie expounds on Part_5's idea about Current place of residence is temporay, and a laundry machine would be more less too much of a headache because every time you have to move you have to carry it along. But when you use pay per wash, you don't own it, you pay for it when you need it and you wont have the burden of moving it around. |

| | Barriers for pay per use in Laundromats (weather used or not usedd) |
|---|---|
| | **Part_4** |
| | Ah, maybe sometimes hygiene issues can be because sometimes we do not want to mix up our clothes with other people, |
| ***Dialogue*** | Moderator: When you mention hygiene issues, is there something you are precisely pointing at something in regards to hygiene or it is just as is is, you don't like to mix clothes with others due to hygiene? |
| ***Dialogue*** | Even though it is not a hygiene issue, like usually we do not prefer to mix our clothes with other people. I mean this is some kind of psychology, we do not like to do this, even though whatever clothes we give in the machine is to make them clean, but mostly, people dont like to mix their clothes with other people |
| | **Part_6** |
| | Time: If you own one you have at your premises and you can use it at your own convenience, I mean, it can be as late as 10pm you can do your laundry, but then, when you are using a laundromat , then you are restricted to time and it has to be within a particular timeframe and I think time is a majoor disadvantage when uisng a laundromat |
| | **Part_2** |
| | The one I used, there was no possibility to book aslot, so I had to go there and wait for others to finish first. |
| | **Part_5/Part_6/Part_2 agree that it is very inconveniencing** |
| | **Part_5** |
| | Part_5 adds on that hygiene is a barrier bacuse the laundromats used by all people and for example everyone uses different types of detergents and as Part_4 said, Not good idea |
| | **Part_2** |
| | For him it takes a lot of effort to go to the laundromat "For me I have to accept that for that day I am going to the laundromat, my daily schedule for that day might change and I have to accept that when Im going, I don't know when Im going to be back incase things chage, so I have to accept it that I have to be ready. |
| | It also needs you to prepare your self psychologically |
| | But also, in my example, it wasn't possible to get a slot first, but if for instance you are going at a specific time then it wont be a problem |
| | **Part_6** |
| | And I also think that compared to only one machine, you know when you normally do your laundry, you separate your coloured clothes from white ones, but then in the laundromats you are looking at other people waiting to use after you and all of that. So you are trying to finish withing time and make room for other. It is just like that kind of convenience. |
| | **Part_3** |
| | You will have to wait for the cleaning cycle to be completed and which is time consuming. And the cleaning cycle might be an hour o two, and when you are not around someone else might just pick out your things and you end up losing one or two tshirts. |
| ***Moderator*** | Also when you consider washing cycles, some go extra minutes on top of scheduled time, which can be very inconveniencing |

| | |
|---|---|
| | Motivations for pay per use in E-scooters |
| | **Part_3** |
| | I might want to try it just for fun but I have never tried I before |
| | **Part_5** |
| | I have never tried it, not sure what to add on it but |
| | **Part_4** |
| | Actually I think this is quite interesting for me, even though I have a personal scooter, but still I used rented scooter before couple of times. Suppose I want to go somewhere else, mostly I use line scooter, because I see out of 4km, if I take a bolt car, I feel it is more expensive, but in a scooter it is less expensive. Atleast 10 to 20 czech koruna less. |
| | And if I call for a car, it takes time to come. Okay...so I have to wait 15 mins or 20 just for the car, but for 4 kim I do not need to wait for 15 mins because I an easily unlock a scooter and go my destination and park at a proper place minutes |
| | Actaully what happens when we do not use something, ah... but when we use one or two times, on the 10th time you experience something different. Like okay this is easy this is safe. And in Europe, this is really flexible and especially if you talk about 3 or 4 kilometers and not 6 or 7 kms or highway. But if you wan to go somehwere very quickly , this is very good Infact it is cheaper than bolt or any other car sharing service. |
| | **Part_2** |
| | I tried it for the first time when I was doing food delivery with bolt,....so for me it was a must I had to do it to make it easier. Otherwise I am not going to try it anymore except just out of curiosity |
| ***Moderator*** | Why did you chose it instead of other means of transport? |
| | I have no car, I have nothing else, doing it by working is tough. The option I can afford apart from working is work. |
| | There is an application you use in Brno for renting e-scooter, and you pay around one hundred and twenty something czk for the whole month,if Im not wrong,...quite cheap |
| | **Part_6** |
| | I havent used one and I havent had a need to. Like earlie mentioned, if anything, it would b out of curiosity and fun. Its not something I have had any experience with. Especially because there are other equally cheaper alternatives like the trams and all that. |
| | And certainly not in this weather currently |
| | **Part_1** |
| | Part_1 mentioned tw motives, for individual use and busness use |
| | Individual views |
| | Mostly I use e-scooters in the late night because at that hur most buses are moving in a one hour interval or something like that, and they do not go in all the routes covered by tram or somethig, but specific routes. So it is more convenient to use a scooter at this tim. |
| | Also, I love to see the weather or the environment, which is something that when I take a car, I cannot enjoy the sam feeling. |
| | E-scooters are more convenient to me in this way |
| | For Business |
| | I use e-scooters for the purpose of delivery jobs, I'm not sure but some the dormitory, mostly Masaryk University didn't allow them to charge inside the dormotories, so it means it is not convenient for them. So if you buy your own, it is then more convenient to do delivery jobs because we dont needany kind of restrictions from dormitories or so, and 2nd, it is more easiet and fastest way compared to cycling and more convenient to use in food delivery jobs |
| | **Part_3** |
| | Part_3 reiterated the point of convenience of e-scooters in short distances instead of waiting for the tram whih could be taking longer to arrive. Hence scooters can help you to save time and do something else |
| | Also, when it comes to delivery jobs, there is a time bound "quoting Part_1". You have a time limit to submit an order which you picked up, and if you have to wait for the tram, it could take you longer to get to your destination, which could be detrimental to your work flow. |

| | |
|---|---|
| | **Barriers for pay per use in E-scooters** |
| | **Part_6** |
| | It is a seasonal thing. It is not something you can use throught the year. For instance, currently looking at the weather now, it is not something that you can conveniently step out with. I see it a s a seasonal thing, it works best when it is in the summer. And availabilty of it during summer could be hard as many people would go for it |
| | |
| | **Part_3** |
| | You can easily fall if you do know how to ride it |
| | |
| | **Part_4** |
| | Availability of scooter stands is not avaialble everywhere, hence it could be inconveniencing especially if you live far |
| | |
| | **Part_5** |
| | Part_5 agreed with Part_6's point of weather inconveniencies. Part_4's point on inconveniency, she elaborated that it might be a little inconveniencing to park it wherever you want, you have to find a nice and good place to pack it and other parking requirements need to be put intoconsiderations too parking as there are not many parking stations. |
| | |
| | **Part_2** |
| | You cannot be 100% that the scooter you are going to take has no issue. Sometimes you have to wait for the next one whoch is available, such thing can affect your timings and can cause you to miss your appointment or something like that. But if it is your own, you ca tae care of it and know that everything will be okay |
| | |
| ***Moderator*** | Has anyone who used a scooter before ever experienced renting a mulfunctioned scooter |
| | **Part_1** |
| | Bad charging, there is one time I was out and I needed a scooter, and there was only one e-scooter at that time, and I rented it. I saw it had less charge, but I thought that was good for me for that distance. However, I didn't go far as it immediately stopped.And I could not move forward nor backward, I was stuck at that same spot. |
| | Part_1, confirms that lack of e-scooter stands is also a barrier to renting them because if you put the scooter somewhere else instead of at the stand, the company charges you a fine, and it doesn't matter by how far you have parked or by how much you needed to pay first.That is the biggest barriesr |
| | Sometime we need to go first, but e-scooters have speed limits (traffic restrictions) hence it cannot go fast in specific places. Some places it goes 20 km/hr in other places 40km/hr, in some place 10 or 15km/hr and so forth and so on. |
| **Moderator** | When an e-scooter loses charge and goes off while using it, what happens to the payment? Do they charge you for that time and what happened to closing your trip? |
| | If it stops in the middle of the way of goes off because of charger, automatically, there is a lost connection. The service provider, through an app will ask me why I left the e-scooter there, and I will respond either 'I had this problem, battery is out of charge. In this case the company will not charge me because it is not my fault. |
| | But when the scooter loses battery, it can be inconveniencing especially at night when Im doing delivery jobs, I need to go by walk because there is no other scooter stands as this was the only point where I picked that e-scooter. Plus at night there are no less tram and/or bus intervals. And bolt taxi can take time and also expensive. |
| | Everyday they collect scooters from different places, to recharge or clean. |

| Emotions that comes to your mind when you think about Laundromats |
|---|
| |
| **Part_6** |
| Convenience<br>Economical<br>Environmental conservation - It is a circular product, so you tend to minimize waste |
| |
| **Part_4** |
| Day by day Consumers think more of evironment<br>Flexibility<br>Habbit- when people get used to something, they make themselves more comfortable with that things<br>In the present, I would think the company needs to make the washing machines user friendly and acceptable for everyone<br>Within 2 years it could be very much flexible for everyone. Because the gain about personal hygiene, and if they are very commited to their services, people would like to take those services. Because washing machines take up space in our places, can be noisy and also consume electricity, so overall if they ensure better services, then people will be in to their services in the Czech Republic |
| |
| **Part_5** |
| Both of the services were created for customers to make our schedules more flexible. So the companies tryig to make them better as per consumers demands, so maybe in 2 years we will be able to catch up from company's sze and point of view better supplies. |
| |
| **Part_2** |
| For me, emotion its more about 'am I going to get the quality I am looking for? Part_1<br>Will I have it whenever I want?<br>Having you own washing machine is easy to make decisions oabout it<br>But when you try to get/use something that is not yours,there is an effort you need to put, these are soome of the stresses<br>But if you want to talk about the environment, the economic aspect of it, the frankly speaking, personally I think about my pocket first, the environment aspecr comes after that. |

| Emotions that comes to your mind when you think about e-scooters |
|---|
| |
| **Part_1** |
| Transport system is very good especially in most morning times, unlike evening.  Ma<br>It is convenient, however, not many use it. And especially in the evenings when there could be problems with less trams or buses. Unlike in the morning when everything is really good and the transport system is okay |
| |
| **Part_4** |
| Scooters are not well maintained, maintainance is necessary. Mostly when I used to take a scooter, they had some break issues or other issures. You know, sometime when you pay for something, you want to feel premium. But it always gives you a leftover like safety concerns.<br>For instance there is a time I could not move it left to right, but it ws very tight and it could not move. And I was less worried in that case because it was at night and there were not so many activities around. So if it is daytime and the areas around are busy it is possible to cause an accident. |

| | Distinct emotions that you feel about the product |
|---|---|
| | |
| | **Part_1** |
| | Escooters are most convenient and fastest to go anywhere, but laundromats, they have time constraints when you can only access them. This is inconveniencing and I would rather buy my own |
| | |
| | **Part_3** |
| | For the scooter, there are way more options that you can use like the trams and other public transport vehicles than just a scooter alone. |
| | For the Lundromat, we al know that it is an absolute neccesity because we have to wash the clothes, but then you don't have to necessarily use a scooter if you don't wash. |
| | The availability of substitues and complementary products also are considered when using anyof these services |
| | |
| ***Moderator*** | What do you think of the need to install an appliacation to use these services? Do you think its cool for you or you find it a hassle? |
| | **Part_6** |
| | In terms of applications and all of that, it is not something I am always comfortable downloading applications especially the ones that are not essential. Uhm ..usually when there is an alternative to use a servoce without a service, I prefer to go for that. |
| | Probably there are some applications that coul be a source of discouragement, not in terms of technology but more of intense of tracking stuff like cookies and all all that. Other than that I think its fine |
| | |
| | **Part_5** |
| | In terms of applications, I would rather go for websites, just to save my phone's memory. And not to get some caches or more apps |
| | |
| ***Moderator*** | If you have used a scooter, do you use the road where the cars are also passing or you are supposed to use a pedestian lane? And is it okay or challenging? |
| | **Part_4** |
| | No, this is like a cycle, you can use it anywhere like normal road or pedestrian |
| | |
| | **Part_2** |
| | I think it is so risky to use e-scooters, it is more about your safety and when you are using the road, there is no control of your ability e.g if you know how to use it well. So it is so risky especially if you don't know how to use it. You can only go for it if there is no option unless there is a company that ask for some documents to know if people are aware of the use of it and other instructions first, if not it is not safe at all. |
| | |
| ***Part_3*** | Part_3 finished off by asking about the difference between pay per use and pay as you go service model - |
| | Is a utility bill considered a pay per use? like you use and they give you the bill based on what you used per month? |

Thank you note for all that attended.

'Name of participant!

Once again, I'm really moved and appreciative of your availability to this call on such a day, when you could be having your 'you time' or doing something else. I dont take it for granted😊. Thank you for the insights you provided during the discussion, you are a gem! 😂👌. Have a restful evening. Cheers 🥂'