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Master Thesis

Reverse logistics in an urban setup:

A consumer perspective of travel mode choice for transporting EOL/EOU furniture.

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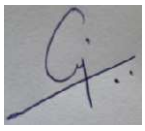

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ABSTRACT

With the rise in urbanization and cities fulfilling sustainability challenges, companies across the globe are moving towards circularity. One approach adopted towards circularity is of reverse logistics where companies take back EOL/EOU products. In the furniture industry, this approach towards circularity is coupled with consumers being asked to transport the EOL/EOU furniture to second-hand/retail stores on their own accord. With urbanization, the ability to transport these goods in a city can involve choosing between various modes of travel available to consumers. In line of this, this research explores what is the mode of transportation that consumers used to transport EOL/EOU furniture in an urban setup and why they used the same. The why aspect of the research is developed by determining what determinants consumers considered when making the choice of the transport mode. This research is drawn from the theory of planned behaviour and uses 8 semi-structured interviews for deriving the analysis. A total of 13 determinants were identified. The attitude construct identified 7 determinants: cost, convenience, door-to-door ability, easy, autonomy, availability, and distance; the social norm construct identified 2 determinants: social responsibility and sustainability; And the PBC construct identified 4 determinants: planning effort, transportability, odd shape & Manoeuvring, and lack of information. 11 of these determinants are consistent with previous research and 2 of which namely: odd shape & Manoeuvring, and lack of information are novel to this research. Lastly, the research provides insights to policymakers and companies to address practical and social barriers to reverse logistics in an urban setup from a consumer perspective.

Keywords: urban setup, reverse logistics, consumer intention, travel mode choice, theory of planned behaviour, EOL/EOU furniture.

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Chapter 1: Introduction

1.1 Introduction

The world is becoming increasingly urbanized with more than half of the world's population currently living in urban areas (Cleophas et al., 2019; Lagorio et al., 2017; *UN*, 2018). About 75% of the European population already lives in and around cities (Eurostat, 2016); and it is estimated that by 2050 two thirds of the global population will become a part of this urban share (UN, 2018). This urban environment is a complex yet flexible system, with complex social interactions and transportation networks (Rose et al., 2017). Rose et al. (2017) differentiates an urban setup from a nonurban one in terms of the presence and interactions of multiple urban stakeholders in proximity as compared to a non-urban set up. This proximity of stakeholders in turn influences both voluntary and involuntary interactions with the transportation network and logistics systems of the urban setup with competition between various urban stakeholders for the limited resources (Rose et al., 2017, p.367). These stakeholders could be retail industries, consumers, delivery agents using the same urban infrastructure such as roads and other modes of travel. While not all urban attributes impact logistics activities, complexities of stakeholders is one (Rose et al., 2017).

Transportation of goods constitutes an important aspect of the urban setup in terms of both social and economic activities (Rubio et al., 2019). Urban logistics represents a lifeline for retail and at the same time fulfils the needs of the citizens (Cleophas et al., 2019; Lagorio et al., 2017). The increased urbanization makes transport of goods to and from an urban setup difficult (Buldeo Rai, Verlinde, et al., 2017; Cleophas et al., 2019). Adding to the innumerable challenges already existing in the urban setup with respect to congestion, pollution, traffic, safety, parking and noise (Cleophas et al., 2019; Hauge et al., 2021; Masson et al., 2017; Rose et al., 2017; Rubio et al., 2019). Thus, the quality of life of the urban population is a function of the logistics in the urban setup with an equated economic impact going hand in hand with urban logistics (Hauge et al., 2021; Lagorio et al., 2017; Masson et al., 2017)

A primary concern to cities is fulfilling sustainability challenges in conjunction with the above stated economic development (Cleophas et al., 2019). For example, cities in France are getting more sustainable with features such as reduced carbon footprint, self-sufficiency in terms of water and energy and moving towards circularity to make cities more liveable (UN-France, 2016). Sustainability with circularity is one such trending topics among many

European cities (Norway, 2022; PWC, 2018; UN-France, 2016). Several EU states are promoted towards circularity by the European commission, proposing a roadmap to create favourable conditions for circularity by restructuring business and industry (European Commission, 2020; Norway, 2022). For example, the French government is encouraging companies to provide information about the environmental impacts of their products and promoting waste reduction through recycling, reuse and repair (UN-France, 2016). The role of governments to transition towards circularity is therefore one of the drivers for companies who greatly depend on these external conditions such as government support, legislation, and environmental policies to catalyse their transitions (Buldeo Rai, van Lier, et al., 2017; Buldeo Rai, Verlinde, et al., 2017; Chaabane et al., 2021; Lahane et al., 2021; van Loon & van Wassenhove, 2020). In fact, to close the loop many developed countries have pushed legislation to direct waste back into the industry through concepts such as "extended producer responsibility" (Lieder & Rashid, 2016). Thus, for the economic and social development of both societies and companies, an implementation of circularity is vital (Lahane et al., 2021; Norway, 2022).

Consequently, with circularity being one of the trending topics companies across the globe are taking steps towards sustainability (Lieder & Rashid, 2016). With the current systems of production and its subsequent consumption rated as unsustainable closing the loops has gained ultimate importance (Borrello et al., 2017). Circularity restorative by design, includes a broad spectrum of activities such as increasing the life of products by providing spares, designing products so they can return into the circular cycle, reusing, restoring and even remanufacturing products so that a second life is allocated to them (Malmgren & Larsson, 2020; McKinsey, 2016). This system plans at providing a sustainable solution to the enormous waste generated due to linear systems and create resource efficiency (Lahane et al., 2021). Most research on circular economy thus, mainly focuses on the restructuring of the linear business model with scholars examining how to make a systematic shift towards circularity (see: Lieder & Rashid, 2016; McKinsey, 2016; Malmgren & Larsson, 2020). This is supported by industry reports across sectors featuring various companies taking multiple paths across their supply chains exploring how raw materials are sourced, manufactured, used and passed down (McKinsey, 2016; PWC, 2018). Business models such as non-ownership of products, decreasing the dependence on raw materials and accounting for potential new gains from waste have been proposed so far (Deloitte, 2022; PWC, 2018).

Reverse logistics as a system where companies can take back products is one of the operations to participating in circularity (PWC, 2018). Consequently, reverse logistics is slowly but steadily becoming an integral part of supply chains across several industry sectors (Chaabane et al., 2021; De Brito & Dekker, 2004). According to Rubio et al. (2019), the main purpose of reverse logistics is the recovery of products that can no longer be used (EOL) or are no longer desired (EOU). In simple terms, it refers to collection of products once consumers have finished using them (PWC, 2018). With reverse logistics value associated with EOL/EOU products can be acquired for possible new gains such as reuse of natural resources, recycle, dispose of as waste or create secondary markets (De Brito & Dekker, 2004). Secondary markets also known as resale markets allow slow-moving, returned, and old products a new life and are powered by reverse logistics (Wang et al., 2017). Likewise, to seize more value out of their products more and more companies are moving towards second-hand stores and the process of buying back (Rogers & Tibben-Lembke, 2001; Wang et al., 2017). To sum up, either because the value associated with recovery from used products is being recognised or companies are being asked to take back products on account of their social responsibility towards the globe, reverse logistics is one of the means towards circularity (De Brito & Dekker, 2004; PWC, 2018).

Consumers have been recognised as one of the key elements towards circularity, with some industry reports even claiming, “there is no circularity without consumers” (PWC, 2018, p.43). While in a linear economy consumers can be seen as passive participants, more likely to be found at the end of the purchase cycle; when it comes to circularity, they become the active participants of the supply chain. One aim being to return products to retailers either to re-circulate or re-use or dispose of as waste (Borrello et al., 2017). Consumers face innumerable challenges when taking necessary measures to transition towards circularity (Borrello et al., 2017). Nonetheless, Ellen Macarthur Foundation (2022) states that it is the anticipated value that a consumer allocates to a product that determines the consumers’ eagerness to return products. This ability to return EOL/EOU products for the purpose of circular gains makes consumers one of the enablers of circular economy and one of the starting points of reverse logistics (Kirchherr et al., 2017; Rubio et al., 2019).

For some industry sectors reverse logistics can be critical and the furniture industry belongs to this criterion (McKinsey, 2016). Mainly, because preserving and strengthening natural capital can be achieved as most of the resources used to manufacture furniture are natural resources such as wood and cotton (Ikea, 2022; McKinsey, 2016). While companies account

to sourcing these natural resources by sustainable means such as the Forest Stewardship Council (FSC), the rate at which these resources regenerate in nature is slow (Ikea, 2022; Target,2021). Thus, it is essential to bring back wood for reuse so that it can be refurbished and/or remanufactured and given a second life (Ikea, 2022). By doing so, the value in the wood can be optimized either by circulating the furniture as a whole or in component. Currently, Ikea one of the biggest furniture retail companies in the world, claims to use 99.5% of its wood from FSC or recycled sources. With approximately 14% of its total wood used from recycled sources (*IKEA Sustainability Report FY21*, 2021).

In light of this, bringing back furniture items to the manufacturer or second-hand stores is the need of the hour so that they can receive a second life. Moreover, the increased pressure from governments, legislation and increased social awareness add to the above cause. One such company, Ikea is offering new circular options to their consumers and inspiring new behaviours by introducing concepts such as the buy-back-resell store (Ikea & Ellen MacArthur, 2020). While the company is taking responsibility to give new life to the furniture, the process involves bringing the furniture back to the stores by consumers themselves (Ikea Buy-back-resell, 2022). Many of the EOU product collections has an operational aspect with consumers often unaware of how to do it (Hanafi et al., 2008). While companies can initiate a number of collection strategies, currently with respect to Ikea drop off by consumers is being promoted (Ikea Buy-back-resell, 2022). The deterrent in this circumstance being that for the sole purpose of dropping EOL/EOU products, consumers need to opt for additional transportation. Ikea provides adequate information with respect to the returns procedure and compensates consumers in form of a voucher for every EOL/EOU product returned. However, with no collection facility, the collection of these products is relatively low despite the incentive given (Borrello et al., 2017; Ellen Macarthur Foundation, 2019; Ikea Buy-back-resell, 2022).

The problem thus identified is that of consumers needing to transport furniture on their own accord. Additionally, the complexities of the urbanization add to this problem. How are consumers transporting this furniture? is of interest to study because firstly, from a societal perspective increasing the return rate of EOL/EOU furniture back to the manufacturer and/or second-hand store is crucial in terms of circularity and secondly, because it will give industry practitioners insights into the consumer journey and provide a foundation to make this process of returning EOL/EOU furniture consumer-friendly in the future.

1.2 Problematization

One approaches to start circularity is to have a system of reverse logistics for products. According to the industry report by PWC (2018), companies need to have this reverse system in place. Clearly, furniture companies promoting buy-back and resale, as well as second-hand stores do not have this system in place (Ikea, 2022). Furthermore, from the information presented in the above section in the furniture industry it is the consumers that need to transport assembled furniture on their own record to the second-hand/retail store. Additionally, if these stores are located within the city premises, the complexities of the urban set up will add to this problem of reverse logistics by consumers. To summarize, this is a problem with respect to what is expected of reverse logistics from companies and what is being done and thus needs further exploration. Consequently, to enhance circularity with reverse logistics a need for knowledge to address this problem is generated. Having knowledge about how consumers are transporting EOL/EOU furniture in an urban setup will give insights to both policymakers and companies to address any practical and social barriers in transporting the same.

This problem can be broken down into some major aspects with consumers constituting a part of the reverse system and practising reverse logistics in an urban setup. Firstly, the furniture needs to be returned to stores (Erikshjälpen, 2022; Ikea Buy-back-resell, 2022). Considering the urban setup, these second-hand/retail stores could be located in high density areas such as city centres with limited transportation options because of traffic or parking rules. Making the problem of transporting EOL/EOU furniture in an urban setup more complex. Secondly, the furniture needs to be returned by consumers. This is an action that consumers need to perform, theoretically termed as behaviour. The consumers have the liberty to choose a mode of transportation as per their will. There could be multiple modes of transport available to consumers that would cater to the above needs. Thus, which mode of transport is it that consumers choose and why?

Addressing from a theoretical perspective, the above problem called for a review of literature (chapter 2) on four major topics namely urban setup, reverse logistics, consumer behaviour (intentions) and travel mode choice. Extensive knowledge of the above fields is available in academia, however, there is need to explore knowledge on how all these four dimensions merge. Ritola et al. (2020) research on circular economy highlight the lack of research in the field considering the consumers as enablers towards circular economy. As explained earlier, reverse logistics is one of the means towards circularity and consumers are one of the aspects

towards reverse logistics. However, previous research conducted on reverse logistics considers problems with designing and planning, inventory management, network design and development of various business models along with decision and performance evaluation studies (Govindan et al., 2015). Moreover, according to Rogers and Tibben-Lembke (2001), efficient reverse logistics systems for EOL/EOU products are lacking. Building on these research gaps, the research firstly explores reverse logistics from a consumer perspective.

Following this, Within the complexities of the urban setup discrete research on consumers as stakeholders towards logistics is lacking (de Carvalho et al., 2019). Considerable research with the urban setup and frameworks considering mobility policies, mode of transport and sustainability in terms of urban freight transport has been conducted (Hauge et al. ,2021). In addition, mixed transport systems showcasing close interactions between freight logistics and people mobility have also been studied in urban environment (Buldeo Rai, Verlinde, et al., 2017). But these public transport utilities concentrate merely on distribution of products and not on collection showcasing another element in need of research.

And lastly, when returning EOL/EOU products to second-hand/retailer stores, consumers select a mode of transportation. Previous studies on travel mode choice within an urban setup focus on travellers' selection between cars, public transport, walking and bikes for various activities such as commuting to work, groceries and so on (Clauss & Döppe, 2016; Jain et al., 2021). To date no research in the domain of travel mode choice with respect to reverse logistics from a consumer perspective in an urban set up has been done. In summary, this research calls on exploring how consumers transport EOL/EOU furniture in an urban setup and address the research gaps recognized in the literature review. The subsequent section articulates the research aim and questions.

1.3 Research Aim and questions:

The broad aim of this research is to conduct an investigation towards fulfilling the above stated research gaps. Firstly, consumers are requested to carry assembled EOL/EOU furniture to second-hand/retailer stores. The complexity of doing this increases especially in an urban setup with multiple stakeholders interacting with each other in a closed environment (Rose et al.,2017). This informs the aim of the study, which is to understand how consumers carry EOL/EOU assembled furniture to second-hand/retailer stores in an urban setup. It is important to address this aspect firstly to address the above-mentioned gap in knowledge with respect to travel mode choice to both research and practice. For companies the findings of

this research will allow them to better understand the degree of interactions between various stakeholders and craft strategies to prosper in the dynamicity of the urban setup. With the recognition of this consumer journey, companies can understand how to facilitate, maintain or even upgrade the transport mechanism for reverse logistics to stores thereby enhancing consumer experience. Moreover, from a societal perspective, this research aims to allow governments to set policies to make the return journey of EOL/EOU products easy and convenient for consumers.

At this point, the broad question is to explore how consumers transport EOL/EOU furniture to second-hand/retailer stores in an urban setup. The demand of consumers returning furniture at their EOL/EOU to stores located in the city centre is episodical with consumers bringing in their products from varying locations of the city. While doing so the consumers choose a specific mode of transport for this reverse logistics. How consumers transport EOL/EOU furniture to second-hand/retailer stores in an urban setup can be explored firstly by asking what the mode of transport is that they used and why they have used the same. Why a specific mode of transport is chosen is studied by research from Clauss and Döppe (2016), who identified 28 perceptual determinants that urban travellers consider when selecting the travel mode (Appendix 1). In simple words, these are factors that every individual considers when choosing a mode of travel. In line with this, understanding the determinants considered when choosing a mode of transport for EOL/EOU furniture from a consumer perspective in an urban set up leads us to the following research question

- What are the determinants of consumer modal choice for reverse logistics of EOL/EOU furniture within an urban setup?

In addition to the research implications mentioned above, the findings help companies understand the starting point of the consumers reverse logistics journey and can help them develop business models and/or services to enhance the circularity process

1.4 System Boundaries:

The research considers the urban network composed of set of consumers who have returned products for circularity from their homes, the mode of transport and the store within the urban setup where the products were returned for circularity. Additionally, since this research focuses on EOL/EOU furniture, only assembled furniture in line with data published on

furniture second-hand/retailers website has been considered (Erikshjälpen, 2022; Ikea Buy-back-resell, 2022).

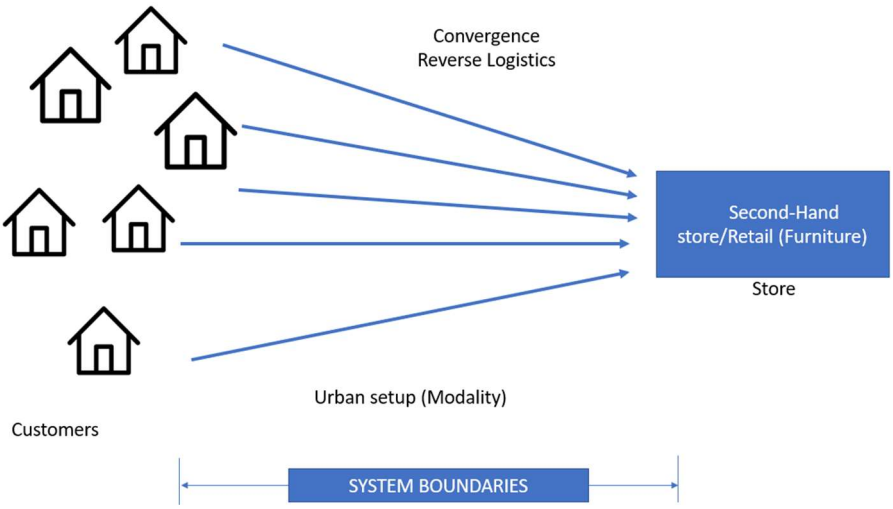

Figure 1: System Boundaries

1.5 The structure of the thesis:

The next chapter which is the theoretical framework explores the relevant concepts with respect to the aim and research question. The theory and approach of using the theory for the empirical data analysis. Chapter 3 presents the methodological considerations. This is followed by the analysis of empirical data in chapter 4. And finally, discussion and conclusion on what determinants influenced consumers modal choice in an urban setup?

Chapter 2: Theoretical Framework:

2.1 Chapter overview:

It is by building on the theoretical framework that current research areas can be explored, already existing concepts understood, and research gaps identified. While the aim of this research is to fill the research gap by identifying attributes that consumers consider in choosing a mode of transport to return EOL and EOU furniture products to the store, the key research areas for this thesis include urban setup, reverse logistics, consumer intention and travel mode choice. Very scant literature pertaining to the combination of the above research areas is currently available. Therefore, this chapter begins with an overview of urban setup and reverse logistics, followed by establishing a link among the two. Thereafter, existing research on how people choose modes of travel is explored. The theory of planned behaviour (TPB) and concepts which will be employed to analyze the empirical data are presented. Finally, a research model for the thesis is presented.

2.2 Urban setup:

2.2.1 Urban Infrastructure:

A major differentiating factor for an urban setup against a non-urban setup is the competition between stakeholders such as retail industries, consumers, delivery agents for the same urban infrastructure such as roads and other modes of travel (Rose et al.,2017). This proximity of the stakeholders tends to impact as well as react with each other increasing the complexities with respect to organisational factors (Lagorio et al., 2017, Rose et al., 2017). Contrary to this, Cleophas et al. (2019), reflect that multiple stakeholder working together in such close proximity increase the efficiency of the urban setup by sharing resources be it cars, modal infrastructure or even consolidation centres. These complexities increase the differences in the decision making observed at macro and micro levels within the urban set up as highlighted by Hauge et al. (2021). While at the company level, decisions are more focussed on its employees and individual company goals; on a broader perspective, the city authorities need to focus on its citizens and businesses on a holistic scale. To sum up, previous research has indicated on the inevitable interactions between various stakeholders however, the degree of these interactions requires better understanding to allow companies to craft strategies to prosper in this dynamic urban setup.

Another distinct feature with respect to the urban setup is that of the diverse modal profile. Rather than being built on a single, dominant mode such as road; an urban setup consists of

complex yet flexible system of modal profile that form the core of urban interconnectivity (Brunner et al., 2018; Rose et al., 2017). Thus, modal diversity in simple terms can be understood as locations which have a minimum of two main modes of transportation for example: road and rail. This modal diversity in turn is termed as accessibility and is one of the key features within an urban setup. While accessibility is described as the number of locations that a firm can interact using a given mode of transportation (Rose et al., 2017). Lim and Thill (2008) clarify that the ways in which companies are able to serve their consumers is a function of the modal diversity of the urban setup, as it facilitates or hinders the logistic activities therein.

Additionally, multiple studies have been conducted to understand the urban setup at large such as Rose et al. (2017) identifying the diversity in modal diversity, the centrality of the network, the industry on which the urban setup is founded and lastly, the clustering profile of the citizens as the key parameters that define an urban setup. Hauge et al. (2021) designed a multi-layer framework by mapping relevant measurable parameters such as modes of transport, mobility policies, population, traffic data, safety implications and so on for sustainable urban freight transport. However, this proposed framework is designed especially for production logistics and an extension of this framework to other forms of mobility is lacking. Additionally, the authors clearly specify that the said framework is not applicable to reverse logistics.

2.2.2 Urban Logistics

Rose et al. (2017) defines urban logistics "as that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and point of consumption in order to meet consumers' requirements, as influenced by complex interactions among densely populated social systems and associated infrastructure" (p.362).

In recent years, a lot of attention has been laid to distribution of goods rather than collection in urban freight transport from both academia and the larger policy context (see: Buldeo Rai et al., 2017; Lagorio et al., 2017, Rubio et al., 2019). Cleophas et al. (2019) highlight the obstacles in urban freight movement in terms of low carrying loads, exceeding times for both loading and unloading of goods and a huge number of deliveries to consumers in an urban set up. He (2020) discusses the urban freight transport design and distribution innovations from a sustainable perspective with the systematic literature review and points out that a lot of research has been done with respect to infrastructure and strategies that would allow feasible

urban goods movement. In addition, most research has focussed on the last-mile delivery that includes not only location and vehicle routing problems but also the inclusion of green vehicles such as EVs and cargo bikes to enable product transfers in congested urban areas. He (2020) also adds that researchers have taken into consideration the use of public transport vehicles such as trams, buses and subways for the transportation of goods. However, the use of these public transport vehicles is only for transshipment transportation wherein this mode is merely used as a connector in combination with maybe EVs or Cargo bikes and so on. Buldeo Rai, Verlinde, et al., (2017) further add to using passengers' excess capacity to deliver goods in an urban setup known as crowd logistics. While these researches showcase the close interactions between stakeholders such as freight logistics and people mobility applied in urban environment, It is important to note that these public transport utilities are mainly focussed on the distribution of goods rather than collection.

Mixed transportation is the concept of using the same vehicle for the transportation of both passengers and goods (Masson et al., 2017). For example: the use of free capacity of taxis to transport both passengers and goods. The study reflects that though several projects have been implemented at city levels to enhance the cooperative movement of both freight and people by using advanced information systems, such projects have seen minimal success. Passenger dissatisfaction in consequence to the impacts of mixed transportation have been highlighted as a scope for future studies (Masson et al., 2017).

Identifying transport modes not extensively used for freight transport in an urban set up Have been studied in previous research. Cleophas et al. (2019) observe that railway network is usually available in cities. However, the same is rarely used to transport freight but mostly operate at maximum capacity towards passenger demand. Contrary to this, In research from Dampier and Marinov (2015), a concept of using the railway network to transport freight from peripheral business areas to the city centre has been studied and the same was found to be reasonably more sustainable as compared to conventionally powered vehicles.

From a sustainability perspective, Hauge et al. (2021), suggest that various cities across the world have implemented different strategies including sustainability as an aspect within their mobility plans. These strategies impact the way in which goods are distributed and delivered to and from distribution or production sites in urban areas. Moreover, a modal shift is an excellent means to reduce the negative impact of transportation in urban setups. Lastly, it is the flexibility of the urban network to respond to the unprecedented changes in the freight

demand based on changes in consumer behaviour that make an ideal urban network (He, 2020). Thus, integrating changes in consumer behaviour with the future of urban freight is essential both from a managerial and societal perspective.

2.3 Reverse Logistics

Rogers and Tibben-Lembke (2001) define reverse logistics as ‘‘The process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal’’ (p.130). Reverse logistics is one of the key competence for companies trying to close their supply chain loops and enhancing circularity (Agrawal et al., 2015). And while it is strategic for a firm to enhance its reverse logistics, in the current scenarios efficient reverse systems for EOL and EOU products are lacking (Rogers & Tibben-Lembke, 2001).

To understand the difference between reverse logistics and returns management, it is important to understand the difference between the various types of consumer returns, to better understand the concept of reverse systems. Based on the position of the product in the life cycle consumer returns are classified into warranty returns, Commercial reimbursement returns, service returns and lastly, EOU and EOL returns (De Brito & Dekker, 2004). According to Rubio et al. (2019) the main purpose of reverse logistics is the recovery of products that can no longer be used (EOL) or are no longer desired (EOU). De Brito and Dekker (2004) define EOL as products that are either at the end of their physical life or economic life. These are the products that are taken back for their recovery value by either the manufacturer or brokers. On the other hand, they define EOU products as products that a consumer returns at a particular life stage seizing an opportunity to define it as no longer required or useful (Campos et al., 2017). These returns are usually directed to second-hand/retailer markets. And reverse logistics is a process of collecting these EOL and EOU products (Rubio et al., 2019). This is the key difference between reverse logistics and returns management. Understood by the aspect that returns are mostly products that the buyer is unsatisfied with in terms of quality, defect, or other factors (Ahsan & Rahman, 2021). This returns management/logistics can be accomplished through various channels such as returns to store: which involves returning to the closest store or return to non-store: which involves authorization to drop of the product at the closest parcel or drop-off point as these products are pushed back in the supply chain (Ahsan & Rahman, 2021). Additionally, to deal with

product returns companies are known to have dedicated collection to third parties for both collection and processing (de Araújo et al., 2017).

Reverse logistics have been developed and implemented in electronic companies such as Dell, Apple and Kodak (Agrawal et al., 2015; Rubio et al., 2019). Considerable research on reverse logistics includes urban waste management. From network designs, capacity of collection, location of facilities, routing issues and vehicle capacities (see: Bing et al., 2012; Borrello et al., 2017; Chaabane et al., 2021; Rubio et al., 2019). But when it comes to reverse logistics of EOL or EOU furniture products companies currently require consumers to transport the material to the nearest store themselves (Erikshjälpen,2022; Ikea Buy-back-resell, 2022).

Both urban logistics and reverse logistics have been studied distinct to each other, though they are of consequence to stakeholders such as companies and consumers. Additionally scant attention has been paid to consumer behaviour in both these fields (Rubio et al., 2019). Moreover, Rubio et al. (2019) highlight the need to address different recovery options and developing strategies for selling these recovered products (EOL and EOU) jointly within urban and reverse logistics (p.12). It is evident that logistics in urban areas is challenging and providing effective solutions for reverse logistics of EOL/EOU products even more so.

2.4 Consumer Intention

"Little is known about consumers' willingness to participate in circular economy" (Borrello et al., 2017, p.1). Kirchherr et al., (2017) second the same while suggesting that consumers are not usually depicted as enablers towards circular economy and highlight the prominent lack of consumer perspectives in the circular economy definitions previously coined. Indicating a huge research gap in this respect. Thus, most models on circular economy are focussed on the supply side completely ignoring the consumer demand. Kirchherr et al. (2017) in their future scope have drawn attention to the need for research on the consumer perspective to understand the way to enhance their contribution towards circular economy.

The importance of logistics for the success of circular economy as an integrated approach along with a coherent change in business models, government policies and last but not least consumer behaviours has been highlighted in research from van Buren et al. (2016). This strategic shift includes but is not limited to design, use, disposal and most importantly the collection of products to enter the circular cycle. In terms of logistics, it is important to keep the urban areas liveable along with integrating first mile, last mile and reverse logistics. van

Buren et al. (2016) also state that city logistics is a dynamic service with a market that is highly unregulated. From a consumer perspective van Buren et al. (2016), say that as consumers become aware of circularity a change in their behaviour and preferences will be observed and is required by companies as well (see: van Loon & van Wassenhove, 2020).

Concurrently, consumers need to take care of their products and responsibly return products so that reusing them becomes possible and this increases the challenges in setting up reverse logistics as higher quality returns may be more costly (Van Loon & van Wassenhove, 2020). However, there are consumer segments who have the intention to access EOL and EOU products thus, building a consumer market along with recovery alternatives. (Rubio et al., 2019). Meanwhile, for companies estimating costs and risks associated with the eco-system activities can be burdensome and hence, asking consumers to bring back EOL and EOU products seems like a reasonable alternative. To better understand how consumers, move these products using different modes of transport understanding their travel mode choice is imperative.

2.5 Travel mode choice:

Clauss & Döppe, (2016), conducted research to understand the choices urban travellers make while choosing multimodal options and identified 28 determinants on which travellers determine their choice of travel (Appendix 1). While these will be elaborated later, they also highlighted that most research on travel mode choice has been conducted from the point of view of development policy for governments. Very little research been conducted to find the consumers journey towards a retail store. This research gap has however, been explored in research from Buldeo Rai et al. (2019, 2020) from a travel to store or collection point perspective. Research on travel mode choice from consumer homes to stores is therefore one of the needs towards the research knowledge.

Buldeo Rai et al. (2019, 2020), in their research explored how consumers' omnichannel shopping behaviour is converted into travel behaviour in an urban setup of Brussels. In independent studies they tried to identify how consumers travel to and from stores and collection points. While distances travelled by consumers for purchasing were on the higher side (15km), the distances for returning trips were the least (9km). In addition, their research recognised that most purchasing trips are combined with other activities while for the returning trips no "trip chaining" (combining an activity such as groceries, meeting friends with returns) information was collected by them (p13). An important finding being, cars were

one of the preferred choice for purchasing followed by bikes, however, cars were used less for returning.

According to research from Borrello et al., (2017) very little is known about consumers' inclination to participate in circular economy. Though this research was mainly focussed on food waste circularity, the findings indicated that consumers are willing to participate in returning food waste to retailers in return for rewards. Borrello et al. (2017) rightly point out that when aiming for circularity, while consumers would involve a change in their attitudes towards EOL/EOU products, collecting the waste and putting them aside to return to retailers takes effort, commitment and responsibility. Their research with respect to the parameter of "modality" depicted, that consumers most preferred waste collection from their homes rather than them having to carry the same to a disposal point. This preference then reflected on the same respondents not having an inclination to discounts. Some respondents were however willing to deliver the waste personally. An important finding of this research is that the respondents preferred to limit their effort related to participation. This can be linked to the consumers ability to have ease of operation and/or participation.

Thus, combining all the above stated research gaps. Firstly, the lack of efficient reverse systems currently available for EOL and EOU products within the complexities of an urban setup in addition to the need to explore consumer as an important stakeholder in these domains. Secondly, considering the need to research consumers perspective to enhance their contribution towards to circularity and the need for knowledge pertaining to travel mode choice to return products to retail/second-hand stores. This research aims to explore how furniture is transported by consumers at its EOL or EOU to a second-hand/retailer store in an urban setup by understanding firstly, their preferred mode of transport and the reasons in choosing that specific mode of transport. The pictorial representation of where this research lies in the domains of urban setup, reverse logistics, consumer intention and travel mode choice is depicted below.

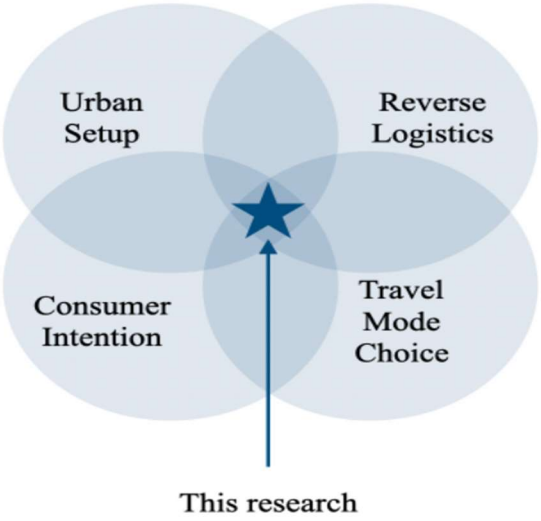

Figure 2: Pictorial representation of this research

2.6 Theoretical underpinning:

The consumer perspective is essential to understand the consumer journey (Santos & Gonçalves, 2021). Consumer behaviour is one of the cornerstones to consumer journey analysis (Santos & Gonçalves, 2021). To reach a choice which is characterised by this behavioral pattern and by placing the consumers at the heart of this reverse logistics journey, the theoretical framework will enable to identify the determinants that urban travellers consider when making a choice among different travel modes.

Several theories with respect to general consumer behaviour were examined. Theories and models facilitate in understanding the different variables and circumstances in a logical manner and their correlation, thus aiding in establishing theoretical knowledge (Santos and Gonçalves, 2021). The theory of reasoned action (TRA), the theory of planned behaviour (TPB), the technology acceptance model (TAM) (Davis et al., 1989), Unified theory of acceptance and use of technology (UTAUT) (Venkatesh et al., 2003), and Innovation diffusion theory were some of the theories considered for this research. While TRA, TPB, TAM and UTAUT consider behavior the actual usage is caused by intention with constructs such as people's attitudes, social norms and perceived behaviour control (PBC) dictating the intention (Davis et al., 1989; Santos and Gonçalves, 2021); the innovation diffusion theory accesses the adoption of innovation and was considered based on the assumption that consumer initiated reverse logistics is an innovative process. TAM considers perceived usefulness and ease of use and UTAUT takes into account performance and effort expectancy

along with social and facilitating conditions, both TAM and UTAUT are mostly used in technology acceptance and hence, were not considered apt for this research.

This research uses the TPB. It is one of the commonly used theory in transport research (see: Donald et al., 2014; Guiver,2007; Jain et al., 2021; Lanzini & Khan, 2017; ŞImşekoğlu et al., 2015; Zhang et al., 2021). It has been generally accepted among researchers that actual behavior is governed by behavioral intentions (Zhang et al., 2021). TPB is the extension of the theory of reasoned action (Ajzen, 1991) with the PBC added to the former theory. When using this theory to determine the travel intentions, most researchers have considered the psychological factors to evaluate the transport mode use of travelers (Donald et al., 2014). According to the TPB, there are three factors namely: attitude towards the behavior, the subjective norms and lastly, PBC that determine behavioral intentions (Ajzen,1991). The more positive the attitude, greater is the intention and PBC is determined by the confidence an individual has towards his ability to perform. The TPB provides three distinct constructs that determine intuition and thereby behaviour, making it structured to understand the travel mode choice made by consumers to return EOL/EOU furniture in an urban setup and therefore this research uses the framework of TPB to answer the research question and identify the determinants of the travel mode choice.

Attitude (behavioral beliefs)	Degree of favorable or unfavorable evaluation a person has towards the behaviour
Subjective Norm (Normative beliefs)	Perceived social pressure an individual has to perform or not perform the behaviour
Perceived Behavioral Control (Control beliefs)	the perceived ease or difficulty an individual refers to. It includes past experiences and anticipated obstructions

Table 1: Theory of Planned Behavior (Adopted from Ajzen, 1991 (p.188)

Ajzen (1991) acknowledges the importance of both opportunities and resources that should be available to a person to have a behavioral achievement (p.196), along with one's past experiences or information influenced by second hand sources such as friends and acquaintances that make up the control beliefs. The relation explained simply as the more the presence of opportunities or innuemarable resources with relatively low hinderances, greater is the perceived control over behavior.

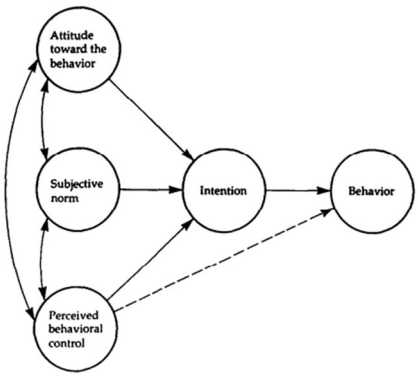

Figure 3: Theory of Planned Behavior (Adopted from Ajzen, 1991 (p.182)

2.6.1 Applications of theory:

The TPB is used extensively in travel mode choice to understand the modal choice made by people such as choices between cars, bikes, buses and trains (see: Donald et al., 2014; Guiver, 2007; Jain et al., 2021; Lanzini & Khan, 2017; ŞImşekoğlu et al., 2015; Zhang et al., 2021). Donald et al. (2014) used the TPB to understand travel mode choice by identifying factors for commute to work with respect to using a car or using the public transport. The study revealed that the use of car is not governed by PBC but is determined by attitude and subjective norms, while the use of public transport was governed by all three factors. With respect to public transport, the TPB has been used to understand travel intentions. ŞImşekoğlu et al. (2015) find the more a positive attitude towards its use, the more favourable it is for the traveller to use it. Ingvardson and Nielsen (2019) add to this stating subjective norms in terms of perceived societal and environmental importance act as enablers to people choosing public transport.

2.6.2 Limitations of theory:

The TPB makes distinction between attitude, subjective norm and PBC and while this segregation has been used extensively for evaluation of both intentions and behaviour, these distinctions have been questioned (Ajzen,1991). It is critical to consider that these distinctions are related, however the exact form of their relations is unknown. Additionally, the theory lacks the use of moral obligation of an individual that may influence the intentions and behavior of an individual. Since this research focuses primarily on identifying the attributes that govern consumers' travel intentions towards reverse logistics, the above-mentioned distinctions add to the identification. Considering moral obligation is a limitation that is carried from the TPB into the research. However, the TPB has been extended

successfully to accommodate the moral obligation (see: Donald et al., 2014). Due to the constraint of time this research uses the theory in its original form.

Additionally, When using the TPB, it is crucial that the referent behavior is clearly stated and thus is very focused. This particular detail was called to attention by Donald et al. (2014) wherein they mentioned that most research merely mention whether a person uses a particular mode of transport but fail to mention what they use it for. Hence, To overcome this limitation, in this research the use of the mode of transport is clearly stated and it is to carry EOL and EOU products from consumer homes to second-hand/retailer stores only.

Thus, the application of TPB in this research will provide an empirically grounded model to help understand why consumers currently use their travel choice to bring back EOL and EOU products to stores.

2.7 Linking Theory with Research:

The TPB states that the behavioral intention is directly linked to the behavioral action (Ajzen, 1991). In turn, this behavioral intention is governed by intervening motivational factors that are indicators of how much effort or how hard people are willing to execute the behavior (Donald et al., 2014). In conclusion if the intention is anticipated, the behavior can be anticipated.

It is crucial to note that in this research the behavior of taking EOL/EOU products back to the second-hand/retailer stores has already been performed. In line with the TPB, this behavior is preceded by the intention and this intention is governed by the constructs of attitude towards that behaviour, subjective norm, and PBC (Donald et al., 2014). Which as described by the theory refer as an individuals' assessment of executing the behavior, their judgement of other people's normativity, and lastly their assessment of command about performing the behavior (Ajzen, 1991). Thus, for example when commuting to work, an individual will use a travel mode if they assess it positively, regard positive social pressure to use it, and consider that they have the necessary skill set to use it.

The travel mode choice studied with TPB include attributes such as time, convenience, savings, flexibility in the construct of attitude. In line with this, earlier research by Donald et al. (2014) identified four factors based on what is the expense of the trip? how convenient was it? comfortable and reliable is the mode of transport, the time duration of the journey in terms of both travel and waiting time, and the availability of the vehicle. Within the

subjective norm construct approval or disapproval from family and friends has been able determinant. While with respect to PBC, how easy or difficult it is to perform the said travel behaviour is examined (Jain et al., 2021). In conclusion, the TPB establishes a series of hypothesis by linking attitudes, subjective norms and PBC to intention and consequently to behaviour which will be used to identify attributes with respect to returning EOL/EOU products to stores.

2.8 Summary:

The above chapter has proceeded with a detailed literature review in the fields of urban setup, reverse logistics, consumer intention and travel mode choice. By highlighting the research gaps, it has established that the research lies at the intersection of the above fields. Next, the TPB was explained in detail with its construct's attitudes, social norms and PBC. The applications of this theory with respect to travel mode choice and its limitations were also considered. Lastly, the TPB was linked with research allowing it to be used both when designing the interviews and analysing the empirical data collected. The subsequent sections, explain these aspects in further detail.

Chapter 3: Methodolody

3.1 Chapter Overview:

The chapter outlines the methodological considerations of this research and connects the research aim, theory, methods of collecting and analysing the empirical data into a cohesive whole. It presents the research strategy, the data collection procedures, sampling techniques and interview procedures in detail along with ethical and quality considerations and a reflection on the limitations of the methodological choices.

3.2 Research Strategy:

Is defined as the general orientation of conducting social research (Bryman, 2016).

"Knowledge is constructed in processes of social interchange" (Flick, 2018, p.88). Thereby making science a social construct (Okasha, 2016). According to the ontology of social constructionism, social constructs are phenomena whose meanings are continuously fulfilled by social actors (Bryman, 2016; Okasha, 2016). It is important to note that these social constructs though produced by social interactions are in a state of constant change (Andrews, 2012). As in the case of travel mode choice several mobility options are available, however, the choices made are continuously renewed, revised and reviewed in relationship to the social world. Thus, to represent a social phenomena constructionism is fundamental. Additionally, in constructionism concepts are created by the social actors to better understand their experiences and this research aims to identify, formalize the everyday experience into knowledge (Andrews, 2012; Flick, 2018).

Moving on to the epistemology, interpretivism. To identify and understand the attributes that govern consumer intention towards using a particular mode of transport for EOL/EOU products, it is important to accept that it is the distinctiveness of humans which is being studied by understanding their behavior drawn from their social life (Fay, 1996). This belief is the foundation of the epistemology of interpretivism. According to Bryman (2016), individuals create meanings of their social reality and try to understand the world around them. It is on these meanings that individuals act and these meanings are termed as constructs that motivate behavior. It is characteristic to interpretivism that these constructs used to describe human behavior are from the social life being studied (Fay, 1996). Both travel decisions and mobility are impacted by constructs that motivate their use of a particular travel mode based on what they prioritize to choose (Jain et al., 2021). And the research question is precisely aligned with identifying attributes from the social life of travel mode choice. The

basis of interpretivism is “attempting to see things from the person’s point of view” (Bryman, 2016, p.30). With the aim of the research aligned to understanding the consumers subjective norm, the analysis and interpretation of the empirical data is based on seeing their preference of travel mode choice from their perspective.

A combination of constructionist ontology coupled with interpretivist epistemology calls for a qualitative methodology (Bryman, 2016) with the method for collecting data narrowed down to semi-structured interviews. The existing research on travel mode choice is characterised by both qualitative and quantitative methods. From focus groups, semi-structured interviews, questionaries; surveys being one of the preferred choices (see: Clauss & Döppe, 2016; Jain et al., 2021; ŞImşekoğlu et al., 2015; Tueanrat et al., 2021; Zhang et al., 2021). While the aim of this research is to identify the attributes that govern consumer intention, it is instinctive to know their point of view when making the choice which can be accomplished with the method of interview. Because it is in interviews that participants speak about their experiences, their views and practices that they like (Flick, 2018). Since, the TPB is used as a theoretical reference and with the aspect of finding attributes from the research question, the interview method was narrowed down to semi-structured interviews. As Flick (2018), states that the method of study is determined by the object of study. With mostly open-ended questions, this method of qualitative research allowed for flexibility and left room for the interviewees’ perspectives about his travel mode choice (Flick, 2018).

The qualitative approach in this research is motivated by two choices. Clearly this research advocates qualitative research strategy which is motivated ontologically by constructionism, epistemologically by interpretivism and the research method of semi-structured interviews. Additionally, it is motivated by two choices. Firstly, qualitative approach is fundamental to understanding the words with an emphasis given to how individuals interpret their world (Bryman, 2016) and to identify which mode of transport individuals use to transport EOL/EOU to stores and why? Understanding their interpretation of the journey in their own words is important. Thus, understanding the individual’s perspective, their knowledge and practices motivates for qualitative approach (Flick, 2018). Secondly, the empirical data collected is being studied through the TPB and thus is being grounded in a theoretical context. This procedure of deriving hypothesis from theory and evaluating the empirical calls for deductive reasoning (Bryman, 2016; Flick, 2018) which starts with the theory, making predictions with respect to the empirical data which are then verified based on collected facts (Björklund & Paulsson, 2014).

3.3 Data Collection:

Drawing on the aim and the research questions of exploring reverse logistics from a consumer perspective in an urban setup, the empirical data has been collected in urban areas/cities. This follows the process as described by Bryman (2016) as the "sampling of areas" (p.417). As described in the theoretical framework, the urban density and clustering profile within the urban setup force interactions and interdependency between various stakeholders and make moving products (logistics) challenging (Rose et al., 2017). For example: the traffic, office rush-hours, daily commuters all using one or the other mode of transportation flexibly. Moreover, an urban setup is characterised by multi-modal profile. It is rarely dominated by a single structure of network such as road and includes trams, metros, railways etc. (see: Cleophas et al., 2019; Dampier and Marinov, 2015; Rose et al., 2017). Moreover, these networks provide urban travellers with multiple ways to travel be it private cars, car-sharing, bikes, walking, taking buses or other modes of public transport. It is the above-mentioned complexity and the myriad of possibilities with the travel mode choice that empirical data was collected from the cities of Copenhagen, Helsingborg, London, Lund, and Stockholm which have at least two modes of travel within city premises.

3.3.1 Sampling techniques:

Bryman (2016) clearly indicate that sampling should be a direct reference to the questions being researched. In simple words, the research question can indicate the right sample. Thus, in line with the above thoughts, this research required people who have returned EOL/EOU products to a second-hand/retailer store within an urban setup. It is evident, that these respondents have already demonstrated a willingness to personally deliver the products back to the retailers. Their modal choice and attributes governing their intention in doing so have been explored in this research. This type of sampling is known as "purposive sampling" and is extensively employed in qualitative research (Bryman, 2016; Flick, 2018). It is a non-probability sampling and only those relevant to the research are selected. However, to maintain variety in the sample, individuals were interviewed from different cities which is one of the key characteristics relevant to the research question (Bryman, 2016).

A pilot was conducted with a person living in Helsingborg city who had carried EOU products to a second-hand/retailer store within city premises. The process included asking the individual to go through the interview guide in addition to being informed about the purpose of the study verbally through zoom meeting. An important aspect highlighted was the email

address to get in touch with the individuals who are willing to get interviewed was missing in the interview guide. After the same, the preliminary interview questions were pitched and insights from these will be elaborated in the next section. The individual's personal engagement towards the process of returning the EOU products made him the apt sample.

After this, to reach as many people as possible Facebook and Instagram as a platform were used to circulate the interview invitation. Facebook groups such as second-hand/retailer marketplaces within cities mentioned earlier were posted to ask people to interview. In spite of trying to reach the maximum population, a mere 5 individuals responded to the google form that was being circulated (see: Appendix 3). Thus, with a need to increase the sample size, snowball sampling technique was employed and individuals who had participated in the research were asked to recommend others. Snowballing allowed to broaden the environment by not limiting the research to the researchers' acquaintances (Flick, 2018).

A total of 8 interviews were conducted, excluding the pilot interview after which saturation was reached. It is difficult to specify the apt sample size, nonetheless, the same can be best understood when saturation is reached (Bryman, 2016; Flick, 2018). Saturation is when no new data or relevant data seem to be emerging from the interviews and is a judgement that further collection of data is not needed (Fick, 2018).

3.3.2 Designing Semi-structured Interviews:

Semi-structured interviews deemed to be a reliable method towards answering the research question since the research is following a qualitative methodology and aiming to understand the consumers' perspective. Bryman (2016) state that while semi-structured interviews allow a researcher to follow an interview guide with these interviews are referred to as being in-depth. This research is fairly focussed on understanding the modal choice for reverse logistics of EOL/EOU furniture in an urban setup and thus, semi-structured interviews allow these specific topics to be addressed. Additionally, the interview guide is designed in a structured manner divided into constructs so that all three aspects of the TPB namely: attitudes, social norms and PBC are covered (Jain et al., 2021). This made sure that all questions were asked with leaving scope for the interviewees to manoeuvre. Additionally, the interview guide worked as a reference allowing both the interviewer and interviewee flexibility with respect to probing into topics of particular interest.

The interview questions started with opening questions, making the interviewee feel comfortable and then followed with "grand tour questions" which were more specific towards

the actual use of the transport mode. “Example question” (such as “could you give me an example….?”) were included to aid interviewees explain their thoughts better (Leech, 2002). Moreover, “probes” (such as: “you mentioned …., could you tell me more about the same?”) were introduced so that interviewees could dive deeper into the topics (Flick, 2018). Thus, a reasonable flow was maintained as questions moved from one topic to another (Bryman, 2016). All questions were kept open-ended to enhance the in-depth element of the interviews. Demographic questions such as Name, age, sex and occupation were not part of the interview but were included in the interview invitation form circulated across social media (see Appendix 3). The language of the questions was kept as simple as possible so that words used in everyday life are incorporated in the interview (Bryman, 2016). For example: after the pilot interview words such as “advantages” and “disadvantages” were replaced by “like” and “not like”; making it easy for the interviewee to relate.

Designing the semi-structured interviews was a cyclic process with narrowing specific research questions to interview topics as suggested by. All questions included in the interview guide have a theoretical reference (Flick, 2018). For example: Masson et al., (2017) state it is important to understand how products are being carried. This aspect was examined by asking “What is the mode of transportation that you used to transport the furniture from your home to the second-hand/retail store??” A total of 15 interview questions were formulated that were organised across the three constructs of the TPB (Flick, 2018). Reviewing, revising and identifying issues with the questions as stated above helped finalize the interview guide (see Appendix 4 for interview guide).

3.3.3 Conducting Semi-structured Interviews:

Interviews mostly took place on Zoom or Microsoft teams. One advantage of using zoom to undertake interviews is that it allowed conducting interviews over a large geographical area (Archibald et al., 2019). Interviewees were given the option to choose between the two platforms through the interview invitation. This made it easy for people to make themselves available as per their convenience. Moreover, they could give the interviews in a familiar setting such as their home, helping them use their own terms when answering questions (Bryman, 2016). The use of zoom for qualitative interviews allowed building rapport with the interviewees. Most interviewees had kept their camera on and hence, their facial expressions were clearly visible. Additionally, zoom is considered as a user-friendly and cost-effective technology to conduct qualitative interviews.

All interviews began with building a rapport with the interviewee by asking them about themselves, where they live and why is it that they find participating in this research interesting (Bryman, 2016). Once, the ground-breaking was done, the interviewees were reiterated the purpose of the interview and asked to reflect on the time when they had transported the furniture from their home to a second-hand/retailer store in the city and try to connect with that experience. Then, questions as described in the earlier section were asked while maintaining a reasonable flow that was understood with the help of the pilot conducted (Bryman, 2016). Most interviews last approximately 30mins. At the end of the interview, a brief account of their answers was provided from the interview notes so as to affirm everything they said was reiterated and a confirmation of their answers received, known as respondent validation (Bryman, 2016).

3.4 Data Analysis:

Name	City	Gender	Occupation	Age	Mode of transport	Item carried	interview Date	Duration	Mode
Interviewee 0	Helsingborg	Male	Working	40	Car	Table	29-04-2022	36 min	Zoom
Interviewee 1	Lund/ Malmo, Sweden	Male	Working	32	Car+trailer	Sofa	12-04-2022	41min	Zoom
Interviewee 2	Exeter, UK	Female	Student	25	small Car	Table + chairs	06-04-2022	26 min	Teams
Interviewee 3	Gothenburg, Sweden	Female	Student	31	Car	Furniture	11-04-2022	39 min	Zoom
Interviewee 4	Helsingborg, Sweden	Female	Student	26	Hand	cabinet	13-04-2022	24 min	Zoom
Interviewee 5	Copenhagen, Denmark	Female	Student	25	Bike	Table	15-04-2022	31 min	Zoom
Interviewee 6	Malmo, Sweden	Male	Working	29	Hand	Drawer	20-04-2022	44 min	Zoom
Interviewee 7	Helsingborg, Sweden	Male	Student	27	Car	Table + chairs	20-04-2022	21 min	Zoom
Interviewee 8	Stockholm, Sweden	Male	Working	30	Car+trailer	Cabinets	23-04-2022	28min	Teams

Table 2: Socio-demographic data of Interviewees

The socio-demographic data along with interview details is presented in the table below. The qualitative data analysis was an iterative process (Flick, 2018). The empirical data collected was recorded using “zoom” and transcribed using “grain”, a transcription software so that a solid database for analysis was available (Flick, 2018). This was followed by data categorization around a specific question followed by making interpretations of what was being said. This categorization was followed by formulating headings and trying to understand the underlying theme (Flick, 2018). 28 determinants from research by Clauss and Döppe (2016) were used as a basis to categorise the empirical data collected (Appendix:1). This research allowed a simplified yet focused analysis of the empirical data. Additionally, aligning the interview questions with the TPB allowed for a structured analysis of the data with 7 determinants: cost, convenience, door-to-door ability, easy, autonomy, availability and

distance identified in the attitude construct; 2 determinants: social responsibility and sustainability identified in social norms; And 4 determinants: planning effort, transportability, odd shape & Manoeuvring, and lack of information identified in the PBC.

3.5 Ethical Considerations:

Codes of ethics are devised to maintain the relationships between the researchers, interviewees, and the field of study (Flick, 2018; May, 2011). Thus, from an ethical perspective it is important that individuals participate voluntarily (Flick, 2018); and this was achieved by sharing the interview invitation on Facebook groups. With the fullest possible information available on the google sheet, an additional briefing with respect to the research, methods employed, and the final application of the research was given before every interview. During conclusion the interviewees were asked if they had any doubts and/or needed clarifications about the process and that they are free to contact the researcher if the need arises. Confidentiality in terms of the interviewees identity and information provided was assured to all interviewees and their anonymity is taken care of by using pseudonyms such as interviewee 1, 2, 3 (ASA, 2022; Bryman, 2016, Flick, 2018). Informed consent is another basic ethical tenet. Apart from the voluntary participation mentioned above, consent with respect to recording the interviews and transcribing the same for research purpose only was clearly obtained (ASA, 2020; Bryman, 2016, Flick, 2018). Finally, to promote the integrity of the research this research was conducted under the supervision of a professor from Lund University, Sweden (ASA, 2022).

3.6 Quality Considerations:

This research considers interviewees from multiple cities, thereby considering multiple accounts of social reality (Bryman, 2016). Moreover, the choice of sampling techniques ensured that individuals who have transported EOL/EOU products were selected for empirical data. Additionally, respondent validation as explained in section (conducting) is an important criterion of credibility (Bryman, 2016). As mentioned in section (designing) reliability within this research was attained by designing the interview guide based on the theoretical framework, making sure the relationship between theory and empirical data can be established (Flick,2018). Also, from the inception of this research a diary has been maintained documenting all phases of the research process, from problematization to analysis, thereby increasing the dependability and allowing for replication of the research process (Bryman, 2016; May, 2011). Lastly, from the aspect of generalisation, while the

findings of this research are specific to sample selected and maybe coherent with other samples, they should not be generalised. On the contrary, external validity is secured by generalising the findings with respect to the TPB (Bryman, 2016). Thus, the findings of this research may be consistent with researches that apply the TPB to travel mode choice. Finally, apart from the quality and trustworthiness ensured in this research, the ability to use the research output towards society makes this research credible.

3.7 Reflecting on the Limitations of the methodological Choices:

Qualitative research is not based on a single method or theoretical concept (Flick,2018). While the rationale of the choice of research strategy and method have been presented above, one cannot deny that the same research could be approached through multiple dimensions (Bryman, 2016). Firstly, since this research uses semi-structured interviewing, it is observed that with the sample size of 8, though the research has reached saturation, it is difficult to generalize the research output, a bigger representation of population may be necessary. While social media platforms were used to increase the number of respondents, the response rate was very low (Bryman,2016). Calling for the use of multiple sampling techniques. However, the research output may be used to generalise the findings of the TPB and travel mode choice.

One limitation evident due to sampling is that of the age of the interviewees. Since, to reach a greater audience, people were reached via social media namely Facebook and Instagram, the interviewees have been collected in a narrow age group of 25-32 years (excluding interviewee 0 since he was contacted personally). One probable reason for this being that it these young adults that use social network platforms extensively.

Also, the use of zoom for conducting interviews experienced some technical issues such as low bandwidth (Archibald et al., 2019). With one interview, the connectivity was so low that constant interruptions with the interview required disconnecting and connecting the zoom meeting. Nonetheless, these technical issues did not have lasting effects on both the researcher and the interviewee but helped establish rapport through the joint problem-solving initiated.

Chapter 4: Analysis of Findings:

4.1 Chapter Overview:

This chapter presents the thematic analysis from the empirical data hereby called as determinants of travel mode choice. The analysis is structured using the three variables of the TPB: attitudes, social norms and PBC. An important finding from the empirical data is that there is no one specific or major mode of transport that the interviewees have used for reverse logistics of EOL/EOU furniture to second-hand/retailer stores in an urban setup. The modes include walking, cycling, car with or without a trailer. However, none of the interviewees used public transport for this activity. The determinants identified on why interviewees chose a particular mode of transport are based to a certain degree on the 28 determinants by Clauss and Döppe (2016) (Refer: Appendix:1). These determinants are discussed below:

4.2 Attitudes:

The attitudes were explored by asking questions such as what is it that the interviewees liked or did not like about using a particular mode of transport to return EOL/EOU furniture to second-hand/retailer stores. Some of the key determinants identified were convenience and cost. However, a more detailed understanding of these determinants revealed that convenience and cost accounted for varied perceptions among the interviewees.

One Individual who used a car to transport a table and couple of chairs from Helsingborg to Malmo, when asked what he liked about using this mode of transport for this activity immediately said:

> It's convenient. It's easy. It's, cheap. (Interviewee 7, car)

4.2.1 Convenience: as a determinant surfaced frequently among all respondents. However, as mentioned earlier the interpretation of "convenience" varied for each of the interviewees. In research from Jain et al. (2021) a similar observation with respect to convenience was made. For some interviewees the ability of the mode of transport to carry the furniture also known as the transportability was a key feature towards convenience (Clauss & Döppe, 2016). Such as being able to load the car as opposed to loading the same on a public transport such as bus.

> Two major things? Actually, one is a how convenient it is, if it is basically something which can come in a car or a trailer attached to the car, I will do that because that's my flexibility And the second one is which one is cheaper. So basically convenience and cost. // So if they have a car, Someone has to have driver's license, so that's convenient. Otherwise, if they are going by public transportation, probably I would not // where it's very inconvenient to carry// Maybe I can use bus,

> but, it also depends if I have to change to more transport just to deliver the product, there is quite inconvenient. (Interviewee 1, car+trailer)

> Yeah, it was definitely convenient. It was and rather than also renting, you know, another vehicle or renting another add on to this vehicle, We managed to, to plan and, you know bring everything inside. So yeah, it was convenience and easiness of it.// well, convenience. Closeness of the Car to the facility and the space. (Interviewee 3, car)

While for other interviewees who used a car to transport the EOU furniture, convenience was identified as the door-to-door availability (Clauss & Döppe, 2016). Which is referred to as the degree of route coverage in terms of directly reaching the destination vs the need to walk additionally. Additionally, it involved temporal flexibility which is having access to the mode of transport independent of time (Beirão & Sarsfield Cabral, 2007, Clauss & Döppe, 2016). This includes the independence from time-related public transportation means (Guiver, 2007).

> I think it was the fact that I could load the things from the house, into the car, at the house and then just unload them directly at Ikea. Like there was no, even for something light like a chair, you know, I didn't have to walk from the bus stop to Ikea with it and all that kind of thing. Cause when you get there, there's a trolley that you've been put stuck on. And also that you can choose the timing of leaving, but you're not controlled by the timetables of public transport. (Interviewee 2, car)

In contrast, one of the interviewees associated with both convenience and inconvenience of the physical challenge to carry the furniture by hand versus having to rent a car or carry the furniture on the bus. While for another convenience was the fastest way of getting the task done.

> Convenience to me would be not having to be physically, maybe exhausted is the wrong word, but you know, it shouldn't be a physical challenge to bring back furniture.// Well, I don't think it's black and white, for my situation, it is physically challenging from time to time, depending on the furniture to walk there with the furnitures. but still, you know, it's way it's more, it's less convenient to rent a car or go there by bus.// And so it is both inconvenient and convenient, but for me, it is the most convenient way, even though it is physical challenge. (Interviewee 6, Hand carried)

> Convenience is the fastest way of doing something. And a way of doing something where we'd as few moving parts as possible. So, if I'm going to take a train that I first have to walk to the train station with the furniture, get to the stuff on the train, get the stuff off the train. And in this case I would have taken, had to take a bus from the train station to the store. That's too much nonsense. That's basically like three journeys. (Interviewee 8, car)

Thus, the factors that people have associated with the notion of convenience has varied across the interviewees. Nonetheless, convenience was an emergent theme among all the respondents.

4.2.2 Cost: Like convenience, cost as a determinant was emphasized by many interviewees. Some respondents attributed cost directly to the financial aspect such as hiring a car/trailer or the logistics cost. Additionally, an interviewee who used his car to transport the furniture acknowledged the fuel cost "paying for gas, I guess that always sucks" (Interviewee 7, car). As stated by Clauss & Döppe (2016), monetary cost is something that every individual considers towards reducing travel costs.

> Well, first of all, I mean, my first concern is always money. (Interviewee 4, hand-carried)

> The tangible financial cost matters.// I have to hire a trailer?//and then I have to go back and deliver the product. So I already, if someone doesn't have a car, they will hire the car. So those are the logistics cost. (Interviewee 1, car+trailer)

> I mean, I've thought about car, but I think it's too expensive to rent. (Interviewee 5, used Bike)

> I think, you know, reason number one, would be you know, I think honestly like financial stuff, like if, if I had infinite amount of money, I suppose I would have taken a cab.// I would say that it is free and that is environmental sustainable. (Interviewee 6, Hand carried)

> And the second part is efficiency, which can be done at their cheapest uses of resources (Interviewee 1, car+trailer)

For one interviewee who used a car to transport the furniture and had to do it alone and needed to dismantle and re-build the furniture outside the second-hand/retailer store, linked cost to the aspect of time.

> cost of time, I suppose, just to time the whole like loading up from your house and driving it there and waiting // If I had more money and thought about it more, I probably would have like hired a van, put stuff in a van and go there in a van. (Interviewee 2, car)

4.2.3. Door-to-door ability: For most interviewees the ability of their mode of transport to directly reach the second-hand/retailer store (destination) which is directly related to the high route coverage of the travel mode was an important determinant when choosing the said mode of travel. In line with research from Clauss and Döppe (2016), it is evident that all respondents chose a single mode of transport over multi-modal because of the complexities involved with interfaces of multi-modal travel.

> And also because if you go by bus, then I have to take the furniture to the bus and then ask the bus, maybe change bus to another one and so on. So we still need to carry it quite as much, but I know if I didn't have any other option. (Interviewee 6, Hand carried)

> It takes a much shorter amount of time for me to just, you know, walk over there with it, rather than pick up the car, come back to the apartment, pick up the wardrobe, bring the car over there and then bring the car all the way back to where I originally picked it up. (Interviewee 4, hand-carried)

> I can get point A to point B without any hassle. The only real trouble is taking it in the car and getting it out to the car, but that's easy.// So you were going directly from your home to the store. There's no steps in between. That's one point. (Interviewee 7, car)

4.2.4. Easy: Another key determinant that most interviewees mentioned was the ease of using the mode of transportation (Clauss & Döppe, 2016). The actual mode of transportation was deemed easy by most car users, with the only difficult aspect of the journey being loading and unloading the car. Nonetheless, this difficulty was not perceived of much consequence.

> private transportation is easier.// the car and just drive it?// So it's easier that you just hire a trailer and do it yourself.//Anyone with a large furniture and they use cars, they can not use a public transportation. // and on a scale of one to 10, 10 being the easiest and one being the most difficult, I will say this around seven. (Interviewee 1, car+trailer)

> the actual use of the mode of transport was fine. It was just like either end getting everything in the car and then getting it all out of the car. But the actual transport part was fine. // It's not really that difficult. The actual use, the actual use of the car. again, it's like fitting everything in, but that was my, I had a lot of stuff and I had a small car. (Interviewee 2, car)

> Yes, it's when something is made easier when something is comfortable. When you don't have to think too much. (Interviewee 3, car)

> So yeah, ease like conceptual ease, and speed is convenient. Well, when you just, you don't have to think about anything essentially where it's just like, put the stuff in the car, drive to the place. That's very easy to, you know, how that works.// It wasn't worse than I expected it to be, and it wasn't better than I expected it to be. It was just, you know, easy was okay. (Interviewee 7, car)

In case of one interviewee who hand-carried the furniture to the second-hand/retailer store, difficulty in terms of not having a license or knowing how to drive a car was compensated by the ease of walking.

> And second of all, cause I don't have anything that can really carry those things. I would have to, I would have to, like, I don't have a license either. So I'd have to ask a friend to drive or I would have to rent a whole van with a driver as well. This is too much of a hassle. So the easiest thing for me to do is always just to ask a couple of people for help. And then I know we carry it together.// It was quite easy to mobilize people and I mean, it feels several people to, to carry it. I mean, even if it is heavy, like you take turns, you know, so I guess most difficult thing about it would be to actually carry it as far as possible In one go. (Interviewee 4, hand-carried)

4.2.5. Autonomy: The ability of the person to have control with oneself over it being determined by others is termed as autonomy (Clauss & Döppe, 2016; Rojas López & Wong, 2017). In simple terms its about being independent from the decisions of others. This determinant is prominent among all car users be it with or without the trailer. Guiver (2007), describes this preference that car users have the control of their time and free from the hassels of using other modes. The autonomy is expressed

by the interviewees in terms of being able to carry the furniture at their own accord and at a time of their preference and not having to depend on anyone.

> You've got more freedom. If you drive a car, you can also kind of, if you have a lots of virtues, just, Hey, you can just fill the car and just drive. You just put it in the car and you take it. and yeah, let the freedom you can, you know, go there whenever you want and leave whenever you want.// And also, cause like I went very early in the morning, like before the store opened and was there like assembling these in the car park before the store// it was just the fact that I own the car. Maybe I'm supposed to be like, I didn't have to ask anyone to borrow a car and ask anyone if I could use that car and things like that. so that made it a lot easier. I probably could have borrowed a car, but I don't think I'd have bothered. (Interviewee 2, car)

> You can do it whenever you want. That's tracking the times. (Interviewee 7, car)

> Flexibility, I guess it's a good word, I mean, in terms of I can choose myself when to pick it up or when to do the actual transport. I mean, I start to process myself and I could do it in my own time. Yeah. I mean, if I want to do it in the morning, or the afternoon, it doesn't matter. Like I see, I can see when I wake up, I can decide. (Interviewee 8, car+trailer)

One interviewee expressed the lack of autonomy involved when using another mode of transport as opposed to car as being made to depend on his friends to enable the transport of the furniture.

> And then you know, I would ask some of my friends, can you help me up to pick it up?// So that's something we can be and you need someone you know, to, to, to help you out to pick it up, to drop it off. So that is something you know, is especially in Sweden is quite challenging.
>
> (Interviewee 1, car+trailer)

It is thus revealed that autonomy is an important determinant that most interviewees considered when choosing the mode of transport.

4.2.6. Availability: The accessibility of the travel mode choice within proximity is referred to as availability (Clauss & Döppe, 2016). This is one of the prominent determinants within the attitude section and suggests that interviewees chose to use the mode of transportation that was readily available to them near their homes and/or could be used to get as close as possible to the second-hand/retailer store. For example: the bus being far, trains not running in the routes have been mentioned to narrow down their choice of travel. Which in consequence, suggests that the lack of immediate accessibility to public transport has been detrimental to its use. Donald et al. (2014) indicate that vehicle availability is one of the key factors associated with travel mode choice and the findings of the empirical data align with the same.

> but I used the car, but in the city itself, it's, there's no trains really to get places, its more buses,// so I had a car. I lived where there were no bus connections. So I used a car// So like no public transport

> went then and stuff like that basically.// obviously I went to the car that had a driving license so I could drive a car. // I, if I lived on a bus route, then maybe I'd consider a bus, but it depends a little bit on what product I was taking back. (Interviewee 2, car)

> Eh, so basically from there it would have been the bus, but actually the bus stop is very far away from the house. So even there, like having to transport, maybe it's like a five minutes drive or something Walking would not have worked. // Yes, it's actually both facility. I mean, it's both actually, because it's two aspects of it. It's the closeness from when you leave the door and you want to Transport. and then also obviously then to bring the car in front of the place where you're leaving (Interviewee 3, car)

> I guess this was the availability of having a car because my girlfriend's parents live nearby, so we can just go there and borrow the car for free. // A combination, I guess, the accessibility to having a car, but then also since it's so cheap to rent a trailer. (Interviewee 8, car+trailer)

With respect to those who used cars, their choice seemed a natural choice with one interviewee noting "Why would I choose something else if I have this available?" (Interviewee 8, car+trailer). Additionally, basic factors such as having a driver's license and being able to drive were also mentioned by a few. In contrast to the above who used cars to transport the furniture, it was the unavailability of the car or suitable mode of public transport that motivated people to carry the furniture by hand or bicycle.

> it would be more, much more likely for me to take a bus.I mean, like, you know, you can usually find depending on where are, I guess you can usually find a bus that's going to go from A to B pretty close to where pretty close to A to B anywhere. And it's very cheap and there's enough space (Alternative mode) (Interviewee 4, hand-carried)

> Since, you know, there was no, no buses that went in that direction. Exactly. And, you know, neither of us owns a car and renting a car for that purpose. Seems like an exaggeration to take it by bike.// if I had a car, I would use that one because that's way more convenient, but since I do not, and my friends tend to not own a car either. we choose. (Interviewee 6, Hand carried)

> To be honest, the, the, some like three of the secondhand stores are on a small, but a busy street so parking. There is a mess, I suppose. I mean, you could park closely with a car. Sorry. The bus is no, I will not take the bus there in a million years because it's, I would have to walk further to travel there by bus, I think, to go to the bus stop. And then I think I have to change the bus at least once or maybe twice (Interviewee 6, Hand carried)

4.2.7. Distance: In consequence to the availability of the mode of transportation, distance to the second-hand/retailer store was also a crucial determinent. Especially for people who hand carried the furniture, the close proximity of the store from their home was instrumental. Many interviewees emphasized that if the second-hand/retailer store located further away, they would have perhaps not taken up the journey. Nonetheless, for some interviewees clubbing the activity of returning furniture with other chores coped for the distance.

which was like half an hour drive away.// , I lived close to an Ikea store. If I lived further away, I absolutely wouldn't bother. Yeah. Like if I, if I was, I wouldn't go exclusively to do that, if I was going into the city, for example, like, cause I, I lived a bit outside, so I wouldn't do, I would go and then I might go do my shopping or like, you know, go and do something in a city or something. I would never just go and do that. (Interviewee 2, car)

well, I was looking at enough because the second hand store is right next to my place. So I carried it With some friends// But I mean, if the, if the, if the distance between where I lived and the second hand shop where we're further, then, then I wouldn't consider walking in there for a second. (Interviewee 4, hand-carried)

I mean, it wasn't too far, but when you're carrying something heavy, you know, even a 500 meters could seem quite a long and this, in this case it was even longer.// but I live in an area which is quite close to a lot of secondhand shops. (Interviewee 6, Hand carried)

And then it's also, the train station is far away from the secondhand store, so it's not right. It's carrying it to the train and then perhaps a bus ride. And, you know, (Interviewee 7, car)

4.3 Social Norms:

The interviewees were first asked how their inner circle of family and friends felt about them using their particular mode of transport to return furniture to the second-hand/retailer store. Later, they were asked to expand this circle to how stakeholders such as the municipality, the government and even the second-hand/retailer stores felt about their choice of transport. This is an attribute of the TPB which includes expectations from the above-mentioned members (Jain et al., 2021). Two discrete determinants namely social responsibility and sustainability emerged in this section.

According to the TPB, the stronger the subjective norm that is the expectation of support from family, friends and other societal stakeholders, the stronger is the individual's intention to performing the behaviour (Ajzen, 1991, p.188). In line with the theory, almost all interviewees had a positive association towards what the various stakeholders think about them using their choice of transport. Be it using a car or hand-carrying the furniture, interviewees felt that their friends and family approve of their choice and would do the same in case of returning furniture.

Yeah, no. I think if I told anybody that I moved stuff to a second-hand/retailer store in my car, they would say, yeah, of course that's what you do. I think it's, yeah. I would be very surprised if anybody else used the different method. Unless you live within comfortable walking distance, so you could carry it perhaps with a friend, then I would, I would, I think everybody would say that that's the reasonable way to do it.
(Interviewee 7, car)

> Yes. I think they would have done the same. If they have a car or have the access to a car or borrow a car, they would do the same (Interviewee 3, car)

> I think that they would agree with me. Like, you know, it's not necessarily worth spending a lot of money if you can actually get it over with You know, if it's, if it's doable to carry it, why not? (Interviewee 4, hand-carried)

> I think they don't. Yeah. They wouldn't think it's strange in that sense. I mean, since I grew up on the countryside, but not in a big city, you always have had to have a car anyway. So we always had cars, so we always will not be moving around for different places. We always car+trailer because that's, that's how, how you do it because you have the availability, I guess. , I think they rather see me borrowing a car that's already within the family and make use of That transport mode instead of paying a lot of money to, To do something else. They care about me and my economy, I guess, I don't know (Interviewee 8, car+trailer)

With that said, from the governments, municipalities, and second-hand/retailer stores perspective also interviewees felt that their decision of using the choice of transportation was supported by these stakeholders. With associations such as cheap rent on trailers and available parking spaces interviewees clearly acknowledged positive subjective norms.

> Yes. That's the reason why you have such a cheap (Trailer service). I think it is more subsidized, mode you know, caring, it's readily available. I mean, if you look at around Lund, and malmo, you can find many trailers at any time (Interviewee 1, car+trailer)

> Obviously you have the possibility to go and rent a car and our options of what type of car. like, you have so many parking lots, for example. So there, it's kind of another municipality view on cars, I think rather than, yeah (Interviewee 3, car)

In contrast, Interviewee 4 who hand-carried the furniture to the second-hand/retailer store thought that with governments encouraging recycling, the mode of transportation was not of much consequence.

4.3.1. Social Responsibility: An instrumental determinant attributed to the social norms is that of behaving responsibly towards others (Clauss & Döppe, 2016). All interviewees associated with not using public transport as a mode of reverse logistics for EOL/EOU furniture saw it as their responsibility towards the community. Despite some interviewees acknowledging, that public transport such as buses allowed them the space they needed for the movement of furniture, it was the inconvenience it would have caused to fellow passengers, that refrained them from using the same.

> It would require a lot of seats and also space on the bus. And third of all it's just not really nice either for, for people there (Interviewee 3, car)

> But I really don't see myself taking the bus with furniture.// you know, I would feel maybe not ashamed by have on the bus, but I will feel like I was in the way of a lot of people, you know, furniture usually take up quite as much space carry it in there. Maybe, you know, make you get inconvenient for other people. Maybe not myself, you know? (Interviewee 6, Hand carried)

> I would never take on a train. Well, it's, it's more of a, like, you know, if you take it on the train, you have to like, if the trains full, you're going to bump into people and you can't sit anywhere with like any sort of furniture.//If I said that I used to train, for example, I think people would be like, ah, why, why would you trouble other people? Wouldn't the train. I think Sweden is very, You don't, you don't, you don't want to annoy people by bringing like basically a dining room set on to train that's a bit, you know? (Interviewee 7, car)

4.3.2. Sustainability: is the environmental impact the choice of mode of transport (Clauss & Döppe, 2016). Not many interviewees had a strong moral obligation about the environment to using the car for the purpose of reverse logistics. Focussing purely on the transportation aspect and not considering recycling/returning in this determinant, they regarded car as an effective tool for the said purpose.

> The bad thing would be the, the emissions.// I would say that considering that, especially when considering like a move, when you move from within the same, City, at least where you have this type of occurring transportations, I wouldn't say that it affects the environment, but if you were to, you know, do this quite some times per year, or you were to move furniture within cities, or actually, you know, Quite a distance, you know, that would affect quite a lot, I think. but other than (Interviewee 3, car)

> they recycle it because probably, we care about environment.//or we don't just want to dump things outside, So we Recycle it. But at the same time we cannot you know, we, we cannot force ourselves to use some sustainable mode of transportation. That's something which is very difficult, (Interviewee 1, car+trailer)

However, Interviewee 6 who hand carried the furniture had a distinct perspective. Nonetheless considered the environmental aspect not of consequence in recent times.

> Because having cars, riding all over the city just to bring, you know, maybe a small furniture to a store that seems very non environmental sustainable, I guess that aspect is also in the picture, but not to a large extent for now. (Interviewee 6, Hand carried)

4.4 Perceived Behavioural control:

PBC is referred to individual's perception to execute a given behaviour (Jain et al., 2021). The factors that act as obstacles or impediments are therefore hindering towards their perceived control over the behaviour and thereby guiding the individual's intention (Ajzen, 1991). The determinants that increased the interviewees perceived difficulty of using their chosen mode of transport are discussed below.

4.4.1. Planning effort: is the engagement that an individual has towards either route or travel planning (Clauss & Döppe, 2016). Most interviewees affirmed that high level of planning effort was required for the travel. From co-ordinating with friends, to understanding where the trailers are located, how long they can be rented were certain challenges that interviewees needed to ascertain.

> Yeah. It needs a bit of planning// So it's a lot of admin. You have to coordinate with your friends, you have to find a suitable time. Some amount of work to be done. (Interviewee 1, car+trailer)

> And then start planning for the transportation of the furnitures specifically then.// it was probably too first carrying it, but I guess also the plan for it, you know, having to go through, what do we have here? What do you have to fit in? How we, you know, put everything in? And I think that's probably the, the most challenging part maybe. (Interviewee 3, car)

> Planning it's in that sense, Because it's not only to look up where I used to drop off my, my furniture. It's also about finding the trailer, where is the trailer, how long can I rent it? yeah, when do I need to drop it off? And how big does it have to be all of this? Is it clean enough? Do I need, you know, have some protection to protect the furniture before it gets to the second hand, maybe all this small, things of that adds up to (Interviewee 8, car+trailer)

4.4.2. Transportability: is suitability of the mode of transport to carry big and heavy items (Clauss & Döppe, 2016). Since this research is focussed on consumers choosing a travel mode to transport EOL/EOU furniture to second-hand/retailer stores, transportability as a determinant has been accounted for by every interviewee and is therefore one of the key determinants.

> Like it's not necessarily positive or negative with carrying a bike. It's all about whether this furniture that you want can be carried on a bike. (Interviewee 5, Bike)

> It was quite heavy.// and we carried it by ourselves, as I said, and I remember it's being pay quite painful, you know, because it was, it wasn't too close to the home and it was quite heavy, but the thing is, and it, even though it was heavy, it seemed as the most reasonable way to transport the material. (Interviewee 6, Hand carried)

> You have to use some straps just to make sure that if you, if you emergency brake, then if your emergency brake, you don't want anything flying around. And if you, if you open a door and you close it, you don't want the chair leg going through the window like that. It's, it's a bit of a hassle to fit everything in and make sure it's stable // eah, fitting stuff into car. (Interviewee 7, car)

> I couldn't fit in the car. I couldn't take it to my bike. I couldn't take it on the bus because you know, it weighted like, yeah, at least a hundred kilos. So this is a very big piece. Then I needed, you know, a big trailer.// But yeah, much, very, very limited as I said to the bulkiness of the, of the actual furniture. (Interviewee 8, car+trailer)

Though this big and heavy furniture can be transported through public transport, the need to carry it into the public transport on one's own accord is governing its transportability negatively.

> They were quite big and heavy. and I was on my own, so I had no one to help me. and there was a lot of them, so like taking them on public transport, even if I could have done it would have been very difficult. (Interviewee 2, car)

> So we are facing the challenge of carrying the whole furniture. Large furniture voluminous furniture to the store.// I recently recycled a sofa and it's a huge. I didn't really want to dismantle it and I cannot carry a sofa in a public transportation. (Interviewee 1, car+trailer)

4.4.3. Odd shape & Manoeuvring: "Odd shape" as a theme recurred throughout the empirical data. Most interviewees were concerned that the odd shape of the furniture made it difficult for them to manoeuvre and transport the furniture. This perceived difficulty was a barrier and has been added as a determinant specifically with respect to this research. One interviewee used the Swedish word "Otymplig" which translates to "awkward or ungainly" in english to describe the challenge in carrying assembled furniture (Interviewee 6, Hand carried).

> when you, when you actually get solidly, assembled, it's an odd shape. And then you don't really want to break it. And you are careful about a trailer with all the manoeuvring.
>
> (Interviewee 1, car+trailer)

> It's difficult. It's more difficult if you're, if like the thing that oddly shaped, Like if you've got a table, if you've got a big table or like with the legs sticking out and stuff, that's quite diffi.. If you've got a small car, like that's difficult to manoeuvre in the beginning as if you had a bigger one or a van or something like that. (Interviewee 2, car)

> The moment you have anything that's kind of an odd shape. You immediately know that you can't take it on the bike. (Interviewee 5, Bike)

4.4.4 Lack of Information: According to the TPB, information is one of the factors that governs the PBC (Ajzen, 1991). This theme was most apparent with respect to public transport. There was a strong belief among the interviewees that the public transport was not supportive towards its usage for the purpose of transporting EOL/EOU assembled furniture to second-hand/retailer store. This however can be attributed to them not having the knowledge or information about the same. And hence has been included as a determinant.

> I mean, I have a feeling I would get on the bus in the UK. The driver would be like, why you bring your chair? You can't bring a chair. I mean, not just like returning stuff, but just if I have a chair on the bus you know, and I don't even know if they would let you on with it. (Interviewee 2, car)

(using a bus) first of all to get on board with it, I'm not sure that we would allow.

(Interviewee 3, car)

Themes mentioned only once by varying interviewees such as availability of space, the physical effort of carrying the furniture, effectiveness in terms of ability to do a task, reliability in terms of time, and a method of social exchange in terms of interacting with friends have not been considered for the principle empirical analysis.

Interestingly, Interviewee 5 who used a bike and lives in Copenhagen used three distinct words when describing the mode of transportation for moving the furniture namely: Balance, Eh, creativity and challenge. And in the account of the surroundings stated the challenges that are characteristic to the urban setup.

> So the challenge is of course, like comes from also the, both the two words that I used before, but it's also about the thing I mentioned before with the sidewalks can be quite annoying and there can be bumps in the road. If you have something that's fragile, that's something that's really hard to balance. A lot of the times when you're walking out sidewalks, there's the drainage for the waters that makes your bike go up and down, eh, yeah. Uneven sidewalks, work wages, like constantly have to go like back and forth and kind of figure out how to do it. I mean, and like, I think it's when you move into an urban environment, you expect that there will be a lot of, ***because it is a very tight environment***. So you expecting that car is not an option. //I think the bike comes as an extra kind of, okay, you don't have to carry it all the way. It can be made slightly easier for you, but I don't think I would ever do it if I wasn't in an urban environment. Like It's, it's like it's a slightly, it's making the reality, the shitty reality of having to carry a lot of furniture slightly less shitty, but I would never do it anywhere that isn't essential or like wasn't living in central. (Interviewee 5, Bike)

4.5 Summary of Analysis

	Theory of Planned Behaviour Constructs	Determinants
1	**Attitudes**	**Convenience**
2		**Cost**
3		**Door-to-door ability**
4		**Easy**
5		**Autonomy**
6		**Availability**
7		**Distance**
8	**Social Norms**	**Social Responsibility**
9		**Sustainability**
10	**Perceived Behavioural control**	**Planning effort**
11		**Transportability**
12		**Odd shape & Manoeuvring ***
13		**Lack of Information ***

Table 3: Summary of Analysis (Note * is new determinant towards this research)

A total of 13 determinants were identified through the analysis. The attitude construct identified 7 determinants: cost, convenience, door-to-door ability, easy, autonomy, availability and distance; the social norm construct identified 2 determinants: social responsibility and sustainability; And the PBC construct identified 4 determinants: planning effort, transportability, odd shape & Manoeuvring, and lack of information. 11 of these determinants are consistent with research from Clauss and Döppe (2016) and 2 of which namely: odd shape & Manoeuvring, and lack of information are novel to this research. A detailed discussion of the findings is presented in the next chapter.

Chapter 5: Discussion and Conclusion

5.1 Discussion of findings

This research has been able to demonstrate the predictive power of the TPB with respect to travel mode choice towards reverse logistics for EOL/EOU furniture within an urban set up competently and is consistent with prior research within the research area of travel mode choice (see: Donald et al., 2014; Jain et al., 2021; Lanzini & Khan, 2017; Zhang et al., 2021). Thus, a contribution of the research has been to add to the existing knowledge of using TPB within transport studies to consider the role of attitude, subjective norm and PBC in explaining commuting behaviour. Consumer Intention is the predecessor of Behaviour and is indeed governed by attitudes, social norms and PBC. All three constructs have been able to identify the main determinants of travel mode choice which corroborates with research from Lanzini and Khan (2017). Additionally, the findings seem consistent with research from Donald et al. (2014) who suggest PBC as a strong construct for intentions with regards to public transport. As in this research the barriers identified within the construct of PBC have inhibited the use of public transport towards the above travel mode choice.

With respect to answering the aim of the research of understanding how consumers carry EOL/EOU assembled furniture to second-hand/retailer stores in an urban setup. The aim can be answered with two questions namely: what mode of transport was used? And why they used the said mode of transport? The findings present that hand-carrying, bike, cars and car with an add-on trailer have been used but public transport as a travel mode choice for this purpose has not been selected by any of the interviewees. As explained earlier, why the said mode of transport was used is based on the determinants individuals consider while making a travel mode choice (Clauss & Döppe, 2016) (see: Appendix 1). The selection in this specific research was made based on 13 key determinants: 11 of which are consistent with research from Clauss and Döppe (2016) and 2 of which are novel to this research. The detailed list that interviewees considered while choosing their said mode of transport for the purpose of reverse logistics of EOL/EOU furniture in an urban setup identified by analyzing the empirical data collected is showcased in Table 1, thus answering the research question

The crucial determinants seem to be cost and convenience, consistent with research from Jain et al., (2021), a closer inspection revealed convenience to be a combination of various other determinants and did not emerge as one of the primary reasons. Thus, a significant determinant of the choosing the travel mode was cost. This finding compliments the

association of travel mode choice being governed by cost of the trip in research by Donald et al. (2014). However, cost in this research was associated to both monetary cost and time. These subjective interpretations merely enrich the empirical data collected. Consistent with another finding by Donald et al. (2014) with respect to availability, this research aligns itself with certainty that the availability of travel mode choice was another significant determinant. The possibility of walking, having a driver's license, being able to drive, the ownership of the bike and the unavailability of public transport near their homes, all reason towards availability as key determinant.

Furthermore, sustainability played only a marginal role as regards to this travel mode choice which contrasts with earlier research, wherein environmental responsibility is highly decisive determinant when selecting travel modes in the case of urban travellers (see: Cleophas et al., 2019; Donald et al., 2014; Jain et al., 2021; Lanzini & Khan, 2017). While interviewees agreed that cars are comparatively more associated with emissions as compared to public transport in line with Donald et al. (2014) and Zhang et al. (2021). Using cars is an integral part of most people in urban areas (Batty et al., 2015). And this exact sentiment reflected through the interviewees, with them attributing the use of cars for the sole purpose of reverse logistics of EOL/EOU furniture as being integral to their daily use and not leading to any significant emissions. Reflecting on some of the aspects mentioned in the introduction with respect to pollution and congestion associated with the urban setup with de Carvalho et al. (2019) highlighting how urban freight transport is one of the main contributors of unsustainability in cities and Rose et al. (2017) pointing out that the average speed of vehicles in an urban setup is lower and delivery vehicles tend to lead to congestion. Does it make sense to ask people to bring EOL/EOU furniture to stores using cars for this sole purpose in such congested urban setups? or can alternative solutions be provided is worth considering.

Additionally, "odd shape & manoeuvring" and "lack of information" are two new determinants identified from the analysis. These findings contribute to the existing knowledge of travel mode choice, however, are specific to reverse logistics of EOL/EOU furniture in an urban setup. Almost all interviewees highlighted the difficulty of carrying assembled furniture because of its odd shape. The furniture being assembled made it heavy and added to the difficulty of manoeuvring it into the car or carrying it by hand. The empirical data has thus provided with some practical insights about hassles considering the shape of the furniture. Moreover, taking into consideration the constraints associated with packing and fitting the furniture have also been emphasized which has also been supported by

Masson et al. (2017) when choosing a mode of transport. Another key addition to the literature on travel mode choice is “Lack of information”, which deemed crucial for not choosing public transport as an alternative. As showcased in the analysis, interviewees had no knowledge about if they could use public transport for the purpose of moving EOL/EOU furniture to the second-hand/retailer store within their city. This determinant is most crucial from the governmental perspective. Because, since governments are promoting circularity in combination with asking companies to buy-back old furniture, subsequent information towards enhancing the use of public transport or any alternative choices needs to be taken into consideration

Public transport was not a popular choice for the purpose of this travel, is a major contribution of this study as none of the interviewees used the same. While one may consider based on this research finding, that since cost is a significant determinant and public transport is more cost friendly as compared to transport by car (Guiver, 2007); the social responsibility determinant prevailed over cost. With all interviewees expressing the inconvenience they could cause by carrying assembled furniture in public transport is precisely in line with research from Masson et al. (2017), who revealed in their research on mixed transportation of goods and passengers that thinking about passenger inconvenience is essential. Social norms did play an important role in mobility decisions of not choosing public transport (Belgiawan et al., 2017). Additionally, the lack of door-to-door ability which is represented by the ability of the travel mode to have maximum route coverage coupled with distance are also factors influencing the lack of use of public transport, which align with previous research by Cleophas et al. (2019) and Rose et al. (2017). Accessibility with respect to urban environmental characteristics has been suggested to impact logistics (Rose et al., 2017). And this aspect relates specifically to the use public transport for the purpose of reverse logistics. As mentioned by most interviewees, it would require them to carry the furniture from their home to the nearest public transport junction, if the network of the public transport is not direct, the journey will include stops, transitions making the travel cumbersome. Lack of autonomy with respect to being dependent on the public transport timetables is also a barrier. Cleophas et al. (2019) and ŞImşekoğlu et al. (2015) also emphasize these negative aspects related to transport priorities of public transport, highlighting this aspect of routing and time dependency with respect to public transport in their respective research. Thus, making use of public transport infrastructure for the purpose of reverse logistics of EOL/EOU assembled

furniture in an urban setup will require awareness of the above determinants and coming up with novel solutions.

5.2 Societal implications:

This research provides valuable insights for governments and policymakers. There is sufficient evidence that public transport was not a preferred choice among the interviewees. Therefore, integrating the use of public transport would require overlapping of both expectations and responsibilities of municipal stakeholders and private companies. In simple words, interests of government promoting reverse logistics as a means to circularity must align with the public being able to use the public transport for such purposes. Thus, drawing on research by Cleophas et al. (2019), urban transportation systems are dominant in collaboration and for the above said purpose of transporting EOL/EOU assembled furniture to second-hand/retailer stores located in urban setups implementation of urban collaborative transport systems is crucial. Carrying capacity of public transport is enormous, and while it is essentially indented for passenger transport, free-capacity and/or non-rush hours could be promoted for use of public transport for this cause. Practical barriers such as access distance could be addressed by making transitions at multi-modal stations user-friendly. For example: if an individual is carrying EOL/EOU furniture on a trolley with wheels, the carrying ability increases exponentially and in terms of public transport taking it on or off the bus/train should be equally convenient by perhaps having a boarding device such as a ramp. Rose et al. (2017), discuss the limited understanding and interactions among various stakeholders in an urban setup, this research through the determinant of social responsibility has been successfully able to communicate the understanding among these various stakeholders. The societal barrier in terms of hesitation that people feel towards using public transport has identified a need for municipalities and policy makers to increase awareness and spread information about the ability to use public transportation for the purpose of reverse logistics of EOL/EOU furniture within city premises and the same would be socially responsible and not otherwise. While it is understandable that carrying a bulky and heavy cabinet in a bus could take up a lot of space, small furniture items such as chairs can be easily carried without causing much inconvenience to fellow passengers. Thus, categorizing which furniture can be carried along with municipalities collaborating with second-hand/retailer stores within their administration to strengthen accessibility with route coverage could raise the recovery rate. An interesting example to seek inspiration from is the Alelyckan recycling park developed as a pioneering facility by the city of Gothenburg, Sweden (Alelyckan, 2020; PWC, 2018). Here

residents can bring their unwanted items including furniture and depending on its condition it is taken to various sales outlets within the park. Having public transport infrastructure merging into such parks and with close collaborations with second-hand/retailers, the process of providing easy public transport as an option to carry EOL/EOU furniture is worth exploring. Building on Rose et al. (2017) future research on urban mobility, this paper adds on the need to focus on network optimization and optimal facility allocation for return of products by retailers. This collaborative decision between the public, municipalities and companies will enhance the economic, ecological and socio-cultural value of goods.

5.3 Managerial implications:

From managerial perspective, this research explicitly identifies what determinants people consider when choosing a travel mode for returning assembled furniture to second-hand/retailer stores at its EOL/EOU in an urban setup. This rich qualitative documentation of what factors are important to address for companies when they wish to design business models for enhancing such return initiatives and circularity at large is decisive. Cost is an important determinant from the consumer perspective drawn from this research and this can enable companies to make the consumer journey cost-effective by introspecting their current infrastructure and incorporating optimal system changes. For example: most companies including furniture retailers have partnered with third party logistics providers for delivery options, these same providers can use the free carrying capacity of the vehicles after delivery for collecting EOL/EOU furniture from consumers. Additionally, the lack of packaging involved in transporting these EOL/EOU furniture can increase risk of damage when consumers transport these products using their own means and can lead to reduced compensation from the store and reduced recycle value. By using already existing third-party logistics providers experienced in transporting furniture, this service would require no additional action or infrastructure and will allow for cost-efficient scalable returns through existing logistics. Moreover, it is important for companies to address the bulkiness and odd shape of the assembled furniture with innovative solutions. As one of the biggest furniture retailers, Ikea supplies most of its furniture in flat packaging allowing consumers flexibility in carrying. Practical solutions such as being able to dismantle the furniture and second-hand stores/retailers' acceptance of dismantled furniture could enable greater recovery rate. Moreover, this will make the furniture handleable for ease of manoeuvring and also make it carriable on public transport. Thus, by considering the determinants seeking combined

solutions as opposed to specific solutions, co-creating value and relationships with consumers could be achieved in the long term (de Carvalho et al., 2019).

5.4 Conclusion:

The findings of this research by combining both theory and empirical data complement existing literature of travel mode choice and the novel topic of reverse logistics of EOL/EOU furniture in an urban setup from a consumers' perspective. It has been able to provide a comprehensive qualitative account of the determinants for the above said purpose with the identification of 13 distinct determinants (refer Table 3). "Cost" identified through the attitude construct of TPB ranked highest when it came to making this specific travel mode choice and "Sustainability" identified through the social norm construct of TPB has been only a marginal determinant. Two new determinants were added to the existing knowledge of travel mode choice that are, however, specific to this research of reverse logistics of EOL/EOU furniture namely "odd shape & Manoeuvring" and "Lack of information".

Firstly, this research has addressed the need for knowledge with respect to the modes of transport that consumers choose to return EOL/EOU furniture to second-hand/retail stores in an urban setup. In addition to this, the research has successfully demonstrated the predictive power of TPB with respect to travel mode choice. The value of this research is that it has successfully identified the key determinants for the said travel mode choice and provided insights to policymakers and companies to address practical and social barriers to reverse logistics in an urban setup from a consumer perspective.

5.5 Future Implications:

Future research can focus on extending the model of TPB and consider additional indicators such as habit, moral norms and even environmental norms in the proposed framework (Donald et al., 2014). As interpretations of both cost and convenience are subjective, future research can focus on the extension of these determinants and understanding the key factors. It is also important to consider the differences in the physical and cultural characteristics of various urban setups and which transport infrastructure plays a crucial in the dynamics of that particular urban setup (Rose et al., 2017). The characteristics could be in terms of the density and the demographic of the population, financial aspects, modal choices available in the city, geography of the area, the average speed of travel, and many more. Another, scope for future research could be actually monitoring the carbon footprint of the implications of transporting these EOL/EOU furniture to second-hand/retail stores in an urban setup. As mentioned in

research by van Buren et al. (2016), not all circular systems are “better” than their linear counterparts (p.1) and inefficient circular systems could create economic, social and environmental damage. Monitoring the use of excessive transportation towards the above cause could thus be worth exploring. And finally, the success of business models also depends on the local differences in terms of physical and/or social attributes of the cities and companies under study. Thus, what may work for one may not necessarily work for the other and specific solutions towards reverse logistics in specific urban areas may be required.

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Appendix

Appendix 1: Determinants of travel mode choice.

Determinant	Determinant
Autonomy	Physical effortlessness
Cost efficiency	Planning effortlessness
Cost transparency	Privacy
Door-to-door ability	Reliability
Ease to use	Service degree
Flexible route choice	Situational adaptivity
Fun to drive	Social exchange
Healthy activity	Social responsibility
Innovativeness	Stresslessness
Local availability	Sustainability
Long-distance capability	Temporal flexibility
Low maintenance	Time-efficiency
Personal safety	Traffic safety
	Transportability
	Weather independency

Source: In research from Clauss and Döppe (2016), p.100

Appendix 2: Determinant Associations of Interviewees.

Determinants	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7	Interviewee 8
Convenience	✓	✓	✓		✓	✓	✓	✓
Cost	✓	✓	✓	✓	✓	✓	✓	✓
Door-to-door ability	✓		✓	✓		✓	✓	
Easy	✓	✓	✓	✓			✓	
Autonomy	✓	✓					✓	✓
Availability		✓	✓	✓	✓	✓		✓
Distance		✓		✓		✓	✓	
Social Responsibility		✓	✓		✓	✓	✓	
Sustainability			✓			✓		
Planning effort	✓		✓					✓
Transportability			✓		✓	✓	✓	✓
Odd shape & Manoeuvring*	✓	✓			✓	✓		✓
Lack of Information*		✓	✓		✓			

Appendix 3: Interview Invitation and agreement form

Hello!

I am Anuja Wadekar, and I am a final year master student studying master's in service management at Lund University, Sweden. For my master thesis, I am working with Ikea, Sweden to explore the future of urban mobility. However, to understand the future, it is important to know the present and hence, my research is focussed on understanding the current state of mobility from a consumer perspective within an urban setup.

Ikea aspires to be circular and climate positive by 2030, while inspiring and enabling the many people to live a better everyday life within the boundaries of the planet. To promote this cause, Ikea is taking innumerable steps from changes in product design, availability of spares, and lastly, giving a second chance to Ikea furniture through its circular hub. Ikea understands that consumers are the at the heart of this circularity drive. Not only because they are involved in purchasing circular products; but are also responsible to bring products back to the Ikea store, as in the case of the circular hub (Buy Back and Resell). Today, as Ikea is coming closer to the consumers especially in urban areas, understanding how these used products commute to the store is of importance. By knowing this, Ikea will be able to make this process of bringing back products to the store more consumer friendly.

If you are among someone who has recently brought back products to the second-hand store / retail store such as Ikea, located preferably in the heart of your city. I would like to interview you for my master thesis and understand in greater detail how you transported the products?

Kindly fill the interview agreement form with your basic information. All the information you provide will be handled with confidentiality.

- Your first name:
- Gender: Male () Female () Other ()
- Age:
- Occupation:
- City of Residence:
- I am willing to participate in the interview. Yes () No ()
- Via Zoom () Microsoft Teams ()
- I consent to recording the interview only for academic purposes and analyzed anonymously ()
- Please state your preferred date and time

Appendix 4: Interview Guide

Opening Questions:

1. Could you tell me about the various modes of travel available in your city?

2. Which is your most preferred mode of travel? (say when visiting friends, going to work, etc) (public transport, car, shared mobility, walking, cycling)

3. What is the mode of transportation that you used to transport the furniture from your home to the second-hand/retail store?

Attitudes

4. Could your share which positives you thought of while selecting this mode of transport?

5. What in your opinion do you like of using this mode of transport, specific to returning furniture to the store? Could you give an example to elaborate your personal experience with these likes?

6. What in your opinion do you not like of using this mode, specific to returning products? Could you give an example to elaborate your personal experience with these dislikes?

Social Norms

7. How do you and your friends feel about using XXX mode of transportation?

8. Have any of your friends' returned furniture for resell/recycle? Which mode of transportation have they used?

9. Do you think other stakeholders such as municipalties, the government or stores like Ikea encourage the use of XXX mode of transport?

Perceived Behaviour Control

10. How has your experience been with using this mode of transportation to move the furniture?

11. What are the some of the enablers (easy) you see in using this mode of transportation?

12. What are some of the difficulties you see in using this mode of transportation?

13. Why did you not choose YYY mode to transport these products?

14. Have you considered other modes of transport? What is it that you like about it?

Before I conclude

15. I believe you have answered all my questions, is there something more you would like to add/ask?

Thank you for your time and patience. Please feel free to reach out to me in case of any queries.

List of Figures: Figure 4: literature review flow chart