Trendy or Sustainable? Exploring the Motivations and Barriers Influencing Secondhand Fashion Consumption Among Students in Rotterdam

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ABSTRACT

The fast fashion industry has been widely criticized for its significant environmental and social impacts, leading to increased attention on sustainable alternatives like secondhand clothing. This study explores the motivations and barriers that influence secondhand clothing purchases among students aged 18 and above in Rotterdam. A quantitative survey was conducted, and the data was analyzed using Pearson correlations and multiple Ordinary Least Squares regression analyses.

The results reveal that emotional value is the most robust positive predictor of secondhand shopping frequency, suggesting that students are more likely to buy secondhand when the experience brings emotional satisfaction. Additionally, hygiene concerns emerged as the most significant barrier, strongly reducing the likelihood of secondhand shopping. All motivational factors except social value were significant, namely sustainability, affordability, and uniqueness.

These findings emphasize the importance of emotional and psychological rewards in sustainable consumer behavior and offer practical recommendations for secondhand retailers and policymakers to stimulate the growth of secondhand fashion markets. By addressing emotional motivations and hygiene concerns, secondhand clothing consumption can be further promoted, contributing to more sustainable consumer practices and supporting Rotterdam's circular economy ambitions.

KEYWORDS: Secondhand fashion, Sustainability, Purchasing Motivations, Fast Fashion
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1. Introduction

The clothing industry is often recognized as one of the most polluting industries in the world (Maldini et al., 2017). Within this industry, the fast fashion model, defined by its rapid production of inexpensive clothing, has emerged as a significant contributor to environmental harm (Bick et al., 2018). On average, 33% of the climate emissions produced by Dutch citizens come from goods (including clothing), primarily due to the emissions generated during the extraction of raw materials and the production process (Bergsma, de Koning, & Snijder, 2022). From excessive resource exploition to pollution and waste, fast fashion's negative impact has raised serious concerns among environmentalists, researchers, and policymakers. In response, secondhand clothing has gained attention as a sustainable alternative. By extending the life cycle of garments, secondhand shopping reduces the demand for new production, minimizes waste, and lowers carbon emissions associated with transportation (Brewer, 2019).

Despite the growing popularity of secondhand fashion globally, many aspects of consumer behavior in this context have not been explored enough, particularly in the Dutch setting. This research focuses on the key research question: *"What motivates students aged 18 and above in Rotterdam to purchase or avoid secondhand fashion?"* By understanding these motivations, the study aims to provide valuable insights for secondhand retailers and policymakers who want to promote sustainability in fashion.

Research on sustainable fashion practices in the Netherlands remains limited. Scholars such as Maldini et al. (2017) point out that much of the available information comes from international studies, with Scandinavian and UK researchers leading the way. While the rise of vintage and secondhand fashion has been studied in global contexts, such as the US and UK, little research has focused on Dutch cities, despite their growing secondhand markets (Zhang, 2021). Understanding Dutch consumers' acceptance of secondhand clothing is an important step toward addressing this knowledge gap.

The topic of secondhand fashion is not only socially and environmentally important but also of personal and academic interest. Personally, I have witnessed friends order large amounts of cheap clothes on websites like Shein. This often made me wonder about their intrinsic motivations to opt for these kinds of clothing instead of durable or secondhand clothing. Globally, the rise of secondhand shopping reflects changing consumer attitudes, driven by concerns about sustainability. In the Netherlands, the number of secondhand stores has increased, but the factors influencing consumer choices, especially among young people, are not well understood. College students, in particular, represent a unique demographic whose motivations, such as affordability, uniqueness, and environmental awareness, are worth exploring (Yan et al., 2015).

This research contributes to both local and academic discussions about sustainability in the fashion industry. By shedding light on the motivations behind secondhand shopping in Rotterdam, it

highlights the role of consumers in shaping a more sustainable future and offers practical insights for businesses and policymakers working to address environmental and social issues in the fashion sector.

2. Theoretical framework

2.1 The rise of fast fashion

The easily accessible low-cost fashion of today is described as fast fashion. The word "fast" refers to how swiftly a retailer can bring designs from the runway to their shelves in order to meet the ever-increasing demand for a wider variety of clothing styles (Bick et al., 2018). Fashion, maybe more than any other art or industry, is intrinsically linked to time; it draws inspiration from new designs and finds its essence in contemporary trends. Over the past ten years, the fast fashion model has flourished due to its quick production times and capacity to capitalize on the newest trends. The growth of fast fashion is driven by consumer behavior. Social media promotes trend cycles, which makes consumers want to adopt new styles (Brewer, 2019). Young consumers with high disposable incomes are the main target market for "fast fashion" (Diddi et al., 2019). Cheap clothing is produced as a result of rising consumption. Often production is outsourced to low- and middle-income countries to keep costs down. Due to globalization, the fast fashion market has grown immensely (Bick et al., 2018).

Since the rise of fast fashion around the early 2000s, brands have nearly doubled the number of clothing collections they release. Meanwhile, global clothing production continues to grow by approximately 2% per year. At the same time, the average lifespan of garments has dropped by 36% since 2005, with many items being discarded after minimal use (Niinimäki et al., 2020). Bick et al. (2018) write that on a global level, 80 billion pieces of new garments are bought every year. Most of these garments are produced in China and Bangladesh, while the US is the largest clothing consumer in the world (Bick et al., 2018). Clothing retailers like Zara, H&M, Forever21 and Topshop have transformed the conventional fashion sector with their fast production and systematic supply networks. Even though this evolution now enables a wide range of consumers to buy close copies of their favourite designers, the fast fashion model has weakened the value of designers' trademarks, significantly increased the carbon footprint of the industry, and fostered a wasteful culture (Brewer, 2019). The fashion industry's long supply chain, from raw material production to retail, contributes significantly to environmental harm through its intensive use of water, chemicals, materials, and energy at every stage (Niinimäki et al., 2020). I will further explore the environmental, occupational and wasteful issues with fast fashion.

2.2 Problems with fast fashion

Textile production is the first step when manufacturing clothing. Cotton and polyester have been identified as the most commonly used fibres for textiles produced for the EU market (ECAP, 2018). Both of these materials are linked to serious health effects due to the production processes. Cotton needs a lot of water (20,000 litres per kilogram) and chemicals to grow, whereas polyester, a synthetic fabric, is made from oil (Bick et al., 2018; Brewer, 2019). Globally, cotton cultivation uses about 44 trillion litres of water annually (Niinimäki et al., 2020). The textile industry uses over 15,000

chemicals throughout production, with cotton farming alone accounting for a significant share of global pesticide and herbicide use. These agrochemicals are linked to serious health risks, including cancer, infertility, and birth defects, and also degrade soil and biodiversity. 10% of chemicals used in textiles pose a high risk to human health, and 5% to the environment. However, many products are finished outside the EU, making it difficult to trace or regulate chemical use (Niinimäki et al., 2020).

Microfibers from synthetic fabrics make up 85% of human-made waste found on ocean shores. They are also found in fish, seafood and drinking water, raising serious health concerns (Brewer, 2019). Additionally, risks arise from textile dyeing because wastewater is frequently released into neighbouring water systems, which results in negative effects on the health of both local residents and animals (Bick et al., 2018). In Cambodia, the industry is estimated to cause 60% of water pollution and over a third of chemical pollution (Niinimäki et al., 2020).

Brewer (2019) writes that the global fashion industry is not just harmful to water supplies, it also contributes to 10% of the world's carbon emissions (Brewer, 2019). Most emissions occur during fibre production, especially for synthetic materials like polyester and acrylic, which are fossil fuel-based and highly energy-intensive (Niinimäki et al., 2020). In 2015, making fibres and textiles released about 1.2 billion tons of greenhouse gases, which is more than the emissions from all international flights and shipping combined (Brewer, 2019). The complex supply chains of fashion also adds to the problem. Materials and products are shipped from country to country, creating a high-carbon transportation network. The industry's focus on fast production to quickly meet demand, further increases these emissions (Brewer, 2019).

40 million people are employed worldwide in the assembly of clothing. The low- and middle-income countries where 90% of clothes are produced, often do not implement health and safety requirements, because of weak political and organizational systems. This leads to many risks for workers, like breathing problems caused by cotton dust and synthetic particles from poor ventilation, and injuries from repetitive tasks. The workers face serious health problems like lung disease, cancer, hormone disruption, and injuries which can sometimes be fatal. There have been some tragic incidents, like the collapse in a clothing factory in Bangladesh, where 1134 workers died. Unfortunately, disasters like this one have not significantly improved safety standards for the garment workers in these countries (Bick et al., 2018).

Pre-consumer waste is waste that is generated during textile and garment manufacturing in the process of cutting the fabric. Poor design alignment, printing patterns, and assembly errors contribute to this (Niinimäki et al., 2020). The fast fashion industry encourages people to treat clothes as disposable, which leads to a lot of waste (Brick et al., 2018). The large quantities of fast and cheap garments has altered the way consumers are thinking about and using clothing. Clothing consumption is more and more a reflection of the culture of disposable products that exists in the society of today (Diddi et al., 2019). Globally, around 73% of garments end up in landfills, and recycling rates remain very low. Only 15% is collected for recycling, and less than 1% is recycled back into high-quality

textiles. Most is downcycled into products like insulation or rags (Niinimäki et al., 2020). Between 2000 and 2019, the amount of used textiles exported from the EU tripled (European Environment Agency, 2023). These are sorted by low-paid workers in low- and middle-income countries. While some items are sold in second-hand markets, clothes that are not sold end up as trash. This waste often clogs rivers, parks and public spaces in these countries. This causes environmental and health problems in places that do not have strong waste management systems (Brick et al., 2018). Synthetic fibers like polyester, rayon, and nylon take an incredibly long time to break down, sometimes 200 years or more (Brewer, 2019). Textile waste is also very apparent in The Netherlands. A study by Maldini et al. (2017) found that a Dutch consumer purchases roughly 46 new clothing items every year, each item costing about 16 euros on average. Every Dutch person discards about 40 items of clothing annually, 24 of which are disposed of as regular household trash and are thus burned. Nine of these clothes are appropriate for the global second-hand market, while two are rewearable in the eyes of customers but not by international second-hand criteria; five are gathered separately but are not acceptable for reuse, so they can be recycled (Maldini et al., 2017). Adding to this, the amount of times a piece of clothing is worn before discarding it has declined (Kim et al., 2021).

2.3 Circular economy and the rise of seconhand fashion

The fashion industry has been under constant pressure to switch from a linear economic model to a circular economy (CE) model as it is one of the most environmentally damaging industries (de Aguiar Hugo et al., 2021). Ta et al. (2022) also write that a sustainability shift in the textile and clothing sector is forcing associated companies to adopt CE principles. CE models aim to lessen the negative effects on the environment, cut down on waste production, and support sustainable supply chains. CE also promotes zero-waste design, reuse, repairability, and resource-sharing techniques in an effort to optimize a product's life cycle. Stakeholders in a CE collaborate to optimize product value in order to produce favorable social and environmental effects. Changes toward CE are still happening slowly, despite the fact that the fashion production chain already has a number of CE initiatives in place. They still mostly follow a linear model of taking resources, making products, and disposing them, due to the fast-paced consumption driven by the (fast) fashion industry. While achieving CE in the fashion industry appears to be extremely difficult, there is a growing trend toward more sustainable activities whether as a result of environmental, public, or governmental concerns (de Aguiar Hugo et al., 2021).

As previously mentioned, reuse in the fashion industry supports the circular economy model. Secondhand stores exemplify this approach by giving used clothing a second life through resale, helping to extend its lifespan (de Aguiar Hugo et al., 2021). So, alongside the rise of fast fashion there has also been a rise of vintage and secondhand clothing. The past ten years, wearing vintage clothing has become popular, and the number of vintage retailers worldwide has skyrocketed. This is partly due to the fashion industry’s growing environmental concerns (Zhang, 2021). Yan et al. (2015) write

that stores selling second-hand items have grown about ten times faster than other types of retail stores. To clarify, while almost all vintage clothing is secondhand, not all secondhand clothing is vintage. Something can only be called vintage if it was produced more than twenty years ago and represents a particular fashion era (Zhang, 2021). In my research I will be focusing on secondhand clothing, so it does not matter whether the clothing is vintage or not.

2.4 The role of the consumer and purchasing behavior

The change of adoption to circular economy principles has been well examined from the viewpoints of the industry and business models, but there is a lack of research on the consumers point of view, or how consumers feel about buying reused clothing. This knowledge is essential since the adoption of CE goods is greatly influenced by the consumer experience (Ta et al., 2022). Research by Diddi et al. (2019) shows that there is a gap between consumers' intentions and their actual behavior. While many consumers aim to buy eco-friendly clothing, they often do not follow through. Concerns about environmental and social issues in fashion have shifted young consumers' values towards being more socially aware. Although they are willing to adopt sustainable lifestyles, practicing sustainable clothing consumption is challenging due to trade-offs between style and ethics, and it is influenced by individual personality and values. Clothing choices are complex because they involve identity, social acceptance, and trends (Diddi et al., 2019).

Going back to all of the pressing issues with the production and distribution of fast fashion, changing trade policies and rules would be the most powerful way to create big changes in the fast fashion industry. However, people in wealthier countries also have an important role. They can support brands and practices that focus on reducing harm to people and the planet. For example by buying durable high-quality clothing, shopping second-hand, fixing clothes they already own, and supporting brands with clear, ethical supply chains (Bick et al., 2018). So, one of the ways that consumers can purchase clothing in a more sustainable way is to buy pre-owned or secondhand items. A number of studies show that people who buy secondhand clothing often do this to express their own ideals (Laitala & Klepp, 2018). Environmental concerns have started to boost consumers' tendency to purchase used goods in recent years (Yan et al., 2015). What I gathered from the previous information is that some researchers claim that the vintage and secondhand clothing market is growing (Zhang, 2021; Yan et al., 2015). But still, in 2017, the wardrobe of a Dutch consumer consisted of about 173 items, only 7 of which were secondhand garments (Maldini et al., 2017). While there might still be some stigma around buying secondhand clothing in The Netherlands, the people who do buy secondhand clothing probably do this to express their own ideals (Laitala & Klepp, 2018). It is incredibly useful to understand consumer behaviour and choices when it comes to the fashion industry, since the consumer plays such a large role in being able to create global changes in the fast fashion industry (Bick et al., 2018). Consumption value plays a key role in influencing people's purchasing decisions and is an important part of building customer relationships. Understanding the

deeper meaning of consumption value helps explain why consumers choose certain products or brands and why dividing the market into different segments is necessary. Kim et al. (2021) found that different aspects of consumption value in circular fashion have a strong impact on how consumers view a product. Even if they recognize some risks, a positive attitude toward the product can still develop. Behavioral models have shown that attitudes, norms, and perceived control influence intentions, but the specific reasons behind consumers' choices have been overlooked. Understanding these reasons can help explain and motivate sustainable behaviors. Most consumer behavior studies, especially on sustainable clothing, have not clearly identified why young consumers choose to engage in certain sustainable clothing consumption behaviors. Recognizing these reasons will provide deeper insights into the factors motivating or discouraging them. Consumers weigh costs and benefits, which may not always be financial, but include social, psychological, and other factors (Diddi et al., 2019). So what are motivations for consumers to buy or avoid secondhand clothing? The decision to engage in sustainable clothing consumption is influenced by various trade-offs, such as balancing style with ethics. The complexity of these decisions is also influenced by factors like social identity and the desire to be accepted within peer groups. While consumers may recognize the ethical benefits of secondhand clothing, factors such as convenience, style preferences, and perceived social status can act as barriers (Diddi et al., 2019). Gaining insight into these motivations can help secondhand stores tailor their offerings and strategies to attract a broader consumer base effectively.

2.5 Motivations to buy secondhand fashion

With my research I will further explore the motivations and barriers people experience to buying secondhand clothing. Here, "motivation" refers to the explanations that people offer when questioned about why they act in a particular manner (Laitala & Klepp, 2018). In the past, clothes were expensive and highly valued, so reusing them was a normal practice. Laitala & Klepp (2018) write that today, in Western countries, clothing prices have dropped significantly, in 2018 only 2-5% of people's household budget was spent on clothes. Because of this, people's reasons for buying secondhand clothes are now more varied than in the past, when saving money was the main motivation (Laitala & Klepp, 2018). To investigate these dynamics, this study distinguishes between motivating factors that encourage secondhand clothing purchases and barriers that discourage them.

2.5.1 Sustainability

A strong motivation for buying secondhand clothing is environmental concerns (Laitala & Klepp, 2018). Millennials and Gen Z are the most environmentally conscious generations so far. Millennials seek green, ethical, durable, and repairable products, while Gen Z, now entering the workforce, share similar preferences for sustainable brands. Kim et al. (2021) write that around 50% of Millennials and 54% of Gen Z are willing to pay 10% or more extra for sustainable products, compared to only 34% of Gen X and 23% of Baby Boomers. Consumers with high environmental

value prefer circular fashion products, as these items reduce reliance on virgin raw materials. Studies show that products with a circular or recycled design are seen more positively by individuals who value the environment, strengthening their attitude toward circular fashion (Kim et al., 2021). Pretner et al. (2021) agree with this, they write that environmental concern significantly influences consumer attitudes and purchasing decisions. Participants in the study by Diddi et al. (2019) expressed that they were more likely to buy clothes made from certified organic or recycled materials because it made them feel good about helping the environment. They also valued ethical business practices and did not want to support companies that mistreat their employees. Some participants preferred buying second-hand clothes, seeing it as a more sustainable option that helped save resources. Overall, their choices were driven by both environmental and social concerns, and they felt positive about their actions (Diddi et al., 2019).

2.5.2 Emotional value

Consumers can experience emotional value when buying secondhand clothing. Consumers feel happy not only because of the product's unique design but also due to the satisfaction of contributing to environmental protection. This emotional connection is expected to strongly influence consumers' positive attitudes toward circular fashion products (Kim et al., 2021).

2.5.3 Social value

Social value refers to the benefits consumers get from being associated with a product or brand that reflects positively on their social image. For circular fashion, if consumers believe these products are eco-friendly and make a good impression, they gain social value. However, if they worry about stigma or perceptions of these products being unsanitary, they may feel lower social value (Kim et al., 2021).

2.5.4 Money

Prior research argues that consumers' willingness to pay is higher for environmentally friendly products. But Pretner at al. (2021) argue that since CE products have perceived lower quality, because of stressed fibers and contamination issues, than new products, the willingness to pay might not be higher for secondhand clothing. This would mean that a reason for buying seconhand clothing is lower prices. Buying used clothes allows people to buy good quality clothes for a much lower price (Diddi et al., 2019).

2.5.5 Uniqueness or epistemic value

Uniqueness, or epistemic value, plays a significant role in motivating secondhand fashion consumption. Research from Norway shows that consumers who purchase secondhand clothing place a high value on originality and style (Laitala & Klepp, 2018). Similarly, Yan et al. (2015) found that

college students are often drawn to secondhand shops because they expect to find unique items unavailable in regular retail stores. Epistemic value refers to the interest or curiosity consumers experience when encountering rare or novel products, which in the context of circular fashion, increases their desire to purchase secondhand or recycled items (Kim et al., 2021). Supporting this, Diddi et al. (2019) found that participants who acquired used clothing, either by purchasing it or receiving it from friends and family, mentioned uniqueness as a primary motivation. Many appreciated finding rare, one-of-a-kind items that were unavailable through conventional retail, noting that vintage pieces felt both special and often more affordable. This desire for individuality and self-expression aligns with broader findings that sustainable fashion consumers value the uniqueness of used clothing (Diddi et al., 2019). Furthermore, de Aguiar Hugo et al. (2021) highlight that consumers are more willing to pay higher prices for sustainable clothing when it offers a sense of exclusivity. Both slow fashion and secondhand items appeal to individuals seeking a distinctive style, making uniqueness a key motivator for engaging with more sustainable fashion options (de Aguiar Hugo et al., 2021).

Based on the previous information I formulated the first five hypotheses which can be grouped as motivations.

H1: Motivations for Buying Secondhand Clothing

H1a: There is a positive association between perceived sustainability and the frequency of secondhand clothing purchases.

H1b: There is a positive association between (gained) emotional value and the frequency of secondhand clothing purchases.

H1c: There is a positive association between perceived affordability and the frequency of secondhand clothing purchases.

H1d: There is a positive association between perceived (gained) social value and the frequency of secondhand clothing purchases.

H1e: There is a positive association between perceived uniqueness (epistemic value) and the frequency of secondhand clothing purchases.

2.6 Barriers to buying secondhand clothing

In the Norwegian study, people who avoid buying used clothing give unclear or general reasons, often mentioning concerns about hygiene, health, or personal comfort. It becomes clear that people face several barriers when it comes to buying secondhand clothes. Examples of these barriers are hygiene concerns, inconvenience of shopping, limited selection and quality and the stigma around secondhand clothing (Laitala & Klepp, 2018).

2.6.1 Perceived lack of variety/styles

Aesthetic risk refers to the concern that a product may not align with a consumer's personal style or image. In the case of circular fashion, consumers may worry that these products will not match their existing wardrobe, are out of style, or do not fit well. This perceived risk can make them hesitant to purchase circular fashion items (Kim et al., 2021). Previous studies have shown that eco-friendly clothing is often seen as less stylish, which discourages people from buying it. In this study, participants valued fashion trends and self-expression more than sustainability. They wanted to buy clothes frequently to keep up with trends and fit in with friends. Some also enjoyed shopping itself and preferred having a variety of clothing rather than fewer, high-quality pieces (Diddi et al. (2019). Many consumers avoid sustainable fashion because they prioritize style over sustainability. Even if they support eco-friendly choices, they prefer traditional fashion if sustainable options do not match their aesthetic preferences. Some also view sustainable clothing as outdated or linked to alternative styles, which further discourages them from choosing it (de Aguiar Hugo et al., 2021).

2.6.2 Hygiene issues

Sanitary risk refers to the concern that circular fashion products may not be clean or hygienic, as they are made from recycled or discarded materials. Consumers may worry about stains, dirt, or the products not being as fresh as new items, which can affect their willingness to purchase these items. "Among the risk factors, sanitary risk (i.e., a concern about the possibility of products not being hygienic) had the greatest negative impact on consumers' product attitude." (Kim et al., 2021 p. 16). Contamination perceptions arise from either visible changes in a product, like stains or imperfections, or from mental associations of the item being unsanitary. In the case of clothing, consumers may worry about health risks or hygiene issues, especially with secondhand or recycled garments, as they associate these items with possible contamination or exposure to germs, particularly because the items have been used before. The closer the item is to the body, the stronger the feeling of disgust and perceived risk. Consumers may feel uncomfortable buying circular products, especially second-hand clothes, because they associate them with being previously owned, leading to fears of contamination or invasion of personal space. This discomfort, or dissonance, reduces the perceived quality of the item, even when it has environmental benefits (Pretner et al., 2021). De Aguiar Hugo et al. (2021) also say that many consumers hesitate to buy second-hand clothing due to hygiene concerns, as they are unsure about its cleanliness or previous ownership

2.6.3 Price

Financial risk refers to consumers' concerns about losing money or facing extra costs for repairs or replacements when buying a product. In the case of circular fashion, consumers may feel that these products are more expensive than regular fashion items, due to factors like limited production and higher prices set by retailers. Studies have shown that many buyers see upcycled or

secondhand products as overpriced, which can lead to a negative perception and hesitation to purchase (Kim et al., 2021).

2.6.4 Lower quality

Consumers can be concerned that a product may not perform as expected. For circular fashion, this risk arises because these products are made from recycled materials, which may lead consumers to doubt their durability, quality, or functionality. As a result, potential buyers might hesitate to purchase circular fashion items due to worries about their performance (Kim et al., 2021). For secondhand items it may not be clear from what material the garment is made or how it was produced. This can lead to the consumer doubting the quality.

2.6.5 Identity misalignment

Diddi et al. (2019) examined young consumers' reasons for engaging or not engaging in sustainable clothing purchasing behaviors. Some participants felt embarrassed or less excited when buying second-hand clothes compared to new ones. They believed wearing used clothing could affect their sense of identity. Cultural norms also influenced attitudes, as buying second-hand is less common and sometimes stigmatized in certain countries (Diddi et al., 2019). In some cultures, like China and Italy, used clothing is also linked to social status, making people more reluctant to purchase it, especially those from higher-income groups (de Aguiar Hugo et al., 2021). Additionally, some participants associated shopping with happiness and were unwilling to reduce their purchases for sustainability reasons, as they enjoyed the experience of buying new clothes (Diddi et al., 2019). Some participants avoided buying fewer clothes due to a lack of self-control, a love for material possessions, and a desire to stand out. They preferred instant gratification, choosing cheaper, fast-fashion items over saving for higher-quality alternatives. This aligns with a broader culture of consumerism, where shopping is driven by aspirations, identity, and the need for immediate pleasure rather than necessity (Diddi et al., 2019).

Based on the previous information I formulated the last five hypotheses which can be grouped as barriers:

H2: Barriers to Buying Secondhand Clothing:

H2a: There is a negative association between perceived lack of variety and the frequency of secondhand clothing purchases.

H2b: There is a negative association between perceived hygiene concerns and the frequency of secondhand clothing purchases.

H2c: There is a negative association between perceived overpricing and the frequency of secondhand clothing purchases.

H2d: There is a negative association between perceived poor quality and the frequency of secondhand clothing purchases.
H2e: There is a negative association between perceived identity misalignment (stigma or style mismatch) and the frequency of secondhand clothing purchases.

2.7 The case of Rotterdam

The development of secondhand fashion in Rotterdam offers a unique case study, particularly given the city's current sustainability goals and evolving urban identity. Bergsma, de Koning, and Snijder published an article in 2022 where they advised the Rotterdam municipality on how they can promote secondhand clothing consumption in the city. Although Rotterdam has traditionally focused on waste management at the end of a product's life cycle, the authors write that promoting secondhand consumption presents a greater opportunity to extend product lifespans and achieve significant environmental benefits (Bergsma, de Koning, & Snijder, 2022).

In recent years, the Municipality of Rotterdam has launched a circular economy program aimed at halving the use of primary raw materials. This program is built on two main strategies: raising awareness among citizens, businesses, and local organizations, and embedding circular economy principles within existing economic structures. A strong partnership between the municipality and secondhand stores could play a crucial role in achieving these ambitions, as creating demand for secondhand goods depends on factors like product quality, availability, ease of access, affordability, reliability, visibility, and a positive public image (Bergsma, de Koning, & Snijder, 2022).

Although many goods are still purchased new (both online and in physical stores), a significant number of Rotterdam residents are already participating in secondhand trade through platforms like Marktplaats.nl and thrift shops (Bergsma, de Koning, & Snijder, 2022). According to the Dutch thrift store trade association BKN, in 2019, 214 affiliated thrift stores in The Netherlands collected 150 million kilograms of goods, with 78% being reused or recycled (Bergsma, de Koning, & Snijder, 2022). This highlights both the existing foundation for secondhand trade and the potential for growth.

Compared to Amsterdam, Rotterdam's vintage fashion scene is still emerging. Urban scholars note that the presence of vintage shops often reflects broader processes of gentrification and cultural transformation, trends that are only recently becoming visible in Rotterdam (Zhang, 2021). While the city has been cultivating its image as a creative hub, it has not yet achieved the strong vintage fashion identity associated with Amsterdam. Zhang (2021) characterizes Rotterdam as a second-tier city that continues to struggle with attracting sufficient visitors, local customers, and vintage retailers. This challenge is rooted in Rotterdam's historical image as a port city with a working-class character, contrasting sharply with Amsterdam's more established association with fashion, creativity, and the arts.

Given this context, it becomes especially relevant to investigate how students in Rotterdam perceive secondhand fashion. As trend-sensitive and environmentally aware consumers, students may play a key role in shaping local demand and helping to reposition Rotterdam's image. Supporting the secondhand market could not only promote more sustainable consumer behavior but also contribute to the city's broader creative and economic development (Zhang, 2021).

To stimulate secondhand consumption, Bergsma, de Koning, and Snijder (2022) recommend several interventions. These include providing vouchers and information about local thrift stores during residential relocations, offering pick-up and repair services, organizing events centered on circular economy themes, and experimenting with campaigns that normalize secondhand shopping. Additional strategies involve fostering a sense of community in shopping districts, collaborating with role models, introducing educational initiatives in schools, and testing pop-up secondhand shops in vacant retail spaces. According to behavioral science principles, for secondhand shopping to become mainstream, products must be made highly visible, attractive, easy to access, and rewarding to purchase (Bergsma, de Koning, & Snijder, 2022).

All of these insights are highly relevant for this research project. By understanding the local context and the opportunities outlined in current policy and urban studies, this study on student motivations and barriers in secondhand fashion consumption contributes directly to identifying practical strategies that can help accelerate the growth of secondhand clothing consumption in Rotterdam.

3. Methodology

3.1 Research design

This study seeks to answer the central research question: *"What motivates students aged 18 and above in Rotterdam to purchase or avoid secondhand fashion?".* To address this question, the study adopts a quantitative, cross-sectional research design grounded in a positivist paradigm. A deductive approach was employed, whereby hypotheses are formulated based on an existing theoretical framework and empirically tested using structured data. This design is well-suited for identifying patterns and relationships between variables in a defined population at a specific point in time. The hypotheses mentioned in the theoretical framework will be used to answer the following sub-questions:

- **RQ1:** "What motivates students to buy secondhand fashion?"
- **RQ2:** "What barriers do students experience to buying secondhand fashion?"
- **RQ3:** "How do students perceive secondhand clothing stores in Rotterdam?"

To collect data, a structured online survey is used as the primary research instrument. This method enables the collection of standardized responses from a large sample, facilitating reliable comparisons and statistical analysis. The fixed format ensures that all participants receive the same set of questions in the same order, which minimizes researcher bias and enhances replicability.

The use of a structured survey is consistent with best practices in quantitative research, particularly those outlined by Bryman (2016), who emphasizes the importance of standardization, objectivity, and comparability in survey-based studies. Moreover, the structured format aligns with the hypothesis-driven nature of this study, which aims to quantitatively assess the influence of motivational and barrier-related factors on students' secondhand fashion consumption.

3.2 Sampling

The target population for this study consists of students aged 18 and above who study in Rotterdam. This includes students enrolled in a variety of educational institutions such as universities, universities of applied sciences (hogescholen), and vocational training programs (MBO). The aim is to capture a broad and diverse student population in terms of educational background, and socioeconomic status.

A non-probability convenience sampling method was employed, primarily due to practical considerations such as time constraints and accessibility. While this sampling method limits generalizability to the broader population, it enables efficient data collection. Participants were recruited through multiple channels to maximize reach and enhance diversity within the sample. These channels included:

- Student associations, such as a local korfball club, dance association, and the fraternity SSR Rotterdam.

- Online platforms, including LinkedIn, Facebook, and Instagram.
- Offline efforts, such as distributing flyers throughout the city in public spaces and student-heavy areas like libraries.

To ensure adequate statistical power for analysis, particularly for correlation and multiple regression techniques, a sample size of 153 respondents was used for analysis. This sample size allows for sufficient variability across key demographic and psychographic factors, while also supporting reliable detection of statistically significant effects. The duration of data collection was six weeks. Efforts were made to include students from a variety of educational levels and socioeconomic backgrounds to obtain a more comprehensive understanding of secondhand fashion consumption motivations across the student population in Rotterdam.

3.3 Operationalization

In the survey the dependent variable "frequency of buying secondhand clothing" is measured. The answer categories are never, rarely (every six months), occasionally (every few months), sometimes (once a month) and often (multiple times a month). The extent to which the frequency of buying secondhand clothing is influenced by the independent variables, which are explained in the table below.

Concept	**Indicator**	**Survey Example**	**Measurement Scale**
Sustainability (H1a)	Environmental concern	"I have bought secondhand clothing because it is more environmentally friendly." "I bought secondhand clothing because I saw it as a way to reduce waste."	5-point Likert scale
Emotional value (H1b)	Emotional satisfaction	"Buying secondhand clothing made me feel happy and satisfied."	5-point Likert scale
Affordability (H1c)	Price sensitivity	"I bought secondhand clothing because it was cheaper than new clothing."	5-point Likert scale
Social value (H1d)	Peer/social influence	"I bought secondhand clothing because it reflected positively on my social image."	5-point Likert scale

		“Buying secondhand clothing made me feel like I was making a positive impact on society.”	
Uniqueness (H1e)	Epistemic value	“I bought secondhand clothing because it allowed me to express my unique style.” “I bought secondhand clothing because I enjoyed the thrill of finding unique pieces.”	5-point Likert scale
Limited variety (H2a)	Perceived lack of styles	“I avoided buying secondhand clothing because the selection was too limited.” “I chose not to buy secondhand clothing because I felt the styles were outdated.” “I decided against secondhand clothing because it didn’t match my personal taste.”	5-point Likert scale
Hygiene concerns (H2b)	Perceived cleanliness	“I avoided buying secondhand clothing because I was concerned about hygiene issues.” “I felt uncomfortable wearing clothes that someone else has worn before.”	5-point Likert scale
Overpricing (H2c)	Value mismatch	“I avoided buying secondhand clothing because it was not worth the price for its quality.”	5-point Likert scale
Poor quality (H2d)	Durability/wear	“I avoided buying secondhand clothing because I felt like it's lower in quality than new clothing.”	5-point Likert scale

Stigma (H2e)	Social perception	"I opted for buying new clothing because it helped me fit in with my social group."	5-point Likert scale

The survey also collects information about participants' background, shopping habits, and attitudes, to better describe the group and explore possible influencing factors:

- Age (categorical: 2000–2010, 1990–1999, 1980–1989)
- Education level (university, HBO, MBO)
- Field of study (e.g., arts, natural sciences, economics)
- Gender (male, female, non-binary/other, prefer not to say)
- Neighborhood of residence in Rotterdam (e.g., Kralingen, Centrum etc.)
- Province of residence if outside Rotterdam
- Ethnic or cultural background (e.g., African, European, Asian etc.)
- Monthly income (categorical: €0–500, €500–1500, etc.)
- Interest in fashion (not interested → very interested)
- Interest in fashion trends (not interested → very interested)
- Place of secondhand shopping (e.g., thrift store, Vinted, vintage shop)
- Satisfaction with secondhand stores in Rotterdam (very dissatisfied → very satisfied)
- Suggested improvements for secondhand stores in Rotterdam (open-ended)
- Main reasons for buying or avoiding secondhand fashion (categorical, checklist)

This operationalization enables a structured analysis of how motivations, barriers, and demographic factors relate to secondhand fashion purchasing frequency among students in Rotterdam.

3.4 Validity and reliability

To ensure the quality and credibility of the research findings, this study employed several procedures to enhance both validity and reliability. Prior to full-scale data collection, the survey was pilot tested with 10 students from diverse educational backgrounds in Rotterdam. The purpose of this test was to evaluate the clarity, wording, and structure of the questions, as well as the technical functionality of the online survey platform. Based on participant feedback, minor revisions were made to improve question phrasing and flow.

To ensure content validity, the survey items were developed based on existing literature and validated scales. Constructs such as environmental concern, price sensitivity, and emotional value were informed by previous studies in consumer behavior and secondhand fashion (e.g., Laitala & Klepp, 2018; Diddi et al., 2019)). This process ensured that all relevant dimensions of the motivations and barriers were covered comprehensively and aligned with the theoretical framework guiding this study.

Internal reliability of the multi-item scales was tested using Cronbach's alpha, which checks how consistently people answered related questions. A Cronbach's alpha of 0.70 or higher was considered acceptable. For questions measured with just one item, reliability could not be formally tested, but this was acceptable because these questions were simple and clear, such as "age" and "education level."

Several steps were taken to minimize threats to validity:

- To reduce social desirability bias, the survey was fully anonymous and self-administered online, allowing participants to respond without external pressure.
- To improve response honesty, participants were informed that their input would remain confidential.
- Leading or emotionally charged language was avoided in the survey design to reduce response bias.

By combining these strategies, the study aims to ensure that the data collected is both accurate and reliable, and that the findings meaningfully reflect the factors influencing secondhand fashion consumption among students in Rotterdam.

3.5 Data analysis

The collected survey data were analyzed using IBM SPSS Statistics (Version 28.0.1.1). A range of quantitative statistical techniques was applied to examine patterns and relationships of various factors related to secondhand clothing consumption.

Before analysis, the dataset was cleaned by removing participants who had filled in the preview version. After that there were 153 respondents left, which were used for the analysis. For questions that allowed multiple answers (e.g., questions 9, 14, 17, and 18), SPSS automatically split the responses into separate variables. These were grouped into multiple response sets using the following steps: Analyze → Multiple Response → Define Variable Sets, with dichotomous coding (1 = selected, 0 = not selected). Each set was labeled accordingly (e.g., "ethnicity"). In addition, several Likert-scale items that addressed the same underlying concept or hypothesis were combined into a single variable to improve clarity and consistency. This was done using the Transform → Compute Variable function in SPSS. For example, to create an overall measure for perceived sustainability, the mean of three related statements was calculated (e.g., sustainability_avg = MEAN(Q1, Q2, Q3)).

To begin, descriptive statistics were used to summarize the demographic and behavioral characteristics of the sample. This included frequencies, means, and standard deviations for variables such as age, education level, gender, shopping habits, and key psychographic traits. These analyses provided an overview of the sample and established a foundation for deeper analysis. Next, Pearson correlation analysis was conducted to explore associations between key variables, such as the relationship between interest in fashion and frequency of secondhand shopping.

To examine the influence of motivations and barriers on the frequency to purchase secondhand clothing, two multiple linear regression models were conducted:

- Model 1: Motivational factors as predictors of purchase frequency (e.g., sustainability, emotional value, affordability, uniqueness, social value)
- Model 2: Barrier-related factors as predictors of purchase frequency (e.g., hygiene concerns, lack of variety, stigma, overpricing, quality)

The dependent variable in both models was the self-reported frequency of buying secondhand clothing. All statistical tests were conducted using a significance level of $p < .05$. Before running the regression models, key assumptions were checked, including the linearity of relationships between the independent and dependent variables, the normality of residuals, and homoscedasticity (equal variance of residuals). Multicollinearity was also assessed using Variance Inflation Factors (VIF), with a threshold set at $VIF < 5$. These steps were taken to ensure the robustness of the regression models and the reliability of the results.

4. Results

4.1 Demographic summary

Out of the 153 participants, 79.7% identified as female, 15.2% as male, and 4.7% as non-binary or other. The majority of respondents (77.0%) were born between 2000 and 2010, followed by 20.9% born between 1990 and 1999, and 2.1% earlier than that. 87.3% of the respondents identified as European, while all other ethnic or cultural backgrounds were selected 1-10% of the time. While all participants study or have studied in Rotterdam, 76.4% currently live in Rotterdam, and the remaining respondents largely reside in Zuid-Holland. Those living in Rotterdam were spread across various neighborhoods, with no single neighborhood being dominant.

In terms of educational background, most respondents were university (WO) students (74.6%), followed by HBO students (19.7%) and MBO students (5.6%). Participants represented a wide range of academic fields, with the largest percentage coming from Social Sciences & Humanities (27.5%).

When asked about their fashion interest, 33.8% reported being somewhat interested, and 46.5% said they were interested, with an overall mean of M = 2.73, SD = 0.77 on a 4-point scale. Regarding secondhand shopping habits, the most common response was that participants occasionally buy secondhand clothing (M = 2.99, SD = 1.21 on a 5-point scale). The highest percentage of people say that they typically buy secondhand clothing at the thrift store: 73.5%. After that is on online platforms like Vinted with 61.1%. Since people could select multiple answers, the total exceeds a 100%. Participants were moderately satisfied with secondhand stores in Rotterdam, with 29.5% saying they were neutral, and 33.3% reporting they were somewhat satisfied.

Participants were asked to indicate their main reasons for buying secondhand clothing (multiple answers allowed). The most frequently selected reasons were sustainability and affordability, the first chosen by 69.0% of respondents and the second by 69.8%. Uniqueness was also a common motivation (48.8%). Fewer participants reported buying secondhand clothing for emotional fulfillment (31.0%), or social image (6.2%). Percentages do not add up to 100%, as multiple responses were allowed.

Participants were asked what prevents them from buying secondhand clothing more often (multiple responses allowed). The most commonly reported barrier was limited selection and fewer style options, selected by 47.3% of respondents. Other frequently mentioned reasons included hygiene concerns (34.1%), the perception that secondhand clothing is overpriced (29.5%), and concerns about quality (19.4%). A smaller number of participants indicated that secondhand clothing does not align with their identity (7.8%). Interestingly, 21.7% of respondents reported that nothing prevents them from buying secondhand more often. As multiple responses were allowed, percentages do not sum to 100%.

4.2 Pearson correlation

A Pearson correlation was conducted to assess the relationship between interest in fashion and frequency of secondhand clothing purchases. The analysis revealed a statistically significant positive correlation, $r(140) = .24$, $p = .004$, suggesting that greater fashion interest is associated with more frequent secondhand shopping behavior.

Pearson correlation analyses revealed significant positive relationships between all five motivational factors and the frequency of secondhand clothing purchases. The strongest correlation was observed for emotional value ($r = .690$, $p < .001$), followed by uniqueness ($r = .540$), sustainability ($r = .487$), and affordability ($r = .405$). All relationships were statistically significant at $p < .001$, suggesting that students who view secondhand clothing as emotionally rewarding, unique, affordable, or sustainable are more likely to buy it frequently. Inter-correlations among motivational variables were moderate to strong, with the strongest being between sustainability and social value ($r = .620$, $p < .001$) and between emotional value and uniqueness ($r = .553$, $p < .001$), indicating conceptually related but distinct constructs.

Pearson correlation analyses revealed a strong, statistically significant negative relationship between hygiene concerns and frequency of secondhand shopping, $r(115) = –.567$, $p < .001$, suggesting that participants who view secondhand clothing as unhygienic are significantly less likely to purchase it. A moderate negative correlation was also observed for lower quality ($r = –.284$, $p = .002$) and for stigma ($r = –.266$, $p = .004$) and limited variety ($r = –.216$, $p = .019$) . The belief that secondhand clothing is overpriced is not significantly associated with shopping frequency ($p > .05$). Additionally, several barriers were interrelated: hygiene concerns positively correlated with quality concerns ($r = .479$, $p < .001$) and with stigma ($r = .465$, $p < .001$). Stigma also showed a strong association with limited variety ($r = .391$, $p < .001$), indicating that perceived social judgment and practical store limitations often co-occur in participants' reasoning.

4.3 Multiple regression analysis

A series of Ordinary Least Squares (OLS) regression analyses were conducted to examine how both motivational and barrier-related factors influence the frequency of secondhand clothing purchases among students. Regression analysis was also conducted because, unlike Pearson correlation, it not only assesses the strength and direction of relationships between variables but also determines the unique contribution of each predictor while controlling for the effects of others. This provides a deeper and more nuanced understanding of how multiple factors simultaneously influence secondhand shopping behavior. Prior to the analyses, all standard assumptions of linear regression were assessed. A scatterplot of standardized residuals against predicted values indicated some deviation from linearity and homoscedasticity, as residuals showed a structured pattern and were not evenly dispersed across the range of predicted values. Despite these limitations, the residuals appeared to be approximately normally distributed based on visual inspection of the histogram and P–P plot.

Therefore, the regression results should be interpreted with some caution, acknowledging the potential impact of minor assumption violations. Multicollinearity was assessed using Variance Inflation Factors (VIF), and all values were below the conservative threshold of 5.0, with the highest VIF (1.923) observed for social value. This indicates that multicollinearity was not a concern in the model.

4.3.1 Motivation-based model

The first regression model tested the extent to which motivational factors predicted secondhand shopping frequency.

The regression equation based on unstandardized coefficients was as follows:
Purchase Frequency = $\beta_0 + \beta_1$(Sustainability) + β_2(Uniqueness) + β_3(Social Value) + β_4(Emotional Value) + β_5(Affordability) + ε

The model was statistically significant, $F(5, 111) = 27.73$, $p < .001$, and accounted for 55.5% of the variance in purchase frequency ($R^2 = .555$), suggesting a strong model fit. Among the five predictors, emotional value emerged as the strongest and most statistically significant positive predictor of secondhand shopping frequency ($b_4 = .617$, $t = 5.12$, $p < .001$), suggesting that students who feel emotionally satisfied when buying secondhand clothing tend to do so more frequently. Uniqueness ($b_2 = .222$, $p = .012$), sustainability ($b_1 = .271$, $p = .024$), and affordability ($b_5 = .192$, $p = .041$) were also statistically significant positive predictors. In contrast, social value was not a significant predictor ($b_3 = –.032$, $p = .815$).

Table 1: Multiple regression analysis predicting secondhand clothing purchase frequency.

Predictor	B	SE B	β	t	p	VIF
(Constant)	-1.7	0.461	—	-3.69	< .001***	—
Sustainability_avg	0.271	0.119	0.191	2.28	.024*	1.745
Uniqueness_avg	0.222	0.087	0.205	2.57	.012*	1.597
Social_value_avg	-0.032	0.137	-0.021	-0.24	.815	1.923
Emotional value	0.617	0.121	0.438	5.12	< .001***	1.828
Affordability	0.192	0.093	0.144	2.06	.041*	1.209

Notes: B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Significance levels: *p < .05, **p < .01, ***p < .001

Emotional value was the strongest predictor of secondhand shopping frequency. Because emotional value might be influenced by other motivations, an additional regression analysis was conducted to examine which specific factors contribute to emotional satisfaction when purchasing secondhand

clothing. Motivations such as sustainability, affordability, uniqueness, and social value were included as predictors to determine their relationship with emotional value.

The regression equation based on unstandardized coefficients was as follows:
Emotional Value = $\beta_0 + \beta_1$(Affordability) + β_2(Sustainability) + β_3(Uniqueness) + β_4(Social Value) + ε

The overall model was statistically significant, $F(4, 112) = 23.18$, $p < .001$, and explained 45.3% of the variance in emotional value ($R^2 = .453$). This indicates that the included motivational factors jointly predict students' emotional satisfaction with secondhand shopping. Among the predictors, uniqueness ($b_3 = .286$, $p < .001$), affordability ($b_1 = .23$, $p = .001$), and sustainability ($b_2 = .244$, $p = .008$) were significant positive predictors. This suggests that students who value these aspects tend to experience greater emotional reward when shopping secondhand. In contrast, social value was not a significant predictor ($b_4 = .083$, $p = .440$), indicating that motivations related to social image do not substantially influence emotional fulfillment in this context.

Table 2: Multiple regression analysis predicting emotional satisfaction when purchasing secondhand clothing.

Predictor	B	SE B	β	t	p	VIF
(Constant)	0.889	0.352	—	2.527	.013*	—
Affordability	0.23	0.07	0.242	3.302	.001**	1.101
Sustainability_avg	0.244	0.09	0.242	2.704	.008**	1.638
Uniqueness_avg	0.286	0.062	0.372	4.592	< .001***	1.344
Social_value_avg	0.083	0.107	0.075	0.774	.440	1.912

Notes: B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Significance levels: *p < .05, **p < .01, ***p < .001

4.3.2 Barrier-based model

A third OLS regression was performed to assess whether perceived barriers predicted shopping frequency.

The regression equation based on unstandardized coefficients was as follows:
Purchase Frequency = $\beta_0 + \beta_1$(Limited Variety) + β_2(Hygiene) + β_3(Overpricing) + β_4(Low Quality) + β_5(Stigma) + ε

The model was also statistically significant, $F(5, 111) = 11.33$, $p < .001$, and explained 33.8% of the variance ($R^2 = .338$), indicating moderate predictive strength. Again, all regression assumptions were met, and VIF values remained below 2.5. Of the five barrier-related predictors, only hygiene concerns

significantly and negatively predicted secondhand shopping frequency ($b_2 = –.546$, $p < .001$). Participants who perceived secondhand clothing as unhygienic reported significantly lower shopping frequency. Other factors, including limited variety ($b_1 = –.117$, $p = .324$), overpricing ($b_3 = .124$, $p = .157$), low quality ($b_4 = –.058$, $p = .533$), and stigma ($b_5 = .017$, $p = .882$) were not significant predictors.

Table 3: Multiple regression analysis predicting secondhand clothing purchase frequency based on perceived barriers.

Predictor	B	SE B	β	t	p	VIF
(Constant)	4.68	0.437	—	10.701	< .001***	—
Limited_variety_avg	-0.117	0.118	-0.084	-0.991	.324	1.215
Hygiene_avg	-0.546	0.101	-0.535	-5.408	< .001***	1.642
Overpriced	0.124	0.087	0.117	1.426	.157	1.130
Low quality	-0.058	0.093	-0.058	-0.625	.533	1.432
Stigma	0.017	0.113	0.014	0.149	.882	1.415

Notes: B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Significance levels: *p < .05, **p < .01, ***p < .001

4.3.3 Adding control variables

To assess the robustness of these findings, fashion interest and other demographic variables were added as control variables in a series of hierarchical regressions.

The regression equation based on unstandardized coefficients was as follows:
$$\textit{Purchase Frequency} = \beta_0 + \beta_1(\text{Sustainability}) + \beta_2(\text{Uniqueness}) + \beta_3(\text{Social Value}) + \beta_4(\text{Emotional Value}) + \beta_5(\text{Affordability}) + \beta_6(\text{Age Dummy}) + \beta_7(\text{Female}) + \beta_8(\text{Education}) + \beta_9(\text{Fashion Interest}) + \varepsilon$$

A hierarchical regression analysis was conducted to examine the impact of motivational factors and demographic controls on the frequency of secondhand clothing purchases. In Model 1 (Table 1), motivational factors explained 55.5% of the variance, $F(5, 111) = 27.73$, $p < .001$. In Model 2 (Table 4), the inclusion of control variables (age, gender, education, fashion interest) increased explained variance to 59.6%, $F(9, 107) = 17.56$, $p < .001$, $\Delta R^2 = .041$. Emotional value remained the strongest significant predictor ($b_4 = .690$, $p < .001$), followed by sustainability ($b_1 = .266$, $p = .023$) and affordability ($b_5 = .199$, $p = .035$). Among the control variables, gender ($b_7 = -.442$, $p = .024$) and age ($b_6 = –.375$, $p = .033$) were significant, suggesting that younger and male participants tend to shop secondhand more frequently.

Table 4: Multiple regression analysis predicting secondhand clothing purchase frequency including control variables

Predictor	B	SE B	β	t	p
(Constant)	-0.933	0.613	—	-1.522	.131
Sustainability	0.266	0.116	0.187	2.304	.023*
Uniqueness	0.127	0.090	0.117	1.400	.164
Social Value	0.006	0.135	0.004	0.048	.962
Emotional Value	0.690	0.125	0.490	5.513	< .001***
Affordability	0.199	0.093	0.149	2.135	.035*
Age Dummy	-0.375	0.174	-0.138	-2.155	.033*
Female	-0.442	0.193	-0.153	-2.290	.024*
Education	-0.171	0.144	-0.078	-1.192	.236
Fashion Interest	0.153	0.103	0.102	1.480	.142

Notes: B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Significance levels: *p < .05, **p < .01, ***p < .001

Another hierarchical multiple regression analysis was conducted to examine whether barrier-related factors predicted secondhand clothing purchase frequency, and whether this relationship held after controlling for demographic variables. In the first model (Table 3), only the barrier-related predictors were included: perceived limited variety, hygiene concerns, affordability, quality, and stigma. The model was statistically significant, $F(5, 111) = 11.33$, $p < .001$, and explained 33.8% of the variance in secondhand shopping frequency ($R^2 = .338$).

In the second model (Table 5), control variables (age group, gender, education level, and fashion interest) were added.

The regression equation based on unstandardized coefficients was as follows:

$$\textit{Purchase Frequency} = \beta_0 + \beta_1(\text{Limited Variety}) + \beta_2(\text{Hygiene}) + \beta_3(\text{Quality Barrier}) + \beta_4(\text{Quality Perception}) + \beta_5(\text{Social Fit}) + \beta_6(\text{Age}) + \beta_7(\text{Gender}) + \beta_8(\text{Education}) + \beta_9(\text{Fashion Interest}) + \varepsilon$$

This model remained statistically significant, $F(9, 107) = 9.37$, $p < .001$, and explained 44.1% of the variance ($R^2 = .441$), representing an increase of 10.3% in explained variance. This indicates that the inclusion of demographic factors improves model fit. Among the barrier-related predictors, hygiene concerns remained the strongest and only significant negative predictor ($b_2 = –.555$, $p < .001$), suggesting that students who are more concerned about hygiene are significantly less likely to purchase secondhand clothing. None of the other barrier items (limited variety, quality concerns, affordability, or social fit) were significant predictors in the final model. Among the control variables, age ($b_6 = –.555$, $p = .008$) and fashion interest ($b_9 = .414$, $p < .001$) were significant predictors,

indicating that younger individuals and those with greater fashion interest were more likely to buy secondhand. Gender and education were not significant predictors.

Table 5: Multiple regression analysis predicting secondhand clothing purchase frequency based on perceived barriers including control variables

Predictor	B	SE B	β	t	p
(Constant)	4.640	0.703	—	6.598	< .001***
Limited Variety	-0.033	0.113	-0.024	-0.290	.772
Hygiene	-0.555	0.095	-0.544	-5.849	< .001***
Quality Barrier	0.111	0.082	0.106	1.353	.179
Quality Perception	-0.040	0.087	-0.040	-0.456	.649
Social Fit	-0.065	0.109	-0.053	-0.599	.551
Age (A1)	-0.555	0.205	-0.204	-2.704	.008**
Female	-0.229	0.224	-0.079	-1.022	.309
Education	-0.131	0.166	-0.060	-0.792	.430
Fashion Interest	0.414	0.113	0.275	3.647	< .001***

Notes: B = unstandardized coefficient; SE B = standard error; β = standardized coefficient. Significance levels: *p < .05, **p < .01, ***p < .001

The analyses confirm that emotional value and hygiene concerns are the two most robust predictors of secondhand shopping behavior. Emotional motivation plays a dominant role in encouraging purchases, while hygiene-related perceptions strongly discourage them. Additionally, fashion interest appears to influence shopping frequency, but its role differs depending on whether motivations or barriers are considered: it becomes non-significant when motivations are added but is a meaningful predictor in the context of barriers.

4.3.4 Secondhand fashion stores in Rotterdam

As mentioned before, participants were moderately satisfied with secondhand stores in Rotterdam, with 29.5% reporting a neutral attitude and 33.3% indicating they were somewhat satisfied. When asked what could be improved, several recurring themes emerged across the responses. A dominant concern was pricing, with many participants criticizing secondhand stores for being too expensive.

A common frustration was that secondhand clothing often seemed unjustifiably expensive. Multiple participants remarked that prices in secondhand shops were sometimes equal to, or even higher than, those of new clothing. This was especially troubling when it came to basic or lower-quality items. A respondent commented, “The price is also unjustifiably expensive.” Others echoed

this sentiment, linking high prices to the curated nature of some stores. One participant noted, “Sometimes they price the clothes very high while it is not worth it. The term vintage then takes over while it is not applicable.” Another added, “In curated stores I am often fine with this, but in thrift stores I often do not feel like the clothes are worth the price.”

Beyond pricing, another frequent point of feedback was the quality and condition of items. Participants mentioned that clothing was sometimes damaged, torn, dusty, or made from low-quality fast fashion brands. As one respondent explained, “There are often poor quality clothes hanging there, such as from Shein, which have threads hanging from them, are dirty or are already torn.” Hygiene in the stores themselves was also an issue: “It should be less dusty,” a participant simply stated. Participants further suggested improvements in selection and accessibility. Several wanted more stores offering trend-aligned secondhand clothing, as well as better organization within stores to make browsing by size and style easier. A student remarked, “Often the offer is the same and lacks many different other types of styles of clothing. It is mainly old-fashioned or very alternative. Difficult to find good basics for example.” Others stressed the need for more inclusive sizing, noting that larger sizes were often hard to find.

Finally, several participants noted that secondhand stores in Rotterdam could benefit from better visibility and marketing, particularly online. Several respondents mentioned that despite their interest in secondhand shopping, they often struggled to find stores or didn’t hear much about them. One participant noted, “I actually never see anything about it, and I think that more attention would cause a change in buying behavior for many people.” Some suggested that improved promotion, especially through social media, could help secondhand stores attract a wider audience.

Overall, the open-ended responses highlight that while there is strong interest in secondhand fashion among students, improvements in affordability, quality, hygiene, organization, and marketing could significantly enhance the secondhand shopping experience in Rotterdam.

5. Conclusion

5.1 Answer to the central research question

This study was set out to explore the key research question: "What motivates students aged 18 and above in Rotterdam to purchase or avoid secondhand fashion?" Because the (fast) fashion industry causes a lot of environmental and social problems (Bick et al., 2018; Brewer, 2019), secondhand clothing provides an important and more sustainable alternative. However, little research had previously focused on understanding the specific motivations and barriers affecting secondhand clothing consumption in the Dutch context, and particularly among students in Rotterdam. The findings reveal that intrinsic motivations, especially emotional value, play a central role in driving secondhand shopping behavior. Students are more likely to purchase secondhand clothing when it brings them satisfaction, and this emotional reward is often linked to perceptions of sustainability, affordability, and uniqueness. Among the barriers studied, only hygiene concerns significantly reduced shopping frequency. While other issues like pricing, selection, and quality were frequently mentioned in open responses, they did not emerge as statistically significant predictors. Fashion interest helped explain why some students shop secondhand more frequently, particularly in overcoming barriers. However, when motivational factors were accounted for, its influence lessened, reinforcing the central role of emotional and value-based motivations.

5.2 Interpretation of findings

Motivational factors were found to have a stronger overall influence on secondhand shopping behavior than perceived barriers. This is an encouraging finding, as it suggests that students can be positively motivated to engage in secondhand fashion consumption. Even if certain barriers exist, such as concerns about hygiene or limited variety, strong motivational drivers may outweigh these obstacles.

In support of H1b, emotional value emerged as the most statistically significant positive predictor of secondhand shopping frequency. This finding suggests that students who experience happiness or satisfaction from buying secondhand are substantially more likely to engage in the behavior. This aligns with prior research emphasizing the emotional and experiential rewards of secondhand fashion consumption. However, emotional value does not appear to operate in isolation. It is likely shaped by other underlying motivations such as sustainability, affordability, and uniqueness. For example, students may feel emotionally rewarded because they know they are making environmentally conscious choices, saving money, or acquiring one-of-a-kind pieces. In this sense, emotional value acts as an overarching outcome, a synthesis of other motivational factors. This interpretation is supported by an additional regression analysis, which found that students who were motivated by sustainability, affordability, and uniqueness reported significantly higher levels of emotional satisfaction. While emotional value was the most direct predictor of shopping frequency,

these findings suggest that other motivations may indirectly contribute to behavior by enhancing emotional fulfillment. The hypotheses on sustainability (H1a), affordability (H1c), and uniqueness (H1e) also showed statistically significant positive associations with shopping frequency. These results support the idea that students are more likely to purchase secondhand clothing when they perceive it as environmentally responsible, cost-effective, or offering unique items. In contrast, social value (H1d) did not significantly predict behavior, suggesting that motivations related to social recognition or image do not independently influence secondhand shopping when other, more personally meaningful factors are considered.

Among the barrier-related factors, only H2b, concerning hygiene concerns, was supported. Participants who perceived secondhand clothing as unhygienic were significantly less likely to purchase it, confirming hygiene as a key deterrent to secondhand shopping. This finding is consistent with prior research that highlights consumer hesitations around the cleanliness and safety of pre-owned garments. Additionally, open-ended survey responses reinforced this concern: several participants mentioned issues such as dusty clothing, unpleasant store scents, and poor garment maintenance, suggesting that hygiene is a widespread and important barrier among Rotterdam students. In contrast, the remaining hypothesized barriers (lack of variety (H2a), perceived overpricing (H2c), poor quality (H2d), and identity misalignment (H2e)) did not significantly predict shopping frequency. This suggests that while these issues may exist, they are either less central to decision-making or outweighed by stronger motivations such as emotional value or sustainability. The open-ended feedback indicates that these issues are still present in consumers' experiences, even if they are not decisive factors statistically. Many participants complained about high prices, noting that secondhand clothing in Rotterdam is sometimes as expensive as new clothing. Others mentioned low-quality items, such as clothing made from fast fashion brands, or difficulties finding larger sizes and more trend-aligned offerings.

5.3 Theoretical implications

This study confirms earlier research that shows secondhand fashion consumption is often driven by emotions and personal experiences (Kim et al., 2021; Diddi et al., 2019; Laitala & Klepp, 2018). It adds to this by showing that emotional value is not a standalone factor, but rather a result of other motivations like sustainability, affordability, and uniqueness. This suggests that future studies on consumer behavior—especially in the context of sustainable fashion—should place more focus on emotional and ethical factors instead of just practical concerns.

Moreover, the significant negative influence of hygiene concerns validates prior literature identifying sanitary risk as a central barrier (Pretner et al., 2021; Kim et al., 2021). These findings reflect the broader challenges consumers face when balancing ethical motivations with personal comfort and social expectations, as outlined in the literature on trade-offs and identity-related barriers in sustainable fashion consumption (Diddi et al., 2019; Laitala & Klepp, 2018).

5.4 Societal and practical implications

In practice, the findings suggest that secondhand retailers and policymakers in Rotterdam should focus on enhancing emotional value. By tapping into the emotional motivations of their customers, stores can strengthen consumer engagement and increase shopping frequency. For instance, shops could promote the environmental benefits of secondhand clothing through in-store posters or social media campaigns, emphasize affordability through student discounts or loyalty programs, and curate unique, stylish selections to enhance the sense of individuality and uniqueness. By reinforcing these drivers, stores can foster stronger emotional connections and build longer-term loyalty among student shoppers.

Given the prominence of hygiene concerns and secondary issues like pricing and selection, secondhand retailers in Rotterdam should prioritize improving the shopping experience. Clear communication, such as in-store or online messaging explaining how items are cleaned and quality-checked, could help alleviate hygiene fears. Investment in store aesthetics and better product presentation would also promote a sense of cleanliness and care. To address pricing concerns, stores could reconsider pricing strategies to ensure that affordability remains a clear advantage over new retail options. Moreover, there is room for better marketing and visibility. Several participants mentioned the difficulty of finding secondhand stores or discovering their offerings online. Retailers should enhance their digital presence and marketing efforts to reach a broader audience, especially students who are highly active online. Overall, while hygiene remains a barrier for some, it is also one of the most actionable, and addressing it could unlock greater engagement with secondhand fashion across a wider audience.

The Rotterdam municipality can support these efforts through public awareness campaigns that normalize secondhand consumption and challenge outdated stigmas. Policies that incentivize sustainable consumption , such as tax breaks or subsidies for certified secondhand businesses, could further encourage both supply and demand. Collaborations between city councils and secondhand stores (e.g., sustainability weeks, pop-ups, or circular fashion hubs) could help change public perception and highlight the role of secondhand fashion in climate-conscious living. Given Rotterdam's ambitions to foster a circular economy (Bergsma, de Koning, & Snijder, 2022) and cultivate a more creative city identity (Zhang, 2021), supporting secondhand fashion not only addresses environmental concerns but also contributes to the city's broader cultural and economic goals. Public awareness campaigns and local policies, such as tax breaks or collaborative sustainability events, can further enhance the attractiveness of secondhand consumption.

5.5 Limitations of the study

While this study offers valuable insights into the motivations and barriers influencing secondhand fashion consumption among students in Rotterdam, several limitations should be

acknowledged. First, the use of non-probability convenience sampling limits the generalizability of the findings to a broader population. Most participants were highly educated and identified as female, which may have influenced the results due to existing gender and education-related patterns in fashion interest and sustainability behavior. Second, the study relied on self-reported data, which may be subject to social desirability bias, particularly in responses related to sustainability or emotional value. Third, while composite variables were created to measure key concepts, some constructs (e.g., stigma or social value) were measured using a single item, which may have reduced reliability.

Future research could address these limitations by using larger, more diverse samples, including participants from different age groups, cultural backgrounds, and regions. Longitudinal studies could also explore how motivations and barriers change over time, particularly in response to shifting cultural attitudes toward sustainability and fashion. Additionally, qualitative research, such as interviews or focus groups, could provide deeper insight into the emotional and identity-related aspects of secondhand fashion that quantitative surveys may not fully capture.

5.6 Suggestions for future research

Future research could address these limitations by using larger, more diverse samples, including participants from different age groups, cultural backgrounds, and regions. Longitudinal studies could also explore how motivations and barriers change over time, particularly in response to shifting cultural attitudes toward sustainability and fashion. Additionally, qualitative research, such as interviews or focus groups, could provide deeper insight into the emotional and identity-related aspects of secondhand fashion that quantitative surveys may not fully capture.

Moreover, further research could explore how store environments, digital platforms, or peer networks influence secondhand shopping behavior. For instance, how do influencers or sustainability campaigns affect the perception of secondhand fashion? And how might technology change shopping experiences in this sector?

Ultimately, pressing new questions include: How can emotional value be operationalized in different retail contexts? What store practices and policies effectively reduce hygiene-related concerns among secondhand clothing shoppers? And how can cities like Rotterdam embed secondhand fashion more deeply in their urban sustainability agendas? Answering these questions would provide valuable guidance for both academics and practitioners seeking to promote more sustainable consumption habits through secondhand fashion.

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Appendix A: Survey

Information on the study

Study purpose

The goal of this study is to gain insights into the motivations behind purchasing or avoiding secondhand clothing. The data collected will help us understand these behaviors and contribute to the development of effective strategies for promoting sustainable fashion.

This research is conducted by Juul Bolder, a Master's student in Cultural Economics and Entrepreneurship at Erasmus University Rotterdam, as part of her Master's thesis.

Survey Duration

The survey will take approximately 5 minutes to complete.

Processing of the data

Your responses will remain anonymous. While the survey asks for some personal information, such as your field of study, age, and residence, these are categorical responses, making it highly unlikely that any answers can be traced back to an individual. This information is collected to build a comprehensive database and to design relevant behavioral interventions. You will not be asked for contact information, nor will your IP address be stored.

Contact information

If you have any questions or need more information about the study, please feel free to reach out to me at 507084jb@eur.nl.

Questions

Q1 When were you born?

- o Between 2000 - 2010 (1)
- o Between 1990 - 1999 (2)
- o Between 1980 - 1989 (3)
- o Other: (4) _____

Q2 What applies to you best?

- o Male (1)
- o Female (2)

o Non-binary / other (3)

o Prefer not to say (4)

Q3 Do you live in Rotterdam?

o Yes (1)

o No (2)

Display this question:

If Do you live in Rotterdam? = Yes

Q4 What neighbourhood do you live in?

o Kralingen-Crooswijk (1)

o City centre (2)

o Delfshaven (3)

o Overschie (4)

o Noord (5)

o Hillergersberg-Schiebroek (6)

o Feijenoord (7)

o Prins Alexander (8)

o Charlois (9)

o Ijsselmonde (10)

o Hoek van Holland (11)

o Buiten Rotterdam (12)

Display this question:

If Do you live in Rotterdam? = No

Q5 What province do you live in?

- o Groningen (1)
- o Friesland (2)
- o Drenthe (3)
- o Overijssel (4)
- o Flevoland (5)
- o Gelderland (6)
- o Utrecht (7)
- o Noord-Holland (8)
- o Zuid-Holland (9)
- o Zeeland (10)
- o Noord-Brabant (11)
- o Limburg (12)

Q6 Are you currently enrolled in an educational program?

- o Yes (1)
- o No (2)

Q7 What type of educational institution are you currently studying at? If you're not currently enrolled, what was the last type of educational institution you were enrolled in?

- o HBO (1)
- o MBO (2)
- o WO (3)

Q8 What field is/was your studies based in?

- o Social Sciences & Humanities (1)
- o Arts & Creative Fields (2)
- o Natural Sciences (3)
- o Formal Sciences (4)
- o Engineering & Technology (5)

- o Health & Medical Sciences (6)
- o Business & Management (7)
- o Law & Legal Studies (8)
- o Education & Pedagogy (9)
- o Agricultural & Environmental Studies (10)
- o Practical & Vocational Studies (11)
- o Other (12) _____

Q9 Which of the following best describes your ethnic or cultural background?

- ☐ European (1)
- ☐ Anglo-Saxon (UK, America, Canada, Australia, New Zealand (2)
- ☐ Middle Eastern (3)
- ☐ African (4)
- ☐ Asian (5)
- ☐ Latin American (6)
- ☐ Do not wish to answer this question (7)

Q10 What is your monthly income?

- o €0-500 (1)
- o €500-1500 (2)
- o €1500-2500 (3)
- o €2500 or more (4)

Q11 How interested are you in fashion?

- o Not interested (I don't care about fashion) (1)
- o Somewhat interested (I like fashion but don't focus on it much) (2)
- o Interested (I enjoy fashion and put effort into my style) (3)
- o Very interested (Fashion is a big part of my life) (4)

Q12 How interested are you in fashion trends?

- o Not interested (I don't follow trends at all) (1)
- o Somewhat interested (I notice trends but don't actively follow them) (2)
- o Interested (I keep up with trends and incorporate them into my style) (3)
- o Very interested (I closely follow trends and love staying up to date) (4)

Q13 How often do you buy secondhand clothing?

- o Never (1)
- o Rarely (every six months) (2)
- o Occasionally (every few months) (3)
- o Sometimes (about once a month) (4)
- o Often (multiple times a month) (5)

Skip To: Q15 If How often do you buy secondhand clothing? = Never

Q14 Where do you typically buy secondhand clothing?

- ☐ Thrift stores (Kringloop) (1)
- ☐ Online secondhand platforms (e.g., Vinted, Depop) (2)
- ☐ Curated vintage stores (3)
- ☐ Clothing swaps (4)
- ☐ Other: (5) _____

Q15 How satisfied are you with secondhand clothing stores in Rotterdam?

- o Very dissatisfied (They don’t meet my expectations at all.) (1)
- o Somewhat dissatisfied (They could be better in terms of selection, pricing, or quality.) (2)
- o Neutral (I don’t have strong feelings either way.) (3)

o Somewhat satisfied (They generally meet my expectations, but there's room for improvement.) (4)

o Very satisfied (I'm happy with the selection, pricing, and quality.) (5)

o I don't shop at secondhand stores. (6)

Q16 What do you think could be improved about secondhand clothing stores in Rotterdam?

_____

_____

Q17 What are your main reasons for buying secondhand clothing? (Select all that apply.)

☐ Sustainability reasons. (1)

☐ Buying secondhand clothing gives me a sense of fulfillment. (2)

☐ It's more affordable compared to new clothing. (3)

☐ Secondhand fashion offers unique clothing pieces. (4)

☐ I think buying secondhand clothing reflects positively on my social image. (5)

☐ I don't buy secondhand clothing. (6)

☐ Other (please specify): (7) _____

Q18 What prevents you from buying secondhand clothing more often? (Select all that apply)

☐ The selection is limited, with fewer style options available. (1)

☐ Hygiene concerns. (2)

☐ Feeling that it is overpriced for the value that you get. (3)

☐ Concerns about the lower quality of secondhand items. (4)

☐ Feeling that secondhand clothing doesn't align with my identity. (5)

☐ Nothing prevents me from buying secondhand clothing. (6)

☐ Other (please specify): (7) _____

End of Block: Questions

Start of Block: Likert scales

Motivations to buy Thinking about times when you have consumed secondhand fashion, please indicate how much you agree or disagree with the following statements.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I have bought secondhand clothing because it is more environmentally friendly. (1)	o	o	o	o	o
Buying secondhand clothing made me feel happy and satisfied. (2)	o	o	o	o	o
I bought secondhand clothing because it was cheaper than new clothing. (3)	o	o	o	o	o
I bought secondhand clothing because it allowed me to express my unique style. (4)	o	o	o	o	o

I bought secondhand clothing because it reflected positively on my social image. (5)	o	o	o	o	o
I bought secondhand clothing because I wanted to support sustainable businesses. (6)	o	o	o	o	o
Buying secondhand clothing made me feel like I was making a positive impact on society. (7)	o	o	o	o	o
I bought secondhand clothing because I enjoyed the thrill of finding unique pieces. (8)	o	o	o	o	o
I bought secondhand clothing because I saw it as a way to reduce waste. (9)	o	o	o	o	o

Motivations to avoid Thinking about times when you chose not to consume secondhand fashion, please indicate how much you agree or disagree with the following statements.

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
I avoided buying secondhand clothing because the selection was too limited. (1)	o	o	o	o	o
I chose not to buy secondhand clothing because I felt the styles were outdated. (2)	o	o	o	o	o
I decided against secondhand clothing because it didn't match my personal taste. (3)	o	o	o	o	o
I avoided buying secondhand clothing because I was concerned about hygiene issues. (4)	o	o	o	o	o

I felt uncomfortable wearing clothes that someone else has worn before. (5)	o	o	o	o	o
I avoided buying secondhand clothing because it was not worth the price for its quality. (6)	o	o	o	o	o
I avoided buying secondhand clothing because I felt like it's lower in quality than new clothing. (7)	o	o	o	o	o
I avoided secondhand clothing because shopping for it felt inconvenient. (8)	o	o	o	o	o
I opted for buying new clothing because it helped me fit in with my social group. (9)	o	o	o	o	o

End of the survey.

Declaration Page: Use of Generative AI Tools in Course Assignments

Student Information

Name: Juul Bolder

Student ID: 507084

Course Name: CC4150 Master Thesis

Instructor Name: Dr. Younghyun Kim

Assignment Title: Trendy or Sustainable? Exploring the Motivations and Barriers Influencing Secondhand Fashion Consumption Among Students in Rotterdam

Date: 16-06-2025

Declaration:

Acknowledgment of Generative AI Tools

I acknowledge that I am aware of the existence and functionality of generative artificial intelligence (AI) tools, which are capable of producing content such as text, images, and other creative works with limited user input.

GenAI use could include, but is not limited to:

- Generated content (e.g., ChatGPT, DeepSeek, Quillbot)
- Writing improvements, including grammar and spelling corrections (e.g., Grammarly)
- Language translation (e.g., DeepL)
- Research task assistance (e.g., finding survey scales, qualitative coding, debugging code, Gemini Deep Research)
- Using GenAI as a search engine tool to find academic articles or books. (e.g. Perplexity AI)
-

For any GenAI task, 1) it must be permitted by the course and 2) you are responsible for verifying the accuracy of the outputs used in any submission. Improper use of sources obtained from GenAI could constitute academic fraud.

Also, 3) the requested prompts/logs (under Extent of AI Usage below) may be either screenshots or textual copies. The appendix can be included as part of the main submission or submitted as a separate document. Check with your lecturer.

☐ I declare that I have used generative AI tools, specifically [Name of the AI Tool(s) or Framework(s) Used], in the process of creating parts or components of my course assignment. The purpose of using these tools was to aid in generating content or assisting with specific aspects of the assignment.

Extent of AI Usage

☐ I confirm that while I utilized generative AI tools to aid in content creation, the majority of the intellectual effort, creative input, and decision-making involved in completing the assignment were undertaken by me. I have enclosed the prompts/logging of my GenAI tool use in an appendix.

Ethical and Academic Integrity

☐ I understand the ethical implications and academic integrity concerns related to the use of AI tools in coursework. I assure that the AI-generated content was used responsibly, and any content derived from these tools has been appropriately cited and attributed according to the guidelines provided by the instructor and the course. I have taken necessary steps to distinguish between my original work and the AI-generated contributions. Any direct quotations, paraphrased content, or other forms of AI-generated material have been properly referenced in accordance with academic conventions.

By signing this declaration, I affirm that this declaration is accurate and truthful. I take full responsibility for the integrity of my assignment and am prepared to discuss and explain the role of generative AI tools in my creative process if required by the instructor or the Examination Board. I further affirm that I have used generative AI tools in

☒ I declare that I have NOT used any generative AI tools and that the assignment concerned is my original work.

Signature: Juul Bolder
Date of Signature: 16-06-2025

accordance with ethical standards and academic integrity expectations.

Signature: [digital signature]
Date of Signature: [Date of Submission]