

DOCTORAL THESIS

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Sustainable Consumption: Motivations and Characteristics of Consumers' Post-Purchase Behaviour of Fashion Products

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ABSTRACT

The environmentally conscious consumption of fashion products promotes the preservation of natural ecosystems for current and future generations. This may include the purchasing and use of textile products made from organic and sustainable materials, the repair, reuse, and recycling of textile products, and the concept of slow fashion. In recent years, the environmental aspects of fashion products have drawn the attention of both researchers and practitioners. As a result, many scientific papers have been accumulated regarding this vital aspect of consumer behaviour. This research aims to provide an overview of the literature regarding consumer behaviour toward sustainable fashion products, uncover and categorise significant driving factors, and identify the most critical barriers.

This research adopts a multi study research design that integrates a systematic literature review, a pilot survey, and a large-scale empirical investigation to comprehensively examine sustainable fashion textile consumption and consumers' sustainable post-purchase behaviours. The current research focused on sustainable post-purchase behaviour of fashion textile consumption. Sustainable consumption is crucial for advancing the circular economy envisioned by the European Union in its Circular Economy Action Plan. This framework emphasises that, alongside corporations adopting more sustainable production processes, consumers must also contribute to a sustainable future by altering their consumption patterns and lifestyles. A key aspect of consumer behaviour involves preferences for new versus second-hand products and actions taken post-purchase. To deepen understanding in this area, this research analyses consumers' sustainable post-purchase behaviours related to fashion (textile) products, focusing on the factors influencing their intentions to reuse, repair, and recycle.

To better understand the further study, the representative survey of 500 residents in Budapest, Hungary, was conducted by employing clustering techniques and structural equation modelling grounded in the Theory of Planned Behaviour (TPB). The findings indicate that consumers who purchase second-hand fashion products are slightly more likely to engage in sustainable post-purchase activities. The results identified and characterized four distinct clusters of fashion consumers based on their post-purchase behaviours. Moreover, it was found that attitudes have a relatively minor influence on repairing and giving away old fashion items, whereas social norms and perceived behavioural control play a more significant role.

Keywords

fashion consumption, sustainable development, green fashion, purchasing behaviour, sustainable post-purchase behaviour, fashion industry, motivation, reuse, repair, and recycling

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1. Introduction

The fashion business, one of the most significant economic sectors in the world, is coming under more and more criticism for its impacts on society and the environment. The "fast fashion" model has sparked serious questions about sustainability due to high pollution and resource consumption, labour exploitation, and overproduction. Therefore, sustainable fashion has emerged as a vital means of reducing environmental harm and promoting ethical conduct throughout the value chain. Customers continue to play an essential yet often overlooked role in driving significant change, even as manufacturers, designers, and brands have received much attention. Through their decisions, actions, and values, consumers actively shape production methods, drive market demand, and influence the life cycle of apparel.

This research investigates how customers may adapt to sustainable fashion consumption, examines the factors influencing sustainable choices, and explores the obstacles and motivations of the consumers' behavioural changes. It also highlights the importance of accessibility, education, and awareness in enabling customers to make informed decisions. By analysing consumer behaviour within the sustainable fashion movement, this research aims to enhance understanding of how bottom-up change can contribute to the global movement for social and environmental responsibility in fashion.

At present, due to the sustainability issue, the environmental and social implications of the fashion industry are increasingly recognized. The fashion industry has begun searching for ways to recycle and reuse used goods. Customers are also considering making fashion consumption more sustainable and recycling their used garments. However, not all consumers like this way of thinking; more environmentally conscious consumers prefer it and show interest in the post-purchase stage. A study found that consumers are more likely to respond to second-hand platforms that are materialistic and ecologically conscious than those that are not. This reduces cognitive dissonance associated with the consumption of second-hand products (Parguel et al., 2017). But when a person tries to establish internal harmony, consistency, or congruity among one's opinions, attitudes, knowledge, and values, the effort can create stress, leading to cognitive dissonance (Harmon-Jones and Harmon-Jones, 2008). So, it is better to think about consumption in a way that may bring environmental benefits.

Fashion (clothing) supports sustainable development by becoming more eco-friendly, as it is a significant contributor to waste. The industry is transforming consumption patterns by using green and recycled materials in production (Niinimäki and Hassi, 2011). The fashion

industry uses green and recycled raw materials to satisfy consumers while reducing waste (Howarth and Hadfield, 2006). More clothing recycling factories should be established, more second-hand clothing stores launched, and more environmentally friendly packaging introduced (da Costa et al., 2018).

As a result, my aims to focus on the post-purchase behaviour of consumers of fashion products (clothing) to motivate them to act sustainably. Organic, environmentally friendly, renewable, slow, and greener are some aspects of sustainable fashion (Cervellon et al., 2010). The global textile and fashion industry is a key economic sector, recognised for its substantial investments, revenue generation, contribution to GDP, and role in employment. The fashion industry, known for its complexity and prominence, has progressively adopted an economic framework and strategic approach (Jacometti, 2019). The European Union's fashion industry mainly consists of small and medium-sized enterprises (SMEs) and is the world's second-largest exporter after China. It is of significant economic importance, employing around 3 million people and contributing roughly 170 billion EUR annually (European Commission 2020).

Hungary has a vast fashion textile market with approximately 12,000 small and medium-sized enterprises in the fashion industry (European Commission, 2019). Major international and multinational corporations largely control the clothing and footwear industry. By 2025, the apparel e-commerce industry was expected to generate US\$806 million, or 16.4% of all Hungarian e-commerce, and by 2029, it was expected to grow to US\$885 million (ecommercedb.com). Hungarian consumers primarily purchase apparel from fast fashion brands, which make trendy clothing accessible to a broad audience by utilizing innovative production and sales techniques that enable quick, cost-effective manufacturing (Euronews, 2019). According to Statista (2024), Hungary's women's clothing market brought in roughly €1.37 billion in 2024, with the average Hungarian spending €141 per person on 28 clothes annually. About 3% of total consumption is spent by households on apparel and footwear, just less than the EU average of about 4%. According to Kokas-Palicska (2011), sustainability and innovation in environmentally friendly fabrics are essential factors for company growth and the prosperity of the textile and apparel sector. Research initiatives concerning the sustainability of the textile and clothing industry are being conducted at various research centers in Hungary, including the Institute of Isotopes and the Institute of Materials and Environmental Chemistry of the Hungarian Academy of Sciences, BAY-ATI (Institute for Materials Science and Technology), BAY-NANO (Institute for Nanotechnology), the Department of Polymer Engineering, and the Faculty of Chemical and

Bioengineering at Budapest University of Technology and Economics, as well as the Rejtő Sándor Faculty of Light Industry and Environmental Protection Engineering at Obuda University, INNOVATEX Textile Engineering and Testing Institute Co., and Nanovo Ltd., among others.

However, excessive natural resource consumption and mass production at low costs raise significant social and environmental concerns in the fashion industry. Consequently, companies must reconsider their strategies and adopt more ethical and environmentally sustainable practices (Claudio, 2007). Scaling textile recycling, encouraging sustainable consumption habits, and promoting locally made, heritage-based, and eco-friendly clothing through occasions like Budapest Fashion Week are all essential to future success. Therefore, companies must understand that both fashion textile and sustainable fashion consumption can support the growth and development of Hungary's fashion textile industries. Thus, it is essential to facilitate more research from the Hungarian context.

This thesis aimed to comprehensively review the relevant literature to understand better consumer post-purchase behaviour regarding sustainable textile products in the fashion industry. Thus, the research aims to investigate different factors influencing those behaviours. Therefore, the objectives of the research are:

- To review the related literature on sustainable post-purchase behaviour to understand the research trends better and find the research gaps.
- To discover the factors and motivators to sustainable post-purchase intentions and behaviour of consumers of new and second-hand fashion textile products.
- To examine the different components of the theory of planned behaviour on post-purchase intentions
- To analyse different demographic characteristics of such intentions and behaviour.
- To identify different clusters of consumers based on sustainable post-purchase behaviour regarding reuse, repair, and recycling

After exploring this research gap in more detail, this thesis focuses on understanding fashion consumers' motivations behind various sustainable post-purchase behaviours, including reusing, repairing, and recycling textile products. The primary research questions guiding the current research are:

1. What are the characteristics of different consumer clusters based on their post-purchase behaviour of fashion products?

2. What factors influence consumers' sustainable post-purchase behaviour?

To address these questions, this thesis presents the findings of a survey conducted among fashion consumers in Budapest, Hungary's capital. The structure of the thesis is as follows: first, a review of different types of sustainable post-purchase behaviours and the literature on consumer motivations for engaging in them was conducted. Next, this thesis focused on the fashion industry, providing an overview of the literature on post-purchase behaviour in this sector. Then, this thesis presented the hypotheses and research methods, followed by a discussion of the empirical survey results. Finally, a conclusion summarising the findings and directions for future research was provided.

Chapter 2 reviewed the existing literature on green and sustainable fashion textile consumption to better understand current research in the field. The literature on sustainable post-purchase behaviour and motivations for fast, traditional, and slow fashion was also reviewed. Moreover, motivations for post-purchase behaviour (Reusing, Repairing, and Recycling) were reviewed. The literature review focused on studies in the same field published between 2011 and 2021, examining the research questions, methodologies, theoretical frameworks, and key findings. This literature review informed and inspired the in-depth research, moving beyond an initial focus on purchase behaviour. Consequently, the study focuses on post-purchase behaviour in sustainable fashion consumption, covering reuse, repair, and recycling aspects.

This review helped to identify gaps and challenges that shaped the direction of the next research work. Thus, the thesis offers a detailed investigation of green, environmentally sustainable fashion textile consumption, beginning with an extensive analysis of prior research. This thesis focuses on the definition of sustainable consumption, explores environmentally conscious behaviours such as reusing, repairing, and recycling, reviews consumption models, and examines the theory of planned behaviour as a key tool for understanding consumer behaviour.

Then, chapter 3 identifies research gaps, outlines the methodology and design, describes questionnaire development and analytical techniques, and proposes a conceptual framework for further study. Then, it presents the findings through descriptive statistics, offering a comprehensive overview of the sample profile. The study then covers the two steps of structural equation modelling: measurement and structural model evaluation using SMART PLS software. Additionally, cluster analysis was conducted to gain deeper insights into

consumer behaviour. It includes a discussion that critically interprets the results of existing literature. Then it clarified the research questions, defined the hypothesis, and introduced the research methods, followed by an analysis of the results of this empirical research in Chapter 4. In this chapter, the scenario for a qualitative study is also presented, which helped inform the following studies in this thesis. First, the survey results on the major stakeholders and consumers of second-hand clothing stores are presented. The results helped my research to focus on sustainable post-purchase behaviour for fashion textile products.

Moreover, the thesis outlines managerial and theoretical implications in the following chapters. It emphasises key findings, suggests directions for future research, and addresses the study's scope and limitations. Finally, conclusions were drawn for both practitioners and future research. Then, this thesis concludes with a summary of the research work, limitations, thesis statements, and related publications.

Figure 1 shows the systematic research framework that begins with a literature review, followed by a survey of key stakeholders and consumers of second-hand textile stores to identify research gaps and a large-scale quantitative survey of post purchase behavior of consumers of fashion products.

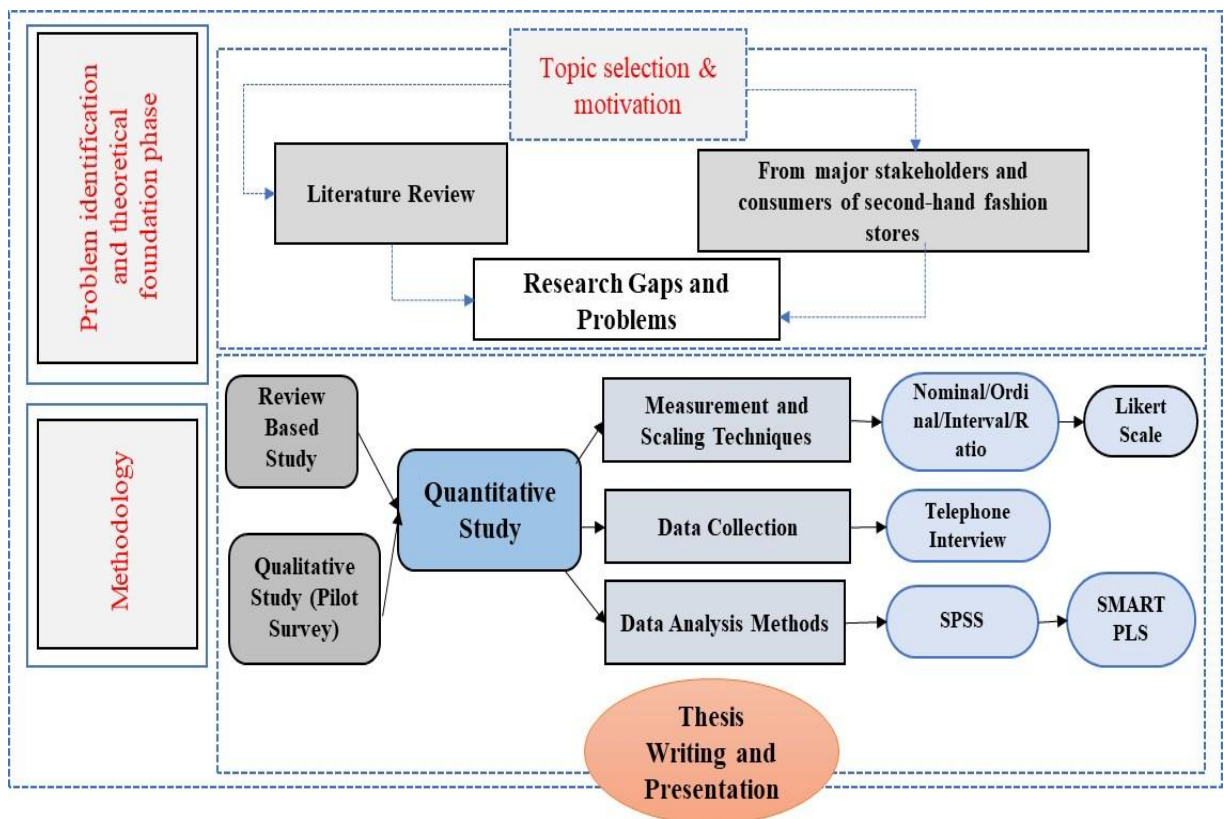


Figure 1. Research Outline (Source: Own Edition)

2. Literature Review

2.1 General Overview of the Fashion Clothing Industry

The fashion clothing industry has a significant influence on the global economy by encompassing various operations such as design, manufacturing, distribution, marketing, and retail of garments and accessories. By understanding the framework and key trends of the fashion textile sector, the transition towards sustainability and increased consumer awareness can be analyzed.

Global apparel consumption has risen 400% in the past 20 years (Jia et al., 2020) and the number of materials in circulation, the energy used to run production, and the methods used to handle the resources during use are all determined by the growth in consumption. The environment suffers from it (Sadeghi et al., 2021) and for what the fashion industry's negative impacts on sustainability must be addressed immediately via circular economy strategies (Saha et al., 2022).

A circular apparel business depends on using environmentally friendly, sustainable fabrics. For instance, cellulose-based materials like Lyocell are created via a closed-loop manufacturing cycle. As a result, 99 percent of the chemicals used to create the fibers were recycled and reducing the environmental effects of textile production requires using sustainable fibers (Bick et al., 2018). In order to overcome the difficulties associated with reprocessing waste textiles at the end of their useful lives, eco-design is crucial. Reducing the release of greenhouse gases is one of the main objectives of sustainability and the circular economy, in addition to recycling and material circularity. Sustainable energy is a key element of sustainable production (Okafor et al., 2021).

Along the supply chain, eco-friendly raw materials can mitigate significant adverse effects. Alternative sustainable fibers with comparable qualities must replace polyester, nylon, and other materials. The spinning and weaving industry should also quickly switch to renewable energy sources and lessen its reliance on non-renewable ones (Patwary, 2020). However, long-lasting products and extended use of stylish apparel can significantly lessen their environmental impact. According to Allwood et al. (2015), prolonging the life of garments reduces the need for new products by 20%, which results in a reduction of roughly 20% in all measures in the producing nation.

Furthermore, the fashion industry's supply chain accessibility is crucial since it will significantly lower unreported subcontracting and, consequently, the business's less obvious social and environmental consequences. Subcontracting is common among suppliers in many developing nations. Subcontracting should be governed by appropriate guidelines that are openly disclosed. In addition to subcontracting, supply chain transparency is required to guarantee accurate identification of the materials used and the individuals producing the goods. Many social and environmental difficulties can be resolved by ensuring these two factors (Patwary, 2020).

Clothing firms consider sustainability a critical strategic problem and focus their corporate operations on accomplishing social and ecological goals to achieve a competitive advantage by deliberately setting themselves apart from the global fast-fashion industry. Meanwhile, supply chain openness pressures businesses to create more sustainable products and processes (Wiegand and Wynn, 2023). The dynamic and fast-paced nature of the fashion clothing industry directly influences the life cycle of fashion textile products, driving rapid shifts from design and production to consumption and disposal.

Life Cycle of Fashion Textile Products

The life cycle of clothes originates with the production or cultivation of raw materials and finishes with discarding or recycling. The process comprises many essential steps, starting with raw material manufacture, yarn and fabric manufacture, cloth concluding, product fabrication, use, and management at the end of life. Comprehending the process is essential for evaluating the textile sector's detrimental ecological and economic ramifications (Fletcher and Tham, 2019).

- **Raw Material Sourcing**

Textile life cycles commence with natural or synthetic raw materials. Natural fibres, including cotton, wool, and flax, are obtained from botanical or animal sources, whereas synthetic fibres such as polyester, nylon, and acrylic are produced from petrochemicals via polymerisation methods. Cotton cultivation necessitates considerable resource and pesticide consumption, whereas synthetic fibre production is energy-intensive and relies on fossil fuels (J. M. Allwood, 2006).

- **Fiber Processing and Yarn Manufacturing**

Raw fibres are subjected to washing, carding, and combing upon collection. These procedures orient the fibres and eliminate contaminants. The fibres are spun into yarn utilising mechanical or chemical techniques, contingent upon the fibre type. Spinning converts free fibres into continuous strands appropriate for weaving or knitting (Kadolph and Marcketti, 2010).

- **Fabric Manufacturing**

Then, clothes weaving, knitting and non-woven-in-nature techniques are processed to transform the yarn. Weaving entails twining the weft and warp threads, whereas knitting creates loops from a singular thread. Non-woven fabrics are produced by glueing or felting fibres. This phase establishes the finished textile's texture, durability, and pliability (Corbman, 1983).

- **Textile Finishing**

Post-manufacturing, fabrics undergo finishing procedures to improve aesthetics, form, or utility. These may encompass whitening, colouring, printing, and methods for resistance to water, flame retardancy, or wrinkles. This phase may exert significant environmental repercussions due to the use of colours, chemicals, and water (Muthu, 2020).

- **Garment Manufacturing / Fabric Utilisation**

Completed clothing is divided, stitched, and constructed into final items that include apparel, furniture, or technological materials. This phase frequently entails labour-intensive tasks, prompting numerous global firms to outsource this stage to cost-effective nations. Product design, design patterns, and quality assurance are also vital components in this context (Glock and Kunz, 2005).

- **Distribution and Use Phase**

Completed textile items are packaged, stored, and sent to retailers or directly to customers. The fashion supply chain may encompass wholesalers, e-commerce platforms, and logistical companies (Christopher et al., 2004). Subsequently, consumers utilise, launder, and preserve products. The lifespan is contingent upon the quality of materials and user conduct. The consumption of energy and water during laundry contributes to environmental degradation (J. M. Allwood, 2006).

- **End-of-Life / Disposal**

At this stage, products may be repurposed into new fibres or fabrics, downcycled into insulation or rags, resold in secondhand markets, or discarded in landfills or cremated. Consequently, circular models like reuse, repair, and take-back initiatives are growing (Fletcher and Tham, 2019).

Figure 2 shows the Life cycle phases included in the baseline scenarios and the clothing library scenarios.

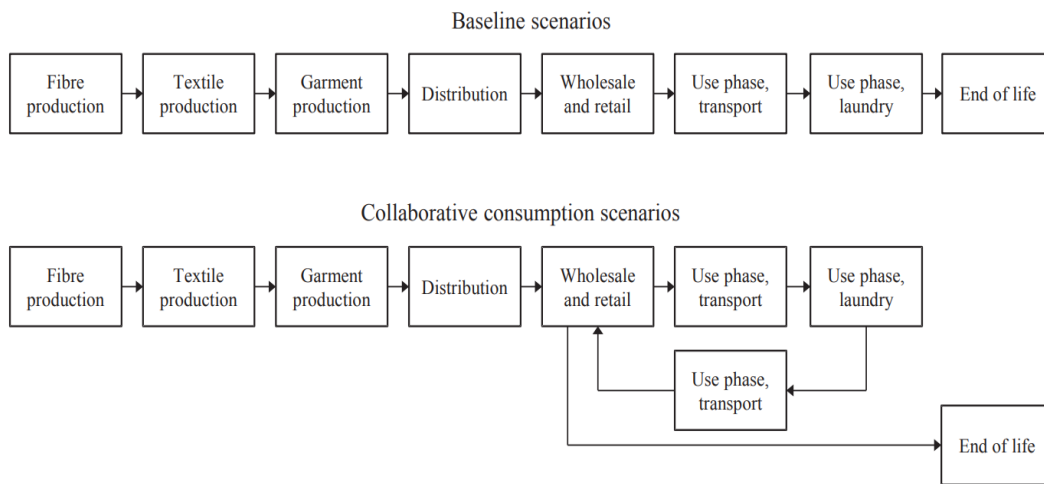


Figure 2. Life cycle phases of clothing products [Source: Zamani et al., (2017)]

The life cycle of fashion textile products has a significant impact on the sustainability of fashion consumption, as each phase, from production to disposal, affects both environmental and social outcomes.

2.2 Sustainability and Fashion Consumption

Sustainable Development

Over the past thirty years, researchers have increasingly focused on sustainable development. A key component of this concept is sustainable consumption and production, which necessitates that businesses adopt strategies enabling consumers to engage in sustainable behaviours. The term “Sustainable Development” was introduced in the report titled “Our Common Future” prepared by the World Commission on Environment and Development (WCED, 1987). In page 54, the report defined sustainable development as development “that meets the needs of the present without compromising the ability of future generations to meet their own needs”. According to the United Nations General Assembly (1987),

sustainable development promotes economic growth while protecting the environment and enhancing social well-being. It serves as a foundation for introducing environmental and social policies and initiatives. While scholars explore sustainability theoretically, businesses and policymakers focus on addressing its practical challenges. According to Hult (2011), an organisation can achieve market-based sustainability when it effectively connects itself through market-oriented product demands, the demands of consumers and the preferences of various stakeholders concerned with economic, social, and environmental dimensions of social responsibility issues. When introducing the role of marketing, Hult (2011) acknowledges its unique position to shift attention from maintaining connections with customers to proactively managing a more extensive range of marketplace concerns due to the increased concentration on sustainability activities. In this context, marketing plays a unique and influential role by shifting its focus from maintaining customer relationships to proactively managing a broader range of marketplace concerns arising from sustainability-related challenges.

Empirical research further supports this market-based sustainability perspective. For instance, Kirchherr et al. (2017) found that consumers' attitudes and purchase intentions of electronic goods are influenced by the satisfaction and environmental benefits of the products that fulfil their needs and contribute to the circular economy. Consumption within the circular economy supports ecological sustainability, as it fundamentally aims to achieve sustainable development by minimizing waste, extending product lifecycles, and optimizing resource use.

Overall, sustainable development serves as a comprehensive framework that connects economic activities, consumer behaviour, and environmental responsibility. It establishes a conceptual framework for understanding sustainable production and consumption patterns, which are vital for achieving long-term sustainability and facilitating the transition to a circular economy.

Sustainable Production and Consumption

Goal 12 of the United Nations Sustainable Development Goals (SDGs), titled 'Responsible Consumption and Production,' has gained significant attention recently (Szlávik, 2016). According to the Lowell Center for Sustainable Production (1998), producing goods and services that avoid pollution, use less energy and natural resources, are economically viable, protect the safety and well-being of consumers, workers, and societies, and provide social

and creative fulfilment for all involved is known as sustainable production. Sustainable production can be used as a strategic statistic to assess a company's total sustainability and investigate more sustainable options for the future. A strategic statistic is a measurable metric utilized by organizations to facilitate long-term decision-making through performance assessment and the formulation of future initiatives (Kaplan & Norton, 1996).

However, a business must also incorporate social and economic factors into its evaluation to attain sustainable production. Businesses must cut back on waste in all its forms as well as their use of energy, raw materials, and natural resources to meet the objectives of sustainable production. They should concentrate on creating, producing, distributing, and either recycling or disposing of products to keep resource consumption and environmental effects within the projected bearing ability of the Earth (Krajnc and Glavič, 2003).

Therefore, studying green and sustainable fashion textile consumption is essential to achieving sustainable development goals. According to Connolly and Prothero (2008), the idea of "green consumption" pushes people to adopt sustainable lifestyles and assume accountability for reducing environmental problems. This could entail picking long-lasting, robust products, using sustainable and renewable resources, and selecting organic products (Connell, 2011).

Consumption is a daily aspect of human life that describes using goods and services to maintain life. Consumers tend to choose products that meet their needs and requirements, particularly sustainable consumption (Da Giau et al., 2016). Researchers are attempting to find alternatives for a sustainable lifestyle by conducting various experiments over a more extended period to make consumption sustainable. In 1994, the United Nations Environment Program published a study titled "Sustainable Consumption Policy Factors," which introduced the idea of sustainable consumption. In this report, they described sustainable consumption refers to providing services and products that fulfill people's needs and enhance their quality of life while simultaneously reducing the consumption of natural resources and harmful materials and limiting waste and pollution generated throughout their lifecycle (Source: The United Nations Environment Program 1994).

Yin et al. (2014) conducted a case study to evaluate the sustainable consumption of urban residents in China. They defined sustainable consumption as a logical, reasonable, and balanced consumption practice that meets a person's growing demand and correlates with economic, environmental, and social development. Another study by Cuc and Vidovic (2014) focused on the economic, social, and ecological reasons for sustainable development and recycling of products such as recycling facilities are less expensive than waste

management programs (economically), creating jobs (socially), and maintaining natural resources such as water (environmental reason). So, companies and consumers are increasingly concerned regarding sustainable consumption with ecological benefits and are more conscious of making sustainable buying decisions.

Wu et al. (2016) conducted a study that found an individual's sustainable consumer behavior is affected by demographic variables like age, gender, etc., as well as other variables like two-type knowledge and skills, two-type attitude, and life values. Wang et al. (2014) said sustainable consumption is a scientific, civilized, reasonable, and proper consumption act that not only contributes to the satisfaction of a person's consumption but also to social, economic, and environmental development.

Overall, it can be said that sustainability is a massive concept in the modern age. In every aspect of business, it has become a central issue to think more about sustainability in the long term in a competitive world and to contribute to the development of the circular economy. At the United Nations Conference on Environment and Development in Rio, the "environment-friendly" concept was first put forward in 1992 through Agenda 21. The idea is widely practiced and used and needs to be better understood by both consumers and companies (Hoelting, 1994).

Fashion Textile Industry

The fashion industry is one of the most environmentally harmful sectors, consuming approximately 500,000 tons of microfibers and 93 billion cubic meters of water annually (Khitous et al., 2022). The fashion industry is the second-largest consumer of resources and a major contributor to pollution, ranking just behind the oil industry (Akhtar et al., 2012). The textile industry has a profound environmental and societal impact. It generates substantial contaminated water and is responsible for 8–10% of global carbon dioxide emissions (Moran et al., 2021). Moreover, the textile industry significantly impacts society because its highly complicated supply chains are characterized by fierce international competition, mass production, and fast consumption. It substantially impacts the implementation of the Sustainable Development Goals, such as expanding the economy and the minimum wage structure, the number of jobs, gender equality at work, and the environment (Khan and Roy, 2023). The fast-paced industrial expansion and the increasing need for greater focus on social sustainability in developing nations create challenges in tackling workplace concerns, such as employee safety, sanitation, and overall health (Kabir et al., 2019). Fast fashion is being introduced and characterized continuously moving very fast from design to retail stores with new collections, which also raises many environmental

and social issues. While in 1975, 34 million metric tons of textile fibers were manufactured worldwide, this figure had more than tripled by 2020, reaching 109 million metric tons, with 146 million metric tons predicted for 2030 (Esbeih et al., 2021).

Consumers who are more concerned about the environment are more prepared to spend money on organic products (Sandra and Alessandro, 2021). Kang et al. (2013) revealed that product knowledge, perceived consumer effectiveness, and perceived personal relevance significantly impact young consumers' attitudes, subjective norms, and perceived behavioural control, influencing their purchase intentions for environmentally sustainable textiles and apparel. Lin (2010) demonstrated a link between consumers' environmentally friendly purchasing intentions and their purchases of organic clothing. Consumers ready to spend extra money on sustainable clothes were cautious about using chemicals in garment production, prioritizing wool garments. They were interested in cotton production and its environmental consequences. In addition, these consumers are prepared to spend a higher price on green apparel and often examine the labeling while acquiring them. According to Ellis et al. (2012), consumers are ready to invest 25 percent more just for sustainably grown cotton fabrics than for products produced from conventional cotton. In addition, green clothes were more attractive to customers who had previously purchased organic products and practiced environmentally beneficial behaviour. So, an empirical study is essential to understand sustainable post-purchase fashion textile consumption better. The current research can help uncover different post-purchase behaviours, such as reusing, repairing, and recycling.

Features that Make the Textile Product More Sustainable

Several features are essential to make textile products sustainable

- **The Usage of the Sustainable Raw Materials**

Raw materials are essential to ensure the textile's long-term sustainability. Palamutcu (2017) states that every processing step in the textile production chain harms the environment. Every fibre, yarn bobbin, square meter of fabric, chemical, the consumer cycle time of each textile item, and t-shirt recycling or waste stage leave their imprint. Cotton, wool, silk, and linen are commonly used natural fibres; each has an environmental impact due to the growing--processing and consumer usage stages. In addition, traditional synthetic-based artificial fiber varieties have their raw material footprint and degradation time in nature. For instance, from the sustainability standpoint, a new generation of biodegradable artificial fiber production

technologies offers exciting potential. According to Fletcher (2013), sustainable textiles comprise organic, biodegradable, or recycled fibres, such as organic cotton, hemp, bamboo, or recycled polyester. These materials mitigate environmental impact during manufacturing. Moreover, the utilization of natural or low-impact colors, together with the avoidance of hazardous compounds such as azo dyes, formaldehyde, and heavy metals, guarantees safety for both laborers and consumers (Shen et al., 2010).

- **Ethical Production Processes and the Updated Technologies Used**

Palamutcu (2017) emphasised the importance of using the most up-to-date textile production technology to improve a textile product's sustainability. With the collaboration of material science and information technologies, the speed and efficiency of production have been steadily improving over the years. Technology developers and designers' duty is pervasive in textile processes and products. Every technological development in fiber manufacturing, yarn manufacture, or chemical application process directly impacts millions of people and environmental media, such as soil and water, worldwide. The volume, temperature, and chemical load of the wastewater discharged from the production plant determine the impact of the wet-processing stages. Sustainable textile production reduces water consumption (e.g., rain-fed cotton or closed-loop water systems) and employs renewable or low-energy technology (Muthu, 2020). Methods, including zero-waste pattern cutting, recycling of production remnants, and digital printing, contribute to reducing textile waste (Gwilt, 2020).

- **The Eco-friendly Supply Chain**

The supply chain is the transfer of raw materials through designing, fabrication, and manufacturing to make a sustainable fashion product. The supply chain is essential for making goods more environmentally friendly (Henninger et al., 2015; K. E. Lee, 2017). It has long been accepted that a supply chain is sustainable if its triple bottom line, namely its economic, social, and environmental performance, is well-balanced (Chi, 2011). A supply chain is unsustainable if the supply chain's focal companies aren't engaged in sustainability, and companies that provide the final value are solely concerned with profit maximization (Köksal et al., 2017). According to Claudio (2007), guaranteeing equitable compensation, secure working environments, and humane treatment of labourers across the supply chain is a defining characteristic of sustainable textile production.

- **Availability of the Products**

Tarkiainen and Sundqvist (2005) found that product availability favoured green purchasing intention and behaviour, while limited product availability harmed consumer green purchasing intention and behaviour (Young et al., 2010a). Moreover, as per Tanner and Wölfing Kast (2003), consumers don't like to waste time looking for green items; instead, they choose simple items to find.

- **Quality and Longevity of Clothing Items**

Consumer purchasing intention and behaviour are influenced by product quality (Mondelaers et al., 2009). According to Young et al. (2010), green product features positively impact green product purchases. For instance, long-lasting and durable materials can be easily incorporated into existing clothes and product optimization techniques. They are frequently seen as a component of "excellent design" because the minor stable part of a garment determines how long it will last (Fletcher, 2012). Sustainable fabrics are engineered for durability and resilience, minimising the necessity for frequent replacement (Niinimäki and Hassi, 2011). Moreover, utilising recyclable, compostable, or reusable packaging diminishes the overall environmental impact (Muthu, 2016).

- **Appropriate Working Conditions**

Besides environmental considerations, social issues, such as child labour, labour abuse, and poor remuneration, are also essential in sustainable textile products (J. Allwood et al., 2008; Niinimäki and Hassi, 2011; Wood et al., 2010). Apparel value chains require a lot of labor. The worldwide apparel business has had its fair share of societal issues, from the cotton farm to the textile factory to the retail outlet. Workers in the United States, often immigrant women, were forced to long hours, harmful working environments, low wages, and maltreatment during the 1900s. Several strikes and protests in the early 1900s led garment firms to acknowledge the workers' rights to form unions (Von Drehle, 2003), but working conditions in developing countries are often subpar.

2.3 An Overview of Previous Studies on Sustainable Textile Fashion

Inspired by the importance of sustainable fashion consumption and our limited understanding of the topic, initially, this research seeks to summarise and assess the literature related to green and sustainable clothing consumption by addressing the following research questions:

- What are the general characteristics of the articles published in the literature?
- What do the authors address the specific research problems, and what theories and methods do they use?
- What are the central findings of the literature regarding sustainable fashion consumption?
- What potential research directions emerge in this research area for the future?

Based on the initial literature survey, a limited number of articles was found that provide a review of the existing literature or suggest future research directions based on the state-of-the-art in the field. For example, Tey et al. (2018) explored the willingness to pay for sustainable apparel in 2018 using only 12 articles. Mukendi et al. (2020) reviewed the literature on sustainable fashion in 2020 by analysing a significantly larger sample of 465 papers and focusing on a much broader topic, where the results showed seven study streams that cover every discipline, to investigate whether consumer and organisational behaviour might be transformed for the future. They identified seven relevant scientific inquiry clusters: supply chains, social retail marketing (SRM), consumer behaviour, consumer practices and communities, social marketing interventions, future leaders, and sustainable business models. The objective of the present review falls within the scope of these two studies. It aims to explore the literature findings regarding the factors that influence sustainable clothing consumption.

The review focused on English language journal articles available in the Web of Science (WOS) database falling in the categories of economics, business, finance, social science, management, and environmental science. Since only very few, sporadic articles were published on the topic before 2011, we considered articles from a ten-year period between 2011 and 2021. The research included three distinct stages:

- Stage 1: Identifying the need for a review, setting the objectives of the research.

- Stage 2: Identification of keywords and search terms, setting up of inclusion and exclusion criteria, data extraction and synthesis.
- Stage 3: Data extraction and analysis.

In February 2021 we searched for relevant articles in the Web of Science (WOS) database using the following keywords:

First, we executed our search using the keywords "Textile" and "Fashion". This search designated our subject area and provided 9944 articles.

Next, and in order to make our database more relevant, we narrowed the 9944 articles by using the following keywords: "Green" OR "Sustainable" OR "Eco-friendly" OR "Environmentally Friendly" OR "Second-hand" OR "Recyclable". This search narrowed our database from 9944 to 809 articles.

Finally, to focus our attention on the literature addressing the consumption patterns of textile products, we further narrowed the database by the following keywords: "Behaviour" OR "Intention" OR "Purchase*" OR "Post-purchase" OR "Buy*" OR "Reuse" OR "Repair" OR "Recycle" OR "Repurchase". This search yielded 150 articles.

After an initial review of the selected 150 articles, we identified those which are not directly related to our study area. These studies focused on Product-Services Systems, eco-labelling, Small and Medium Size Entrepreneurship (SME), advertisement of fashion products and employee motivation and are not concerned with our objective of analysing consumer motivations to consumer green fashion products.

This narrowing of the database resulted in the elimination of 46 articles that were not directly related to the topic of the study, which left us with 104 contributions that directly address the area of green and sustainable textile consumption. We adopted the PRISMA methodology from the study by Testa et al. (2021) to illustrate the review protocol used to identify the relevant literature for analysis. The Selected articles were thoroughly analysed using a spreadsheet to record all relevant information such as research questions, theories, research methods, sample size, sampling methods, tools used to collect and analyse data, variables used, hypothesis, product type (clothing), geographical scope, major issues addressed, significant findings, research gaps, future research opportunities identified and recommendations by the authors.

Sustainable fashion is one of the most significant product categories from a sustainability point of view. According to one recent definition, fashion is how our garments convey and reflect our unique social perspective while connecting us to time and place (Fletcher, 2008).

Sustainable fashion is also called eco-fashion (Strähle, J.; Grünewald, A.K., 2017), which is linked to the environmental aspect of sustainable production and consumption (Lundblad and Davies, 2016), but, sustainable fashion can also be understood to cover a broad range of social concerns in fashion manufacturing and usage (N. Lee et al., 2012). There is a difference between fashion-conscious and sustainable-conscious consumers. Fashion-conscious consumers discard garments more quickly with little moral consideration; however, these fashion-conscious consumers are more willing to repair products that support their 'fashion personality' (L. S. McNeill et al., 2020). On the other hand, Yan and Yazdanifard (2014) acknowledge that environmentally conscious consumers recognize the need to increase their consumption of green products.

A study by Gilg et al. (2005) found that consumers demand ethical, environmentally sound, and socially responsible products. Chan and Wong (2012) acknowledged that green clothing is sustainable because it uses natural resources and fibres and encourages ethical business practices that protect environmental resources. Niinimäki (2010) concluded that ethical commitments to clothing purchases and moral values are essential motivators for buying green clothing. This ethical commitment adds value to the product, resulting in longer product lifespans and, thus, better outcomes and a slower fashion cycle.

The study by Machado et al. (2019) which the contribution was to look into the role of consumer behaviour mostly in perspective of the sustainable development by reusing fashion items. In this research, the literature on second-hand purchases concentrates on financial indicators: second-hand purchasing is a means of obtaining a reasonable price, low financial budget to invest while purchasing, and the availability of brand items at a lower cost may indeed inspire the actions of consumers. They used a qualitative research method by ethnological and in-depth interview sessions to better understand the consumers' motivation towards second-hand fashion products. They discovered that consumers recognised that acquiring used clothing items is a fantastic way to get high-quality things that last longer. Even though they have clothes that last longer, consumers purchase less and start to refuse to accept the conventional production chain, which sells relatively low products at a premium price.

Another study by Vehmas et al. (2018) aimed to examine consumers' interpretations and perceptions of circular clothing. They conducted consumer interviews using an online platform to incorporate shoppers and workshops with project and external stakeholders. According to the findings, consumers and businesses are conscious of

scarce resources and environmental issues and therefore are more concerned about the challenges of limited resources. Thus, consumers like the concept of reusing clothing waste to introduce better clothing items. Moreover, C.-C. Chen et al. (2018) used the decision-making model for identifying consumers' purchase intentions toward green products. They used survey questionnaires to consumers in the departmental stores of different appliance departments. They found that purchase intention was favourably influenced by environmental outlook, product attitude, and perceived financial value. Furthermore, ecological consciousness and even the state's ability directly affected products and environmental attitudes toward sustainable consumption.

Buerke et al. (2017) in a research study focused on more responsible consumers' behaviour. The findings show that increasing awareness and subjective values concentrated on sustainable practices significantly positively impact consumers' responsible behaviour. An anonymous online questionnaire of German consumers was used to gather this data. The authors also stated that responsible consumer buying behaviour can always be an essential aspect of sustainable consumption. A qualitative pilot study by Catlin et al. (2017) emphasised the social and environmental aspects of sustainability. The findings stated that the social part of sustainability is significantly more linked to emotion, while the ecological aspect of sustainability was more closely related to cognition.

Another study by Maria Ciasullo et al. (2017) carried out an empirical investigation of Consumer Buying Behaviour in the Fashion Market. They used the Multiple Linear Regression Model from questionnaires to test the research questions (Can "importance," "perceptions," and "social power" adequately influence consumers' readiness to incentivise an environmentally friendly fashion brand through their purchase intentions? and how much are buyers willing to spend for a piece of sustainable clothing?). The results indicated that consumers prefer the brand's sustainability and opinions of friends and pay 20% more for sustainable clothing. Min Kong and Ko (2017) focused more on the consumers' decision-making process of sustainable fashion products. To collect data, a survey question was conducted as the research methodology. The results indicated that the intentions to sustainable fashion products increase with less perceived risk, but there was no relationship between consumers' satisfaction and perceived risks. Moreover, consumers' product knowledge, environmental concerns, and perceived benefits positively impact consumers' purchase intentions.

The review of **Table 1** facilitates a comparative analysis of the existing literature, aiding in the identification of gaps and patterns pertinent to the current topic.

Table 1 Some review of related literature, Source: Own elaboration

Name of the Authors and year of publication	Findings of the articles	Research Gaps and Future Research
Machado et al., (2019)	The findings revealed that purchasing second-hand clothing is an excellent way to get high-quality, long-lasting products. Then consumers become ready to buy fewer products and reject the traditional manufacturing process, which offers low-quality goods at high prices.	The evaluation of perceptions of the participants had limitations. People of various ages, social backgrounds, and locations may be interviewed in the future.
Vehmas et al. (2018)	Consumers are becoming more interested in recycling and sustainable options, and they like the concept of reusing clothing materials to make new clothing.	Only respondents from Finland were included in this research, but multiple European countries can have different outcomes which need to be examined.
C.-C. Chen et al. (2018)	There are positive impacts of environmental consciousness, social influence, product attitude, and perceived monetary value on purchase intention; Product attitude influenced purchasing intention the most, while environmental consciousness and government position influenced environmental and product attitudes for ecological sustainability.	This research examined consumer behaviour around the desire to buy green goods using a decision-making framework that relates cognitive, affective, and behavioural intentions. The findings reveal that objective knowledge doesn't influence the environmental attitude, but it does not mean that factual knowledge is not suitable for analysing the consumers' purchase intentions. Instead, more investigations are needed to measure the importance of objective understanding of consumers to determine the preferences for green product purchases.
Buerke et al. (2017)	- The three main sustainability dimensions (Environment, society, and economy) can be used	The social and individual responsible consumer actions were examined in this paper. However, the findings contradict comprehensive importance steps, and for this,

	to assess societally responsible consumer conduct.	the more precise value orientations could have a better chance of being related to purchasing intention. The results agreed with inevitable benefit consequences of sustainability issues, such as environmental considerations, green buying, and socially conscious utilisation. However, more research is needed to examine this inverse relation and assess if consumerism does, in reality, harm consumer perception and ethical behaviour.
	- Through applying the three pillars of sustainability to the sense of consumers' lives, individual responsible consumer behaviour can be categorised.	
Catlin et al. (2017)	The investigation of the study provides a more direct analysis of the social and environmental variables from the consumer's perspective, which can help explain the differences in customer attitude better. Social awareness involves more emotional or emotive terms, whereas environmental concern involves more psychological.	Analysing the distinct behavioural association for social and environmental aspects of sustainability may influence customer assumptions about another brand or product features is an important area for future study.
Maria Ciasullo et al. (2017)	Consumers consider the value given to a brand's sustainability, according to this report, since they base their decisions on their preferences and the opinions of their friends. Moreover, respondents stated they are willing to pay a price of no more than 20% for a sustainable piece of clothing.	The selected sample group was a small reference sample with a high level of education, so we needed to research the diversified and extensive selection of respondents.
Min Kong and Ko (2017)	According to the study's results, consumers prefer sustainable fashion goods when they believe the products have value and no perceived risk; The study provides marketing insights for improving socially responsible consumption.	Previously, marketing campaigns centred on product and store features that would draw consumers to environmentally friendly fashion goods reusable or recyclable and renewable sources, but the emerging market requires the emphasis shift to online systems to promote sustainable fashion products. Moreover, future studies should pay more attention to socio-psychographic factors.

2.3.1 General Demographics of the Literature on Sustainable Fashion

The number of articles describing the different aspects of sustainable fashion consumption has increased significantly between 2011 and 2021. While only two papers were published at the beginning of the period in 2011, 29 articles were published in 2021 (**Figure 3**). Most sustainable textile consumption research was undertaken in the United States, South Korea, China, and India (Table 2).

Table 2 Number of publications by country

The country where research was conducted	Number of papers
United States of America	18
China	13
South Korea	9
India	6
Australia	5
England	4
Japan	3
Italy	3
Sweden	3
Germany	2
Other countries	38

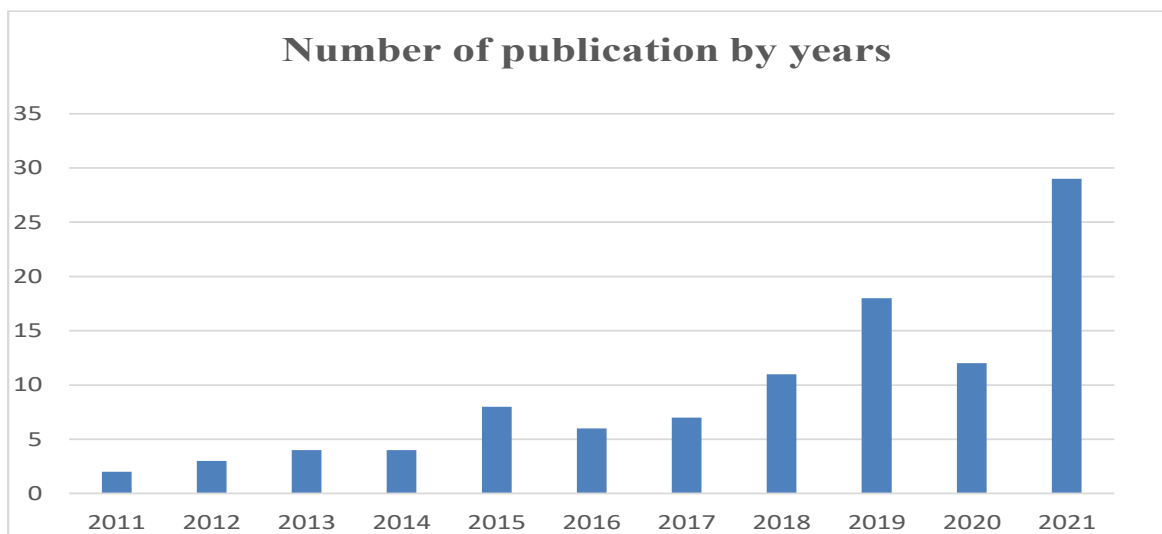


Figure 3. Number of publications reviewed by year (2011-2021)

After reviewing the selected articles, six distinct research topics emerged. Most articles focus on sustainable textile consumption (about half of all the articles) in general. In contrast, others examine more specific behaviours related to textile consumption, as shown in **Table 3**. According to the results, the concepts of slow fashion, collaborative fashion, and circular fashion are gaining interest in the literature and concrete actions relating to these, such as the purchasing of second-hand fashion products and the reuse, repair, and recycling of garments. Legere and Kang (2020) investigated the function of self-concept as a motivator in choices regarding slow fashion. They used perceived self-enhancement benefits as a mediating variable between the dependent variable – behavioural intentions toward slow fashion – and the independent variables – effects of moral self-identity and proximity of apparel. The findings of their study suggest that customers' desires for transformation and self-enhancement by symbolic behaviour in social situations may be driving forces behind slow fashion consumption. Perceived benefits of self-improvement and behavioural intentions were directly influenced by symbolic moral identity, but not by internalised moral identity. Mohammad et al. (2021) conducted a study to investigate the mediating role of attitudes toward used clothing and the direct and indirect effects of electronic word of mouth (eWOM) on mindful consumption behaviour (MCB) in the context of sustainable clothing purchases. The findings of this research lend credence to the direct influence of eWOM on consumer involvement, awareness, and attitudes towards used clothing.

The findings confirmed the link between MCB and consumer involvement, but they did not confirm the relationship between attitude and mindful consumption (MC). The study also supported the mediation role of consumer participation between eWOM and consumers' MCB, but it did not support the mediating role of attitude toward second-hand clothing. These tendencies may be able to balance or at least moderate the exponential rate of growth in the usage of textile products as experienced in developing countries in the last decades (Ekström and Salomonson, 2014).

Table 3 Major research topics identified

Research problems addressed	Number of Articles
General textile consumption	68
Circular fashion consumption (reuse, repair, and recycle fashion items)	16
Slow/fast fashion purchase behaviour	7
Collaborative fashion consumption (renting, swapping)	6
Second-hand clothing consumption	7

2.3.2 Research Methods Used on Sustainable Fashion Textile Consumption

Research

Most studies on sustainable textile consumption utilize quantitative research approaches (70 out of 104 articles). However, qualitative research methods have also been used (26 articles), with some studies employing several diverse research approaches (8 articles).

Ekström and Salomonson (2014) followed qualitative research approaches in their work, and an exploratory qualitative study was done by Ruppert-Stroescu et al. (2015), qualitative semi-structured one-to-one interviews were conducted by Wiederhold and Martinez (2018). Quantitative research approaches were followed in the research of La Rosa and Johnson Jorgensen, 2021; Vilkaite-Vaitone and Jeseviciute-Ufartiene, 2021) to identify consumers' sustainable clothing purchase behaviour.

Different studies used various techniques to accomplish their research objectives. For instance, an experimental design was employed to measure consumers' purchase intentions in a survey by Rolling et al. (2021) when exploring how customer attitudes toward luxury brands and product use cases affect consumers' cognitive dissonance, which affects brand attitudes and purchase intentions. A self-administered online survey was carried out in different studies by H. Moon and Lee (2018). The authors conclude that the connection between environmentally friendly materials and a fast-fashion fashion brand is essential for consumers. Besides this, a relationship between the parent brand and the sustainable extension boundary. According to the findings, consumers' perceptions of the fit between the original fast fashion brand and the new sustainable line improve when they perceive an integration of sustainability aspects into fast fashion. Furthermore, consumers' evaluations of the extension line's cause-effectiveness, worth, and monetary value influenced purchase

intention and the purchase of a higher price. This means that customers consider a fast-fashion brand's sustainable construction line more when they think that buying from the new sustainable line will be helpful to themselves and the community.

McNeill and Venter (2019) used in-depth interviews in their study to determine the critical reasons for and obstacles to collaborative fashion and clothing consumption. According to their findings, sustainable consumption's social and ethical implications are the least likely motivators for engaging in collaborative fashion consumption. In contrast, opportunities for individual identity expression are the most desired benefits. Face-to-face surveys were done by Şener et al. (2019) to identify features that impact consumers' expectations for slow fashion products and the implications of perceived value on customers' purchase intentions and willingness to spend at higher prices. The findings showed that customer value perception positively impacts purchase intent and readiness to pay higher costs.

Furthermore, customers who want to buy slow-fashion clothing are ready to pay more than they would for other products. D'Souza et al. (2015) They used an exploratory study to investigate men's buying intentions towards eco-clothing based on product attributes, environmental concerns, and responsible behaviour. The results showed that four critical variables with substantial impacts are environmental awareness, sustainable price, sustainable behaviour, and sustainable branding. K. K.-L. Moon et al. (2015) conducted an exploratory survey questionnaire to evaluate consumers' overall pro-environmental behaviour and fashion consciousness and in-depth interview research to investigate the obstacles to the rising popularity of sustainable fashion from the viewpoints of industry experts. They conducted the study to explore ways to fill the gap between supply and demand for sustainable fashion. Five fashion professionals' perspectives were brought together to identify the primary impediments to popularisation and argue that being fashionable and ecologically conscientious are incompatible notions that cannot coexist.

2.3.3 Theories used in fashion consumption research

This research has also assessed the theories used in the literature. The theory of planned behaviour (TPB) (used by 19 out of the 104 articles analysed) explains consumer behaviour regarding the consumption of green textile products. **Table 4** shows the most frequently used theories. The authors found that while TPB has clear benefits, it cannot fully explain the attitude-behaviour gap in the context of sustainable fashion (Wiederhold and Martinez, 2018). Furthermore, results generated using TPB may also be limited because they are based on

buying intentions rather than actual purchase behaviour (Cowan and Kinley, 2014; La Rosa and Johnson Jorgensen, 2021).

The strongest indication of environmentally friendly buying behaviour in the future is one of the components of the theory of planned behaviour, namely attitude toward environmentally friendly clothing and social problems (Cowan and Kinley, 2014).

Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021) employed TPB by using attitudes, subjective norms, perceived behavioural control and information provided as independent variables while examining textile recycling intentions. They concluded that the primary motivator for textile recycling in Lithuanian homes is perceived behavioural control. While perceived behavioural control, subjective norm, and attitude toward behaviour were all powerful determinants of behaviour, information provision turned out to be less important. In their study, the traditional framework of planned behaviour, rather than the extended model, was more suitable for estimating the willingness to recycle textile waste. The research by Cowan and Kinley (2014) used the theory of planned behaviour with independent variables: belief factors, normative influence factors, and perceived behavioural control factors to explain purchase intentions towards environmentally friendly apparel. The result showed that all these factors impact purchase intentions. Another research by Lang and Joyner Armstrong (2018) utilised the same theory. Their independent variable was fashion leadership, and the mediating variables were attitude, subjective norms, perceived behavioural control, and clothing renting and swapping was the dependent variable. They found a significant influence of fashion leadership on the purchase decision of clothing items. They also identified a positive relationship between the independent and mediating variables. These findings supported the hypothesis that fashion leadership with attitude and subjective norms are positively correlated with overall intention to adopt sustainable clothing product-service systems (CPSS).

This research is unique in various ways, including the extension of the TPB model to include fashion leadership as an external component. Iran et al. (2019) used the theory of planned behaviour and Hofstede's national cultural factors with independent variables: attitude, subjective norm, and perceived behavioural control. The mediating variable was behavioural intention, and the dependent variable was collaborative fashion consumption. Their findings demonstrate that attitude, while social norms and perceived behavioural control are significant determinants of the willingness to adopt collaborative fashion consumption, perceived behavioural control does not have a direct impact on collaborative fashion

consumption. They also demonstrated that the determinants of collaborative fashion consumption vary across different cultures, comparing Iran and Germany. In Tehran, for example, attitude is the most important factor affecting the intention to engage in collaborative consumption behaviour, whereas in Berlin, perceived behaviour control is the most significant predictor of this intention.

The second most often employed theory in the literature is the Theory of Reasoned Action (TRA) which was used by (Hyllegard et al., 2012; Johnson et al., 2016; S. H. Lee and Huang, 2020; Rausch and Kopplin, 2021; Tena-Monferrer et al., 2022; Walker, 2013; Xu et al., 2014) in their study. For instance, Xu et al. (2014) found that TRA can assist in identifying major changes in consumer clothing consumption patterns. They used this theory with the independent variables (1) perceived values: economic value, hedonic value and uniqueness, environmental value, 2) perceived concerns and 3) subjective norm and dependent variable purchase intention towards second-hand clothing. With these variables, the results of their study revealed considerable variations in young consumers' second-hand clothes consumption behaviour in the U.S. and China.

The Theory of Reasoned Action (TRA) was used by Rausch and Kopplin (2021), where perceived environmental knowledge and environmental concern influence the attitude, subjective norm and perceived behavioural control and purchase intention. The dependent variable of the research was purchasing behaviour. The findings revealed that attitudes toward sustainable clothes had the most significant impact on willingness to purchase, while the perceived economic risk has no significant effect on this relationship. According to Walker, TRA tends to focus on the attitude aspect, which can restrict predictive power (Walker, 2013).

Other theories used in the literature include the consumption value theory and Keller's Hofstede's national cultural employed by Wei and Jung (2017). The study was to identify the moderating role of face-saving, which is an essential motivation of Chinese consumers' intentions to buy sustainable fashion products. Ramkumar et al. (2021) used commodity theory and social facilitation theory to analyse the cross-cultural impacts of brand status and social facilitators on improving customer perceptions of circular fashion products, demonstrating that South Korean consumers had a more positive attitude than Americans.

Jacobs et al. (2018) used the value-attitude-behaviour hierarchy in their research to analyse sustainable clothing. Their findings show that having a positive attitude towards social-

ecological clothing standards, biosphere and philanthropic values, and an affinity for online and catalogue shopping help people buy more sustainable clothing. On the other hand, sustainable clothing purchase behaviour is impeded by egoistic and hedonic values and a preference for durable apparel. They did not find substantial effects of the suspected barriers, such as fashion consciousness and price sensitivity. The findings emphasise the need to shift attitudes and values toward sustainability and highlight the durability of sustainable apparel and its accessibility through retail outlets.

Hofstede's national cultural factors were employed by Iran et al., 2019; Su et al., 2019; Wang et al., 2021, and Fishbein's attitude theory was used by Su et al. (2019) using the independent variable: consumer's apparel sustainability knowledge, mediating variable: consumer's attitude and dependent variable: consumer's willingness to buy. The findings revealed that young Millennials' clothing sustainability awareness and personal beliefs have a favourable and considerable impact on customer attitudes toward sustainable clothes, which has a powerful and positive effect on consumer buying behaviour. Furthermore, a cross-cultural comparison identified similarities and differences among young Millennial consumers regarding their garment sustainability awareness and values.

Other theories employed include the knowledge-attitude-behaviour model and the attitude-behaviour-context approach by Dhir et al. (2021). Their research revealed that green clothes buying behaviour is positively connected with green trust, environmental attitude, and labelling satisfaction. G. Zhang et al. (2019) used the motivation—opportunity—abilities (MOA) theory. According to their findings, individual service providers' willingness to share depends on their tailored service capabilities, economic motivation, and perceived ease of use.

Table 4 List of the most frequent theories in the literature

Serial Number	Name of the theories	Articles
1	Theory of planned behavior	Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021), L. McNeill and Venter (2019), Cowan and Kinley (2014), La Rosa and Johnson Jorgensen (2021), Lang and Joyner Armstrong (2018), de Lenne and Vandenbosch (2017), Iran et al. (2019), Becker-Leifhold (2018), Valaei and Nikhashemi (2017), Rausch and Kopplin (2021), McKeown and Shearer (2019), Lang and Armstrong (2018), Kumagai and Nagasawa (2020), O'Reilly and Kumar (2016), Kang et al. (2013), Carfora et al. (2021), McCoy et al. (2021), Khare and Varshneya (2017), Sung et al. (2019), Wiederhold and Martinez (2018).
2	Self-concept theory	Legere and Kang (2020)
3	Theory of Reasoned Action	Xu et al. (2014), S. H. Lee and Huang (2020), Rausch and Kopplin (2021), Tena-Monferrer et al. (2022), Johnson et al. (2016), Hyllegard et al. (2012), Walker (2013).
4	Principles of grounded theory	Wiederhold and Martinez (2018)
5	The value-belief-norm theory	C. V. Becker-Leifhold (2018), Carfora et al. (2021)
6	Festinger's Theory of Cognitive Dissonance	Cairns et al. (2021)

The theoretical frameworks help to better understand consumer intentions and behaviour regarding green fashion textile consumption. The strongest predictor of behaviour, according to the literature is behavioural intention, which helps in the formulation of suggestions for the adaptation of sustainable textiles. The practical applications of the theories for the growth of green and sustainable fashion textiles concentrate on how green fashion producers may engage with and retain sustainable fashion customers. It would be important to further investigate and better comprehend consumer decisions and behaviour applying various theories that may identify different drivers of influencing consumers' green fashion consumption.

2.3.4 Factors and barriers Influencing Sustainable Fashion Clothing Consumption

Based on the assessment of the review article, the most important drivers of consumers' green and sustainable textile consumption can be grouped into four categories, as shown in **Table 5**.

- **Personal and Psychological factors**

Personal and psychological aspects were the most often studied in the 104 articles. D'Souza et al. (2015) found four key variables: environmental concern, sustainable branding, sustainable pricing, and sustainable behaviour. However, consumer perceived effectiveness and belief in those four were not essential factors. According to Kim et al. (2021), the emotional value had the most decisive influence, whereas economic uncertainty and performance risk did not affect product perceptions. Individualism was discovered to moderate the paths between perceptual and cognitive dimensions, product perceptions, product attitudes, and behavioral intention.

According to McCoy et al. (2021), attitude, subjective norms, perceived customer effectiveness, fashion leadership, and past environmental behaviour significantly impacted the intentions of Gen Z consumers for using clothing rental services. The results of the study of J. Kim et al. (2020) confirm that social capital is an influential solid variable for the purchase intention of sustainable fashion products. This research used social media to explore the concept of sustainability with sustainable fashion goods. They presented a paradigm for using social capital in the social media context, like YouTube, to influence sustainability marketing. In the context of fashion this research looked at how social power, social interaction, and social capital influence consumers' purchasing intentions for sustainable fashion items. Diddi et al. (2019) argued that perceived value, acquisition from known sources, sustainability commitment, uniqueness, and lifestyle changes influence sustainable clothing consumption. For instance, an intriguing finding was that the characteristics of slow fashion affect the customer concept of ethical quality (Reimers et al., 2016).

Several scholars conducted studies to identify consumer motivation to purchase sustainable textile products. One of the elements is the social status. The author explained that a person's social group can be separated into two categories: education and wage levels. These elements influence social status, and this social status can significantly increase the likelihood of using environmentally friendly textiles.; one's social status influences the possibility of using eco-

friendly materials was found in a study (Y. Zhang et al., 2021), opportunities for individual identity expression (L. McNeill and Venter, 2019), perceived customer value; has a favourable impact on the buying intention and readiness to pay greater prices (Şener et al., 2019), perceived behavioural control is major and others significant are attitude and subjective norms (Iran et al., 2019; Vilkaite-Vaitone and Jeseviciute-Ufartiene, 2021), face-saving which is a significant motivator for Chinese consumers to buy sustainable fashion items. Face-saving also reduced the impact of overall product value while increasing the effect of green value in anticipating purchasing trends.

Some other studies were conducted on personal norms and attitudes (Carfora et al., 2021; Johnson et al., 2016), egocentric appeals (Song and Kim, 2019), perceived enjoyment and social shopping value (Lang and Zhang, 2019), past green behaviour (Khare and Sadachar, 2017) and hedonic needs (P. Wang et al., 2021). The most important factors that positively impact sustainable fashion consumption based on the literature include attitude, subjective norm and perceived behavioural control, fashion leadership, age, income, social media, fashion leadership and knowledge about sustainable textile products.

- **Product Characteristics**

D'Souza et al. (2015) found that four essential variables that strongly influence sustainable fashion clothing are product price, environmental consciousness, sustainable behaviour, and sustainable brand image. The product value is a vital product element that influences the consumption of green fashion consumption. According to Wei and Jung (2017), when purchasing sustainable fashion products, Chinese consumers evaluate general product value but not green value; however, when it comes to face-saving, the role of the product's green value becomes more important.

Another important factor of product characteristics is price. Eze and Ndubisi (2013) said that higher prices trumped ethical considerations when buying green items, widening the gap between attitude and behaviour. Consumers with low price sensitivity are more likely to make green purchases. On the other hand, high price sensitivity has a detrimental impact on customers' green purchasing behaviour. As a result, it was found that high prices negatively impact green purchase intention and behaviour.

Some other studies were conducted on perceived consumer effectiveness, utilitarian value, and income greatly improved purchase probability for recycled products_(Park and Lin,

2020), re-designing old clothes (Ruppert-Stroescu et al., 2015) and sustainable branding (D'Souza et al., 2015).

- **Broader Benefits**

Wei and Jung (2017) acknowledged that delivering distinct product value is crucial in developing customer value for slow fashion. Customer value positively influences consumers' buying intentions, as reported by Jung and Jin (2016). Parent brand, cause-effectiveness value and monetary value; the match between environmentally sustainable items and a fast fashion brand of textile products is significant for fashion customers. Furthermore, a close fit between the parent brand and the sustainable extension line boosts consumers' impressions of the original brand and the sustainable extension line (H. Moon and Lee, 2018).

Some other studies concentrated on the quality and uniqueness of the textile products (Song and Kim, 2018) and functional, financial, symbolic, aesthetic, environmental and social/ethical aspects of clothing (Rahman and Koszewska, 2020), perceived novelty, perceived greenness and perceived usefulness (L. Chen et al., 2021).

- **Knowledge and Experience**

A study by Dhir et al. (2021) revealed that green trust, labelling satisfaction, and environmental attitude were positively correlated with green clothing purchase decisions. Moreover, green trust, environmental concern, and environmental perspective facilitate some of the suggested associations, whereas age and gender moderate the correlation between environmental issues and environmental consideration. According to the findings, quality expectations and purchasing intention were typically lower for apparel than for durables and fast-moving consumer product bundles (Magnier et al., 2019). Previous environmentally responsible behaviour inspired the purchase of sustainably sourced clothing. Surprisingly, green clothing awareness and social influences did not affect natural clothing purchasing behaviour (Khare and Varshneya, 2017).

Some factors influence purchase motivations which are associated with ecological perceptions, ecological awareness and knowledge, social pressure to respond in an environmentally responsible manner, ecologic feelings, perceived environmental consequences, previous purchases of ecologically responsible apparel, affordability, and expenses of environmentally responsible clothing (Cowan and Kinley, 2014).

Other studies demonstrated the importance of apparel sustainability knowledge and personal values (Su et al., 2019), green knowledge (Khare and Kautish, 2020), environmental awareness (Polajnar Horvat and Šrimp̃ Vendramin, 2021), and attitude towards sustainable textile products (Rausch and Kopplin, 2021) and awareness of eco-fashion (Cairns et al., 2021).

Table 5 Drivers of Consumers' Green and Sustainable Textile Consumption based on the reviewed articles

Categories	Variables
Personal and psychological factors	Social status, face-saving, Opportunities for individual identity expression, Attitude, Subjective norm, Perceived behavioural control, Past experiences, Fashion sensitivity, Emotional value, perceived consumer effectiveness and faith.
Product characteristics	Product value, price, type of products, brand, product quality, durability, brand image, and product re-design.
Broader benefits	Monetary, perceived customer value, Perceived novelty, perceived greenness, and perceived usefulness.
Knowledge and understandings	Environmental knowledge, Eco-fashion awareness.

Table 6 shows the relationship between the independent variables and the dependent variables.

Table 6 Factors Affecting Green Clothing Consumption Behaviour

Articles	Theories Used	Factors Examining (Independent variables)	Factors Examining (Dependent variables)	Relationship
Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021), Cowan and Kinley (2014), La Rosa and Johnson Jorgensen (2021), Lang and Joyner Armstrong (2018), De Lenne and Vandenbosch (2017), Becker-Leifhold (2018), Lang and Armstrong (2018), Kang et al. (2013), Carfora et al. (2021),	Theory of planned behaviour	Attitude, subjective norm and perceived behavioural control influence, Fashion leadership, Age, Income, social media,	Purchase intention	Positive

K. K. P. Johnson et al. (2016), McCoy et al. (2021)				
Khare and Varshneya (2017)		Past Green, Green apparel knowledge		Positive
		Peer influence		Negative
Vilkaite-Vaitone and Jeseviciute-Ufartiene (2021)		Informational provision		Negative
Iran et al. (2019)		Perceived behavioural control		Negative
Rausch and Kopplin (2021)		Consumers' green washing concerns, perceived aesthetic risk		Positive
Legere and Kang (2020)	Self-concept theory	The effects of moral self-identity and proximity of clothing	Behavioural intentions toward slow fashion	Negative
Wei and Jung (2017)	Consumption value theory, Keller's customer-based brand equity	The product value Face savings with the product value The green value Face savings with green value	Behavioural intention	Positive Positive Negative Positive
Salem and Alanadoly (2021)	Personality Traits theory	Social media, Eco-friendly behaviour, and environmental concerns for fashion production	Word of mouth	Positive

There are several barriers to consumer purchasing intentions for sustainable clothing can be identified based on the literature. Price, affordability, awareness, transparency, appearance, and inertia are all barriers to a more sustainable fashion consumption. The influence of each element on customer buying behaviour may be of importance to clothing manufacturers and retailers, who must apply techniques to facilitate sustainable and environmental clothing purchases while focusing on lowering these barriers (Wiederhold and Martinez, 2018).

According to the study by L. McNeill and Venter (2019), the social and ethical impacts of sustainable consumption habits are the lowest motivating factors within this group's (young

women) interaction with participatory consumers' purchase concepts. Others are price sensitivity (Jacobs et al., 2018), high price, lack of information, as well as knowledge and abilities (W.-K. Chen et al., 2021; Kreuzer et al., 2019), perceived economic risk (Rausch and Kopplin, 2021), low price of new products (Cox et al., 2013), social risk and performance risk (Lang and Zhang, 2019).

2.3.5 Stages of a Consumer's Purchasing Decision

The five stages (Figure 4) of a consumer's purchasing decision are need identification, information search, alternative assessment, purchase, and post-purchase behaviour.



Figure 4 . Consumer Decision Process EBM Model (Teo and Yeong, 2003)

This current research emphasised the post-purchase behaviour of new and second-hand fashion products to get a deeper understanding of the behavioural patterns of consumers. Post-purchase behaviour means the process by which buyers consume goods/services and evaluate the performances of those goods/services (Assael, 2005). Consumers determine whether or not they are satisfied with their purchase at the post-purchase stage, which influences their future decisions. Customer's satisfaction correlates positively to repurchases (Fang et al., 2011; Oliver, 1980).

The increase in socially responsible products and related manufacturing involvement in sustainable fashion provides a framework for establishing a new marketplace for sustainable ways. As an aspect of consumer behaviour, sustainable consumption includes aspects of pre-purchase, purchase, and post-purchase (Jacoby et al., 1977). Three factors are personal, situational, and product characteristics that influence the consumers' purchase behaviour of fashion (clothing) items (Albinsson and Perera, 2009; Bianchi and Birtwistle, 2012; Ha-

Brookshire and Hodges, 2009). According to Gunnells et al. (2009), personal characteristics are cognitive, psychological and demographic elements. Moreover, Interest, emotion, self-concept and confidence are all factors considered as personal characteristics. Psychological factors that drive customers to purchase fashion clothing products include demographic components, including gender and age (Bianchi and Birtwistle, 2012; Felix et al., 2013). For instance, (Felix et al., 2013) revealed that women are more environmentally conscious than men and want to protect the environment for future generations. Secondly, many situational factors influence the consumers buying behaviour for fashion products. Like, economic conditions (H. Joung and Park-Poaps, 2013), convenience (Ha-Brookshire and Hodges, 2009), and changes in family and house circumstances (Hibbert et al., 2005) are all examples of situation characteristics. Finally, different values are included in product characteristics. People, for example, like to hold clothes with a high emotional or sentimental value (Albinsson and Perera, 2009). As a result, it is an intriguing research area with enormous potential to contribute to sustainable development.

This research highlights the stage after purchase evaluation where we concentrated on the post-purchase behaviour of new and second-hand fashion products. A post-purchase investigation is undertaken to facilitate future policy where satisfied consumers may repurchase a similar effect. A disappointing experience will discourage the buyer from shopping long-term (Teo and Yeong, 2003). Post-purchase behaviour is usually a stage to assess whether the consumers are satisfied or dissatisfied. In this stage, customers evaluate whether or not they are happy with their purchase and identify their attachment to the products. Thus the levels of product attachment and satisfaction can be assessed in the post-purchase stage. Customers' satisfaction and attachment to the products are two results at the post-purchase stage where the product's utility and appearance have many influences. There is no direct link between product attachment and satisfaction; instead, product attachment and satisfaction are driven by the product's utility and appearance (Mugge et al., 2010). That means at the post-purchase stage, product image, appearance and utility are the most influential factors in the satisfaction level of consumers as well as make consumers attached with the products. Product attachment is defined as the intimate connection a consumer has with a product (Schifferstein and Zwartkruis-Pelgrim, 2008). If consumers become more attached to products, they are more likely to care for and replace them. Moreover, the product's performance significantly affects consumers' satisfaction during the post-purchase stage. When the product's performance was excellent, it positively impacted satisfaction; when it was not good, it was negatively impacted.

Ianole-Călin et al. (2020) conducted research to better understand the consumers' attitudes and intentions in collaborative consumption where they found out that collaboration in consumption is increasing. And this tendency of the consumers motivates them to be concerned about sustainable consumption and environmental benefits, and it may lead them to repair, reuse, and recycle second-hand fashion products. According to Małecka et al. (2022), “Collaborative consumption (CC) involves consumers sharing goods and services, promoting resource circulation and reuse”. According to a study on buying behaviour by (Niinimäki, 2010), customers are now increasing their considerations for sustainable fashion consumption. Sustainable customers often emphasise the importance of thinking beyond buying behaviour and emphasising use, reuse, and recycling (Bly et al., 2015). As a result, the initial purchase intention, socially responsible customers are conscious of the total cost of consumption (Laitala et al., 2012). A study conducted by Morgan and Birtwistle (2009) found that consumers like to donate clothes that have habits for recycling paper, glass and plastics and throw clothes that are damaged and not wearable. The study by H. Joung and Park-Poaps (2013) found that consumers who are environmentally concerned are likely to donate and resale clothes. This environmental motivation and subjective norms influence the reselling of the clothing items. This behaviour motivates consumers to focus on recycling the products as well. The meltdown of a good or service into its raw resources is recycling. Material is retrieved from the waste and used to design new goods (Worrell and Reuter, 2014).

The current research mainly focuses on the post-purchase behaviour of new and second-hand products regarding the repair, reuse, repurchase and recycling of fashion products that contribute to sustainable development. One of the most significant aspects of post-consumption behaviour is the concept of post-behaviour motivation (C.-F. Chen and Tsai, 2007). The future behaviour commitment to acquire a product or service or connection with a supplier, including all circumstances while other options are available, is described as post behavioural motivation (C.-F. Chen and Chen, 2010; Rundle-Thiele, 2005). Post-purchase behaviour motivation manifests itself in three ways; according to (W. Wang et al., 2012), there are three types of motivations: revisit motivation, recommendation motivation, and alternative motivation. Researchers have long used post-purchase motivations to evaluate shoppers' subsequent behaviour accurately. Post-purchase behaviour motivations are typically defined as both a buyer's inclination to repurchase goods and services within the same online sites and inform people about their own purchasing experiences (Kuo and Wu, 2012).

2.3.6 Factors and Barriers Influencing Consumers' Purchase and Post-purchase Behaviour of Sustainable New and Second-hand Fashion Products

Many factors influence the buyers' post-purchase behaviour for new and second-hand fashion products. Uniqueness and style availability are the influential factors to consumers who shop for fashion clothes as they provide unique feelings (Machado et al., 2019). On the other hand, another factor also influences the consumers' post-purchase behaviour of fashion products. Social learning has a positive impact on the sustainable use of fashion products (Kong et al., 2016). When it comes to deciding which shops to visit and what to buy, customers are heavily influenced by social factors. The influence of friends and reference groups on the decision process has long been recognised by consumer theories (J. Kim et al., 2013). Cowan and Kinley (2014) found out that social pressure and environmental interest and awareness influence the intentions of consumers to buy environmentally sustainable clothing. Researchers applied the theory of planned behaviour to various product areas, such as with organic food research. Arvola et al. (2008) demonstrated that in the United States and Europe, beliefs about organic food features like texture, healthiness, and perceived positive consequences on consumption intention are essential. According to Zagata (2012), the most influential primary cause of social influence related to organic food preference is relatives and friends, while coworkers do have minimal impact. The theory of planned behaviour has been used to describe sustainable consumption in various fields. Using the theory of planned behaviour, Han et al. (2010) explained how consumers construct their motivations to tour a green hotel. Moreover, they discovered that behaviour, social influence, and perceived control all influenced their desire in staying at a green hotel.

In second-hand fashion stores, they can get different styles of products. Some studies focus on reselling for making consumption more sustainable. Xu et al. (2014) found out that by reselling clothing products, reuse can be possible. Machado et al. (2019) carried out a study on the role of consumer motivation in the reusing of second-hand fashion products.

The theory of planned behaviour of Ajzen (1991) is often used to predict consumers' behaviour, which means that personal norms are responsible for the consumers' behaviour. Schaller and Malhotra (2015) Wrote a book that used planned behaviour theory to conduct a study in which attitude, subjective criteria, and perceived behavioural control were all essential variables. The study's findings are helpful for the implications of designing a decision-making system and behavioural changes. Ianole-Călin et al. (2020) looked at a study that sought to describe better the intention to participate in consumption by

incorporating personal norms, behavioural values, and individualism-collectivism frameworks within the theory of planned behaviour context. Purchase intention is significantly predicted by consumer attitude and perceived behavioural control, but not by subjective norm (Paul et al., 2016). Other factors like social norms and personal norms influence consumers' post-purchase behaviour of new and second-hand fashion products. There are close links between standards and subjective norms and social norms and environmentally responsible actions. S. H. Kim and Seock (2019) investigated the impact of customers' activities and social norms on their criteria and environmental attributes. There is the influence of personal models in connecting customers' social norms and behavioural intention. Social norms are internalised by subjective standards and affect post-environmental behaviour implicitly or directly.

Another study used the ACSI (American Customer Satisfaction Index), where perceived sustainable value, perceived sustainable quality, and sustainable expectation is designed to influence sustainable fashion performance (H. Wang et al., 2019). For sustainable fashion products. Social capital is an influential factor in consumers' purchase intentions, which is also necessary for sustainable fashion consumption. Social capital like social media (YouTube) contributes to sustainable marketing (J. Kim et al., 2020).

Environmentally conscious consumers act positively at the post-purchase stage of sustainable new and second-hand fashion products. Consumers concerned about the environment are ecologically conscious consumers (Y.-C. Lin and Chang, 2012), and they are more aware of consumption than non-environmentally conscious consumers. The intention towards reused, repaired and recycled (clothing) is an expression of environmentally conscious consumers. Moreover, consumers are more careful about their consumption pattern as they believe that they should in a way that reduces the consumption damages of the environment (Segev et al., 2015). They can contribute to the increases in new and second-hand product consumption in a more sustainable pattern, fulfilling the SDG (Sustainable Development Goal). To support the twelve numbers (Responsible Consumption and Production) of SDG, consumers should balance their income and consumption. Moreover, they need to focus on consumption patterns in a sustainable way that can contribute to the conservation of resources and environmental benefit.

The study's findings have shown connections between personal, financial, and social relationships. It motivates consumers to buy fewer clothes and exhales to the traditional production chain that provides low-quality products. So, in summary some influential factors of new and second-hand fashion products after the study are:

- Social and environmental awareness
- Cost savings, environmental protection, and efficient use of resources
- Quality and longevity/warranty
- Product history
- Higher and lower price
- The appearance of the products
- Social learning
- Uniqueness and style

There are some barriers to consumers' post-purchase behaviour in adapting to the repair, reuse and recycling of new and second-hand fashion products. These barriers restricted consumers to behave sustainably at the post-purchase stage. Research by Ritch (2020) showed that though consumers are interested in sustainable behaviour, in reality, their knowledge of sustainable consumption is limited to sustainable consumption in clothing fashion. Morgan and Birtwistle (2009) discovered that consumers are unaware of their behaviour's environmental and social consequences. Most consumers don't know how the clothing is manufactured or even don't know the ecological effects of synthetic fibres and industrial cotton processing. Santoro (2017) claimed that lack of awareness is the barrier to this sustainable fashion product consumption.

Goworek et al. (2012) revealed that customers are unaware of sustainable clothing consumption for several reasons, such as sometimes sustainable clothing consumption is more complex and consumers like diversity. But in reality, consumers' variety does not match sustainable clothing consumption. Other factors, such as social and cultural norms, affect negative attitudes toward sustainable clothes, according to (Connell, 2010). The Theory of Planned Behavior (TPB) was introduced and developed by Ajzen, who highlighted the idea of the "subjective norm" to describe the social pressure able to influence or not influence individual choices. According to (Hassan et al., 2013), consumer confusion about awareness, assessment, and preference contributes to ethical compromises among ethical consumers when buying clothing. Moreover, according to Ahearn (2011), fast fashion creates obstacles to sustainable clothing consumption and limits its functional existence. On the other hand, according to Hollins (2006), fast fashion results in less durable clothing products, which reduces the sustainability of the second-hand clothing industry by lowering the price difference between new and used clothing. After analysing, the barriers to

consumers' sustainable post-purchase behaviour of new and second-hand fashion (clothing) products are:

- Lack of knowledge on sustainable consumption
- Cultural norms
- Social pressures
- Lack of social knowledge
- Personal norms
- Social norms
- Fast fashion
- Lack of environmental knowledge

2.4 Fashion Industries and Post-purchase Behaviour of Sustainable Fashion Textile Consumption

2.4.1 Fashion Industries and Types of Fashion Consumption

The fashion industry is among the most environmentally damaging sectors, consuming vast quantities of raw materials and generating significant harmful emissions. Over recent decades, the production and consumption of clothing have risen steadily, driven by global population growth and increasing incomes and living standards (Shirvanimoghaddam et al., 2020). Between 1975 and 2018, the annual per capita production of textiles worldwide grew from 5.9 kilograms to 13 kilograms (Peters et al., 2019) and the industry now generates over 92 million tons of waste and consumes 79 trillion litres of water annually (Niinimäki et al., 2020). The environmental impact of the textile industry is well-documented, with production processes such as mixing, carding, combing, stretching, and roving contributing to ecosystem degradation. These stages of production result in noise, air, water, and soil pollution while consuming vast amounts of natural resources (Slater, 2003).

As a result, companies can no longer ignore environmental concerns and must adopt innovative approaches to minimize waste, carbon emissions, and other harmful impacts on the natural environment (Camposeco-Negrete, 2013). Fashion companies have several strategies at their disposal, including reusing and recycling materials such as old garments, manufacturing scraps, bottles, and tires; promoting vintage and second-hand fashion; and leveraging efficient manufacturing techniques – both traditional and modern – such as advanced information technologies (Nieminen et al., 2007). These strategies are increasingly being embraced within the fashion industry. For example, Levi's has implemented

sustainable manufacturing processes, reducing water consumption by up to 96% (Roy et al., 2024). Similarly, Patagonia has become a leader in sustainability by integrating material, relational, and discursive elements into its social and environmental practices. Its initiatives aim to enhance the flow of sustainable materials throughout its supply chain and the wider garment industry (Shourkaei et al., 2024). H&M, on the other hand, incorporates recycled materials into its products and adopts sustainable supply chain management practices, emphasizing ethical labour standards and responsible sourcing (Roy et al., 2024).

Despite these advancements, further progress is essential. Increasing the number of garments recycling facilities, expanding second-hand clothing stores, and adopting more environmentally friendly packaging solutions are critical steps to amplify the industry's sustainability efforts (da Costa et al., 2018).

As fashion industries improve their production processes, supply chains, transportation, and other operations to benefit the environment (Niinimäki and Hassi, 2011), they also develop effective strategies to encourage sustainable consumption patterns among their customers. For example, Vătămănescu et al. (2021) found that fashion companies' corporate social responsibility (CSR) strategies and reputations have a direct positive impact on consumers' inclination to purchase sustainable products.

However, there are different types of fashion consumption which are important to understand.

Fast, Traditional, and Slow Fashion

From small, local businesses, the fashion sector has evolved into a multi-billion-dollar global industry that caters to the diverse needs of over 8 billion people worldwide. Fashion (clothing) is one of the fastest-growing industries, where competitiveness hinges on constant innovation in both engineering solutions and business models. One such model, fast fashion, has emerged to deliver affordable clothing to the masses, but at a significant societal cost. It has been widely criticized for its unsustainable practices – both environmentally and socially – due to the production of low-quality, non-durable products sold at exceptionally low prices (Clark, 2008; Pouillard and Dubé-Senécal, 2023). Fast fashion is characterized by its focus on producing short-lived products, often made from inexpensive materials, and manufactured under poor working conditions, with workers receiving low wages (Clark, 2008). By shortening production times and streamlining supply chain processes, fast fashion increases the profitability of businesses involved (Fernie and Azuma, 2004).

While fast fashion threatens to overshadow traditional fashion, several alternatives, such as slow and sustainable fashion, have emerged to counter its negative societal impacts. According to Štefko and Steffek (2018), traditional fashion informs consumers about the finished product and its origins, while slow fashion emphasizes the heritage of the product and the methods used in its creation. Slow fashion goes beyond following trends, viewing clothing as a form of self-expression. It can also be seen as a subset of traditional fashion, which prioritizes long-lasting processes and often uses recycled or organic materials.

Fast fashion ultimately results in large amounts of waste and harmful emissions. In addition to slow and traditional fashion, purchasing second-hand products (Dahlbo et al., 2017) and extending the life cycle of garments through reuse, repair, and recycling are crucial strategies to mitigate these environmental issues (Herjanto et al., 2016). Herjanto et al. (2016) note that the trend of buying second-hand fashion products is growing annually, and global demand for second-hand clothing is expected to double in the coming years. Nevertheless, the understanding of consumer behaviour and the factors influencing these sustainable practices remains limited in this important area.

Second-hand Fashion

Fashion (clothing) is the fastest growing industry worldwide, and fast fashion is mainly taking place to meet up the competitiveness in the sector. But as fast fashion ultimately results in large quantities of waste, second-hand fashion can be a solution to overcome the problems of unsustainable consumption. Due to the limited natural resource supplies, the buyers, retailers, and designers are focusing on the slow fashion trend, which is expected to grow in popularity.

Second-hand fashion is a remarkable addition that contributes to the sustainable consumption lifestyle. Second-hand fashion means the acquired or used garments are sold by the owner, a nonprofit, or a profit-making company (Castellani et al., 2015). For the sustainable fashion industry, the second-hand fashion industry can be a great contributor by repairing, reusing and recycling fashion products that can give a long-term solution by maintaining eco-friendly fashion products. According to Dahlbo et al. (2017), waste is constantly growing in fashion, especially the clothing industry, so increasing reuse and recycling of products will help to reduce environmental consequences. Still, it's also critical to maintain quality production by using high-quality materials like durable textile and extend the cycle time of clothing by repairing or reusing and recycling non-reusable materials. So the second-hand fashion (clothing) can be a focus area to make sustainable consumption in

the textile area. Niinimäki (2017) mentioned in his study that reuse and recycling will help develop more sustainability by providing used fibres. Even consumers prefer the reuse of clothes, especially young women, purchase more clothes and do the majority of clothing disposal inside their households (Laitala, 2014).

According to previous studies, second-hand fashion can be a viable option as consumers become more interested in sustainable fashion and an environmentally friendly lifestyle. The consumption pattern of second-hand fashion can be different in various contexts. As per Charpy, (2008), second-hand clothing is first given to the family members as a gift to use. Moreover, customers receive second-hand clothing by having old clothes repaired or remade. Even can buy from retailers of second-hand clothing (Lemire, 2012).

As a result, in addition to focusing on manufacturing processes, it is crucial to consider the use phase of fashion products, which can involve a range of sustainable behaviours by consumers. This perspective is supported by Goal 12: Ensure sustainable consumption and production patterns of the United Nations Sustainable Development Goals (Weiland et al., 2021), which emphasizes that reducing the impact of industrial processes is insufficient on its own; consumption also plays a critical role. Furthermore, the concept of the circular economy, advocated by the European Union and others, calls for systemic changes, including shifts in consumer behaviour (Eisenriegler, 2020). Consumer behaviour related to sustainable consumption is often studied through examining new product purchases. However, the buying of second-hand products and consumers' post-purchase behaviours are equally important.

2.4.2 Sustainable Post-Purchase Behaviour of Fashion Textile Products

According to Nittala and Moturu (2023), post-purchase behaviour encompasses the use, evaluation, and disposal of products. While there is a wealth of research on fashion textile consumption, studies that specifically focus on the sustainability aspect of post-purchase behaviour in the fashion industry are scarce.

The term "sustainable post-purchase behaviour" describes the steps customers take to reduce their adverse effects on the environment and encourage ethical consumption after purchasing fashion textile products. This includes activities like reusing old clothing, repairing rather than throwing it away, taking part in clothing swaps or second-hand markets, and prolonging clothing life through appropriate maintenance. Consumers can use less water and energy and use eco-friendly detergents, air-dry, and wash less frequently. Donating, recycling, or upcycling clothing are responsible disposal techniques that help keep textile waste out of

landfills and promote a circular economy. Furthermore, customers are encouraged to adopt a more thoughtful and minimalistic wardrobe approach due to growing awareness of how fast fashion affects the environment (Birtwistle and Moore, 2007; Niinimäki and Hassi, 2011). These practices are essential to make the fashion sector more sustainable by lowering overconsumption and promoting more conscientious clothing end-of-life decisions.

Motivation to Reuse, Repair, and Recycle Products

According to Mohr et al. (2001), responsible consumer behaviour involves acquiring, using, and disposing of products in ways that minimize or eliminate negative effects while maximizing their long-term positive impact on society. Research on reusing, repairing, and recycling products to extend their lifespan has gained increasing attention due to its potential to reduce waste, conserve resources, and promote sustainability. Reuse and repair are highly effective strategies for extending a product's lifespan and minimizing the need for new materials. These practices offer significant environmental and economic benefits by reducing the need to extract, process, and transport raw materials (Terzioğlu, 2021) and align with the principles of the circular economy.

Among the factors motivating product reuse, Monika Nalewajek and Radoslaw Macik (2013) identified that the desire for self-expression, individuality, and creativity as primary drivers, with environmental concerns often serving as secondary motivators in consumer decision-making. Saving money is another significant factor. For example, H. Joung and Park-Poaps (2013) found that economic considerations strongly influenced reuse behaviour, as consumers are motivated by the potential for cost savings.

Simpson et al. (2019) discovered that two psychological tendencies – frugality and attachment – increase the likelihood of retaining products. They also noted that emotional satisfaction and infrequent product use can reduce ownership and lead to the disposal of items that could otherwise be reused. Schifferstein and Zwartkruis-Pelgrim (2008) explain that product attachment refers to a consumer's emotional bond with a product, such as a car. When consumers form stronger attachments to products, they are more likely to care for and reuse them. Additionally, other motivational factors, such as psychological bonds with products, can further encourage reuse behaviour (Brough and Isaac, 2012), offering consumers both benefits and enjoyment while reinforcing their self-identity (Kleine and Baker, 2004). Reusing items can also strengthen social bonds, fostering feelings of love and connection among family and friends. For example, the joy of seeing children wear clothing

that carries cherished memories from relatives or one's own childhood highlights how used goods can deepen human relationships (Marzella, 2015).

According to Musova et al. (2021), environmentally conscious consumers are more likely to engage with and support circular solutions. McLaren et al. (2020) emphasize that product repair is a key strategy for promoting waste reduction and enhancing resource efficiency in many countries. Trust, care, and attachment are crucial factors that drive repair behaviours. Additionally, repairing and updating products adds value, fosters social creativity, strengthens community ties, and encourages resistance to consumerism. A survey by Borthakur and Govind (2019) found that low-income groups are particularly inclined towards repair, with 93.7% of respondents expressing a desire to extend the lifespan of their products. This motivation arises from a need to maximize the utility and longevity of possessions, ultimately saving money. According to Laitala et al. (2021), repairing items instead of replacing them is often more cost-effective, especially for individuals or households managing tight budgets or seeking to reduce overall expenses. However, low prices and poor quality of new products represent significant barriers to repairing old items.

Repairing products offers benefits both for the environment and consumers. Weaver (2014) argue that extending a product's lifespan through repair is an often-overlooked opportunity to improve both consumer well-being and environmental quality. Motivations for repair decisions, therefore, merit further exploration. In their development of a repair propensity scale, they identified three key factors influencing the willingness to repair: market factors (such as repair inconvenience and trust in repair efficiency), product factors (including replacement cost, initial item cost, and attachment), and consumer factors (such as environmental concern, frugality, product retention, innovativeness, and education). According to L. S. McNeill et al. (2020), individuals who prioritize fashion tend to dispose of clothing items more quickly and with less consideration for their environmental impact. Paradoxically, these same consumers are often motivated to repair items that align with their sense of style. This suggests a complex relationship, where fashion-conscious individuals may demonstrate contrasting behaviours toward consumption and repair, with style preferences and aesthetic values playing a significant role.

Terzioğlu (2021) developed a model of repair motivation and barriers to identify the underlying factors influencing consumer behaviour. He identified three key aspects of repair: technical, value, and emotional. Technical aspects encompass the required skills, knowledge, time, and effort, as well as the availability of materials and the need to address design issues.

Value aspects include the functional, aesthetic, and symbolic value of the item, as well as financial considerations. Emotional aspects involve feelings of attachment, perceived pleasure and interest in the repair process, and environmental concerns.

Another key sustainable post-purchase practice is recycling behaviour. Miafodzyeva et al. (2010) found that a significant portion of the population lacks strong awareness about the separate collection of household waste for recycling purposes. According to Berglund (2006), legal norms and personal attitudes are crucial in motivating individuals to engage in recycling, whereas social approval and financial incentives are less influential. He concluded that policies, regulations, and individual beliefs are essential drivers in encouraging recycling practices among the population. Research by González-Torre and Adenso-Díaz (2005) shows that individuals who regularly dispose of general waste are more likely to recycle certain products at home.

Additionally, as the distance to recycling facilities decreases, the number of waste categories that citizens separate and collect at home increases. Both economic and moral motivations influence recycling rates in households. Convenience is a particularly important factor, as the presence of collection points close to residences in multi-family housing complexes leads to higher recycling rates (Hage et al., 2009). Other motivations for recycling include individual commitment, intrinsic satisfaction (Aini et al., 2002), self-efficacy (Tabernerero and Hernández, 2011), conservation practices and knowledge (Corral-Verdugo, 1996), government regulations (Thøgersen, 2003), and environmental awareness (Izagirre-Olaizola et al., 2015). **Table 7** summarizes the key studies on the motivations behind post-purchase behaviour for non-textile products.

Table 7 Summary of key publications regarding the motivation to reuse, repair, and recycle products (non-textile)

Activities covered	Scope	Motivations, other conclusions	Authors
Reuse motivations of electronic devices (e.g., computers)	Australia, in-depth interviews with consumers college-level education	Psychological ownership and attachment, the usefulness of products by extension, and influence reuse behaviour	Simpson et al., (2019)
Reuse and recycling patterns and motives of radio, TV, newspapers, and books	Mexico, direct observations middle-sized families	Conservation practices and knowledge influence reuse and recycling behaviour. Higher-income people can store more (the higher their earnings, the higher	Corral-Verdugo (1996)

		their ability to build storage to keep items but less influence on recycling behaviour).	
Motivations to repair household appliances	Norway, a survey of household consumers aged 18-80	Better quality of products, price, availability of repair service and accessibility of user manuals motivates repair behaviour	Laitala et al. (2021)
Consumers' motivation to repair (e.g., technological and modern materials)	UK and Sweden, semi-structured interviews with simple random sampling of consumers who are interested in repair	Environmental concerns and economic benefits motivate consumers. Three aspects (technical, value, and emotional) influence repair motivations. However, some factors, such as socio-economic perception, lack of knowledge and skills, and time and effort, are barriers to repair behavior.	Terzioğlu, (2021)
Motivational factors toward recycling (household garbage, e.g., solid waste)	Malaysia, interview survey of households of urban residential areas	Intrinsic satisfaction and individual commitment influence recycling behaviour the most. Awareness and education on waste management and recycling are needed to overcome the solid waste crisis.	Aini et al. (2002)
Motivations and frequency of household recycling	Spain, interviews and surveys of random consumers in the street in the northern region	Environmentally conscious consumers are more interested in recycling if bins are near home	González-Torre and Adenso-Díaz (2005)
Recycling motivation of packaging waste (i.e., paper, glass, plastic, and metal)	Sweden, a survey of random households in four different Swedish municipalities	Economic and moral motives, the convenience of bins motivates recycling	Hage et al. (2009)
Determinants of recycling behaviour of waste materials: paper/card, plastics/cans, and glass	Spain and USA, university students	Environmental knowledge, altruistic motivation, and actual and perceived knowledge increase motivation	Izagirre-Olaizola et al. (2015)

In summary, recent research has highlighted various motivations behind consumers' engagement in reuse, repair, and recycling activities for different types of products. Reuse

behaviour is primarily driven by cost-saving intentions and psychological satisfaction (Möhlmann, 2015). Repair practices are influenced by factors such as product quality, cost considerations (Laitala et al., 2021), and environmental benefits (Weaver, 2014). Positive recycling behaviours are shaped by ecological awareness (Miranda Carreño and Blanco Suárez, 2010), personal satisfaction (Taberero et al., 2016), economic incentives (Yau, 2010), and the availability of convenient disposal facilities (Siu and Xiao, 2016). Based on these findings, it can be concluded that psychological factors are more strongly associated with reuse than with repair and recycling, where other factors, such as cost and convenience, play a larger role. Nevertheless, financial considerations remain an important motivator across all three activities.

The fashion textile industry plays a crucial role in the economic and social development of many countries. According to Keane and Te Velde (2008), the textile and clothing industries are of significant economic and social importance both in the short and long term. In the short term, they contribute to revenue generation, employment (particularly for women), and foreign exchange earnings, while in the long term, they offer nations the opportunity for sustained economic growth.

As a result, researchers have increasingly focused on promoting more sustainable lifestyles by examining the sustainability aspects of fashion textile consumption. Over the past 15 years, there has been a notable rise in research output regarding the post-consumer behaviour of fashion products (Abdallah et al., 2024). Consumer purchasing behaviour typically unfolds in five stages: need identification, information search, evaluation of alternatives, purchase, and post-purchase behaviour. As noted by Mugge et al. (2010), post-purchase behaviour is a critical phase where consumers assess their satisfaction with the purchase and determine their attachment to the product.

Reusing, repairing, and recycling textile products can manifest in various ways. Reuse may involve repurposing items for the same or different uses, passing garments to family or friends, donating to charity, or selling them as second-hand items. Repairs can be performed by the original owner or through professional repair services, and recycling occurs through multiple avenues. Upcycling plays a vital role in sustainability by transforming materials that would otherwise be discarded into new products, thereby extending the lifespan of fashion items (Dissanayake and Sinha, 2015). These behaviours are influenced by a range of factors, some of which have been explored to varying extents in the existing literature (see Table 6).

H. Joung and Park-Poaps (2013) identify economic factors as key motivators for reuse and resale behaviour, while convenience drives discarding behaviour. Family subjective norms also influence environmentally motivated resale and donation behaviours. Donation is an important form of post-purchase behaviour. For example, Urmi et al. (2022) found that in Bangladesh, donating clothes to others is the most popular method for sustainably disposing of used garments, followed by reuse, recycling, and reduction. Laitala (2014) highlights that many consumers discard clothing due to space limitations and prefer donating items for reuse rather than simply throwing them away. This behaviour is largely driven by convenience. Abdallah et al. (2024) also observed that the convenience and condition of clothing items significantly impact disposal decisions, with environmental concerns primarily motivating recycling behaviours.

Post-purchase behaviour varies among consumers. A survey by Weber et al. (2017) found that consumers with a high fashion index (fashion consumers) dispose of textile waste differently from those with a low fashion index (non-fashion consumers). While most participants either donated or discarded unwanted clothing, fashion consumers were more likely to use alternative disposal methods, such as reselling, swapping, and participating in take-back programs. Domina and Koch (1999) observed a direct link between the frequency of clothing donations and factors like being a young adult or married. They also noted that resale rates were higher among younger consumers and tended to decline as educational levels increased.

Gender also plays a role in repair behaviour, with men generally more inclined to repair tools or cars, while women are more likely to engage in garment repairs. These preferences reflect traditional gender roles and societal expectations about skills and interests related to different types of repair (Rogers et al., 2021). Research further suggests that women take on a larger share of responsibilities in the post-consumer phase of fashion consumption (Laitala, 2014). For instance, McQueen et al. (2022) found that women in Norway were more likely to repair their garments themselves, whereas men were more inclined to seek assistance. Potdar et al. (2024) also noted that more educated consumers showed greater interest in repair, and women were more engaged in surveys about textile disposal and recycling (Rezaei Arangdad et al., 2019). Zhang et al. (2020) explored how age, income, and gender influence clothing obsolescence, defined as consumers ceasing to wear or rarely wearing certain items. Their findings revealed that women and younger individuals experience clothing obsolescence more frequently, while those with lower incomes tend to hold on to their clothing for longer

periods. College students develop a more positive attitude toward sustainable post-purchase behaviour when exposed to information about reuse and recycling through media sources (Noh, 2021).

Information, education, and the initiatives of charitable organizations play significant roles in motivating consumers to reuse their products. DeVoy et al. (2021) examined the link between educational attainment, income, and textile waste generation, finding that individuals with higher education and income levels tend to produce more textile waste per person. Laitala and Klepp (2018) concluded that both economic and environmental considerations influence the decision to reuse textile products. They also found that the appeal of unique items and specific styles affects the decision to purchase second-hand clothing. Using a network approach, Ekström and Salomonson (2014) highlighted the critical role of various stakeholders – such as charitable organizations, government bodies, and technological support – in motivating recycling by collecting used products.

According to Shirvanimoghaddam et al. (2020), recycling clothing items can serve as a sustainable solution by reducing solid waste. To support this, the use of raw materials with lower environmental impact, such as bamboo, hemp, and natural dyes, should be prioritized during the manufacturing process. Additionally, social recycling – offering unused products to others for free – can further contribute to sustainability (Öztürk and Şahin, 2023). Öztürk et al. also highlight that altruism and the sense of satisfaction from generosity play a significant role in motivating recycling behaviour, alongside other socio-economic benefits (Leal Filho et al., 2019). Some of the research works were conducted on the motivation to sustainable post-purchase behaviour (see **Table 8**)

Table 8 Summary of key publications regarding the motivation to reuse, repair, and recycle textile products

Activities covered	Scope	Motivations to reuse, repair, and recycling	Authors
Motivations of post-consumer textile waste management	Review articles from 1995 to 2021	Convenience and conditions of clothing influence consumers' disposal behaviour, whereas environmental concerns results in positive attitude towards recycling	Abdallah et al. (2024)

Factors influencing clothing disposal behaviour	USA, a survey of a representative sample of college students	Economic concerns, environmental concerns, family subjective norms	H. Joung and Park-Poaps (2013)
Post-consumer textile waste and disposal	Florida, USA, a cross-sectional study of publicly available data from 2014 to 2019	Higher incomes, more residential segregation, and more clothing stores have an influence	DeVoy et al. (2021)
Drivers influencing reuse and recycling of textile products	Canada, online survey of consumers (residents of Ontario)	Fashion consumers reduce textile disposal and engage more in reuse and recycling	Weber et al. (2017)
Repair behaviour of fashion-sensitive consumers of clothing products	Canada, New Zealand, and the USA, cross-sectional online survey of adult consumers	Higher-educated male consumers are more interested in repair than female consumers and pro-environmental practices encourage fashion-sensitive consumers to engage in clothing repair	Potdar et al. (2023)
Reuse and recycling behaviour of textile consumption	USA, self-administered online survey of college students	Media sources, education, subjective norms	Noh (2021)
Consumers' clothing disposal behavior	China, questionnaire survey of Nanjing citizens	Perceived usefulness, attitude, perceived behavioral control, and subjective norms	L. Zhang et al. (2020)
Circular fashion consumption	Middle East, Iraq	New raw materials with lower environmental impact contribute to circular fashion and sustainable solutions. Therefore, those materials must be used to reuse and recycle clothing.	Shirvanimoghaddam et al. (2020)
Repair behaviour	Hull City Council, UK. Questionnaire survey in the university	Higher education, environmental responsibility, women consider more repair	Rogers et al. (2021)

Reuse and recycling of clothing	Sweden, a qualitative research approach to stakeholders and consumers	Information and education, cooperation of charity organizations, and developing technology motivate the reuse and recycling of textiles. For instance, a smartphone app can be created that shows the location of the closest recycling center or charity shop	Ekström and Salomonson (2014)
Motivations of consumers' recycling	Turkey, online and offline survey to consumers	Altruism, the satisfying feeling of generosity	Öztürk and Şahin (2023)
Motivations for second-hand clothing	Norway, a representative sample of Norwegian consumers	Uniqueness and style, environmental, and economic reasons influence reuse	Laitala and Klepp (2018)
Motivations toward sustainable disposal and reuse of textiles	Bangladesh, survey of consumers from various regions	Economic factors have an influence. Other factors include environmental concerns, interest in donating, etc.	Urmi et al. (2022)
Consumers' clothing disposal behaviour	Norway, survey of young women and students	Convenience, donation, gifts to friends	Laitala (2014)

Most studies demonstrate that consumers favour donating or giving away clothing for reuse rather than discarding it. The ease of disposal and the state of clothing items significantly impact consumer decisions to discard them, whereas environmental concerns are crucial in motivating recycling behaviour (Abdallah et al., 2024). Additionally, positive emotions (Ta et al., 2022), environmental concerns (Abdallah et al., 2024; Urmi et al., 2022), economic advantages (H. Joung and Park-Poaps, 2013), perceived usefulness (L. Zhang et al., 2020) etc. and encourage consumers to reuse and recycle clothing. Women and young consumers are more fascinated with reuse, donation, and other post-purchase practices than men and older people (Laitala, 2014; McQueen et al., 2022; Rezaei Arangdad et al., 2019; L. Zhang et al., 2020). The literature review demonstrates that various motivation factors regarding

post-purchase practices of fashion products have been uncovered. Still, there is no conclusion regarding the most important factors and their significance. Research results are often limited by sample characteristics: many research efforts investigated specific social groups, e.g., students of a single university, which restricts the broader applicability of the results.

However, the sustainable post-purchase behavior of consumers of fashion textile products can be linked to fashion companies' corporate social responsibility efforts in addressing consumers' demand for environmentally-friendly products (Vătămănescu et al., 2021), consumer perspectives on emerging circular models within the fashion industry (Carter, 2022), and consumers' purchase intention through fast fashion mobile apps (Pop et al., 2023).

2.5 Research Gaps

Much research has already concentrated primarily on consumer behaviour to improve long-term behavioural patterns (Kronrod et al., 2012; Lilley, 2009; Young et al., 2010b). However, the researchers also argue that several studies on second-hand clothing are limited (Na'amneh and Al Husban, 2012). Moreover, research on some others sectors like, slow fashion, sustainable fashion and post-purchase behaviour etc. are limited. So, by examining consumers' post-purchase behaviour of new and second-hand fashion products, it can be possible to know how consumers can be motivated, encouraged, and facilitate sustainable lifestyles in the textile (clothing) sector. Moreover, a phenomenon of new and second-hand fashion products was explored that provides a review of consumers' post-purchase behavioural intentions towards repair, reuse, and recycling of fashion products which will lead the researchers in their future research directions. Because reusing apparel is linked to a decrease in the cost of discarded clothing in landfills and a pollution reduction (Farrant et al., 2010). Besides that, clothes rental and swapping have become increasingly common ways for buyers to buy used apparel (Albinsson and Perera, 2009). Therefore, my research focuses on consumers' sustainable post-purchase behaviour of new and used fashion items, which may also result in purchasing clothing items that can be recycled, repaired, and reused, reducing textile trash.

The modern clothing industry has progressed well beyond simply meeting basic physiological and psychological needs. The emergence of fast fashion has drastically altered the social and cultural meaning of clothing. As a result, this thesis focused on sustainable post-purchase behaviour of new and second-hand fashion in the clothing industry. According

to Yan et al. (2015), second-hand garment buyers are environmentally aware and buy recycled clothing to support sustainable consumption. Second-hand clothing is becoming highly widespread and the fastest growing fashion industry, also regarded as an environmentally friendly consumption choice. So, it is necessary to investigate the researchers to establish business policy.

Moreover, there are no studies on sustainable post-purchase behaviour in Hungary. So, conducting research here will be representative of Europe. Therefore, this research aims to empirically examine the impacts of TPB components on sustainable post-purchase behaviour regarding reusing, repairing and recycling fashion textile products.

2.6 Conceptual Model and Hypothesis Development

The review of the literature reveals that various factors influence consumers' post-purchase behaviour of fashion products. However, there is no consensus on which factors are the most important or their relative significance. Many studies are constrained by sample characteristics, as they often focus on specific social groups, such as university students, limiting the broader applicability of the findings. To address this gap, several research hypotheses regarding the post-purchase behaviour of fashion consumers were formulated.

This research provides a framework for understanding sustainable post-purchase behaviour in the fashion industry by synthesising empirical findings with the Theory of Planned Behaviour. The hypotheses illustrate the intricate interaction between environmental knowledge, attitudes, subjective norms, and perceived behavioural control in influencing consumers' intentions to repair and donate fashion clothing products. This research aims to enhance the understanding of fashion consumers' post-purchase behaviours by addressing weaknesses in prior research and by implementing segmentation using behavioural clustering.

Conceptual Model Constructs

- **Environmental Knowledge**

Environmental knowledge positively impacts various types of post-purchase behaviour, as it shapes consumers' attitudes and actions toward sustainable practices. Environmentally knowledgeable consumers are more likely to engage in behaviours such as reusing, repairing, recycling, or properly disposing of products (Izagirre-Olaizola et al., 2015; Mugge et al., 2010).

- **Attitude**

Attitude impacts post-purchase behavior, like repairing and giving away fashion products. According to Young Lee et al. (2013), consumers are interested in giving their clothes to others as they believe owning an excessive amount of clothing is undesirable, which increases their sense of well-being. According to Abelson (2009), the consumers are moving away from the "disposable culture" mindset and focusing on making products last longer to save money.

- **Subjective norms**

According to H. Joung and Park-Poaps (2013), subjective norms impacted behaviors such as reselling and donating, motivated by environmental considerations. The study by Lang and Armstrong (2018) revealed a positive correlation between subjective norms and the intention to adopt sustainable clothing product-service systems, including clothing repair

- **Perceived behavioural control**

Repair intention is directly influenced by factors such as repair costs, perceived behavioral control, attitude, and financial benefits (Nadro et al., 2024). Additionally, consumers view giving away unwanted products to friends and family members as the simplest method of disposal (Agbebo, 2020).

- **Post-purchase intention**

The study by Young Lee et al. (2013) found that consumers were willing to donate products to professional organizations in the future. Moreover research by Nadro et al. (2024) revealed that consumers have positive attitudes and perceived behavioural control have positive impacts on intentions to repair products. Additionally, environmental knowledge indirectly affects repair intentions by mediating through attitudes.

Hypothesis Development

Building on the findings of Weber et al. (2017), which indicate that fashion consumers tend to handle textiles more sustainably than non-fashion consumers, this research proposed the following hypotheses:

H1: Fashion consumers who purchase second-hand products engage in sustainable post-purchase behaviours more frequently than those who do not or rarely purchase such products.

H2: Fashion consumers can be categorized into distinct clusters based on their sustainable post-purchase behaviours.

Additionally, this thesis applied the Theory of Planned Behaviour (Ajzen, 1991)) to formulate research hypotheses related to two specific post-purchase behaviours: repairing and giving away fashion products. Based on the work of Izagirre-Olaizola et al. (2015) and Mugge et al. (2010), this thesis proposed the third hypothesis:

H3: Environmental knowledge positively influences environmental attitudes regarding fashion products.

While attitude has been explored as a key determinant of post-purchase behaviour, the findings are not entirely consistent. Drawing from the studies of Young Lee et al. (2013), Abelson (2009), and Nadro et al. (2024), this thesis defined the following hypotheses regarding attitudes and perceived behavioural control:

H4a: Attitude positively influences the intention to repair fashion products.

H4b: Attitude positively influences the intention to give away unwanted fashion products.

H5a: Perceived behavioural control positively influences the intention to repair fashion products.

H5b: Perceived behavioural control positively influences the intention to give away unwanted fashion products.

Finally, building on the research by H. Joung and Park-Poaps (2013), which found that subjective norms influence behaviours such as reselling and donating, and Lang and Armstrong (2018), who revealed a positive correlation between subjective norms and the intention to adopt sustainable clothing product-service systems, including clothing repair, this thesis proposed the following hypotheses regarding subjective norms:

H6a: Subjective norms positively influence the intention to repair fashion products.

H6b: Subjective norms positively influence the intention to give away unwanted fashion products.

Figure 5 illustrates the research's conceptual model, which is based on the Theory of Planned Behaviour.

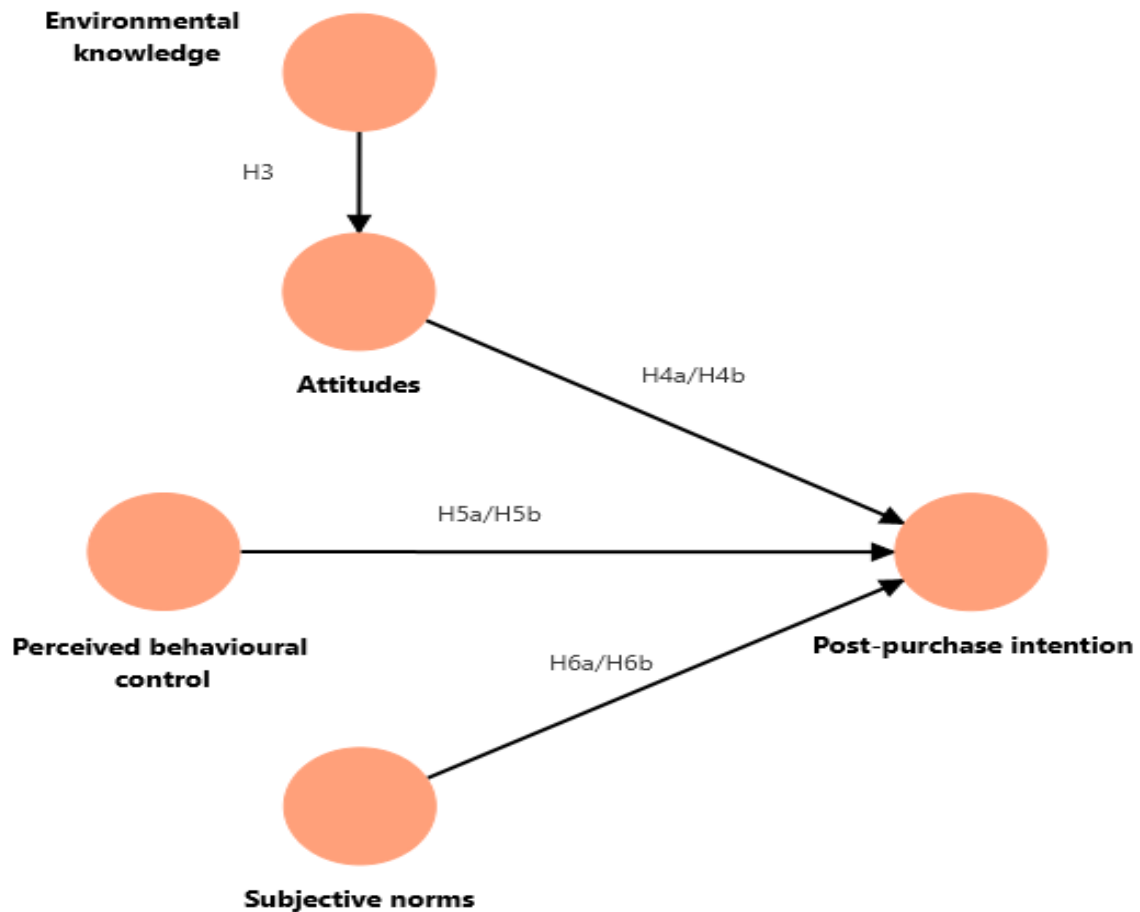


Figure 5. The research model using the Theory of Planned Behaviour (Factors influencing post-consumption behaviour)

The current research establishes a framework for understanding sustainable post-purchase behaviour in the clothing industry by integrating empirical evidence with the Theory of Planned Behaviour. The conceptual model emphasises the relationship among environmental knowledge, attitudes, subjective norms, and perceived behavioural control in influencing customers' intentions to repair and donate fashion items. The present study seeks to improve the understanding of fashion consumers' post-purchase behaviours by addressing weaknesses in prior research and integrating behavioural segmentation.

3. Research Methods

3.1 Research Designs and Sampling Method

This thesis conducted a representative survey of the citizens of Budapest, Hungary, a European capital with a busy fashion scene, to better understand the sustainable post-purchase behaviour of fashion products.

Figure 6 illustrates the various research methods employed throughout the study. The following section provides detailed information on each step of the research process and the results.

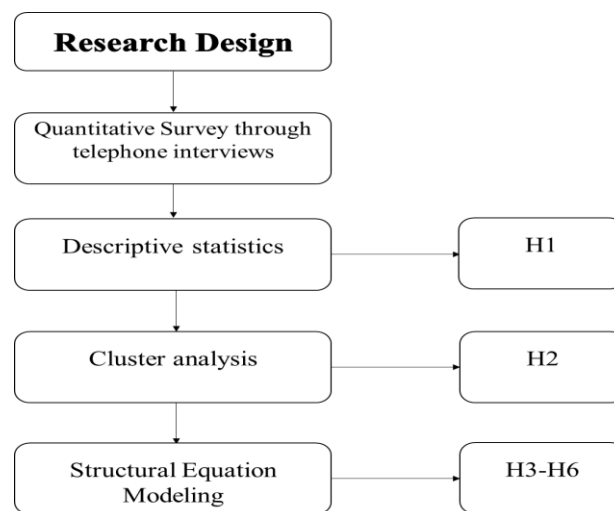


Figure 6. Research methods and respective research hypotheses

To assess the research hypotheses, this thesis conducted a representative survey of the citizens of Budapest, Hungary, a European capital with a vibrant fashion scene. The quantitative survey was designed to reflect the demographic composition of Budapest, including age, gender, education, income, occupation, and city districts. This thesis employed a random sampling strategy and reached 500 citizens through telephone interviews conducted in December 2021. After addressing missing values and cleaning the data, this thesis retained 452 responses for detailed analysis. **Table 9** presents the demographic characteristics of the sample.

Table 9 Demographic profile of the respondents (N=452)

Variable	Frequency	%	Variable	Frequency	%
Gender			Age		
Male	209	46.2	16-29	96	21.2
Female	243	53.8	30-44	130	28.8
Education			45-59	100	22.1
Lower than the 8th grade of primary school	1	0.2	Over 60	126	27.9
Primary school 8 th grade	17	3.8	Monthly Income per capita (EUR)		
Secondary school without a high school diploma, with professional qualification	40	8.8	< 250	39	8.7
High school diploma	216	47.8	250 - 500	166	36.7
College or bachelor's degree	71	15.7	500 - 750	106	23.4
University or master's degree	98	21.7	750 - 1000	37	8.2
Postgraduate training (doctoral degree)	9	2.0	>1000	60	13.3
			Don't know/ don't answer	44	9.7

3.2 Questionnaire Development and Data Collection

Multiple methodologies (qualitative-quantitative approach), known as triangulation, were used to conduct this thesis. Triangulation is described as the incorporation of two or even more philosophies, collection methods, processes, or investigations into a single study of a specific concept, and a researcher can sometimes interview people of differing perspectives and vastly different levels of authority, like high-level management staff as well as position executives in the same company. (Denzin, 2007). Triangulation is significant in research and includes interviews to get a complete view of the current situation and problems (Davies, 2001). At first, interviews of the major stakeholders and consumers of second-hand fashion products were conducted to determine the research questions concerning post-purchase behaviour and disposition of fashion products. The data collection methods were as follows-

- **Qualitative Research**

In social science, qualitative research considers various problems with the interview. According to researchers, qualitative is the reality generated interactively and then becomes meaningful subjectively (Hopf, 2004). Initially, this research conducted consumer focus

groups and interviews to understand the critical themes relating to fashion consumption patterns and the disposition of second-hand fashion products. Then, the qualitative research results were validated, and the intensity of repair, reuse, or recycling of second-hand fashion products was evaluated. Furthermore, this research intended to set the research goal. A survey questionnaire was conducted to do quantitative analysis based on understanding the problems and limitations from the focus group interviews with the major stakeholders and consumers of second-hand fashion products. It was done so that the quantitative survey questionnaire variables would be valid, reliable, and valuable for our research. This preliminary focus group interview revealed consumers' lack of understanding of how their behaviour affects the environment and how cloth trash and clothing consumption can be made entirely sustainable.

As a representative city of Europe, this research chose Budapest as the sample area for the research. Budapest has 23 districts, 16 of which are on the Pest side. As a result, this research focused on the Pest side and preferred various second-hand fashion stores in some of the largest districts: V, VII, and VIII. First, the significant stakeholders directly related to second-hand fashion stores such as Hada, Cream, and Vintage shops were interviewed. Some of the shop's managers and a few of its employees were interviewed. A total of ten stores were visited, but stakeholders from eight were able to provide information because the managers of the other two stores were busy with a new collection of stocks and were unwilling to participate in the interview. As a result, interviews with eight managers and four staff of second-hand fashion stores were conducted. Then, this research narrowed to focus on consultations with customers of second-hand fashion products. Finally, ten consumers were interviewed who had bought clothes at second-hand fashion stores.

The qualitative study helped in examining the motives, behaviours, and perspectives of stakeholders and consumers in the second-hand fashion sector concerning sustainable consumption. Store managers and staff prioritise their role in advocating for reuse, repair, and recycling, while also ensuring that sustainable fashion is accessible to a wide demographic.

- **Quantitative Research**

To validate the research hypotheses, research was conducted via questionnaires distributed to a survey of responsible consumers in Budapest. The questionnaire was designed to examine both the initial purchase and post-purchase behaviour of fashion product

consumers. It included questions about the types of textile products purchased (new and/or second-hand), the factors influencing these purchases, and the determinants of various sustainable post-purchase behaviours, such as reusing, repairing, and recycling textile products.

After receiving the responses, this analysed the data to see if the reliability of the answers was significant. The population of Budapest in 2021 is now estimated to be 1,771,865. Budapest has a total land area of 525.2 square kilometers. With roughly 1.77 million citizens, the population density is approximately 3,351 persons per square kilometer (Source: World Urbanization Prospects - United Nations population estimates and projections of major Urban Agglomerations). So, it was challenging to collect data from all types of consumers in Budapest.

After reviewing the literature, some variables from the research model were utilized in developing the questionnaire to collect data through telephone interviews. The variables are attitude, subjective norms, perceived behavioural control, repairing, reusing, recycling, environmental knowledge, post-purchase intentions and post-purchase behaviour. In addition, age, gender, level of education, employment status, monthly income, and shopping frequency have all been considered demographic variables. A 5-point and 7-point Likert scale was also used in the survey questions to anticipate potential consumers' behavioural intentions.

3.3 Data Analysis

The database of this thesis provided valuable insights into fashion consumers' behaviour. Initially, this research applied descriptive statistical methods to characterize the sample. Next, this research aimed to identify and describe distinct consumer groups using clustering techniques, which are effective tools for understanding consumer behaviour (Frades and Matthiesen, 2010). This research employed both hierarchical and K-means clustering methods, followed by post-hoc analyses (Welch's test and Games-Howell test) to validate the clusters. Finally, correlation analysis was used to further characterize the clusters. To identify the key factors influencing post-purchase behaviour, this research developed a model based on the Theory of Planned Behaviour and analysed our data using SMART PLS (Ringle et al., 2015).

4. Results

This chapter presents the findings from both the qualitative and quantitative phases of the research, providing a comprehensive examination of fashion consumers' sustainable post-purchase behaviours through statistical testing and conceptual discussion.

4.1 Results from the Survey

A snowball sampling in the interview method was followed to collect data from the major stakeholders of the second-hand fashion stores. Snowball sampling is a technique of randomising a sample of participants from a known population. Participants who are not in the randomly selected model but are instead identified by someone from the first phase. In the very first phase, participants are then asked to give the name of the various individuals (Goodman, 1961). The profile of the respondents from major stakeholders is as follows in **Table 10** and consumers in **Table 11** and their responses are shown in **Table 12**.

Table 10 Profile of the respondents of significant stakeholders from the interview

Participant (P) numbers	Gender	Age range
Managers		
P1, P4, P5	Female	25-40
P2, P3, P7, P8	Female	30-45
P6	Male	25-40
Staffs		
P9, P12	Female	25-40
P10, P11	Male	30-45

Table 11 Profile of the respondent (consumers) from the interview

Participants of Consumers (C)	Gender	Age	Income range	Marital status	Occupation
C1	Female	20-30	\$600-\$800	Unmarried	Student
C2	Female	31-45	\$0-\$500	Married	Housewife
C3	Female	45-above	\$0-\$500	Divorced	Housewife
C4	Male	31-45	\$600-\$800	Married	Job
C5	Male	20-30	\$0-\$500	Unmarried	Student
C6	Female	20-30	\$600-\$800	Unmarried	Student
C7	Female	31-45	\$600-\$800	Married	Job
C8	Male	31-45	\$1300-\$Above	Married	Business

C9	Female	20-30	\$600-\$800	Unmarried	Job
C10	Male	20-30	\$600-\$800	Unmarried	Student

Table 12 Coding of the answers of the major stakeholders and consumers from the interview

Questions	Answers
From major stakeholders:	
What factors influence consumers repurchase of second-hand fashion products?	Cheap, reasonable, diversity of products, branded products at a low price,
What types of consumers buy it more? (By Gender and age)	All types but mostly the females, teenagers. In age mostly from 20-80.
What types of strategies do second-hand fashion stores follow to repair, reuse, and recycle second-hand fashion products?	Discount, everyday services, environmental protection, diversification, associations of products, understanding customers' demands, repairing products to make usable, and recycling products to minimize waste.
From consumers	
What do you act normally when the clothing products are damaged?	Throw, repair and reuse, the gift to family members and relatives, sell to second-hand fashion stores, donate to the voluntary organization and low-income people,
Why do you buy second-hand fashion (clothing) products?	Cheap, helpful to maintain social status, branded products availability, environmentally beneficial,
What factors influence your post-purchase intentions when you buy second-hand fashion products?	Opportunity to get high quality and branded products at a low budget can be maintained different styles, social and financial balance, saving money and controlling consumption more.
What are the reasons for your negative post-purchase behaviour of second-hand fashion products?	Non-returnable option, no warranty, quality and durability issues,

Almost all the eight managers and four staff of the second-hand fashion stores stated that consumers purchase second-hand fashion products because they are affordable. The managers of the second-hand fashion stores said that consumers of all ages demand products from them. Nowadays, there is much demand for children's dresses as they grow up very quickly and their dresses are more expensive. But mainly by the age range 20-80, consumers are comparatively other ages. They believe they contribute to sustainable consumption as

they provide everyday services to consumers who are providing consumers to fulfill their needs for clothing at a reasonable price. Moreover, they said they keep the clothes' categories in different sections to make shopping easy. They have many stores in other places to make it available to all consumers. For example, the manager of Hada in Corvin Plaza said that they had 88 stores in the whole of Hungary for 25 years that operate second-hand fashion clothing services for consumers as part of sustainable production and consumption. Even their logo of the name indicates that it is secure and states that they are providing environmental protection.

The other stakeholders said they focus on repair, reuse, and recycling strategies to provide consumers with better services. Even though they have separate marketing departments that handle the consumers' issues, they consider consumers' reviews and try to correct services accordingly. However, they believe that there is still a lack of consumers awareness about the environmental benefits of using second-hand fashion products; instead, they are more concerned about price and brand. However, they think yet they must lack ecological knowledge. Still, consumers' buying habits as positive post-purchase behaviour may have a long-term positive impact on sustainable consumption that will help to reduce waste in the textile industry.

From the consumers' side, the respondents were interviewed with some questions regarding their purchase and post-purchase intentions towards second-hand fashion products and whether they were concerned about recycling and the minimization of waste. Then, this research took interviews first with a general question like, what do they do with consequences if they are damaged or long? Why do they buy second-hand fashion products? Moreover, the study tried to determine the factors that influence their positive and negative post-purchase behaviour.

In the above figure, the answers were coded where they said that second-hand fashion stores can get high-quality products with a low budget, which is the main influential factor for positive post-purchase behaviour. Consumers recognize that they can purchase higher-quality, longer-lasting goods at lower prices than the local market. Even by this, they can contribute to resource utilization as there is resource scarcity and local stores sell low-quality products at a higher price (Roux, 2006). Moreover, they think that purchasing second-hand fashion products is helpful in minimizing waste in the environment. According to research, the acquisition of second-hand clothing is connected to belonging because social

relationships support the growing intentions with the thinking about environmental benefits (Guiot and Roux, 2010).

4.2 Patterns of Purchase and Post-purchase Behaviour of Fashion Products

Figure 7 illustrates the respondents' initial purchase behaviour by the frequency with which they purchased new and second-hand textile products during a year.

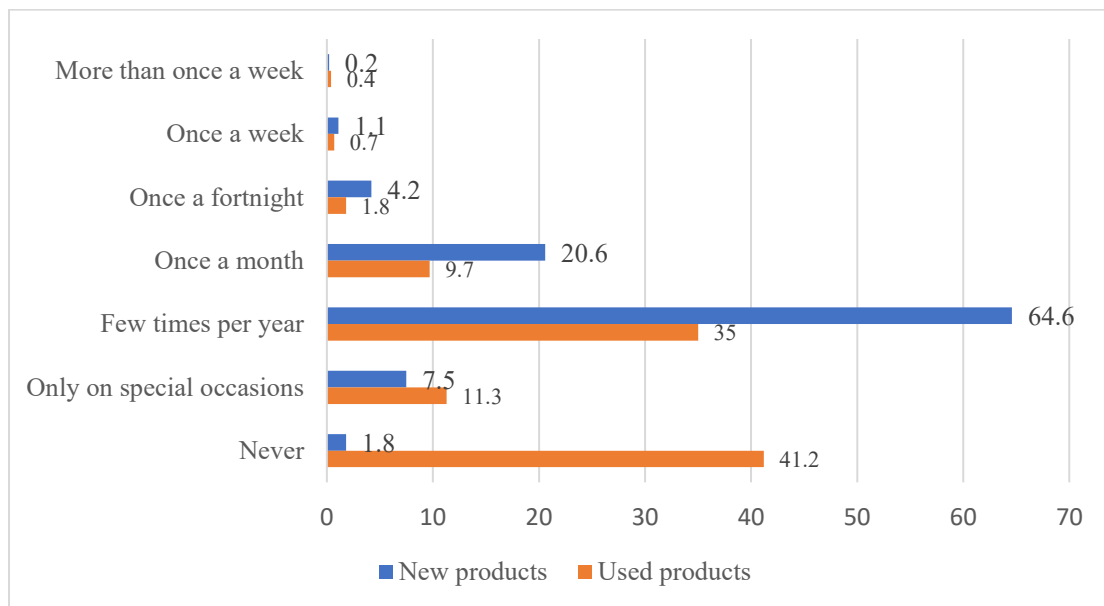


Figure 7. Frequency of initial purchase of new and second-hand textile products (%)

Regarding annual spending on new and used textiles, among the total number of respondents 452, the 87.8% of respondents spend less than EUR 500 on new products, while 58.8% spend the same amount on second-hand items. A typical consumer (40.3% for new and 48.2% for used products) spends less than EUR 125 per year on textiles. Notably, 1.8% of respondents do not purchase any new products, and 41.2% do not purchase used items. These figures indicate that, in Budapest, consumers still prefer new products over second-hand ones.

When categorizing purchase frequency into three groups (frequently, sometimes, and never), the data reveals that purchasing new and second-hand garments is associated with age, gender, occupation, and education. For new products, the relationships with sex (Cramer's $V = 0.120$, $p < .05$), age ($V = 0.251$, $p < .001$), occupation ($V = 0.271$, $p < .001$), and education ($V = 0.134$, $p < .05$) were identified, indicating weak to moderate associations. For used products, sex ($V = 0.206$, $p < .001$), age ($V = 0.161$, $p < .001$), occupation ($V = 0.225$, $p < .05$), and education ($V = 0.115$, $p < .05$) also showed significant

but generally weak to moderate relationships. Overall, these findings suggest that demographic variables have small to moderate influences on product preference.

However, no significant relationship was found between purchasing new or second-hand garments and income or residential location. Although the relationships are generally weak to moderate, younger consumers, females, and those with a diploma tend to buy new garments more frequently than others. Additionally, retired individuals purchase significantly fewer items than those with employment. These findings are summarized in **Table 13**.

Table 13 Relationship between initial purchasing behaviour and demographic characteristics (values of Cramer's V)

Demographic variable	New	Used
Sex	0.120*	0.206***
Age	0.251***	0.161***
Occupation	0.271***	0.225*
Education	0.134*	0.115*
Income	-	-

Note: Significance levels: *: <.05, **: <.01, ***: <.001

The questionnaire examined six different types of sustainable purchase behaviours. The results indicate that purchasing durable products is the most commonly practiced behaviour related to sustainability, followed by the preference for repairable goods and products made from environmentally friendly materials or recyclable items (see **Figure 8**). On the other hand, products that are responsibly manufactured and those made from recycled materials are less popular among the respondents.

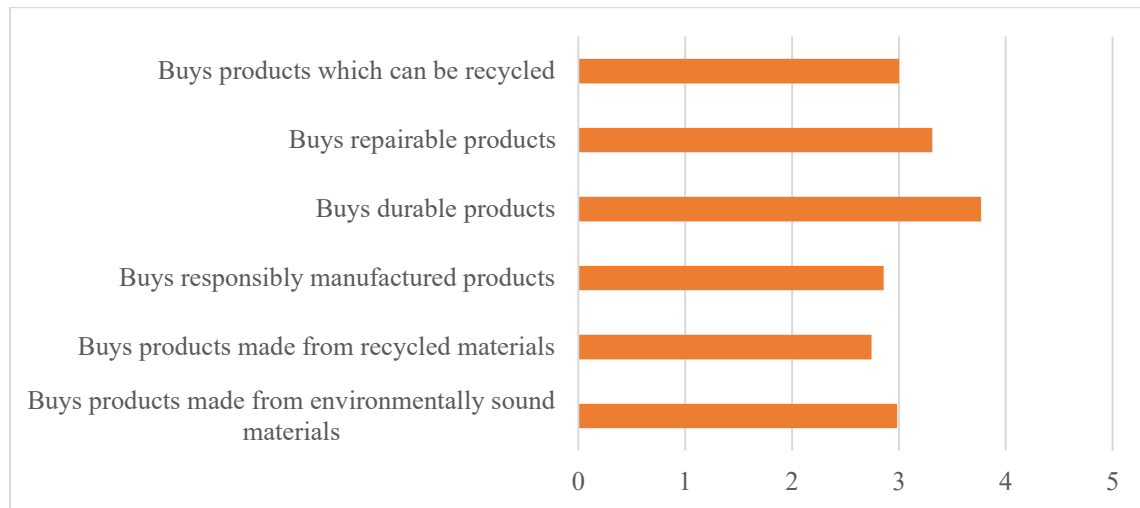


Figure 8. Engagement in different sustainable purchase behaviours (average values, 1: not at all, 5: very much)

Some demographic variables are associated with different manifestations of sustainable purchase behaviour. Women are more likely than men to buy goods made from environmentally sound materials (Cramer's V significant at $<.05$, value: .157), products made from recycled materials (Cramer's V significant at $<.05$, value: .166), and items that are repairable (Cramer's V significant at $<.05$, value: .161) or recyclable (Cramer's V significant at $<.05$, value: .160). However, there is no significant relationship between gender and the purchase of responsible or durable products.

Middle-aged and older respondents are more likely to purchase goods made from environmentally sound materials compared to younger individuals (Cramer's V significant at $<.01$, value: .152). However, none of the other sustainable purchase behaviours show a significant relationship with age. Additionally, education, place of residence within the city, and income do not significantly influence sustainable purchase behaviours.

As shown in **Figure 9** the determining factors for purchasing new and second-hand garments are similar. Interestingly, most factors are rated lower for second-hand purchases, possibly reflecting respondents' lower expectations for second-hand products. The most notable difference is in the expectation of a product guarantee, with second-hand buyers generally not expecting a guarantee to accompany their purchases.

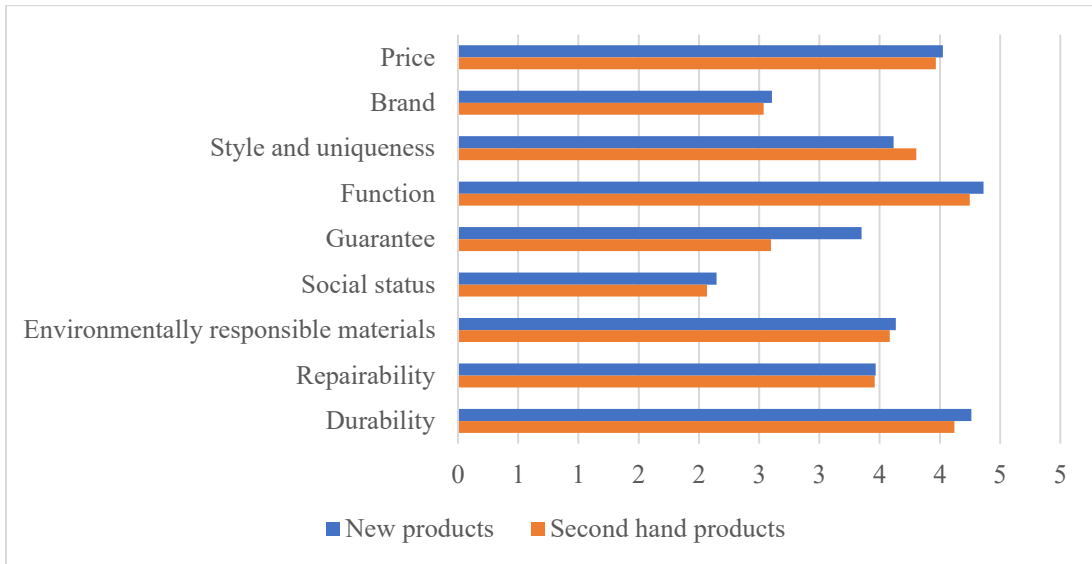


Figure 9. Determining factors of new and second-hand product purchases

The survey measured a number of sustainable post-purchase behaviours by asking respondents how much they display each behaviour (**Figure 10**). Using products as long as possible tops the list, followed closely by using unwanted products for another purpose and donating garments to a charity. Interestingly, respondents also keep their garments for a long time despite not using them.

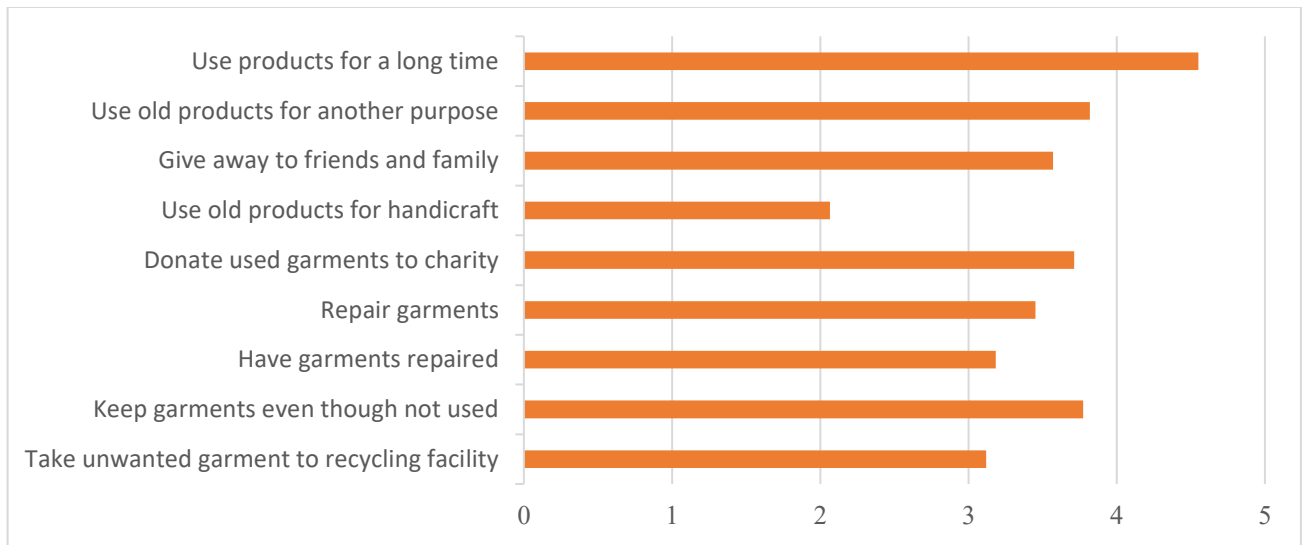


Figure 10. Importance of sustainable post-purchase behaviours (average values)

The association between demographic parameters and sustainable post-purchase behaviours is demonstrated in **Table 14**. While the place of living, occupation and income is not associated with sustainable post-purchase behaviours, there is a clear difference between the behaviour of the two sexes: there is a slight tendency showing that men use their fashion products for longer periods of time. However, women give away unwanted products to

family and friends more often, donate them to charity and repair them themselves. However, having used products repaired and taking them to recycling facilities does not distinguish the two sexes.

Age is associated only with two post-purchase behaviours, namely the length of use and having garments repaired: younger and middle-aged people tend to keep their garments for longer periods of time, and middle-aged people tend to have their garments repaired more often than other age groups. The level of education is only associated with how long people keep their garments: those with a university degree tend to keep their garments for longer periods of time.

Table 14 The association between demographic parameters and sustainable post-purchase behaviours

Demographic variable	Use for long time	Give away to friends	Donate to charity	Repair	Have repaired	Take to recycling facility
Sex	0.151*	0.288***	0.182**	0.202***	-	-
Age	0.142**	-	-	-	0.127*	-
Education	0.153*	-	-	-	-	-

Note: Significance levels: *: <.05, **: <.01, ***: <.001

This thesis examined whether buyers of new and second-hand products behave differently during the post-purchase phase. This research hypothesized that buyers of second-hand fashion products are more environmentally conscious, which would, in turn, lead to more sustainable post-purchase behaviour. **Table 15** demonstrates the relationship between initial purchase behaviour and post-purchase behaviour. Values provide the strength of correlation between the frequency of new and second-hand purchases and post-purchased behaviour assessed.

Table 15 Relationship between initial purchase behaviour and post-purchase behaviour (values of Cramer's V)

Post-purchase behaviour	New fashion products	Second-hand fashion products
Use products for a long time	-	-
Use old products for a different purpose	-	-
Give away to friends and family	0.107*	0.201***
Use old products for handicraft	-	0.171***
Donate used garments for charity	0.099*	0.152**
Repair garments	0.108*	0.135*

Have garments repaired	-	-
Take unwanted garment to recycling facility	-	0.131*

Note: Significance levels: *: <.05, **: <.01, ***: <.001

Table 15 demonstrates that the relationship between the purchase of new fashion products and selected post-purchase behaviours is either missing or is rather weak. Only the behaviours ‘giving away to friends and family’, ‘donating to charity’ and ‘repair’ increase with increased purchasing frequency. While the relationship between the frequency of purchasing second-hand garments and sustainable post-purchasing behaviours is still rather weak in most cases, the relationship is stronger than in the case of new garment purchases. Those who buy second-hand garments more often tend to give away, use for handicrafts, repair and donate their clothing items more often than those who do not buy second-hand garments. Significant associations were found between post-purchase behaviours and product type. For new fashion products, weak associations were identified for giving away garments to friends and family (Cramer’s $V = 0.107, p < .05$), donating used garments to charity ($V = 0.099, p < .05$), and repairing garments ($V = 0.108, p < .05$).

For second-hand fashion products, several significant associations emerged, including giving away garments to friends and family ($V = 0.201, p < .001$), using old garments for handicraft ($V = 0.171, p < .001$), donating used garments to charity ($V = 0.152, p < .01$), repairing garments ($V = 0.135, p < .05$), and taking unwanted garments to a recycling facility ($V = 0.131, p < .05$). These relationships indicate weak to moderate associations, suggesting that consumers of second-hand fashion products engage slightly more in sustainable post-purchase behaviours than those purchasing new items.

4.3 Clusters of Fashion Consumers with Regard to Sustainable Post-purchase Behaviour

To better understand the characteristics of consumers engaging in post-purchase behaviour, this research carried out cluster analysis using the variables describing actual post-purchase behaviour. Romesburg (Romesburg, 2004), describes cluster analysis as a technique used to identify and group similar objects. Three out of the nine post-purchase variables, namely ‘use products for a long time,’ ‘use old products for handicraft,’ and ‘keep garments even though not used,’ did not differentiate fashion consumers considerably. Thus, clusters of consumers were sought after using the remaining six variables: ‘use old products for another

purpose,’ ‘give away to friends and family,’ ‘donate used garments to charity,’ ‘repair garments,’ ‘have garments repaired’ and ‘take unwanted garments to a recycling facility.’

First, this research carried out hierarchical cluster analysis (Ward method), which indicated that two or four clusters of consumers may be identified. K-means cluster was then applied to create and assess the two and four clusters, respectively. The 4-cluster solution turned out to be superior both statistically (higher Eta-squared for each variable) and regarding the interpretation of the resulting clusters, and it was thus retained for further analysis. Post-hoc analysis (Welsch test and Games-Howell test) showed that not all, but most, cluster means were significantly different (see **Figure 11**).

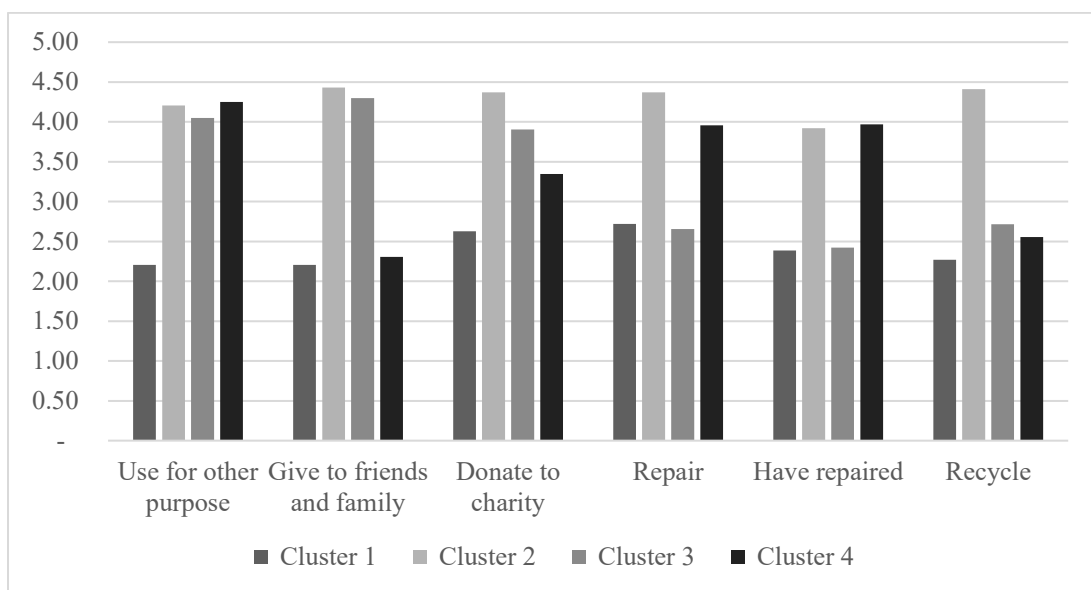


Figure 11. Results of clustering: variable means

Interpreting the four clusters based on their means according to the cluster variables resulted in the following clusters:

Cluster 1: Non-engaged fashion consumers: low score in each post-purchase category

Cluster 2: Committed fashion consumers: high score in each post-purchase category

Cluster 3: Give away fashion consumers: high score in the giving away categories only, low score in repair and recycle categories

Cluster 4: Repair fashion consumers: high score in repair categories only, low to average score in giving away and recycling categories.

While clusters differ in size, each has a significant number of members: 78, 137, 145, and 92, respectively, with the smallest number in the ‘Non-engaged fashion consumer’ group

and the highest in the ‘Give away fashion consumer’ group. **Table 16** demonstrates the major characteristics of the four clusters.

Table 16 Characteristics of the clusters

	Cluster 1: Non-engaged consumers	Cluster 2: Committed consumers	Cluster 3: Give away consumers	Cluster 4: Repair consumers
Gender***	m: 60.3% f: 39.7%	m: 37.2% f: 62.8%	m: 40.7% f: 59.3%	m: 56.5% f: 43.5%
Income, education, profession, place of living	<i>not significant</i>			
	<i>Share of cluster members in agreement with the statement:</i>			
Environmental problems are important challenges***	82.1%	92.7%	88.3%	88.0%
The fashion industry is one of the most significant polluters	<i>not significant</i>			
The fashion industry causes social problems	<i>not significant</i>			
I know several environmental and social labels**	23.0%	44.5%	39.3%	33.7%
Changing consumer behaviour is important***	82.1%	89.1%	82.1%	84.8%
Companies should produce more durable goods	<i>not significant</i>			
Fashion companies should offer repair services	<i>not significant</i>			
Giving away garments gives me a good feeling***	61.5%	95.6%	96.6%	71.7%
By selling/swapping old garments I can help others***	62.8%	90.5%	80.7%	67.4%
Buying durable, repairable, and recyclable products gives me a good feeling***	65.4%	89.1%	81.3%	73.9%
	<i>Share of cluster members for whom the aspect is important/very important:</i>			
How much does price matter when buying new?***	68.2%	80.7%	72.0%	74.4%
How much does the guarantee matter when buying new?***	39.4%	68.1%	47.5%	45.5%
How much do environmentally sound materials matter when buying new?***	44.7% %	75.5% %	54.5%	58.9%
How much does repairability matter when buying new?***	35.5%	71.8%	45.5%	52.2%

Note: Significance levels: *: <.05, **: <.01, ***: <.001

Among the demographic characteristics of the sample, only gender significantly influences cluster membership, while income, education, profession, and place of living do not have an effect. Males are significantly overrepresented in Cluster 1 and Cluster 4. While this research might expect that they engage less in post-purchase activities than females, it is rather surprising to find that there are more male respondents among ‘Repair fashion consumers’ than expected based on sample participation. This is most likely explained by the fact that women who repair their garments also engage in other post-purchase activities and thus belong to the ‘Committed consumers’ category. Most respondents (in any cluster) believe that environmental problems pose important challenges to mankind, a notion especially

prominent among 'Committed fashion consumers.' However, actual knowledge of environmental and social labels is relatively low, reaching more than 40% only in the case of 'Committed fashion consumers.'

Specific environmental and social problems relating to the fashion industry do not seem to divide the four clusters similarly to the attitudes towards the role of companies. However, there is a small but significant difference between how members of different clusters see the role of consumers in reducing the impacts of the fashion industry. Consumers committed to sustainable post-purchase behaviour seem to be more aware of other phases (namely the purchasing phase) of their consumption since they place higher importance on important decision factors such as price, guarantee, and especially environmentally sound materials and repairability than members of other clusters.

Clusters 3 and 4, namely give-away and repair-oriented consumers, seem similar in many respects. However, those who prefer giving away their unwanted garments find more satisfaction in such behaviour than those who rather repair their textile products. It is interesting to note that cluster membership, which indicates the level of engagement in different sustainable post-purchase behaviours, does not seem to relate to any variables, which characterize the amount of consumption. Thus, there is no significant relationship between cluster membership and whether cluster members plan to reduce the amount of their fashion consumption in the future or whether they plan to keep their garments for longer periods of time. This means those engaged in sustainable post-purchase behaviours do not necessarily take a more sustainable approach when considering their initial purchases.

4.4 Factors Influencing Post-Purchase Intention

To investigate the factors influencing various types of sustainable post-purchase behaviours among fashion consumers, this research applied the Theory of Planned Behaviour as developed by Ajzen (1991). According to this theory, attitudes, subjective norms and perceived behavioural control impact behavioural intentions, which in turn affect actual behaviour. Behaviour results from a person's perspective, arbitrary behavioural standards, and perceived behavioural control. The belief in the consequence of conduct is an attitude that can be positive or negative. Social pressure to conform to behaviour is related to subjective norms, while perceived behavioural control demonstrates how people can control their behaviour. The TPB theory is a general theoretical framework for anticipating behavioural intentions in many contexts, including consuming fashion textiles. When

someone acts, their attitudes determine how much they enjoy or dislike something and whether they are satisfied. A person will have a favourable attitude towards engaging in an activity if they know its beneficial effects. Therefore, consumer attitudes favourably impact sustainable post-purchase intentions and behaviour (Lobb et al., 2007; Tuu, 2015).

According to Ajzen (1991), subjective norms typically convey how significant the individual feels to others (family, friends, and colleagues) in their social surroundings or how they anticipate them to behave. Perceived behavioural control is the perception of whether an action is simple or challenging to complete (Thong and Olsen, 2012). By adapting the Theory of Planned Behaviour, this research intended to investigate the determining factors of two sustainable post-purchase behaviours, namely repairing and giving away fashion products.

Table 17 demonstrates the constructs of the research model and the items (indicator variables) of the questionnaire used to measure the constructs. Indicator variables were adopted from previous research regarding the determinants of sustainable consumption behaviour. Items describing environmental knowledge were adopted from Chi et al. (2021), who assessed consumer intentions to purchase slow fashion apparel and defined environmental knowledge as the ability to recognise environmental problems, as well as the causes and consequences of problems. Items regarding attitude were adopted from Chi et al. (2021) and Sreen et al. (2018) who assessed the impact of culture, behaviour and gender on green purchase intention. The construct of subjective norms was developed based on Cialdini and Goldstein (2004) who discussed how normative pressures shape decision making and L. McNeill and Moore (2015) who suggested that repairing and extending the lifecycle of fashion products is a positive practice influenced by social norms. The construct of perceived behavioural control was adopted from Sreen et al. (2018) and Nam et al. (2017), who explored factors influencing consumers’ purchase intention of green sportswear. Finally, the construct of post-purchase intention was adopted from Nam et al. (2017) and H.-M. Joung (2014) who assessed fast-fashion consumers’ post-purchase behaviours.

The items of the questionnaire used to measure the constructs are listed in **Table 17**.

Table 17 Questionnaire items used in the ‘repair’ and ‘give-away’ models

Latent variable	Code	Item	Repair	Give away
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Environmental knowledge	EK1	Environmental problems are among the most critical issues of our age.	x	x
	EK2	The fashion industry is one of the most polluting industries regarding water pollution.	x	x
	EK3	The production of fashion products creates social problems.	x	x
	EK4	Fashion product producers cannot solve the environmental and social problems of the industry alone.	x	x
	EK5	Changing consumer behaviour is an essential element of solving environmental problems.	x	x
	EK6	I know several labels and emblems that prove the environmental and social benefits of clothing products.	x	x
Attitude	ATT1	Buying too many fashion (clothing) products harms the environment.	x	x
	ATT2	Companies should produce longer-lasting fashion products.	x	x
	ATT3	Fashion companies should offer repair services.	x	x
	ATT4	The burden on the environment can be reduced by repairing and reusing fashion products.	x	x
	ATT5	Purchasing fashion products that can be used for an extended period, repaired, or recycled is satisfactory.	x	x
Perceived behavioural control	PBC1	If it were entirely up to me, I am confident that I would purchase fashion products that can be used for a long time, repaired, and recycled.	x	x
	PBC2	Purchasing fashion products that can be used for a long time, repaired, and recycled is totally within my control.	x	x
	PBC3	In the future, it is entirely up to me whether or not I repurchase fashion products that can be used for a long time, repaired, and recycled.	x	x
Subjective norm	SN1	If I repair and use my fashion products for a long time, most importantly, people agree with my decision.	x	
	SN2	It is trendy to repair and use clothes for a long time.	x	
	SN3	It is common practice in my family to pass clothing items to each other if we no longer need them.		x
	SN4	I know many people who give away their fashion products to others when they do not need them anymore.		x
Post-purchase intention	PPI1	In the future, I intend to buy fashion products that can be used for an extended period of time.	x	x
	PPI2	In the future, I plan to buy fashion products that can be repaired.	x	
	PPI3	I intend to repair fashion products after purchasing them.	x	

PPI4	In the future, I plan to buy fashion products that can be recycled.	x
PPI5	I intend to give away the fashion products I do not need to others who can still use them.	x

Items associated with the latent variables were handled according to Hair et al. (Sarstedt et al., 2021): items with a loading value below 0.4 were removed while items with loadings between 0.4 and 0.7 were retained if they improved the measurement model regarding composite reliability and AVE. As a result, in both the ‘repair’ and the ‘give-away’ models three items associated with ‘environmental knowledge’, namely EK4, EK5 and EK6; two items associated with ‘Attitude’, namely ATT2 and ATT3 were removed. Additionally, two items associated with ‘perceived behavioural control’ were removed to improve the model leaving only PBC1 in both models. Results of the analysis of the measurement models are shown in **Table 18** and

Table 19. Indicator reliability refers to the proportion of variance in an observed variable (indicator) that is explained by the underlying latent construct in a measurement model, while composite reliability is used to evaluate the internal consistency of a latent construct. Both measures exceed threshold values (0.4 and 0.7, respectively) in both measurement models (repair and give-away). Moreover, high AVE (Average Variance Extracted) values show that the indicators of the constructs are well-correlated and represent the same underlying concept. These results demonstrate the reliability and validity of the two models.

Table 18 Evaluation of the ‘repair’ measurement model

Latent variable		Loadings	Indicator reliability	Composite reliability	Average variance extracted
Environmental knowledge	EK1	0.740	0.548	0.803	0.576
	EK2	0.781	0.610		
	EK3	0.756	0.571		
Attitude	ATT1	0.753	0.567	0.798	0.568
	ATT2	0.746	0.556		
	ATT3	0.762	0.580		
Perceived behavioral control	PBC1	1.000	-	-	-
Subjective norm	SN1	0.918	0.842	0.849	0.739

	SN2	0.797	0.635		
Post-purchase intention	PPI1	0.814	0.663	0.864	0.680
	PPI2	0.900	0.810		
	PPI3	0.754	0.569		

Table 19 Evaluation of the ‘give-away’ measurement model

Latent variable		Loadings	Indicator reliability	Composite reliability	Average variance extracted
Environmental knowledge	EK1	0.740	0.548	0.803	0.576
	EK2	0.781	0.610		
	EK3	0.756	0.571		
Attitude	ATT1	0.744	0.567	0.798	0.568
	ATT2	0.747	0.556		
	ATT3	0.770	0.580		
Perceived behavioral control	PBC1	1.000	-	-	-
Subjective norm	SN3	0.834	0.696	0.840	0.724
	SN4	0.867	0.752		
Post-purchase intention	PPI1	0.812	0.659	0.779	0.542
	PPI4	0.752	0.566		
	PPI5	0.634	0.402		

Discriminant validity was measured using the Heterotrait-monotrait ratio (HTMT) criterion to confirm that each latent variable differs from others. According to Henseler et al. (Henseler et al., 2015), a threshold value of 0.90 indicates that the path model includes constructs that are conceptually very similar, i.e., a lack of discriminant validity. Hair et al. (Hair et al., 2017) describes discriminant validity as acceptable, with an upper limit of 0.90. **Table 20** and **Table 21** demonstrate that the HTMT is lower than this threshold value in both the ‘repair’ and the ‘give-away’ models and confirm that the constructs are distinct and not confounded.

Table 20 Discriminant validity: Heterotrait-Monotrait Ratio (HTMT) – ‘repair’ model

Latent variable	Attitude	Environmental knowledge	Perceived behavioural control	Repair intention	Subjective norm
Attitude					
Environmental knowledge	0.808				
Perceived behavioural control	0.543	0.307			
Post-purchase intention	0.601	0.302	0.751		
Subjective norm	0.470	0.287	0.439	0.662	

In Table 20, attitude and environmental knowledge are closely linked with environmental knowledge, but their connections to the subjective norm and perceived behavioral control are weaker. Perceived behavioral control has a strong connection with post-purchase intention, highlighting its predictive role. Then, post-purchase intention is strongly influenced by perceived behavioral control and moderately by attitude. Then, the subjective norm is moderately associated with post-purchase intention but less influential in other relationships.

Table 21 Discriminant validity: Heterotrait-Monotrait Ratio (HTMT) – ‘give-away’ model

Latent variable	Attitude	Environmental knowledge	Perceived behavioural control	Repair intention	Subjective norm
Attitude					
Environmental knowledge	0.808				
Perceived behavioural control	0.543	0.307			
Post-purchase intention	0.769	0.454	0.705		
Subjective norm	0.392	0.258	0.329	0.793	

Next, in table 21 this research evaluated the structural models to determine the two models’ capability to predict the target constructs, namely the two post-purchase intentions: ‘repair’ and ‘give-away’. First, this research checked the collinearity of the predictor constructs by

analysing VIF values. An inner model VIF exceeding 3.3 is generally seen as a sign of potential standard method bias. Therefore, if all VIFs in the inner model, determined through a full collinearity test, are 3.3 or lower, the model can be considered free from common method bias (Kock, 2015). The results shown in Table 22 indicate that all VIF values are below the threshold, so collinearity is not a critical issue in either model. This means that each predictor (namely attitude, perceived behavioural control and subjective norm) contributes uniquely to explaining repair and give-away intentions, which ensures the interpretability and validity of the structural model.

Table 22 VIF values

	'Repair' model	'Give-away' model
Environmental knowledge -> Attitude	1.257	1.249
Attitude -> Post-purchase intention	1.000	1.000
Perceived behavioural control -> Post-purchase intention	1.318	1.263
Subjective norm -> Post-purchase intention	1.186	1.095

This research adhered to the guidelines proposed by Hair et al. (2017) to evaluate the variables' mediation effect. Path coefficients for both the 'repair' and 'give-away' models are provided in **Table 23**. In the 'repair' model, path coefficients show a strong relationship between environmental knowledge and attitudes, perceived behavioural control, and post-purchase intention, i.e., repair. At the same time, subjective norms have a moderate effect on post-purchase intention, while attitude has the weakest effect. In the 'give-away' model, the relationship between environmental knowledge and attitudes has a similar strength since the measurement items related to them are the same in the two models. However, perceived behavioural control has a much weaker effect on give-away intention. Attitude and subjective norms have a stronger effect on post-purchase intention (i.e., giving away unwanted fashion products) than in the repair case.

Table 23 Path coefficients, t values, P values, and f^2 effect sizes for the two models

	'Repair'	'Give-away'
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	Path coeff.	t value	P value	f ² effect size	P value	Path coeff.	t value	P value	f ² effect size	P value
EK -> ATT	0.517	12.733	0.000	0.365	0.000	0.515	12.54	0.000	0.360	0.000
ATT -> PPI	0.118	2.668	0.008	0.023	0.208	0.230	5.274	0.000	0.078	0.012
PBC -> PPI	0.512	12.478	0.000	0.408	0.000	0.375	8.031	0.000	0.204	0.000
SN -> PPI	0.263	6.219	0.000	0.119	0.005	0.305	5.685	0.000	0.155	0.009

R² values show the combined effect of the exogenous latent constructs on attitude, repair intention, and giveaway intention in the two models. According to Sarstedt et al. (2021), the R² value of attitude is weak, while the R² values of post-purchase intention 'repair' and post-purchase intention 'give-away' are much higher and in the case of repair can be considered moderate (see **Table 24**).

Table 24 R2 values

	Attitude	Post-purchase intention: 'repair'
R ²	0.267	0.512
R ² adjusted	0.266	0.509
	Attitude	Post-purchase intention: 'give-away'
R ²	0.265	0.453
R ² adjusted	0.263	0.449

Effect sizes (f²) on R² show if an exogenous construct substantially impacts the endogenous constructs. Effect sizes determined in the two models are shown in Table 24. According to Cohen (Cohen, 2013), f² values of 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects of an exogenous latent variable, and effect size values of less than 0.02 indicate no effect. In the 'repair' model, Perceived Behavioural Control has a large effect size; social norms and Attitudes have a small effect size on repair intentions; however, in the case of Attitudes, this small effect size is not significant. In the 'give away' model, Perceived Behaviour Control still has the largest effect, although smaller than in the 'repair' model; Social norms have a moderate effect size, and Attitude has a small effect size, although statistically significant.

5. Discussion of Results

This research's survey examined the behaviour and motivations of consumers purchasing second-hand fashion products and engaging in various sustainable post-purchase activities. The qualitative research facilitated a profound understanding of the emotional, social, and practical factors that influence post-purchase behaviour. It highlighted the shortcomings in ecological awareness and acknowledged the potential to enhance sustainable practices in the second-hand clothing sector. The findings provided a substantial basis for future research and policy initiatives aimed at promoting sustainable consumption in the fashion industry.

In Budapest, Hungary, the majority of fashion consumers purchase new fashion products, with only 58.8% buying second-hand items. statistically significant and interpretable. Three statistically significant and interpretable consumer clusters were identified in the analysis. The internal validity of the cluster solution was acceptable, with a mean silhouette coefficient of 0.47, indicating moderate cohesion and separation among clusters. The results were also stable, as a repeated analysis using a random subsample produced a similar cluster structure, confirming the reproducibility of the findings.

Interestingly, the factors influencing the purchase of new and second-hand products are largely similar, with the exception of a reduced emphasis on guarantees when buying second-hand products. This research hypothesized that consumers who purchase second-hand fashion products exhibit distinct behaviours during the post-purchase phase compared to those who buy less frequently or avoid second-hand products entirely. The findings partially support this hypothesis, revealing differences in certain post-purchase behaviours. While the relationship between the frequency of buying second-hand fashion products and engaging in sustainable post-purchase activities is weak to moderate, significant patterns emerge. Consumers who regularly buy second-hand fashion are more likely to donate unwanted garments to charity, repurpose old items for handicrafts, repair their clothes, and take them to recycling facilities. These behaviours occur more frequently among second-hand buyers than among those who seldom or never buy second-hand products. However, second-hand buyers do not tend to use their garments for extended periods compared to other consumers. These findings support the first hypothesis (H1), highlighting a nuanced link between second-hand fashion purchases and sustainable post-purchase practices.

Thesis 1: Fashion consumers who buy second-hand products engage in sustainable post-purchase behaviour more often than those who do not or rarely buy such products.

Publications

Published

- “Sustainable post-purchase behaviour of consumers of fashion textile products” in the journal “*Discover Sustainability*”, 6(1), 94. <http://dx.doi.org/10.1007/s43621-025-00888-5>
- Consumers’ Post-purchase Behaviour of Fashion Products in the Proceedings of the 28th **International Sustainable Development Research Society Conference (ISDRS)**, Stockholm, 15-17 June 2022, PP; 795-817. ISBN: 978-91-89504-17-2

Among the various sustainable post-purchase options, the most commonly practiced behaviours were using garments for an extended period and repurposing old garments for other purposes. Giving garments away to friends and family and donating to charity were also frequent practices, followed by repairing garments and taking unwanted items to recycling facilities.

Using clustering techniques, the study identified four distinct groups of fashion consumers: ‘non-engaged,’ ‘committed,’ ‘give-away,’ and ‘repair’. ‘Non-engaged’ consumers represented the smallest cluster, while ‘give-away’ consumers formed the largest group, closely followed by ‘committed’ consumers. Among the demographic variables assessed, only gender significantly differentiated the clusters, with men being overrepresented in both the ‘non-engaged’ and ‘repair’ groups.

Beyond their engagement in sustainable post-purchase behaviours, the clusters also exhibit differences in their members' attitudes toward the environment, but not their attitudes towards the environmental and social impacts of the fashion industry. In most areas examined, the ‘repair’ and ‘give-away’ clusters show minimal differences. Nevertheless, members of the ‘give-away’ cluster stand out for deriving satisfaction from helping others by donating their old garments. The identified clusters are both statistically significant and meaningful, providing strong support for the second hypothesis (H2). So, H2 is accepted.

Thesis 2: Fashion consumers can be classified into different clusters based on their sustainable post-purchase behaviours.

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To better understand the motivations driving sustainable post-purchase behaviours among fashion consumers, the study tested two models grounded in the Theory of Planned Behaviour (TPB). These models incorporated constructs aimed at explaining consumers' intentions to repair garments and give away unwanted fashion products. The findings confirm that TPB is a valuable framework for analyzing factors influencing sustainable post-purchase behaviours in the fashion industry.

Among the constructs examined, attitude toward environmental issues had the weakest impact on intentions to repair and give away garments. Social norms exhibited a moderate influence, while perceived behavioural control emerged as the strongest predictor of both sustainable post-purchase intentions. Based on an analysis of path coefficients and effect sizes, accepted hypotheses H3, H4b, H5a, H5b, H6a, and H6b. However, we rejected H4a, as the effect size of attitude on repair intentions was very low ($f^2 \approx 0.02$) and statistically insignificant. Although the values ($t = 2.668$, $p = 0.008$) of H4a is significant but it indicates that the relationship of it is limited practical importance because of small effect size. Thus, the study rejected H4a. These findings contribute to the existing literature on fashion consumer behaviour by analyzing a representative sample of residents from a major European city and employing multiple, complementary research methods.

Thesis 3: Environmental knowledge positively influences environmental attitudes regarding fashion products.

Thesis 4:

- Attitude positively influences the intention to repair fashion products.

-
- Attitude positively influences the intention to give away unwanted fashion products.

Thesis 5:

- Perceived behavioural control has a positive influence on the intention to repair fashion products.
- Perceived behavioural control has a positive influence on the intention to give away unwanted fashion products.

Thesis 6:

- Subjective norm has a positive influence on the intention to repair fashion products.
- Subjective norm has a positive influence on the intention to give away unwanted fashion products.

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The findings of this research align with those of Weber et al. (2017), demonstrating that individuals who frequently purchase both new and second-hand fashion products (‘fashion consumers’) are more likely to engage in sustainable post-purchase activities. However, the results do not corroborate the findings of Potdar et al. (2024), who reported that older, more educated male consumers are more inclined to repair clothing than female consumers. While the ‘Repair fashion consumers’ cluster includes a significantly higher proportion of men, this does not necessarily indicate that men engage in repair activities more frequently than

women, especially considering the higher representation of women in the ‘Committed consumers’ cluster.

When examining gender roles more broadly, women are notably overrepresented in the ‘Committed consumers’ cluster, which places greater emphasis on textile disposal and recycling. This finding reinforces prior research that highlights women's active involvement in these aspects of sustainable fashion consumption. Moreover, the results support studies by Domina and Koch (1999), Noh (2021), Potdar et al. (2024), Rezaei Arangdad et al. (2019) and Young Lee et al. (2013), showing that women who repair their garments also tend to participate in other post-purchase activities, thus aligning with the characteristics of the ‘Committed consumers’ category.

Many studies suggest that both environmental knowledge and environmental attitudes influence sustainable post-purchase behaviours. However, the findings of this research show that, in the context of Budapest, attitude toward the environment as distinct from environmental knowledge had only a weak effect on repair and give-away intentions. Instead, other considerations, such as economic and convenience factors (as highlighted by Laitala and Klepp (2018) and Urmi et al. (2022)), appear to play a more significant role, particularly in repair activities.

Improving environmental knowledge through consumer education can strengthen attitudes toward sustainability, which in turn could promote sustainable consumption. However, our results suggest that while education may enhance knowledge, attitude alone remains a weak predictor of repair and give-away intentions. However, the results show that attitudes are the weakest predictors of repair and give-away intentions. While other post-purchase activities, such as recycling, may be more influenced by attitudes, the findings suggest that education alone may not be sufficient to address the challenges of sustainable fashion consumption.

Instead, greater emphasis should be placed on improving the repairability of products and showcasing practical examples of sustainable practices. These approaches may have a more substantial impact on encouraging sustainable fashion consumption and reducing the environmental burden of the fashion industry. The final aspect of this research was to examine the research gaps and future research directions available to researchers. **Table 25** present a summary of the hypothesis based on their acceptance or rejections.

Table 25 Summarization of the evaluation of hypothesis

Hypothesis	Thesis	Acceptance/Rejection
H1:	Thesis 1: Fashion consumers who buy second-hand products engage in sustainable post-purchase behaviour more often than those who do not or rarely buy such products.	Accepted
H2:	Thesis 2: Fashion consumers can be classified into different clusters based on their sustainable post-purchase behaviours.	Accepted
H3:	Thesis 3: Environmental knowledge positively influences environmental attitudes regarding fashion products.	Accepted
	Thesis 4:	
H4a:	Attitude positively influences the intention to repair fashion products.	Rejected
H4b:	Attitude positively influences the intention to give away unwanted fashion products.	Accepted
	Thesis 5:	
H5a:	Perceived behavioural control has a positive influence on the intention to repair fashion products.	Accepted
H5b:	Perceived behavioural control has a positive influence on the intention to give away unwanted fashion products.	Accepted
	Thesis 6:	
H6a:	Subjective norm has a positive influence on the intention to repair fashion products.	Accepted
H6b:	Subjective norm has a positive influence on the intention to give away unwanted fashion products.	Accepted

6. Conclusion, Limitations and Future Research Directions

6.1 Conclusions

The results contribute to the already existing literature regarding the behaviour of fashion consumers by assessing a representative sample of the citizens of a large European city using multiple, complementary research methods. The results support the findings of Weber et al. (Weber et al., 2017) by showing that those who purchase new and/or second-hand products more often ('fashion consumers') engage in more sustainable post-purchase activities. The research also reaffirms Potdar et al. (Potdar et al., 2023) who found that older, more educated male consumers are more likely to engage in clothing repair than female fashion consumers since this research found a cluster with a significantly higher number of men, which contains consumers who repair their old garments but do not engage in other post-purchase activities. Regarding the roles taken by the different genders in general, however, women are over-represented in the 'Committed consumer' cluster, which also reinforces previous results.

Most authors claim that environmental concerns play a role in sustainable post-purchase behaviour. However, the results show that – at least in the special case of Budapest – this factor has the weakest (if at all) effect on both repair and give-away behaviors. This may indicate that other factors, such as economic and convenience considerations (as suggested by Laitala and Klepp (Laitala and Klepp, 2018); Urmi et al. (Urmi et al., 2022)), play an important role, especially in the case of repair.

The results have important implications for practitioners, businesses, policymakers and NGOs promoting more sustainable lifestyles as well.

Buying second-hand products offers a solution to reducing textile consumption; however, those who buy second-hand products may not behave environmentally friendly regarding other aspects of their fashion consumption. Although this research found a relationship between the frequency of buying second-hand fashion products and some of the sustainable post-purchase behaviours, the sustainability of second-hand fashion consumption cannot be taken for granted.

It is often assumed that raising consumers' awareness to form positive attitudes toward the environment can foster sustainable consumption patterns. However, the results show that attitudes are the weakest contributors to 'repair' and 'give-away' intentions, and while other

post-purchase activities (such as recycling, etc.) may be more affected by attitudes, educating consumers may not provide a solution to the problems of sustainable fashion consumption. On the contrary, improving the reparability of products and providing good examples may contribute more to sustainable fashion consumption and a reduced burden on the natural environment.

6.2 Limitations and Future Research Directions of the Study

Limitations of the Study

Even though the study has significant implications for academics and professionals, some limitations warrant attention. This research has several limitations that should be considered when interpreting the results. It relies on cross-sectional, self-reported data collected through telephone surveys from consumers residing solely in Budapest. Consequently, the findings represent a specific urban and cultural context and should be generalized with caution. Moreover, the survey was conducted in December 2021, a period of increased apparel consumption due to Christmas shopping, which may have influenced some responses. Therefore, while the results provide meaningful insights into sustainable post-purchase behaviour, they should be interpreted within these contextual boundaries. The survey is limited to consumers living in Budapest and no other European country was included in the research. Then, the study looked at only one sector: the consumption of apparel products. These limitations were mitigated through stratified sampling, neutral question wording, and assurance of anonymity. Moreover, the method used to collect the data, namely questionnaires conducted through the telephone.

Methodological Considerations

Thus, the study intends to do additional studies on more variables using the same database in different months. Additionally, the study would like to perform other statistical analyses on it. Research could utilize an experimental design methodology, e.g., “experimental interventions to increase PBC”. The study tested the aspects of the theory of planned behaviour. Future research should consider other theories, such as social cognitive theory and the theory of reasoned action, to understand consumers' sustainable post-purchase behaviour better.

Theoretical Extensions

The study investigated the sustainable post-purchase behaviour of fashion product consumers using the theory of planned behavior and identified different associations with demographic variables. Understanding these associations can help tailor marketing strategies and interventions to promote sustainable behaviors among different consumer segments. Moreover, other associations suggest that different consumer groups exhibit varying attitudes, subjective norms, perceived behavioral control, and post-purchase intentions, which influence their behaviors related to sustainability and consumption practices. The empirical examination of most studies dealing with the topic is confined to consumers from a few countries, as shown when introducing the descriptive characteristics of the sample articles. Since there may be significant differences between how people in different countries and cultures behave, research should extend to other regions, as well as cross-cultural investigation is necessary to improve the generalisability of the results (Kang et al., 2013).

Demographic and Consumer Insights

Moreover, the cluster analysis identified four consumer groups with varying gender compositions and sustainable behavior patterns. While some clusters were male or female dominated, it is important to note that cluster membership does not imply uniform behavior across all dimensions. Additionally, the telephone-based sample structure may influence the observed gender ratios. These findings suggest differences in attitudes and behaviors toward sustainability. Future research should investigate the frequency of sustainable behaviors within clusters, use more diverse sampling methods to reduce bias, explore additional predictors of behavior, and test tailored interventions to better understand and promote sustainable practices. Researchers believe that the study of young female consumers can add to the understanding of sustainability practices in fashion consumption (C. Becker-Leifhold and Iran, 2018; L. McNeill and Venter, 2019). More research on other demographic variables is necessary to clarify the relationship between price, emotional and purchasing attributes, and long-term consumption (Haines and Lee, 2021). A study by Žurga et al. (2015) suggests that a good understanding and forecasting of consumer recycling behaviour can be achieved by exploring proper psychographic features. Future studies incorporating additional cognitive, affective, and motivational aspects may provide new insight into the fundamental factors that make socially responsible consumption advantageous (Park and Lin, 2020).

Research Gaps and Emerging Areas

In addition, some research concentrates on the eco-fashion of textile products, which can provide designers with perspectives on developing sustainable designs suitable to the customer base far beyond trends demanded by the apparel market (Şener et al., 2019). Research findings already provide essential insight into engagement in sustainable consumption and the purchase intentions towards sustainable products, forming the basis for additional research. These studies also act as a base for academics, as existing literature focuses mainly on consumer interests in sustainable practices rather than consumer attitudes toward their behavioural patterns (La Rosa and Johnson Jorgensen, 2021; Wiederhold and Martinez, 2018). Since the study of alternative solutions to clothing consumption is still in its early stages, there will be a need for additional academic studies in this area. A further cross-cultural survey, for example, could be executed to include more purchasers (Iran et al., 2019).

Neumann et al. (2021); Su et al. (2019) investigated younger Millennials, but additional studies may use a more diverse sample group based on geographic location and educational background to support the findings. There has been little empirical study into the impacts of gender and age on sustainable and non-sustainable clothing. This research focused on multiple dimensions and aspects of clothing. Rahman and Koszewska (2020) suggested that more investigations into consumer-centric perspectives on sustainable practices are required. The inquiry by Shrivastava et al. (2021) represents a valuable theoretical foundation for understanding consumer preferences in the acceptance of clothing sustainable practices through circular fashion. It would be fascinating to see how customers of Facebook and other social media sites react to the studies.

The results of a study by Magnuson et al. (2017) suggest that consumer perception of socially responsible clothing may be based on the circumstances; therefore, investigations are required in different attitude scenarios to quantify the same constructs used in the study. This research used a comprehensive perspective, defining it in terms of price, time, and effort, and discovered that it significantly impacted customer perceptions of ethical clothes. In this research, slow fashion was determined to be one of the most significant influencers on customer attitudes toward ethical apparel. However, it should be noted that this operationalisation may have led to respondents seeing it as more of a conventional concept than a moral concept. Gazzola et al. (2020) suggested that continuous studies should enhance the participant representative sample through different communication channels, not just

online networks, in determining this concept in a broader sense, considering other segments of society.

To summarise the findings, this research study identified several research gaps and further research opportunities as shown below:

There are very few studies comparing green textile consumption to the consumption of other products, which calls for a new comparative analysis in the future. Several important aspects of textile consumption are still largely unexplored. Researchers should therefore emphasise emerging areas of fashion consumption such as fast fashion, slow fashion, second-hand fashion, and activities such as recycling, reusing, repairing etc. In addition, research regarding the post-purchase behaviour of fashion consumers is also scarce since most studies focus on the initial purchase decision. So, research on consumers' post-purchase intention and behaviour towards textile fashion products can be explored.

The consumer perspective should be linked to the policy and corporate aspects of sustainable fashion consumption since solutions can only be identified and implemented with the cooperation of the different spheres of society. Future studies may utilize digital technology to investigate the substantial influence of digital media on sustainable consumption behaviors for fashion textile products.

Practical Recommendations

This research provides several recommendations based on its findings.

- Apparel producers and retailers must clearly disclose a product's repairability, its material origins, and its recyclability through visible labelling or digital tags, enabling consumers to make informed, ethical choices.
- Retailers must implement on-site repair facilities or provide accessible post-warranty repair alternatives to prolong product lifespans and mitigate textile waste.
- Policymakers and industry stakeholders ought to endorse systems that facilitate garment returns, reuse, and donations in a straightforward, verifiable, and reliable manner.
- Retailers may offer discounts, vouchers, or loyalty prizes to customers who return, repair, or recycle unwanted apparel, thereby promoting sustainable post-purchase engagement.

- Government and industry should advocate sustainable fashion practices through collaborative educational and awareness efforts that emphasise the long-term economic and environmental benefits of repair and reuse.
- Different digital platforms can be adapted to sustainable practices. Such as, Beeco (A green app full of Ecology) by which cities can enable reuse activities and other sustainable practices that contributes to many circular economy initiatives. So, need to raise awareness from both the companies and government sides for responsible and sustainable practices.

Suggestions for Future Research

These initiatives could enhance motivation towards sustainable post-purchase behaviour and circular fashion systems, thereby enabling businesses to promote it across various consumer segments. Moreover, future research on sustainable post-purchase behaviour can be strengthened by examining cross-cultural, demographic, product-specific, and emerging consumer practices.

- Longitudinal panel studies should be conducted to track sustainable post-purchase behaviour over time, enabling a better understanding of changes in consumer attitudes and practices.
- Future studies should examine sustainable post-purchase behaviours across multiple countries to identify culturally specific drivers and improve generalizability.
- Researchers must explore variations across age, generation, and gender while maintaining measurement invariance to provide reliable comparisons of intentions and actions.
- In addition to garments, research might explore electronics, food, cosmetics, and household products to identify category-specific sustainable behaviours.
- Research should consider practices such as slow fashion, second-hand purchases, repair, reuse, and recycling to capture consumer engagement beyond the initial purchase.
- Experimental interventions aimed at increasing perceived behavioural control (PBC) could be implemented to evaluate causal effects on sustainable post-purchase behaviour.

- Cluster analysis (LCA) could be extended to investigate how consumer segments evolve with increasing product usage time, providing insights into behavioural patterns across the product lifecycle.
- Finally, future studies should incorporate PLSpredict/Q²/Q² predictive validity assessments to evaluate the predictive power of theoretical models on sustainable consumption intentions and actions.

6.3 Novel Findings and Contributions

The first novel output: My research indicates that consumers who use second-hand products are generally more environmentally conscious and engage more actively in sustainable practices than others. This finding supports the study's central hypothesis.

The second novel output: I worked on consumers in Budapest, which may represent similar behavioural patterns compared to other European countries.

The third novel output: Gender significantly influences cluster membership. Educated male consumers are more involved in post-purchase activities than others, while women who repair their garments also participate in additional post-purchase activities. This second contribution is aligned with the second research question.

The fourth novel output: My research found that different factors influence consumers' sustainable post-purchase behaviour, which supports the study's second research question. The aspects of the theory of planned behaviours have significant impacts on consumers' post-purchase activities.

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Appendix

Questionnaire survey on fashion (clothing) products in English

Environmental Knowledge:

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

EK1: Environmental problems are among the most critical issues of our age.

EK2: The fashion industry is one of the most polluting industries regarding water pollution.

EK3: The production of fashion products creates social problems.

EK4: Fashion product producers cannot solve the environmental and social problems of the industry alone.

EK5: Changing consumer behaviour is an essential element of solving environmental problems.

EK6: I know several labels and emblems that prove the environmental and social benefits of clothing products.

Attitude:

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

ATT1: Buying too many fashion (clothing) products harms the environment.

ATT2: Companies should produce longer-lasting fashion products.

ATT3: Fashion companies should offer repair services.

ATT4: By repairing and reusing fashion products, the burden on the environment can be reduced.

ATT5: I believe purchasing second-hand fashion products is good for the environment.

ATT6: Giving away fashion products, which I do not need anymore, gives me a good feeling.

ATT7: By selling/swapping my old fashion products, I can help somebody else.

ATT8: Purchasing fashion products that can be used for an extended period, repaired or recycled is satisfactory.

Initial purchase of fashion (clothing) products

Answer the questions by choosing the right option from the listed categories

IP1: How often do you buy **NEW** fashion products (including all clothing wear: underwear, outerwear: casual and leisure wear, formal and informal wear and accessories)?

- More than once a week
- Once a week

- Every two weeks
- Once a month
- A few times in a year
- Only for special occasions
- Never

IP2: How often do you buy **SECOND-HAND** fashion products (including all clothing wear: underwear, outerwear: casual and leisure wear, formal and informal wear and accessories)?

- More than once a week
- Once a week
- Every two weeks
- Once a month
- A few times in a year
- Only for special occasions
- Never

IP3: How much do you spend on **NEW** fashion products in a year (including all clothing wear: underwear, outerwear: casual and leisure wear, formal and informal wear and accessories)?

- Less than HUF 50 000
- HUF 50 001-100 000
- HUF 100 001-200 000
- HUF 200 001-300 000
- HUF 300 001-400 000
- HUF 400 001-500 000
- More than HUF 500 001

IP4: How much do you spend on **SECOND-HAND** fashion products in a year (including all clothing wear: underwear, outerwear: casual and leisure wear, formal and informal wear and accessories)?

- Less than HUF 50 000
- HUF 50 001-100 000
- HUF 100 001-200 000

- HUF 200 001-300 000
- HUF 300 001-400 000
- HUF 400 001-500 000
- More than HUF 500 001

IP5: How much do the following aspects influence your purchasing decision when you buy **NEW** fashion products?

Indicate your answer by using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

- Price
- Brand
- Style and uniqueness
- Functionality
- Warranty
- Social status
- Environmentally sound materials
- Repairability
- Durability

IP6: How much do the following aspects influence your purchasing decision when you buy **SECOND-HAND** fashion products?

Indicate your answer by using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

- Price
- Brand
- Style and uniqueness
- Functionality
- Warranty
- Social status
- Environmentally sound materials

- Repairability
- Durability

Characteristics of fashion purchase

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

PB1: I often purchase fashion products that are made of environmentally friendly materials.

PB2: I often purchase fashion products that are made of recycled materials

PB3: I often purchase fashion products that were manufactured responsibly

PB4: I often purchase fashion products that can be used for a long time

PB5: I often purchase fashion products that can be repaired

PB6: I often purchase fashion products that can be recycled

Answer the following question in your own words:

PB7: What are the most important barriers for you to buying environmentally friendly clothing items?

Post-Purchase Behaviour for fashion products

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

Reuse

PPB1: I keep using fashion products as long as I can

PPB2: I reuse my outdated/used/unwanted clothing products for other purposes

PPB3: I give away my outdated/used/unwanted clothing products to my family members and friends

PPB4: I use my old garments for crafts or sewing purposes

PPB5: I donate my clothes to charity

Repair

PPB6: I often repair clothes if they are damaged and use them again

PPB7: When I repair my clothes, I do it because:

- I like them and I get attached to them
- I want to save money
- I want to reduce waste

- For other reasons: _____

Recycle

PPB8: I often keep my clothes for several years even though I do not use them anymore

PPB9: If a clothing product cannot be used anymore, I put it in the bin

PPB10: If a clothing product is not suitable for further use, I take it to a recycling facility

Repurchase

PPB11: If I am satisfied with a particular product, I will search for the same brand/producer again

PPB12: If I am satisfied with a particular product, I will continue shopping in the same store

Subjective norms:

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

SN1: My friends consider environmental issues when purchasing fashion products.

SN2: Many of my friends buy fashion products in second-hand fashion stores.

SN3: It is trendy to shop in second-hand fashion stores.

SN4: My friends use their fashion products for a long time and repair them when possible.

SN5: If I repair and use my fashion products for a long time, most people who are important to me agree with my decision.

SN6: It is trendy to repair and use clothes for a long time.

SN7: It is common practice in my family that we pass clothing items to each other if we do not need them anymore.

SN8: I know many people, who give away their fashion products to others when they do not need them anymore.

SN9: I know many people, who sell their fashion products to others when they do not need them anymore.

Perceived behavioral control:

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

PBC1: I always try to purchase fashion products that I can use for a long time and can be repaired if needed.

PBC2: If it were entirely up to me, I am confident that I will repurchase fashion products that can be used for a long time and can be repaired and recycled.

PBC3: I feel that purchasing fashion products that can be used for a long time, can repair, and are recycled is totally within my control.

PBC4: In the future, it is entirely up to me whether or not I repurchase fashion products that can be used for a long time, repaired, and recycled.

Post-purchase intention for fashion(clothing) products

Answer the following questions using the following categories: Strongly disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly agree=5

PPI1: In the future, I intend to buy fashion products that can be used for a long period of time.

PPI2: In the future, I plan to buy fashion products that can be repaired.

PPI3: In the future, I will buy fashion products that can be recycled.

PPI4: I intend to buy clothing products less frequently in the future.

PPI5: I plan to use fashion products for a long period of time after purchase.

PPI6: I intend to give away the fashion products that I do not need to others, who can still use them.

PPI7: I plan to sell fashion products, which I do not need anymore.

PPI8: I intend to repair fashion products after purchasing.

PPI9: I intend to select fashion products and take them to recycle facilities/collection points.

Barriers

Answer the following question in your own words:

PPB13: What are the most important barriers for you to using your clothes for a long time?

PPB14: What are the most important barriers for you to repair your clothes?

PPB15: What are the most important barriers for you to take your clothes to a recycling facility?

Mi a neme? (Gender)

- Nő
- Férfi

Hány éves? (Age)

- _____

Mi a legmagasabb iskolai végzettsége? (Education)

Általános iskola 8. évfolyamnál alacsonyabb

Általános iskola 8. évfolyam

Középfokú iskola érettségi nélkül, szakmai végzettséggel

Érettségi

főiskola vagy alapképzés

egyetem vagy mesterképzés

Posztgraduális képzés (doktori fokozat)

Mi a foglalkozása? (Occupation)

Tanuló

Nyugdíjas

Köztisztviselő

Közalkalmazott

Vállalkozó

Szakmunkás

Betanított munkás

Szellemi alkalmazott multinacionális vállalatnál

Szellemi alkalmazott hazai kis- és középvállalatnál

Szellemi alkalmazott hazai nagyvállalatnál

Tanuló

Háztartásbeli

Munkanélküli

Egyéb:

Mekkora a háztartása? (Size of household)

Egyszemélyes

Kétszemélyes, mindkettő fiatalabb 65 évesnél

Kétszemélyes, legalább egyikük 65 éves vagy annál idősebb

Egy szülő gyermek(ek)kel

Két felnőtt egy gyermekkel

Két felnőtt két gyermekkel

Két felnőtt három vagy annál több gyermekkel

Mennyi a háztartása egy főre jutó NETTÓ HAVI jövedelme? (Size of income)

-50.000 HUF alatt

50.001-100.000 HUF

100.001-150.000 HUF

150.001-200.000 HUF

200.001-250.000 HUF

250.001-300.000 HUF

300.001-350.000 HUF

350.001-400.000 HUF

400.000- HUF

Questionnaire survey on fashion (clothing) products in Hungarian

Kérdőíves felmérés a ruházati termékekkel kapcsolatos fogyasztói szokásokról

Tisztelt Hölgyem, Uram!

Az alábbi felmérést a Budapesti Műszaki és Gazdaságtudományi Egyetem Környezetgazdaságtan és Fenntartható Fejlődés Tanszékének a megbízásából végezzük. A tudományos kutatás célja a hazai ruhavásárlási szokások feltérképezése környezetvédelmi szempontból.

A kérdések az új és használt ruhavásárlással, illetve a ruházati termékek használatával, hasznosításával kapcsolatosak. Kérjük, hogy a válaszokat saját véleménye, illetve szokásai alapján válaszolja meg!

A kérdőív kitöltése névtelen, a válaszokat kizárólag tudományos célokra használjuk fel.

Köszönjük együttműködését!

MINDENKITŐL

EK. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
EK1	A környezeti problémák korunk legfontosabb kihívásai között szerepelnek.					
EK2	A divatipar az egyik legszennyezőbb iparág a vízszennyezés tekintetében.					
EK3	A divattermékek előállítása társadalmi problémákat okoz.					
EK4	A divattermékek gyártói nem tudják egyedül megoldani az iparág környezeti és társadalmi problémáit.					
EK5	A fogyasztói magatartás megváltoztatása a környezeti problémák megoldásának fontos eleme.					
EK6	Több olyan címkét, emblémát is ismerek, melyek a ruházati termékek környezeti, társadalmi előnyeit bizonyítják.					

MINDENKITŐL

ATT. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
ATT1	Túl sok ruházati termék vásárlása árt a környezetnek.					
ATT2	A cégeknek hosszabb élettartamú ruházati termékeket kellene gyártaniuk.					
ATT3	A ruházati cégeknek javítási szolgáltatást is kellene nyújtaniuk.					
ATT4	A divattermékek megjavítása és hosszabb ideig tartó használata által csökkenthető a környezeti terhelés.					

ATT5	Hiszem, hogy a használt ruházati termékek vásárlása jó a környezet számára.					
ATT6	Az általam már nem használt ruházati termékek elajándékozása jó érzéssel tölt el.					
ATT7	A használt ruháim eladásával/elcserélésével másoknak segíték.					
ATT8	A sokáig használható, javítható, vagy újrahasznosítható ruházati termékek vásárlása elégedettséggel tölt el.					

MINDENKITŐL

IP1. Mennyire gyakran vásárol ÚJ ruházati termékeket (például: alsóruházatot, felsőruházatot: utcai és szabadidő ruházatot, alkalmi és üzleti ruházatot, valamint kiegészítőket)?

EGY VÁLASZ

1. Hetente többször
2. Hetente egyszer
3. Kéthetente egyszer
4. Havonta egyszer
5. Évente néhány alkalommal
6. Csak különleges alkalmakkor
7. Soha

MINDENKITŐL

IP2. Mennyire gyakran vásárol HASZNÁLT ruházati termékeket (például: alsóruházatot, felsőruházatot: utcai és szabadidő ruházatot, alkalmi és üzleti ruházatot, valamint kiegészítőket)?

EGY VÁLASZ

1. Hetente többször
2. Hetente egyszer
3. Kéthetente egyszer
4. Havonta egyszer
5. Évente néhány alkalommal
6. Csak különleges alkalmakkor
7. Soha

HA IP1=7 ÉS IP2=7→NEM RUHAVÁSÁRLÓ

HA IP1<7, HA ÚJ RUHA VÁSÁRLÓ

IP3. ÉVENTE mennyit költ ÚJ ruházati termékekre (például: alsóruházatra, felsőruházatra: utcai és szabadidő ruházatra, alkalmi és üzleti ruházatra, valamint kiegészítőkre)?

EGY VÁLASZ

1. Kevesebb, mint 50 000 forintot
2. 50 001-100 000 forint közötti összeget
3. 100 001-200 000 forint közötti összeget
4. 200 001-300 000 forint közötti összeget
5. 300 001-400 000 forint közötti összeget
6. 400 001-500 000 forint közötti összeget
7. Több, mint 500 001 forintot

HA IP2<7, HA HASZNÁLT RUHA VÁSÁRLÓ

IP4: ÉVENTE mennyit költ HASZNÁLT ruházati termékekre (például: alsóruházatra, felsőruházatra: utcai és szabadidő ruházatra, alkalmi és üzleti ruházatra, valamint kiegészítőkre)?

EGY VÁLASZ

1. Kevesebb, mint 50 000 forintot
2. 50 001-100 000 forint közötti összeget
3. 100 001-200 000 forint közötti összeget
4. 200 001-300 000 forint közötti összeget
5. 300 001-400 000 forint közötti összeget
6. 400 001-500 000 forint közötti összeget
7. Több, mint 500 001 forintot

HA $IP1 < 7$, HA ÚJ RUHA VÁSÁRLÓ

IP5: Mennyire határozzák meg az alábbi szempontok a vásárlási döntését ÚJ ruházati termékek vásárlása esetén?

Használja az alábbi kategóriákat: Egyáltalán nem határozzák meg =1, Nem határozzák meg=2, Semleges=3, Meghatározzák=4, Nagyon meghatározzák=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
1	Ár					
2	Márka					
3	Stílus és egyediség					
4	Funkcionalitás					
5	Garancia					
6	Társadalmi státusz					
7	Környezeti szempontból megbízható alapanyagok					
8	Javíthatóság					
9	Tartósság					

HA $IP2 < 7$, HA HASZNÁLT RUHA VÁSÁRLÓ

IP6: Mennyire határozzák meg az alábbi szempontok a vásárlási döntését HASZNÁLT ruházati termékek vásárlása esetén?

Használja az alábbi kategóriákat: Egyáltalán nem határozzák meg =1, Nem határozzák meg=2, Semleges=3, Meghatározzák=4, Nagyon meghatározzák=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
1	Ár					
2	Márka					
3	Stílus és egyediség					
4	Funkcionalitás					
5	Garancia					
6	Társadalmi státusz					
7	Környezeti szempontból megbízható alapanyagok					
8	Javíthatóság					
9	Tartósság					

HA IP1<7 VAGY IP2<7, HA RUHAVÁSÁRLÓ

PB. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
PB1	Gyakran vásárlók környezetbarát alapanyagokból készült divattermékeket.					
PB2	Gyakran vásárlók újrahasznosított alapanyagokból készült divattermékeket.					
PB3	Gyakran vásárlók felelősen előállított divattermékeket.					
PB4	Gyakran vásárlók sokáig használható, tartós divattermékeket.					
PB5	Gyakran vásárlók javítható divattermékeket.					
PB6	Gyakran vásárlók újrahasznosítható divattermékeket.					

HA IP1<7 VAGY IP2<7, HA RUHAVÁSÁRLÓ

PB7. Melyek a legfontosabb korlátok, amelyek megakadályozzák abban, hogy környezetbarát ruhadarabokat vásároljon? Kérem, válaszolja meg a következő kérdést saját szavaival!

FELTÉTELEK A TÁBLÁBAN

PPB. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ, A KATEGÓRIÁK NEM KELL, HOGY LÁTSZÓDJANAK

		5	4	3	2	1
MINDENKITŐL Újrahasználat						
PPB1	Olyan sokáig használom a divattermékeket, ameddig csak lehet					
PPB2	A divatjamúlt/használt/nemkívánatos ruhadarabjaimat más célokra használom fel					
PPB3	A divatjamúlt/használt/nemkívánatos ruhadarabjaimat elajándékozom családtagoknak és barátoknak.					
PPB4	A régi ruhadarabjaimat kézműves vagy varró projektekhez használom fel					
PPB5	A ruháimat eladományozom jótékony célokra					
MINDENKITŐL Javítás						
PPB6	Gyakran <i>megjavítom</i> a ruháimat, ha azok megsérülnek, és tovább használom azokat					
PPB7	Gyakran <i>megjavítatom</i> a ruháimat, ha azok megsérülnek és tovább használom azokat					
MINDENKITŐL Újrahasznosítás						
PPB9	Gyakran még évekig megtartom a ruháimat, habár már nem használom őket					

PPB10	Ha egy ruhadarab már nem használható, akkor kidobom a kukába					
PPB11	Ha egy ruhadarab további használatra már nem alkalmas, akkor leadom egy olyan helyen, ahol gondoskodnak az újrahasznosításáról (üzlet, hulladékudvar, stb.)					
HA IP1<7 VAGY IP2<7, HA RUHAVÁSÁRLÓ						
Újvásárlás						
PPB12	Ha egy termékkel meg vagyok elégedve, akkor a következő vásárlásnál újra az adott márkát/gyártót fogom keresni					
PPB13	Ha egy termékkel meg vagyok elégedve, akkor továbbra is vásárolni fogok az adott üzletben					

HA PPB6=4,5 VAGY PPB7=4,5, HA EGYETÉRT A RUHAJAVÍTÁSI ÁLLÍTÁSOKKAL

PPB8. Említette, hogy megjavítja, vagy megjavíttatja a ruháit. Kérem, mondja meg miért teszi ezt meg!

Több választ is megadhat!

TÖBB VÁLASZ

1. Szeretem azokat és ragaszkodom azokhoz
2. Spórolni szeretnék
3. A hulladék mennyiségét szeretném csökkenteni
4. Egyéb okból, éspedig: _____

MINDENKITŐL

SN. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
SN1	A barátaim figyelembe veszik a környezeti kérdéseket a ruházati termékek vásárlásánál.					
SN2	Sok barátom vásárol használtruha üzletekben.					
SN3	Divatos használtruha üzletekben vásárolni.					
SN4	A barátaim sokáig használják a divattermékeiket és, amennyiben lehetséges, megjavítják/megjavíttatják azokat.					
SN5	A számomra fontos emberek egyetértenek azzal, hogy sokáig használom és megjavítom a ruháimat.					
SN6	Divatos a ruhákat sokáig használni és megjavítani.					
SN7	A családomban bevett gyakorlat, hogy egymásnak ajándékozunk olyan ruhadarabokat, amikre már nincs szükségünk.					
SN8	Számos embert ismerek, akik elajándékozzák másoknak a divattermékeiket, amikor már nincs szükségük azokra.					
SN9	Számos embert ismerek, akik eladják másoknak a divattermékeiket, amikor már nincs szükségük azokra.					

HA IP1<7 VAGY IP2<7, HA RUHAVÁSÁRLÓ

PBC. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
PBC1	Mindig igyekszem sokáig használható, szükség esetén javítható divattermékeket vásárolni.					
PBC2	Ha csak rajtam múlna, biztos vagyok benne, hogy újra sokáig használható, javítható és újrahasznosítható divattermékeket vásárolnék.					
PBC3	Úgy érzem, hogy teljesen rajtam múlik, hogy olyan divattermékeket vásárolok, amelyek sokáig használhatók, megjavíthatók és újrahasznosíthatók.					
PBC4	A jövőben csak rajtam múlik, hogy újra sokáig használható, javítható és újrahasznosítható divattermékeket vásárolok-e.					

HA IP1<7 VAGY IP2<7, HA RUHAVÁSÁRLÓ

PPI. Kérem, hogy adja meg, hogy mennyire ért egyet az alábbi kijelentésekkel!

Használja az alábbi kategóriákat: Egyáltalán nem értek egyet=1, Nem értek egyet=2, Semleges=3, Egyetértek=4, Teljes mértékben egyetértek=5

SORONKÉNT EGY VÁLASZ

		5	4	3	2	1
PPI1	A jövőben sokáig használható, tartós ruházati termékeket szándékozok vásárolni.					
PPI2	A jövőben javítható ruházati termékeket tervezek vásárolni.					
PPI3	A jövőben újrahasznosítható ruházati termékeket fogok vásárolni.					
PPI4	A jövőben ritkábban szándékozom ruházati termékeket vásárolni.					
PPI5	A vásárlás után sokáig tervezem használni a ruháimat.					
PPI6	Azokat a divattermékeket, amelyeket már nem használlok, el szándékozom ajándékozni másoknak, akik még tudják használni azokat.					
PPI7	Az általam már nem használt divattermékeket tervezem eladni.					
PPI8	Szándékomban áll a vásárlás után megjavítani a ruháimat, ha elromlanak.					
PPI9	Szándékomban áll az elhasznált ruháimat külön gyűjteni és azokat újrahasznosító/gyűjtő ponton leadni.					

MINDENKITŐL

PPB14: Melyek a legfontosabb korlátok, amelyek megakadályozzák abban, hogy ruháit hosszú időn át használja? Kérem, válaszolja meg a következő kérdést saját szavaival!

SPONTÁN

.....

9- ruháimat hosszú időn át használom

MINDENKITŐL

PPB15. Melyek a legfontosabb korlátok, amelyek megakadályozzák abban, hogy ruháit megjavítsa?

SPONTÁN

.....

9- ruháimat megjavítom

MINDENKITŐL

PPB16. Melyek a legfontosabb korlátok, amelyek megakadályozzák abban, hogy ruháit újrahasznosító/gyűjtő ponton leadja?

SPONTÁN

.....

9- ruháimat leadom újrahasznosító/gyűjtőponton

DEMOGRÁFIA

MINDENKITŐL

D1. Mi a neme?

1. Nő
2. Férfi

D2. Melyik évben született?

16 ÉV ALATTI KIZÁRÓ _____

D3. Melyik településen él?

1. Budapest
2. Más település – VÉGE

D4. Melyik kerületben lakik?

D5. Mi a legmagasabb befejezett iskolai végzettsége?

EGY VÁLASZ

1. Általános iskola 8. évfolyamnál alacsonyabb
2. Általános iskola 8. évfolyam
3. Középfokú iskola érettségi nélkül, szakmai végzettséggel
4. Érettségi
5. Főiskola vagy alapképzés
6. Egyetem vagy mesterképzés
7. Posztgraduális képzés (doktori fokozat)

D6. Mi a jelenlegi foglalkozása?

EGY VÁLASZ

1. Tanuló

2. Nyugdíjas
3. Köztisztviselő
4. Közalkalmazott
5. Vállalkozó
6. Szakmunkás
7. Betanított munkás
8. Szellemi alkalmazott multinacionális vállalatnál
9. Szellemi alkalmazott hazai kis-és közép vállalatnál
10. Szellemi alkalmazott hazai nagyvállalatnál
11. Háztartásbeli
12. Munkanélküli
13. Egyéb:.....

D7. Hányan élnek az Ön háztartásában, Önt is beleértve?

EGY VÁLASZ, A VÁLASZOK ÖSSZEJE LEGALÁBB 1

1. 65 év alatti felnőtt:
2. 65 éves, vagy idősebb felnőtt:
3. 18 év alatti gyermek:

D8. Mennyi a háztartása egy főre jutó NETTÓ HAVI jövedelme?

EGY VÁLASZ

1. 50 000 forint alatt
2. 50 001-100 000 forint
3. 100 001-150 000 forint
4. 150 001-200 000 forint
5. 200 001-250 000 forint
6. 250 001-300 000 forint
7. 300 001-350 000 forint
8. 350 001-400 000 forint
9. 400 000- forint felett