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Clothing Disposal Behaviour and Sustainable Practices: A Bibliometric Analysis in Business Research

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Master in International Management

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Department of Marketing, Operations and Management

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Resumo

Esta investigação examina a área crítica, contudo pouco explorada do comportamento de descarte de vestuário na indústria da fast fashion, centrando-se nos seus impactos ambientais e sociais. No meio de preocupações crescentes sobre o papel da fast fashion no consumo excessivo e no rápido descarte de vestuário, este estudo emprega a análise bibliométrica para mapear e avaliar o panorama académico em torno desta questão, utilizando as ferramentas Web of Science como motor de busca e o VOSviewer para analisar os resultados. Através de uma análise das principais tendências e trabalhos influentes, o estudo destaca a importância de compreender o comportamento de descarte do consumidor na promoção da sustentabilidade. Os resultados revelam um foco predominante nos comportamentos de consumo em detrimento das práticas de descarte, sublinhando a necessidade de uma compreensão equilibrada para abordar os desafios da sustentabilidade de forma abrangente. Em particular, o comportamento do consumidor surge como um foco principal, enfatizando os fatores psicológicos e sociais que influenciam a aquisição e o descarte de vestuário. Apesar dos pontos fortes das ferramentas bibliometrias, as limitações incluem a falta de contexto e de análise qualitativa, salientando a necessidade de investigação futura que combine abordagens bibliométricas e qualitativas para obter conhecimentos mais profundos. O retrato amplamente positivo do vestuário em segunda mão como alternativa sustentável na literatura de gestão carece de uma análise crítica das suas potenciais desvantagens, como a promoção de ciclos de consumo contínuos. A resolução desta lacuna proporcionaria uma perspetiva mais matizada sobre o papel do vestuário em segunda mão na moda sustentável. Este estudo apela a uma investigação contínua sobre o comportamento dos consumidores e as práticas sustentáveis para promover uma indústria da moda mais responsável e sustentável.

Palavras-chave: Comportamento de descarte de vestuário; Consumo sustentável; Análise Bibliométrica

Classificação JEL:

Q010 - Sustainable Development

Q56 - Environment and Development; Environment and Trade; Sustainability; Environmental Accounts and Accounting; Environmental Equity; Population Growth

Abstract

This research examines the critical but underexplored area of clothing disposal behaviour within the fast fashion industry, focusing on its environmental and social impacts. Amid growing concerns over fast fashion's role in overconsumption and rapid garment disposal, this study employs bibliometric analysis to map and evaluate the academic landscape surrounding this issue, using Web of Science as the search engine and VOSviewer to analyse the results. Through an analysis of key trends and influential works, the study highlights the importance of understanding consumer disposal behaviour in fostering sustainability. Findings reveal a predominant focus on consumption behaviours over disposal practices, underscoring the need for a balanced understanding of to address sustainability challenges comprehensively. Notably, consumer behaviour emerges as a primary focus, emphasizing the psychological and social factors influencing clothing acquisition and disposal. Despite the strengths of bibliometric tools, limitations include a lack of context and qualitative analysis, highlighting a need for future research that combines bibliometric and qualitative approaches for deeper insights. The largely positive portrayal of second-hand clothing (SHC) as a sustainable alternative in Business literature lacks a critical examination of its potential downsides, such as promoting continuous consumption cycles. Addressing this gap would provide a more nuanced perspective on SHC's role in sustainable fashion. This study calls for ongoing research into consumer behaviour and sustainable practices to foster a more responsible and sustainable fashion industry.

Keywords: Clothing Disposal Behaviour; Sustainable Consumption; Bibliometric Analysis

JEL Classification:

Q010 - Sustainable Development

Q56 - Environment and Development; Environment and Trade; Sustainability; Environmental Accounts and Accounting; Environmental Equity; Population Growth

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Index of Acronyms

CE – Circular Economy

LE – Linear Economy

SHC – Second-hand Clothing

VOS – Visualization of Similarities

WoS – Web of Science

CHAPTER 1

Introduction

The fashion industry draws its essence from current trends, seeks inspiration from emerging styles, and has been thriving over the past decade due to its ability to quickly produce and capture the latest trends (Brewer, 2019). Moreover, the democratization of fashion brought about by affordable clothing enables companies to market their products to a wider audience, contributing to a culture of disposability and a relentless demand for the latest replicas of the season's "must-have" pieces (Brewer, 2019).

Fast fashion is characterised by cheap clothing that changes hastily in line with current fashion trends, promoting a culture of excessive consumerism, allowing retailers to quickly produce and sell new styles, appealing to consumers' desire for the latest trends at affordable prices (Rahman et al., 2023).

However, this rise in fast fashion has not only fuelled overconsumption but has also led to a concerning pattern of frequent clothing disposal, where garments are often discarded after only a few wears. As a result, the fashion industry faces the dual challenge of overproduction and waste, as the rapid production of inexpensive, low-quality garments contributes to a cycle of excessive consumption and disposal (Niinimäki et al., 2020). Moreover, this consumption pattern is embedded in a linear model of production and disposal, where garments are created, used briefly, and discarded, rather than being recycled or repurposed, exacerbating environmental and social issues (Ellen MacArthur Foundation, 2017)**.**

The fast fashion model is thus associated to rapid disposal of garments, excessive consumption and waste. Fast fashion makes it economically feasible for individuals to buy more than they need, resulting in clothing reaching the "end of life" - where consumers no longer wear or want the item - well before it reaches the "end of lifecycle", the full use potential of the garment in terms of durability (Jung & Jin, 2016).

Moving away from the fast fashion model and its environmental consequences, nevertheless, requires a shift in mindset at both the business and consumer levels, along with international coordination to establish a functional system for textile recycling and promoting sustainable consumer behaviour (Niinimäki et al., 2020). At the consumer level, the requirement would be for consumers to recognise clothing as a functional product, rather than perceiving fashion as a form of entertainment, and for them to be willing to pay higher prices that account for the environmental impact of fashion (Niinimäki et al., 2020). It has been argued

that changes in consumer behaviour could influence the market and lead to more sustainable production practices, alongside stricter regulations on discharges and waste disposal (Bailey et al., 2022).

Although clothing can be disposed of in different ways, a significant amount of it ends up in the Global South, with textile waste from post-consumer clothes disposal causing 2.1 billion metric tons of greenhouse gas emissions in 2018 (Berg, Granskog, Lee, & Magnus, 2020).

As landfill space becomes increasingly limited, the second-hand clothing (SHC) market has emerged as a profitable business, particularly in countries of the Global South. While this can provide economic benefits, it can also have destructive effects on local ecosystems. The influx of second-hand clothes can overwhelm local textile industries, undermine local economies, contribute to pollution through improper disposal methods, and increase the burden on waste management systems, exacerbating environmental degradation (Manieson & Ferrero-Regis, 2022).

It is thus imperative for all stakeholders - individuals, governmental bodies, and organizations - to conscientiously consider the ramifications of clothing throughout its entire life cycle, from the design process and material selection to production, marketing, usage, and end-of-life disposal, so that the significance of each phase is recognized and well-informed decisions can be made to ensure the sustainability of the fashion industry (Koszewska, 2018).

In practice, however, far more attention has been given to the purchase and consumption stage, and it is only more recently that consumer behaviour during the disposal phase has begun to be given importance (Soyer & Dittrich, 2021). This thesis aims to contribute to the research on clothing disposal and to our understanding of the research in fashion consumption and disposal, through a bibliometric assessment of the scientific literature in these fields, focused on Business and Management research.

The main objective is thus to analyse and map the academic literature on clothing disposal behaviour, identifying key trends, influential works, major themes, and gaps in the research. Specifically, the following research questions are posed:

Q1: What are the main themes linking Clothing Consumption and Clothing Disposal in business research?

Q2: How do terms related to Fast Fashion, Sustainability, and Second-hand Clothing occur in business and management literature?

Q3: How has research on clothing disposal behaviour evolved in the past two decades?

It is hoped that addressing these questions will not only contribute to a better understanding of the evolution and current state of this field of research, but also help inform future studies,

guide industry practices, and influence policy development aimed at promoting sustainable disposal methods and reducing textile waste.

This thesis is organized as follows. Chapter two, the literature review, explores key concepts such as consumer disposal behaviour, its environmental impacts, sustainable disposal practices, second-hand clothing (SHC) disposal, the circular economy (CE), and fast fashion. Chapter three, aims at the research methodology, portraying the research questions and explaining the methodology used. The tool used for this research is a bibliometric analysis, which assesses and scrutinises published papers to uncover connections and patterns among them.

The fourth chapter focuses on the insights obtained from Web of Science and connections identified through VOSviewer to provide a thorough overview of the current research landscape of consumer disposal behaviour, responsible consumption and sustainability. Lastly, the fifth chapter concludes the thesis by summarizing the core findings, emphasizing the study's contributions, and areas for future research as well as recognizing the study's limitations.

CHAPTER 2

Literature Review

2.1. Circular Economy (CE) and Liner Economy (LE)

Circular Economy (CE) is an economic model that focuses on maximizing resource efficiency through waste reduction, long-term value retention, reduction of primary resources, and closed loops of products, product parts, and materials while maintaining environmental and socioeconomic benefits (Hofmann, 2019). A CE can lead to long-term development by detaching economic expansion from the negative effects of resource scarcity and environmental deterioration (Hofmann, 2019). Commodities and materials need to be used as long as feasible to maximize their lifetime and reduce waste.

A growing comprehension of the CE has led to a new set of essentials known as the 6Rs "reduce, reuse, recycle, redesign, refurbish, and repurpose" (Reike et al., 2018, p.247) and then the 10Rs "refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, and recovery"(Morseletto, 2020, p.4). A linear model, by contrast, takes the resources out of the environment and transforms them into finished goods that are disposed of when their useful lives are over. Products are made for a certain function and have a limited lifespan (Neves & Marques, 2022).

The Linear Economy (LE) model rarely discusses recovering value from the products' end-cycle (Sharma et al., 2021). Issues with the LE model include the waste of potentially valuable resources, waste management, waste landfills, growing environmental risks, lack of competitive advantage, and opposition to sustainable development initiatives (Luttenberger, 2020).

2.2. The CE Model: Reshaping the Clothing Industry

Most consumers do not give priority to the social and environmental consequences of apparel when making their purchases. In part, this is due to the complex and multiple stages involved in producing a garment - ranging from sourcing raw materials and manufacturing to distribution and retail - which is further compounded by customers' often inadequate awareness of climate change issues and the scientific facts related to them (Zorpas et al., 2021). It has been proposed, however, that a CE model may be one way to address the issues posed by the fashion apparel industry (Zorpas et al., 2021). It is crucial, therefore, to leverage end-consumer engagement with a CE mindset, because customers are the last players in a typical linear value chain (Alves et al., 2023).

The fashion sector can play an important role in promoting CE and sustainable practices as well as reducing the negative impacts of a LE model (Jacometti, 2019).Yet, Salmi & Kaipia (2022) note that in the context of transitioning to a CE, established clothing companies face three major obstacles:

- The entrenched product-oriented culture within these companies. The focus on traditional product sales limits their capacity to explore opportunities beyond the immediate sale, making it difficult to adopt a holistic approach necessary for CE.

- The dependency on existing product portfolios. Many established brands are tied to their current offerings, which may not align with circularity principles. This dependency can hinder innovation and the ability to redesign products that are sustainable and suited for reuse or recycling.

- Their position in the global supply chain. Established companies often lack direct control over upstream processes, which limits their ability to enforce circularity throughout their supply chains. This fragmentation complicates efforts to align all aspects of production and distribution with CE principles. The shift from a fast fashion-oriented supply chain to one that prioritizes sustainability requires significant investment and restructuring, a challenge that many incumbents struggle to overcome (Salmi & Kaipia, 2022).

Thus, there is significant inertia for existing companies to change their business model, while companies founded on circularity principles, known as "born circulars," face unique challenges in managing suppliers and ecosystems to enforce these principles across the entire supply chain, and at the same time need to offer incentives to attract new customers and develop the market (Salmi & Kaipia, 2022). These obstacles highlight the need for significant changes in companies' practices and mentalities in order to successfully adopt circular business models.

Adopting a CE framework entails maximizing efforts to reduce the consumption of materials and other resources, reusing manufactured components or materials, and recycling waste to produce new inputs for products (Velenturf & Purnell, 2017).

2.3. Fast Fashion and Sustainable Consumption

The term "fast fashion" refers to a business approach that centres on building an effective, faster supply chain to meet customer demand and manufacture stylish goods (Mcneill & Moore, 2015). Having access to fast fashion has led to the popularity of less expensive clothing, resulting in overconsumption by consumers. This tendency to purchase more and wear items less often has contributed significantly to the cycle of apparel waste, as large volumes of low-

quality clothing are discarded due to their short lifespan or because they quickly fall out of style (Lang et al., 2013; Weber et al., 2017). With consumers' habits evolving rapidly, they are transforming the retail industry, particularly in the fast fashion sector (Jannet Camacho Cusicahua et al., 2024)**.**

On the company side, the new idea of ultra-fast fashion concentrates on manufacturing efficiency and quickly meeting customers' growing demands for immediacy and stylish innovation (Camargo et al., 2020). The majority of manufacturing practices are currently outsourced to factories abroad that can produce cheap apparel in large quantities, which is a significant change from previous decades (La Rosa & Johnson Jorgensen, 2021). Some fashion businesses are modifying their supply chains to adopt *ultra*-fast fashion, driven by a circular relationship where increased supply both responds to and stimulates greater consumer demand (Camargo et al., 2020)**.**

While traditional fast fashion typically takes several weeks to months to move products from design to sale, ultra-fast fashion reduces this timeline to just a few days, further accelerating the production cycle (Bick et al., 2018). However, despite this agility, the rapid production and turnover of apparel in ultra-fast fashion amplifies the negative environmental consequences already associated with traditional fast fashion. Thus, ultra-fast fashion exacerbates the cycle of waste and resource depletion by producing even more short-lived clothing, further straining environmental resources.

This way the need to not only address how products are produced but also how they are discarded underscores the importance of the concept of sustainable consumption. Sustainable consumption refers to the acquisition, use, and disposal of products with particular attention to social, economic, and environmental factors (Nguyen et al., 2019). Ultimately, sustainable consumption refers to a normative concept that requires individuals to reduce their impacts to protect the environment and ecological integrity (Anantharaman, 2018).

In addition, sustainable consumption considers the needs and interests of both present and future generations (Camacho-Otero et al., 2018). Unlike traditional consumer decision-making, which tends to prioritize immediate personal benefits, sustainable consumption prioritizes the well-being of others and the environment as a whole (White et al., 2019).

Sustainable clothing consumption takes into consideration the acquisition, wearing, and discarding of clothing. It deems environmental concerns and strives to use fewer natural resources while producing less waste and pollution.

Customer involvement plays a crucial role in the implementation of sustainability strategies (White et al., 2019) and is directly related to the three main stages of a product's life cycle: purchase, use, and end-of-life care. When it comes to these stages, it is imperative to consider the role of customer behaviour and the decision-making process in sustainability, pertaining to the reuse, repair, and recycling of products at the end of their lifespan. Sustainable customer behaviours include investing in durable products or purchasing from companies with sustainable business models as well as repairing, and reusing products (Parajuly et al., 2020).

Furthermore, some authors talk about the difference between positive and negative use behaviour. Positive use behaviour refers to wearing clothing items frequently and maintaining a wardrobe that aligns with one's actual needs, thereby extending the lifetime of each item. By increasing the number of times each garment is worn, which is often referred to as achieving a longer lifespan, individuals can adopt an environmentally beneficial strategy (Klepp et al., 2020). Clothing lifespans can be defined and measured in terms of years, the number of wears, washing cycles, and users.

Conversely, negative use behaviour is characterized by seldom wearing certain items and owning more clothing than is necessary (de Wagenaar et al., 2022). For items that are part of a regular wardrobe, the number of wears is the most relevant metric to assess usage. For occasion wear, however, measuring lifespan by years is more appropriate, as these garments are used less frequently but may still serve their purpose over a long period (Klepp et al., 2020).

2.4. Fast Fashion as a Source of the Second-hand Clothing Market

As global markets have opened and fast fashion has taken hold in the Global North since the 1990s, the trade of SHC has surged in the 21st century (Manieson & Ferrero-Regis, 2022). Purchasing SHC provides various benefits to consumers, including lower prices (Borg et al., 2020). The usage of second-hand channels is fuelled by two primary reasons: finding unique or rare items that are not typically available through standard sellers and disposing of outdated or out-of-style clothing (Yan et al., 2015). Thus, while low-income consumers are more inclined to purchase second-hand apparel, high-income consumers are equally drawn to it to satisfy their desire for exclusivity (Turunen & Leipämaa-Leskinen, 2015).

The SHC trade is regarded as a sustainable practice in the Global North since there is the circulation of garments. Nevertheless, exporting low-grade SHC products to the Global South poses environmental and social concerns (Berg, Granskog, Lee, & Magnus, 2020). Some researchers argue that the availability of easy disposal options, such as reselling platforms or donation channels, may encourage increased consumption; consumers may rationalize excess

purchases by assuming they can simply relocate unwanted items. Similarly, the low prices of second-hand items at stores can contribute to overconsumption, as buyers are more likely to purchase additional items that may ultimately end up discarded (Mcneill & Moore, 2015). This cycle exacerbates waste and undermines the sustainability intentions of the second-hand clothing market.

Many second-hand clothes donated in the Global North are exported to markets in the Global South, particularly in Africa; however, a significant portion arrives in poor condition with limited lifespans, rendering them nearly useless and ultimately leading to disposal in landfills or bodies of water, where they contribute to environmental pollution (Manieson & Ferrero-Regis, 2022)**.** The consequences of this are severe. When these discarded clothes decompose or are burned, they release harmful chemicals and unpleasant odours, polluting the air and damaging the surrounding environment, creating a significant environmental burden for the regions receiving these exports (Acquaye et al., 2023)

To address this growing problem, several solutions have been proposed. These include the development of more robust policies and regulations surrounding SHC imports and waste management, alongside increasing education and environmental awareness for circular clothing initiatives. Specific actions could involve providing designated collection bins for clothing disposal, the establishment of recycling factories to manage excess clothing, and the enforcement of stricter laws to limit or even ban the importation of SHC into certain regions (Acquaye et al., 2023).

Sustainability can be expected to affect the fashion industry in the future, as consumer awareness grows worldwide as well as stricter legislation. Nevertheless, the concerns for developing countries are significantly broader, encompassing not only environmental issues but also economic and social dependencies on SHC markets.

Prohibiting SHC exports to underdeveloped countries would bring its challenges, however, as it would adversely affect the livelihoods of many individuals globally since SHC offers significant societal benefits, such as job creation, garment reuse, and the promotion of conscious consumption (Khurana & Tadesse, 2019), which together help balance economic and environmental needs. This section focuses on the unique dynamics of the SHC market in less developed countries, recognizing that more developed countries experience distinct market dynamics, often driven by circular economy policies and sustainable consumer choices.

Additionally, SHC trade is an important supply chain that connects the Global South and Global North, as well as a significant apparel consumption alternative for those experiencing economic downturn, poverty, and limited purchasing power; it is crucial in providing fashion products to customers in underdeveloped African countries and creates employment opportunities for hundreds of thousands of people in trade, distribution, repair, laundry, and upcycling - turning unwanted or used clothing into new, higher-quality items through creative redesign or restoration (Sumo et al., 2023). This process allows certain segments in some African countries to gain new skills and expertise in the SHC trade, which is expected to assist in building and boosting small- to medium-sized businesses, despite poorly manufactured SHC being unmarketable and causing environmental issues in cities across the continent (Sumo et al., 2023).

2.5. Factors Influencing Sustainable Clothing Consumption Behaviour

There have been studies conducted to specifically target young customers and analyse their disposal patterns as well as their intentions toward sustainable apparel consumption. Diddi et al. (2019) discovered factors that increase the prospect of engagement of young consumers in sustainable clothing consumption such as perceived value, dedication to sustainability, uniqueness, and lifestyle change. However, the study also identified several constraints that hinder sustainable clothing consumption, including a perceived lack of variety/style, financial constraints, lack of knowledge, scepticism, emotional attachment to clothing and indulgent behaviour.

Laitala & Klepp (2020) and Guo & Kim (2023) both examine the factors that influence the lifespan of clothing, highlighting how garment characteristics, user demographics, usage patterns, and maintenance behaviours affect sustainable consumption. First, the type, material, and price of garments play a key role in determining their longevity; for instance, higher-priced garments, often crafted from materials like silk and wool, generally last longer due to superior quality in construction compared to items made from cotton or synthetic fabrics.

Demographic factors such as age, gender, and cultural background also contribute significantly to clothing lifespan. Laitala & Klepp (2020) found that older individuals typically retain clothing longer than younger consumers, and men tend to use garments for longer periods than women. Guo & Kim (2023) corroborate these findings, noting that women tend to purchase and dispose of clothing more frequently, often for psychological reasons like fashion preferences, while men are more likely to retain and repair their garments, a behaviour pattern that supports longer garment use and contributes to more sustainable practices. Additionally, younger consumers are more likely to engage with fast fashion, leading to shorter clothing lifespans due to quicker disposal, whereas older consumers show more sustainable habits by purchasing fewer items, using them longer, and engaging in repair practices.

Likewise, the findings of a study concerning how eco-conscious women in Chile engage in sustainable fashion consumption, identify four primary drivers of sustainable fashion consumption for female Chilean consumers: 1) concern about the fashion industry's societal and environmental impact, 2) fulfilment from contributing to a better society, 3) quality and authenticity of sustainable clothing, and 4) support for local workers and businesses. The data also identifies three major obstacles to purchasing sustainable fashion: scepticism towards sustainable fashion brands, limited selection, and higher prices (Bianchi & Gonzalez, 2021).

2.6. Clothing Disposal Behaviour

The choice of how to dispose of clothing is relevant from an environmental perspective, as consumers define the lifespan of apparel by determining when a garment is no longer wanted and selecting a disposal method (Laitala, 2014). Clothing disposal encompasses more than simply discarding items; it involves a range of options such as repurposing, lending, donating, or selling (Jacoby et al., 1977; Ardbo & Ekvall, 2021). Central to these practices is the growing emphasis on reuse, which can occur through various public and private channels like donations, consignment, swap events, and freecycling, an online practice in which members offer, request, and exchange items without cost within local communities (Eden, 2017).

One prominent approach to increasing reuse is collaborative consumption, which encourages sharing, trading, or renting clothing, reducing the need for new items and thus minimizing waste (Becker-Leifhold, 2018; Piscicelli et al., 2015) This model not only benefits the environment but also offers economic advantages, such as saving resources and reducing costs for consumers (Geissinger et al., 2019). Therefore, collaborative consumption could potentially address some of the environmental issues related to the fashion industry by encouraging product reuse and minimizing new purchases (Lang & Joyner Armstrong, 2018).

Another important distinction in clothing disposal behaviour lies between philanthropic and economic motivations. Philanthropic disposal, driven by altruism, often involves donating clothing to charities or giving them to family and friends (Hassan et al., 2022), while economic disposal revolves around reselling items for financial gain (Zhang et al., 2020). Both methods can reduce the environmental impact of unwanted clothes, but motivations can vary significantly. Conversely, convenience and a lack of environmental awareness may lead to unsustainable practices, such as discarding clothing (Zhang et al., 2020).

It is also worth noting that motivations for holding onto garments may not always be tied to trends or sustainability. Emotional attachment or hedonic responses to particular garments can prevent consumers from divesting too quickly, despite changes in fashion trends (McNeill et al., 2020a). In some cases, garment disposal through gifting, especially within families or social networks, can serve as a way to strengthen relationships while extending the life of the clothing (Cruz-Cárdenas et al., 2017).

Norum (2017) proposed establishing textile recycling bins for garments that would otherwise be discarded, as well as conducting pilot research to investigate consumer use of these bins and their efficiency in diverting waste. A solution like this would benefit not only consumers by clarifying what to do with damaged garments but also organizations by saving resources by not having to sort through unsellable garments.

With an urgent need to develop solutions to climate change, it is critical to find circular waste management solutions and ways to best utilize and integrate existing waste management alternatives to limit waste and prevent future resource use. A key step towards achieving this is understanding consumer behaviour related to clothing disposal and identifying alternate options for unwanted clothing within the existing systems to avoid landfills and further resource extraction can help reduce environmental consequences (Degenstein et al., 2021).

Research indicates that a person's environmental awareness and attitudes are consistent indicators of their sustainable behaviour (HO et al., 2020). In support of this statement, according to a study done on the features that affect the consumption of sustainable fashion and the way young consumers dispose of their clothing in Malaysia, the findings revealed that personal norms, social norms, and environmental awareness all have a beneficial and substantial effect on sustainable fashion consumption (Hassan et al., 2022).

Also, young people who possess a strong sense of environmental awareness tend to be more proactive in contributing to fixing environmental issues and are concerned about the long-term impact of fast fashion on the environment. Research has shown that the actual belief, emotion, and dedication to environmental issues are closely linked to environmental concerns (Song et al., 2019). Consequently, those who have a good understanding of how clothing items can harm the environment are more likely to opt for environmentally friendly clothing options (Hassan et al., 2022). For this reason, to better understand customers' decision-making process around sustainable disposal, it is crucial to determine their willingness to dispose of items sustainably (Radtke et al., 2022).

Research has also highlighted that educational interventions can foster more sustainable consumer behaviour. By promoting early education on the "reduce, reuse, recycle" approach to clothing, individuals may develop a more rational approach to consumption (Paço et al., 2021). However, while education is essential, a broader shift in consumer mindsets is required to address the scale of pollution caused by the textile industry (Paço et al., 2021).

In terms of solutions, studies indicate that consumer-specific factors, such as prior experiences, individual attitudes, and motivations, appear to have a favourable impact on recycling garments in a way that is more ecologically friendly (De Ferran et al., 2020). Education is a key predictor of sustainable consumption behaviour and sustainability education at the university level has been proposed as a strategy to increase awareness and promote long-term change in consumption patterns (Agu et al., 2022). Enhancing educational programs that focus on garment quality, fibre content, and fabric construction could also equip consumers with the knowledge to make more informed purchasing decisions, thereby encouraging them to buy long-lasting garments rather than fast-fashion items (Degenstein et al., 2020).

Technological tools, such as traceability platforms, have been suggested as another approach to fostering sustainable behaviour by providing transparency on the environmental impact of products throughout the supply chain. These platforms trace and register data regarding the environmental impact of each activity along the value chain, such as production activities and logistics functions. As a result, it is possible to determine the environmental impact of any lot of raw materials or intermediate products, such as yarn or fabric, as well as a lot or item of garments that are made for final consumption (Alves et al., 2023a).

Both Nencková et al., (2020) and DeVoy et al. (2021) emphasize the critical role of demographic factors in understanding textile waste disposal behaviours and highlight the necessity for targeted interventions to improve textile waste management. The findings suggest that demographic parameters such as gender, age, education, income, and household size are pivotal in shaping attitudes towards textile waste separation. For instance, men, less educated individuals, and those with fewer resources are identified as less likely to engage in proper textile waste separation in the Czech study, necessitating targeted information campaigns and collaboration with policymakers at various levels.

Similarly, the Florida study reveals that higher-income areas, those with more residential segregation, and regions with a higher number of apparel stores tend to produce more textile waste per capita (DeVoy et al. 2021). Interestingly, despite the variation in waste generation, textile recycling efforts appear consistent across different demographic and socioeconomic criteria. The study also uncovers a significant environmental disparity, with lower socioeconomic communities hosting more landfills per capita.

Culture may also be a promising avenue for the study of product disposal and reuse behaviour. In this manner, it would be feasible to look deeper into the social norms that influence reuse and disposal behaviours at the macro (culture) and micro (group) levels (Minton et al., 2018).

To gain a greater understanding of clothing waste management in specific regions and identify ways to improve clothing disposal within specific communities, it is crucial to examine how different cities handle unwanted clothing (Norum, 2015). In order to reduce the quantity of usable items, including clothing, that end up in landfills, where they cannot be reused, it is necessary to understand current waste streams and how customers use them (Degenstein et al., 2021).

CHAPTER 3

Methodology

This research sought to conduct a comprehensive analysis of the academic literature on clothing disposal behaviour, as well as the broader themes of fast fashion and sustainability. Namely, we were interested to understand the factors influencing clothing consumption and disposal identified in the literature; how the role of consumers in influencing sustainable practices was understood and how the research has evolved mainly over the last two decades. To achieve these objectives, a bibliometric analysis was employed.

Bibliometric analysis is a methodical approach that investigates published research to unveil trends, compare and contrast findings, and identify knowledge gaps that can pave the way for future research (Vergura et al., 2023). It is a broadly accepted and methodologically rigorous approach for exploring and analysing large scientific data collections that can reveal the nuanced evolutionary patterns within a specific field while also highlighting emerging aspects within that area (Donthu et al., 2021). By systematically parsing through substantial quantities of unstructured data, bibliometric studies offer a rigorous means to comprehend these domains. Consequently, well-executed bibliometric inquiries lay the groundwork for the progressive advancement of a discipline in innovative and substantive manners (Donthu et al., 2021).

Bibliometric methodologies introduce a quantitative aspect to the traditionally subjective evaluation of scholarly literature. Employing a quantitative framework, bibliometric techniques facilitate the description, evaluation, and ongoing monitoring of published research. By doing so, they hold the potential to introduce a systematic, transparent, and reproducible review process, consequently augmenting the overall quality of scholarly reviews (Aria & Cuccurullo, 2017).

Even before commencing reading, bibliometric methods serve as invaluable aids in literature reviews by directing researchers towards seminal works and providing a comprehensive mapping of the research landscape. Leveraging aggregated bibliographic data derived from citations, collaborations, and publications, researchers can glean insights into the structural composition, social networks, and topical interests within their respective fields (Zupic & Čater, 2015).

The bibliometric methodology holds the potential to empower scholars to tackle the challenges of managing extensive bibliometric datasets, enabling ambitious retrospectives within business research, where the enhanced understanding of scientific endeavours facilitated by bibliometric analysis not only drives knowledge generation in business studies but also extends its benefits to other fields of inquiry (Donthu et al., 2021).

3.1. Data Collection

The data utilized in this study was sourced from the WoS database, renowned for its capacity to facilitate the exportation of extensive datasets, and widely recognized for its comprehensive coverage across diverse subject matters, rendering it particularly well-suited for bibliometric analyses.

More specifically, WoS functions as a comprehensive online platform granting access to a multitude of databases and citation data spanning across 256 disciplines encompassing the realms of science, social science, arts, and humanities. It was initially developed by the Institute for Scientific Information (ISI), its intellectual property transitioned to Thomson Reuters, and presently, Clarivate Analytics oversees its maintenance (Moral-Muñoz et al., 2020). The content available on WoS encompasses various formats, including full-text articles, reviews, editorials, chronologies, abstracts, proceedings from journals and books and technical papers (Moral-Muñoz et al., 2020).

3.2. Selection Criteria

This study focused on four types of documents: Articles, Proceeding Papers, Review Articles, and Early Access, as they provide the most relevant, high-quality, and up-to-date contributions to the field (Craig et al., 2007; Zhang & Glänzel, 2012) Focusing on these document types allowed the research to draw from a robust, peer-reviewed body of work that is both representative of the broader academic landscape (Rowland, 2002) and sensitive to emerging trends in the study of clothing disposal behaviour. To streamline the dataset, the document type filter function provided by WoS was utilized to exclude other types of data, thereby refining the focus to original research and review articles pertinent to the investigation. No time period was chosen, and all years were included in the analysis, except 2024, which has not yet been finalized. In addition, the study focused on Business and Management Research, setting aside articles from categories such as Environmental Sciences, Materials Science Textiles or Social Sciences Interdisciplinary.

The proceeding step was to search for specific topics, encompassing a broad spectrum of matters pertinent to clothing disposal behaviour and ensuring exploration of the various dimensions surrounding clothing disposal. The study was thus divided into two phases. The first phase consisted of studying the topics of Clothing Consumption and Clothing Disposal separately, which was called broad topic analysis. The idea was to understand the differences between these two topics. In this phase, the focus was on the study of the number of articles, publication years, h-index and researcher profiles.

After gaining a better understanding of these two concepts, the second phase was introduced: Combining topics analysis. Here, specific keywords were selected, to provide an understanding of the research landscape and the contribution of key researchers within the field. The topics chosen were as follows:

"Clothing Consumption" *and* "Clothing Disposal".

"Fast Fashion" *and* "Sustainability" *and* "Second-hand Clothing".

"Clothing Disposal Behaviour".

The second phase focused on the following metrics: the number of articles, publication years, keyword occurrence and cluster analyses. Analysing keyword occurrence and the clusters made it possible to answer the research questions with further exploring of the articles found with the specific keywords.

The first combination - "Clothing Consumption" *and* "Clothing Disposal" - is crucial because it represents two ends of the clothing lifecycle, deeply influencing each other. High levels of consumption, fuelled by fast fashion and changing trends, naturally lead to increased disposal rates, contributing to waste and environmental stress. By examining these processes in tandem, researchers can better understand how consumption habits drive disposal behaviours, revealing patterns that highlight the environmental and economic impacts of current practices.

The second combination - "Fast Fashion" and "Sustainability" and "Second-hand Clothing" - is essential since these topics represent different yet interconnected aspects of the modern clothing lifecycle. Fast fashion drives rapid production and consumption cycles, leading to increased waste and environmental strain whereas, sustainability aims to mitigate these impacts by promoting responsible production, consumption, and disposal practices. SHC, while sometimes positioned as a sustainable option, plays a complex role in this cycle. It offers an alternative for extending a garment's life, yet it can also encourage continuous buying and quick disposal behaviours. This way it is fundamental to understand the positioning of SHC in business research. By examining these three topics together, researchers can gain a comprehensive understanding of the entire lifecycle of clothing - from production to consumption to disposal.

At last, the third topic, "Clothing Disposal Behaviour", is becoming essential as the fashion industry faces mounting scrutiny for its environmental impact, particularly in the context of waste generation and resource depletion. The rise of fast fashion has accelerated clothing consumption, leading to shorter product lifespans and an unprecedented volume of discarded garments. Understanding how and why consumers dispose of clothing is critical for addressing the growing textile waste problem and promoting sustainable disposal practices.

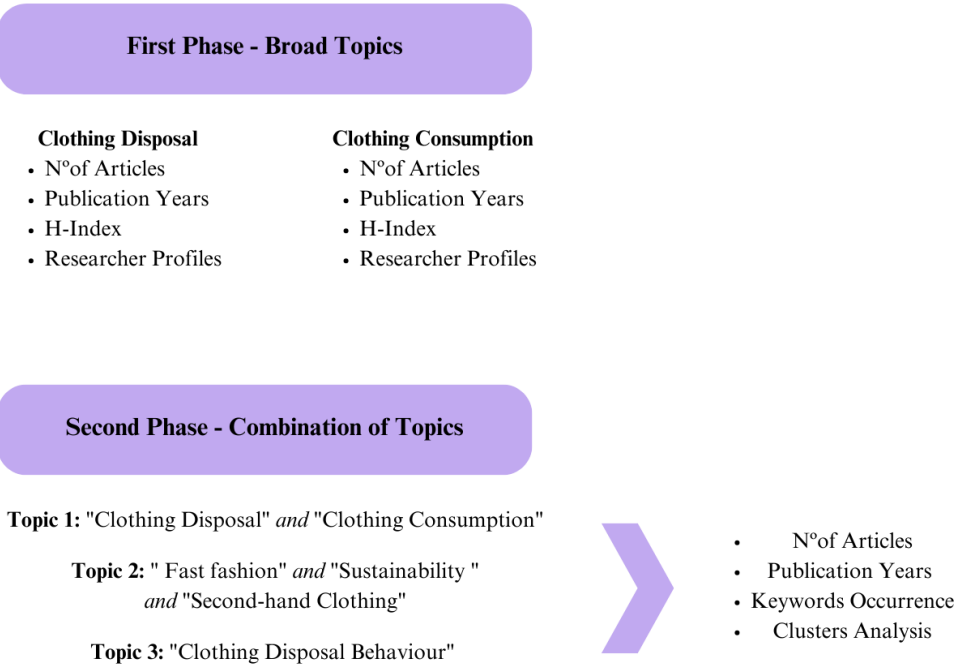Figure 3.1 illustrates the analysis process of these concepts.

First Phase - Broad Topics

Clothing Disposal
- Nºof Articles
- Publication Years
- H-Index
- Researcher Profiles

Clothing Consumption
- Nºof Articles
- Publication Years
- H-Index
- Researcher Profiles

Second Phase - Combination of Topics

Topic 1: "Clothing Disposal" *and* "Clothing Consumption"

Topic 2: " Fast fashion" *and* "Sustainability "
and "Second-hand Clothing"

Topic 3: "Clothing Disposal Behaviour"

- Nºof Articles
- Publication Years
- Keywords Occurrence
- Clusters Analysis

Figure 3.1. Analysis Process. Source: Self-Elaborated

Therefore, this structure provides both a broad overview and a more detailed understanding of the research trends surrounding clothing consumption, disposal, and sustainability. The synthesis of these components facilitates the delineation of contributions within the field, thereby providing a nuanced understanding of its scholarly landscape.

Also, it is imperative to establish clear definitions for key concepts: h-index, researcher profiles and clusters.

The H-index, or Hirsch index, is a metric used to evaluate the productivity and citation impact of a researcher or scholar's published work. It is defined as the highest number (h) such that the author has published (h) papers that have each been cited at least (h) times. This means that a researcher with an H-index of 10 has published 10 papers that have each been cited at least 10 times. The H-index considers both the number of publications and the number of citations, providing a balanced measure of productivity and impact (Lim & Kumar, 2024).

Researcher Profiles are curated profiles that provide a consolidated view of a researcher's entire body of work, including publications, citations, and other academic metrics. Researcher Profiles are more dynamic and customizable, allowing researchers to include a broader range of information, such as affiliations, disciplines, research interests, and ORCID (Open Researcher and Contributor ID) integrations. Profiles aggregate different name variations and affiliations, reducing the likelihood of missing relevant publications due to author disambiguation issues.

The clusters are groups of items represented in VOSviewer, a publicly available software application (van Eck & Waltman, 2010), that are more strongly linked to each other than to items in other clusters. Each cluster is usually represented in a different colour on the VOSviewer map, which helps visually separate groups of related terms, authors, or publications. The clustering algorithm groups items based on network data - such as co-authorship, citation, co-citation, or keyword co-occurrence - creating clusters that represent areas of thematic similarity or research focus. In this study, the focus was on keyword co-occurrence maps, which reveal thematic groups or subfields within a larger research area.

3.3. Visual Mapping

Each topic was calculated and placed on a two-dimensional map using the VOS (Visualization of Similarities) mapping approach, which aims to portray how similar or related two objects are to each other (van Nunen et al., 2018). The findings section provides a detailed explanation of how the visualisations should be interpreted.

Furthermore, visual methodologies were deployed to scrutinize and juxtapose the indicators across various datasets, aiming to discern underlying patterns and emergent trends within the data corpus. Notably, bibliometric mapping, comprising a suite of visualization algorithms, was leveraged to generate maps delineating the contours of scientific knowledge. These maps facilitated the identification of "hot spots" of scholarly activity on clothing disposal behaviour, unveiling prevalent trends and discernible knowledge lacunae within the research domain.

VOSviewer requires that the minimum number of occurrences of a keyword and the number of keywords to be selected be defined. The minimum number of occurrences on VOSviewer was set at five and the number of keywords was established at 10.

In VOSviewer, setting limits on the minimum occurrences of keywords and the number of keywords to include in an analysis is crucial for managing the dataset and ensuring that the analysis remains both interpretable and focused on the most significant patterns. The breakdown of the rationale behind these choices was as follows.

Choosing a minimum occurrence threshold of five ensures the exclusion of keywords that appear only a few times and allows the emphasis to be on terms with consistent relevance across the dataset. This threshold helps filter out less common or potentially insignificant terms, which may not represent core topics. In bibliometric analyses, occurrence thresholds are often set by trial and tailored to the dataset size to balance inclusivity and relevance. Setting a threshold helps focus the analysis on major trends and themes within the field.
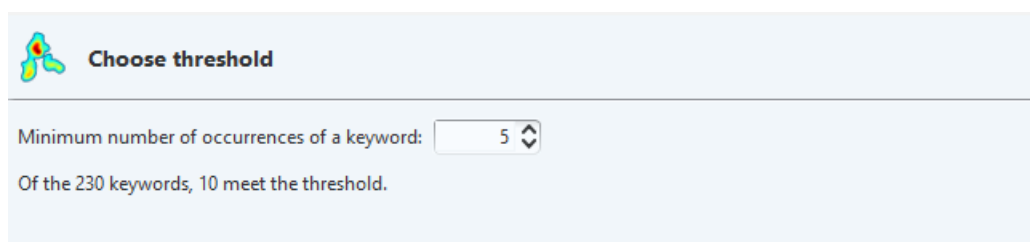

Figure 3.2. Minimum number of occurrences of a Keyword. Source: VOSviewer

In terms of the keywords, limiting the analysis to the top 10 provides a manageable scope and highlights the most influential terms. By focusing on a smaller, high impact set of keywords, the analysis avoids becoming diluted with less prominent terms, allowing clearer visualization and interpretation of central research themes. This cap of 10 keywords is a common choice in bibliometric analyses, as it strikes a balance between depth and clarity.

Figure 3.3. Number of Keywords Selected. Source: VOSviewer

CHAPTER 4

Findings and Discussion

Research into consumers' behaviours in the fashion sector has become ever more relevant, driven by concerns about sustainability, waste management, and ethical consumption. This study examined the research relating to clothing consumption, disposal, and sustainable practices within the field of management, to better understand the connections among fast fashion, sustainability, second-hand clothing, and the evolving themes in clothing disposal behaviour.

Clothing consumption and disposal are essential stages in the lifecycle of fashion apparel. Consumption propels demand for clothing, impacting trends (while also driven by them), production quantities, and resource utilization. Disposal, on the other hand, represents the end-of-life phase, and consumers' decisions regarding clothing that is no longer in active use.

This study began by examining research on each of the two concepts, which offer unique but complimentary viewpoints on sustainability in fashion. By investigating these topics independently before evaluating their interconnections, the aim was to obtain a more holistic perspective of the lifecycle approach in research on fashion consumption. This separation provides a more accurate mapping of research trends and gaps, as well as a clearer comprehension of the literature.

4.1.   Percentage of Business Research within the Topics

Figure 4.1 illustrates the percentage of research publications within the fields of Business and Management across various topics related to clothing Consumption and Disposal. The data shows a rather low representation of Business and Management studies in each category, ranging from 12.214% to 29.104% for Business and from 3.053% to 11.706% for Management. Although there is some research activity, the percentages highlight a limited focus on these areas within the broader context of clothing-related studies.

	First Phase - Broad Topics		Second Phase - Combinations		
WoS Categories	**Clothing Disposal**	**Clothing Consumption**	**Clothing Disposal and Clothing Consumption**	**Fast Fashion and Sustainability with SHC**	**Clothing Disposal Behaviour**
% of total Publications	% of 393	% of 2878	% of 127	% of 299	% of 134
Business	12.214%	16.018%	25.984%	18.729%	29.104%
Management	3.053%	5.594%	6.299%	11.706%	6.716%
TOTAL	**15,27%**	**21,61%**	**32,28%**	**30,44%**	**35,82%**

Figure 4.1. Percentage of Publications of Business and Management Research. Source: Self-Elaborated

These results reveal that, despite the relevance of business and managerial perspectives in addressing issues like clothing consumption and disposal, these fields are still relatively underrepresented in the overall research landscape. There is significant room to expand research in Business and Management related to sustainable clothing practices and consumer behaviour. Given the pressing need for sustainable solutions in the fashion industry, further exploration from these disciplines could provide critical insights into the economic and organizational frameworks that drive sustainable consumer choices and responsible disposal practices.

This suggests a valuable opportunity for future studies to explore how business strategies, corporate social responsibility, and managerial practices can influence and promote sustainable clothing consumption and disposal behaviours. Addressing this gap could contribute to a more comprehensive understanding of the roles that businesses and managers play in fostering sustainability in the fashion industry.

4.2.   Clothing Consumption vs Clothing Disposal

A preliminary search of the two topics in the WoS Core Collection was conducted. The search for "Clothing Consumption" yielded 506 results, whereas the search for "Clothing Disposal" returned 53 items - a considerable difference in the number of articles. The figures 4.2 and 4.3 represent the publication years of Clothing Consumption and Clothing Disposal, respectively.
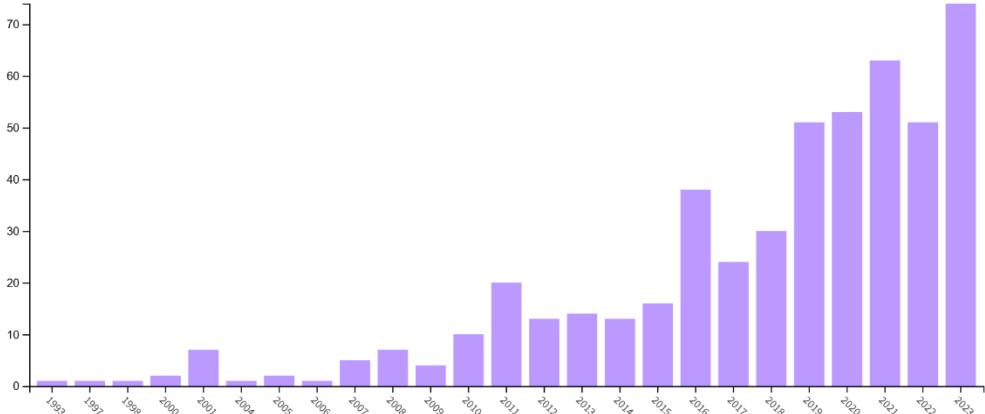

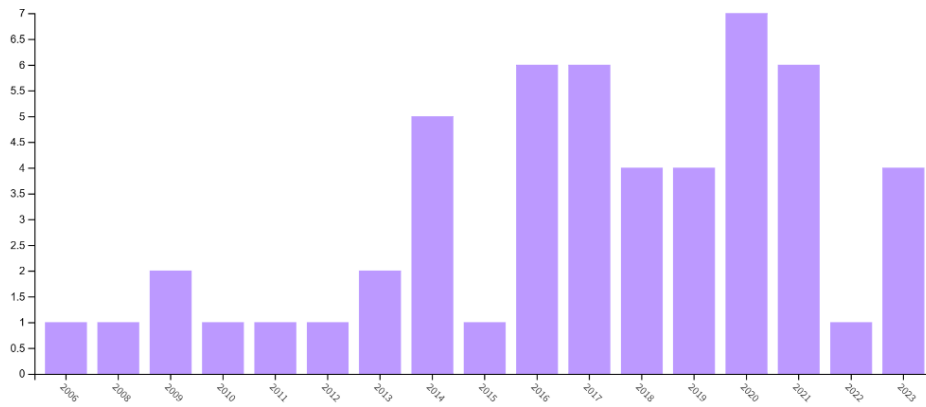*Figure 4.2. Publication Years "Clothing Consumption". Source: WoS*

Figure 4.3. Publication Years "Clothing Disposal". Source: WoS

The data also demonstrates a significant temporal gap between the earliest published articles on each of the topics. The first article on clothing consumption was published in 1989, while research on clothing disposal only emerged in 2006, marking a 17-year difference, as can be seen in figures 4.2 and 4.3. This discrepancy is significant and likely reflects broader developments in societal priorities, academic focus, and the evolution of environmental awareness. Increased consciousness around sustainable clothing disposal has emerged as consumers and researchers alike grapple with the environmental impacts of fashion, particularly concerning recycling, reselling, and reducing clothing waste (Norum, 2017).

The publication trends for Clothing Consumption research, show a steady increase in publications. The marked increase over time suggests an evolving interest in the topic. The overall trend in Clothing Disposal demonstrates intermittent growth, with fluctuations in research, especially after 2014. These fluctuations might reflect the complexity of clothing disposal research, making it a less consolidated field compared to consumption. While consumer disposal behaviour is an integral part of the sustainable fashion conversation, it has often been underexplored in comparison to consumption patterns (Bianchi & Birtwistle, 2012).

4.2.1. H-Index

An alternative approach to understanding these two concepts is to examine the H-index, as its values provide valuable insights into the research landscape. The h-index value is calculated by ranking a list of publications in descending order based on their Times Cited count within the Web of Science database. In this context, the h-index reflects the impact of research within a specific area.

A H-Index of 55 for the topic of Clothing Consumption suggests a high level of academic interest, with significant advancements that are widely acknowledged and frequently cited by other academics. The higher H-Index indicates that clothes consumption is a well-established and influential topic in academia. On the other hand, the topic of Clothing Disposal has an H-Index of 24. While this is a respectable H-Index, it is perceptibly lower than that for clothes consumption.

The higher H-Index for Clothing Consumption confirms that this topic has been prioritized over Clothing Disposal in academic studies. This difference is not independent of the fact that research on clothing disposal began 17 years later; and while disposal behaviours are becoming acknowledged as important, they have yet to attain the same level of scholarly maturity as consumption studies.

4.2.2. Researcher Profiles

In WoS, the term Researcher Profiles refer to individual profiles associated with researchers who have published works indexed in the database. In the context of this study, this metric provides an overview of the research output of various authors in the areas of Clothing Consumption and Clothing Disposal, as measured by the number of publications indexed in the WoS. These profiles help track a scholar's contributions across different fields or topics, and they are useful for identifying patterns in a researcher's expertise and focus areas.

Figures 4.4 and 4.5 represent the Researcher Profile of Clothing Consumption and Clothing Disposal, respectively. The figures focus on the top 10 researcher profiles.
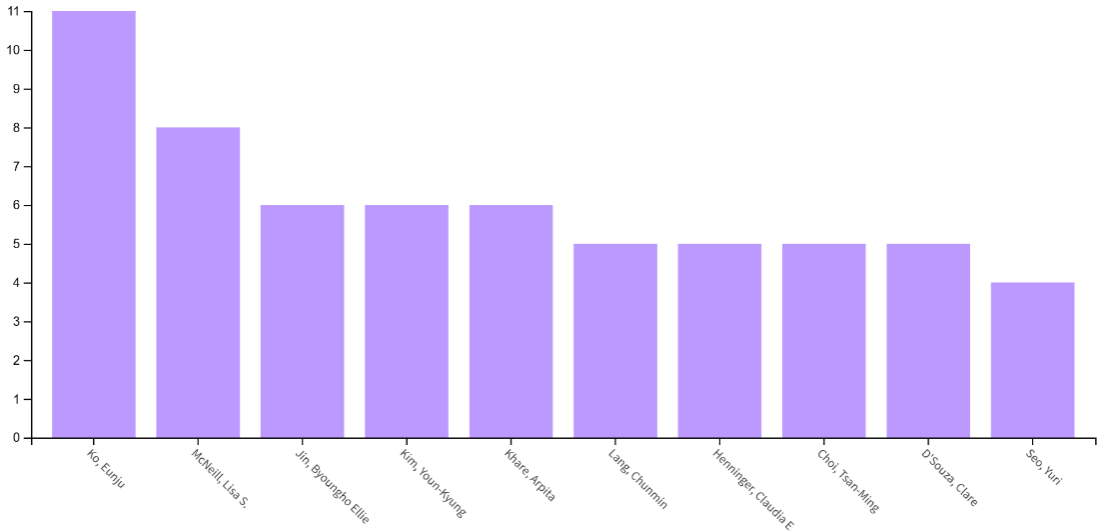

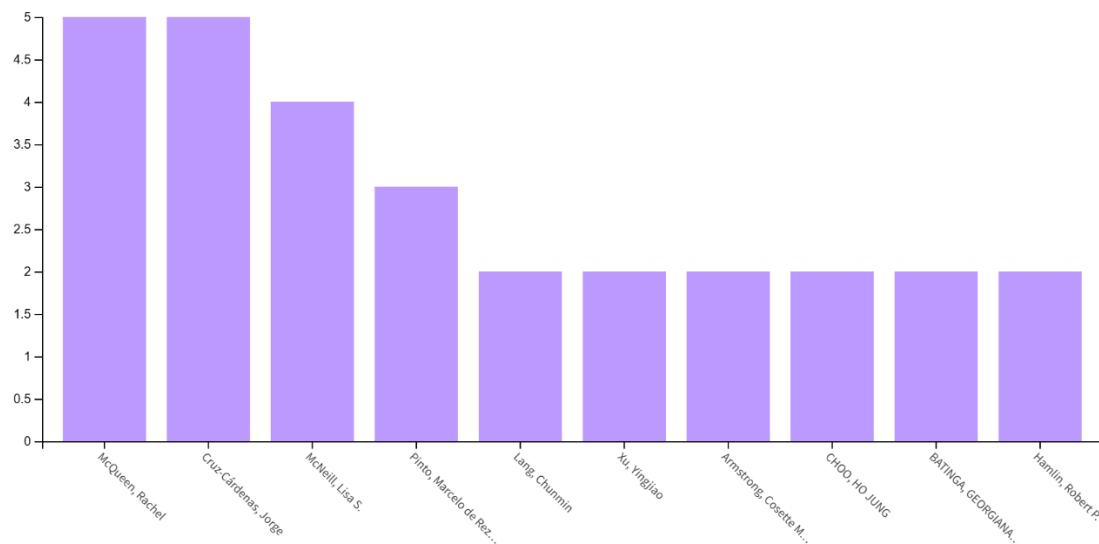*Figure 4.4. Researcher Profile "Clothing Consumption". Source: WoS*

Figure 4.5. Researcher Profile "Clothing Disposal". Source: WoS

Figure 4.4 shows the number of publications for researchers working on "Clothing Consumption, while Figure 4.5 displays the number of publications for those focusing on Clothing Disposal.

The data shows that only two of the top ten researchers from each field work on both Clothing Consumption and Clothing Disposal. Lisa McNeill has eight publications on Clothing Consumption and four on Clothing Disposal, while Chunmin Lang has contributed five articles on Consumption and two on Disposal. Overall, there appears to be a scarcity of researchers who study both topics in the context of business research; yet it is not unreasonable to suppose that researchers who contribute to both areas may have a more integrated approach and a greater awareness of the interdependence between consumption and disposal, as well as the broader implications of fashion-related consumer behaviours. By focusing on these interconnected areas, such researchers can help advance waste reduction, recycling, and more sustainable practices in the industry. Given that the fashion industry contributes significantly to environmental degradation, addressing both ends of the clothing lifecycle - consumption and disposal - remains critical to developing effective sustainable solutions (Joy et al., 2012).

4.3.   Clothing Disposal *and* Clothing Consumption

By combining the topics "Clothing Disposal" *and* "Clothing Consumption", 36 results from the Web of Science Core Collection were found, within Business research. The first study that focused on these themes together emerged in 2008. Figure 4.6 denotes the publication years of the association of the topics of Clothing Disposal and Clothing Consumption.
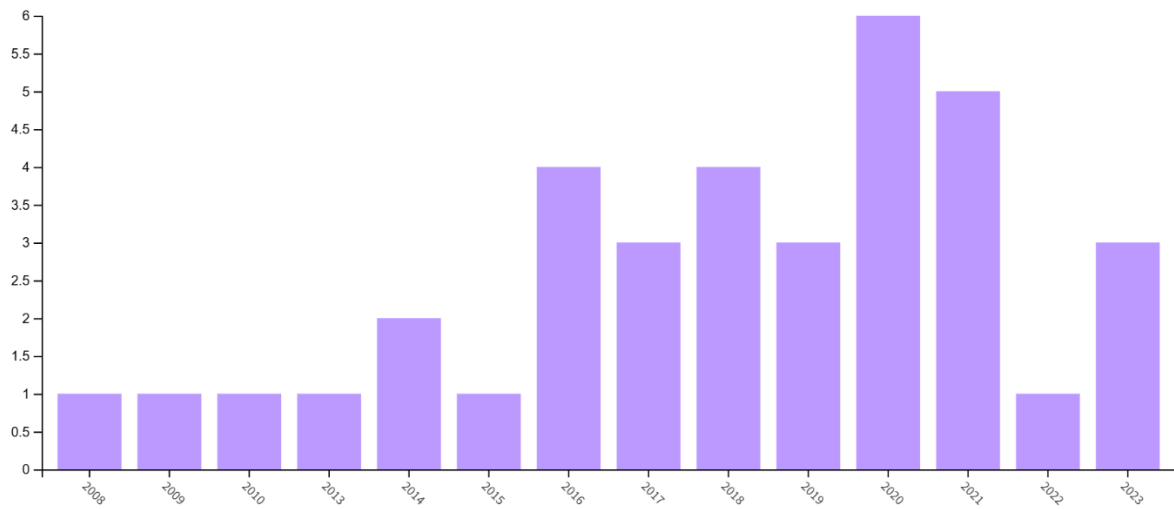
Figure 4.6. Publication Years "Clothing Disposal" and "Clothing Consumption". Source: WoS

The intersection of these two areas suggests that this is a relatively new area of research. Additionally, this also seems to indicate that before 2008, research on these areas appeared to be mostly compartmentalized, with studies on consumption and disposal undertaken independently.

The rise of integrated research after 2008 is consistent with increasing recognition of the necessity of analysing the entire apparel lifespan, from production and consumption to disposal, to address sustainability challenges (Moazzem et al., 2021). As global environmental concerns, particularly related to textile waste, intensified, the academic focus began to shift toward addressing the full spectrum of sustainability in fashion, from purchase decisions to disposal behaviours (Niinimäki et al., 2020).

4.3.1. Main themes linking Clothing Consumption and Clothing Disposal

To respond to the first research question, it was analysed the keywords' occurrence and cluster to better understand the main themes and connections within the Business research on Clothing Disposal and Clothing Consumption. Additionally, it was explored studies that address both topics together, providing a deeper understanding of how these themes intersect. This review was essential to help contextualize and corroborate the keyword analysis.

For this, a visual analysis of keyword occurrences was conducted using the VOSviewer tool. Figure 4.7 provides a visual representation of keyword co-occurrence in research on Clothing Disposal and Clothing Consumption. A keyword occurrence map such as this highlights the frequency and relationships between key terms used in academic publications. Each node represents a keyword, and the size of the node reflects its frequency, while the lines between nodes show how often these keywords are used together. This type of map is useful for identifying the most dominant topics or themes in the research field and how different concepts are interconnected.
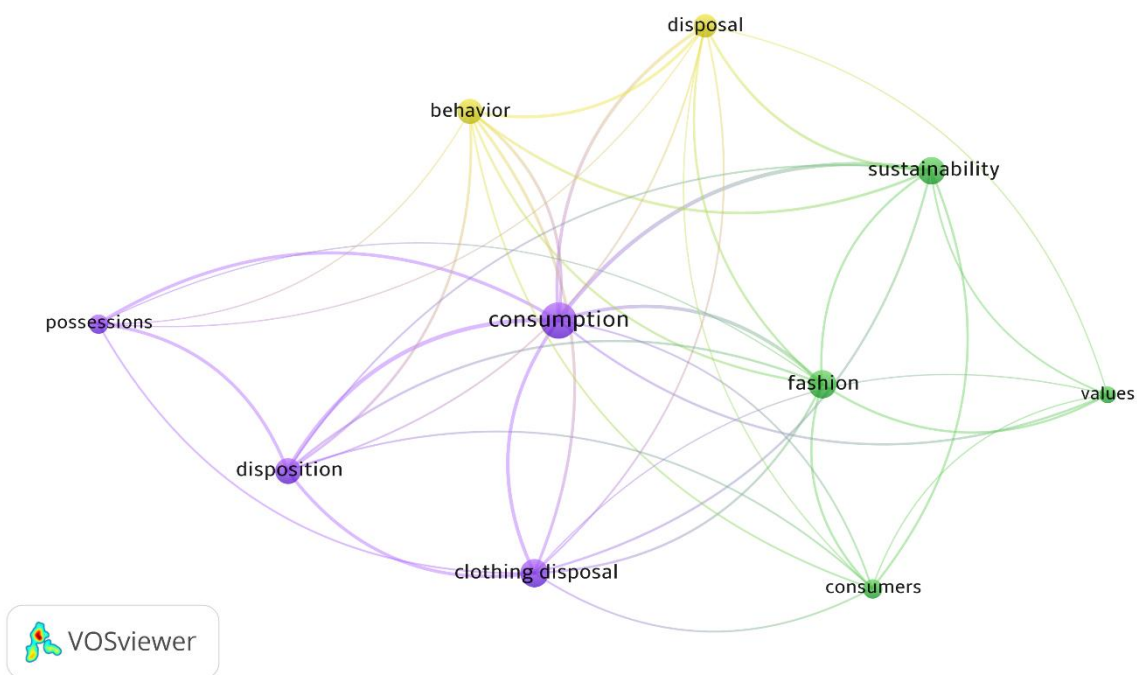
Figure 4.7. Keywords Occurrence "Clothing Disposal" and "Clothing Consumption". Source: Vosviewer

Figure 4.8 represents the clusters within the two concepts. The map distinguishes three major clusters. The first one relates to behaviours: both consumption (possessions and consumption) and disposal (clothing disposal, disposition). The second relates to consumers and their values, including an appreciation for fashion and or their sustainability concerns. The third cluster focuses on disposal behaviour. This way, the clusters were entitled: Consumption Patterns, Sustainable Consumerism and Disposal Behaviour, respectively.

Cluster 1	Cluster 2	Cluster 3
Consumption Patterns	**Sustainable Consumerism**	**Disposal Behaviour**
Clothing Disposal	*Consumers*	*Behaviour*
Consumption	*Fashion*	*Disposal*
Disposition	*Sustainability*	
Possessions	*Values*	

Figure 4.8. Clusters "Clothing Disposal" and "Clothing Consumption". Source: Self-Elaborated

In the first cluster, a vital keyword *consumption*, appears at the centre of the map, suggesting that consumption is a foundational topic in the study of clothing disposal. It shows how closely the study of consumption relates to the crucial topic of disposal.

In the second cluster, *Fashion* is linked to both *consumers* and *values*, highlighting how fashion choices may be influenced not only by consumer behaviour but also by underlying personal values, such as ethics and sustainability concerns. This is consistent with research that highlights the growing awareness of the environmental impact of consumption patterns, which may reflect the increased focus on the need for sustainable consumption behaviours and the environmental consequences of over-consumption and fast fashion (Guo & Kim, 2023). Fashion trends, particularly in fast fashion, contribute significantly to both excessive consumption and rapid disposal, leading to waste and environmental degradation (Patwary et al., 2023).

Fashion significantly influences consumption decisions (Ekström & Salomonson, 2014). Bick et al. (2018) note how the fast fashion industry has led to an increase in unsustainable consumption patterns. The prominence of *fashion* in this cluster implies that fast-changing trends drive over-consumption, leading to the need for a better understanding of behavioural interventions to promote more responsible fashion consumption.

In line with this, behavioural interventions, such as promoting awareness and educating consumers about the environmental impacts of their fashion choices, are essential in fostering more responsible fashion consumption (Köksal & Strähle, 2021). By understanding what drives consumer behaviour, businesses can implement strategies that reduce the urge to follow short-lived fashion trends and instead promote practices such as buying second-hand or choosing sustainable brands. Understanding consumer behaviour is crucial in creating strategies that encourage consumers to reduce waste and embrace more sustainable consumption habits, such as purchasing less, buying second-hand, or choosing sustainable brands (Mcneill & Moore, 2015).

The third cluster, *behaviour* is linked with *disposal*, suggesting that consumer behaviour plays a significant role in how individuals manage the disposal of clothing. This connection implies that decisions about disposal are not just practical but are influenced by underlying behaviours, habits, and even attitudes or values. Consumer behaviour plays a crucial role, as individuals are often driven by trends but increasingly aware of sustainability, which affects both their purchasing and disposal habits (Mcneill & Moore, 2015).

Also, it is worth mentioning important relationships between keywords of different clusters. The connection between *disposal* and *sustainability* additionally suggests an increasing focus on how clothing disposal practices can be made more sustainable. This link emphasizes the environmental and ethical dimensions of how clothes are managed at the end of their lifecycle, reflecting trends toward reducing waste and improving recycling or reuse strategies. Growing consumer awareness and societal concern over waste management have likely contributed to this shift, with research increasingly focusing on sustainable consumption and disposal practices (Norum, 2017). This chronological framework emphasizes the changing nature of study interests, as well as the relevance of addressing consumption and disposal in modern fashion and sustainability studies (Henninger et al., 2016).

Personal values, particularly related to sustainability and ethics, play a significant role in shaping consumption choices and disposal practices(Vieira & Fonseca, 2021). Consumers with strong environmental values favour sustainable options in purchase and disposal decisions (Shaharuddin & Jalil, 2021). Moreover, fashion choices drive consumption, often influenced by trends and the desire for newness, while attachment to possessions can affect disposal practices (Vieira & Fonseca, 2021). People may hold onto clothing longer due to sentimental value, impacting their disposal decisions. Fashion, particularly fast fashion, encourages over-consumption through rapidly changing trends, leading to higher rates of clothing disposal (Degenstein et al., 2020).

The link between sustainability and disposal highlights a growing awareness of environmental impact (McQueen et al., 2022)**.** This awareness influences consumers to seek responsible disposal methods, such as recycling, donating, or repurposing, rather than simply discarding. Understanding these behaviours and values is critical in creating strategies that encourage consumers to reduce waste and adopt more sustainable consumption habits.

In conclusion, clothing consumption and disposal are influenced by a combination of consumer values, attachment to possessions, fashion trends, and sustainability concerns, with each factor contributing to how consumers make decisions at both the purchasing and disposal stages.

4.4. Fast Fashion *and* Sustainability *and* Second-Hand Clothing

By combining the topics "Fast fashion" *and* "Sustainability" *and* "Second-hand Clothing" it was possible to come across 96 results from the WoS Core Collection, within Business Scope. This combination began to be portrayed in 2011. Figure 4.9 represents the publication years of the association of the topics of Fast Fashion, Sustainability and Second-Hand Clothing.
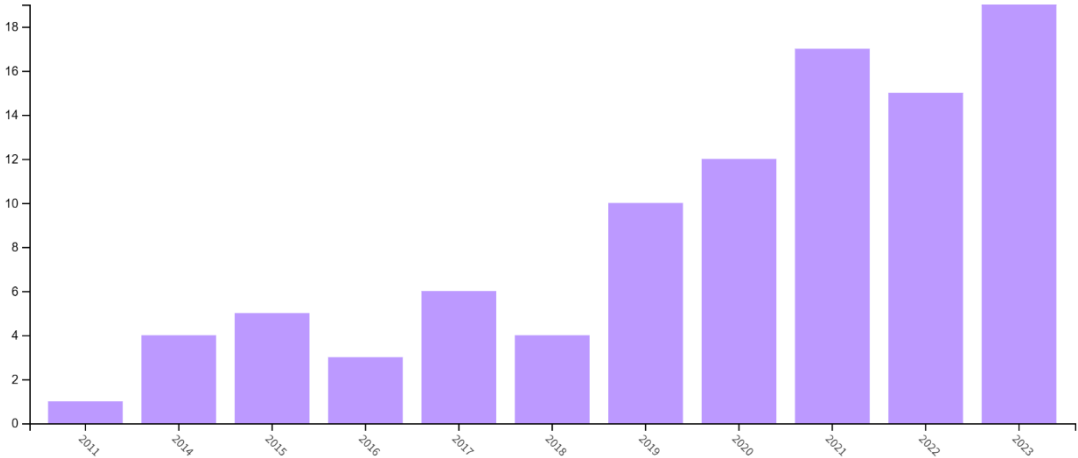

Figure 4.9. Publication Years "Fast Fashion", "Sustainability" and "SHC". Source: WoS

The analysis of these terms reveals their growing presence in the academic discourse since 2011, emphasizing their relevance to ongoing research in the fashion industry. The fast fashion model, characterized by rapid production, high turnover of styles, and short garment lifespans, is widely recognized for its unsustainable practices. This link to sustainability thus highlights the environmental challenges posed by fast fashion, such as increased textile waste and resource depletion. The combination of these three themes - fast fashion, sustainability, and second-hand clothing - highlights a growing scholarly interest in balancing consumption with more sustainable practices.

4.4.1. Occurrence of Terms Related to Fast Fashion, Sustainability, and SHC in Business Literature

To address the second research question, an analysis of keyword occurrences and clustering was conducted to better understand the primary themes and connections within business research on Fast Fashion, Sustainability and Second-Hand Clothing. As well, studies examining those topics were explored to gain a more comprehensive view of their intersections. A visual analysis of keyword occurrences was performed using the VOSviewer tool. Figure 4.10 illustrates a visual representation of keyword co-occurrence in research related to the mentioned concepts.
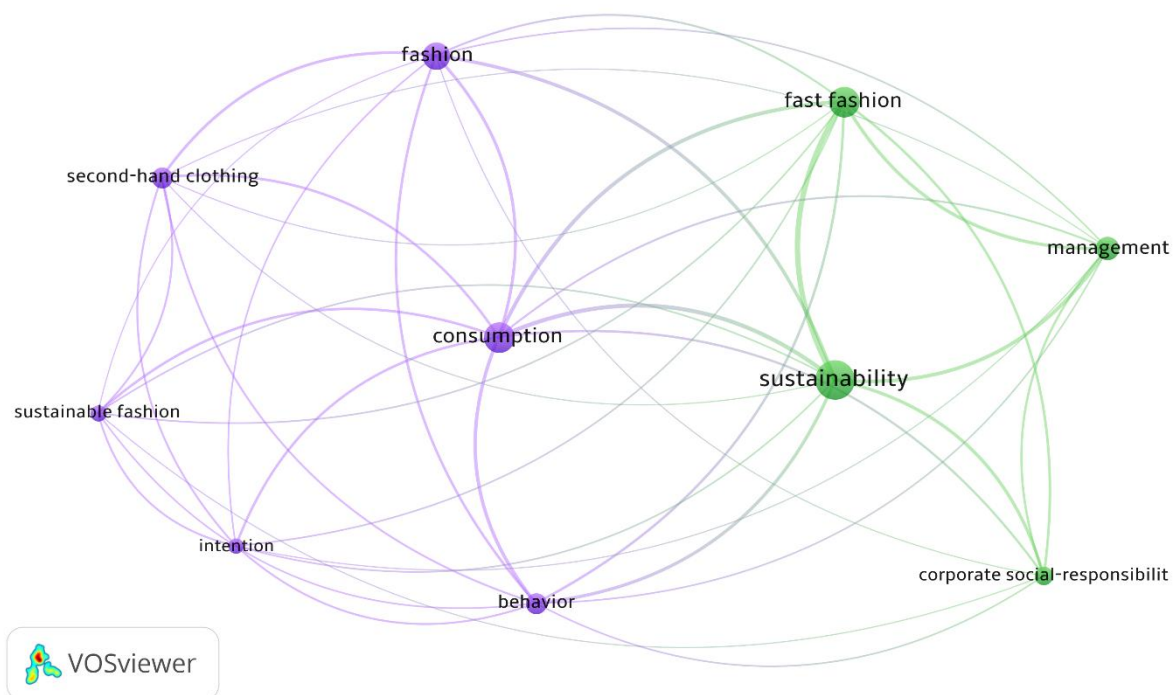

Figure 4.10. Keywords Occurrence "Fast Fashion", "Sustainability" and "SHC". Source: Vosviewer

Figure 4.11 illustrates the clusters regarding the combination of fast fashion, sustainability and SHC, identifying two main groups. The first cluster includes terms related to behaviour, consumption, fashion, intention, second-hand clothing, and sustainable fashion, all of which point to the themes of consumer actions and attitudes toward sustainable fashion choices. The second cluster includes terms like CSR (Corporate Social Responsibility), fast fashion, management, and sustainability, suggesting a focus on corporate responsibility and the management of sustainability practices within the fashion industry. Accordingly, these clusters have been labelled as Purchase Behaviour and Sustainable Practices.

Cluster 1 Purchase Behaviour	Cluster 2 Sustainable Practices
Behaviour	*CSR*
Consumption	*Fast fashion*
Fashion	*Management*
Intention	*Sustainability*
Second-hand Clothing	
Sustainable Fashion	

Figure 4.11. Clusters "Fast Fashion", "Sustainability" and "SHC". Source: Self-Elaborated

In the first cluster, the appearance of *behaviour* as a keyword appears to be a reflection of the growing recognition of the role of consumer behaviour in driving sustainable practices within the fashion industry (Taborecka et al., 2023). The research no longer focuses solely on the actions of companies or even governments but increasingly includes the role and impact of consumer actions (Taborecka et al., 2023). This highlights that consumers' intentions, potentially driven by environmental awareness, are critical for driving sustainable fashion consumption (Hassan et al., 2022). Furthermore, *Second-hand clothing* appears as a closely related term to both *sustainable fashion* and *consumption*, indicating its importance as a sustainable alternative within the fashion industry. This link is consistent with research arguing that second-hand clothing is seen as a viable way to reduce waste, prolong the lifecycle of garments, and mitigate some of the negative impacts associated with fast fashion (Koay et al., 2022).

The second cluster focuses on corporate responsibility, management, and the broader impact of fast fashion on sustainability. The close links between *fast fashion*, *sustainability*, *management*, and *CSR* indicate a strong relationship between these topics. Also, the link between *corporate social responsibility* and *management* suggests that researchers are exploring the role of companies in mitigating the harmful effects of fast fashion, through CSR initiatives and are focusing on how sustainable business practices, supply chain management, and business strategies can play a role in sustainability transitions (Nguyen et al., 2020). Fast fashion and sustainability are strongly linked, suggesting a growing concern about the wasteful and environmentally damaging practices associated with fast fashion, including its resource-intensive production and short product lifecycles, as noted by Papasolomou et al. (2023).

The significant connections between keywords from other groupings should also be mentioned. The keyword occurrence map (figure 4.10) seems to suggest that the literature attributes an important role for consumers in driving sustainability within the fashion industry. Through their *behaviour* and *intention* to adopt sustainable practices, such as choosing *second-hand clothing* or supporting *sustainable fashion*, consumers can significantly impact demand for environmentally responsible options (Koay et al., 2022; Syahrivar et al., 2023). Shifts in consumer preferences can put pressure on brands to adopt more sustainable practices, reducing their reliance on *fast fashion* and promoting alternatives aligned with *corporate social responsibility* (CSR) (Nguyen et al., 2020). Consumers' choices and values can be catalysts in pushing the industry toward a more sustainable future.

4.5. Clothing Disposal Behaviour

The topic "Clothing Disposal Behaviour" resulted in 42 findings in the WoS Core Collection. The theme began to be portrayed in 2006. Figure 4.12 describes the publication years of the topic of Clothing Disposal Behaviour, within Business research.
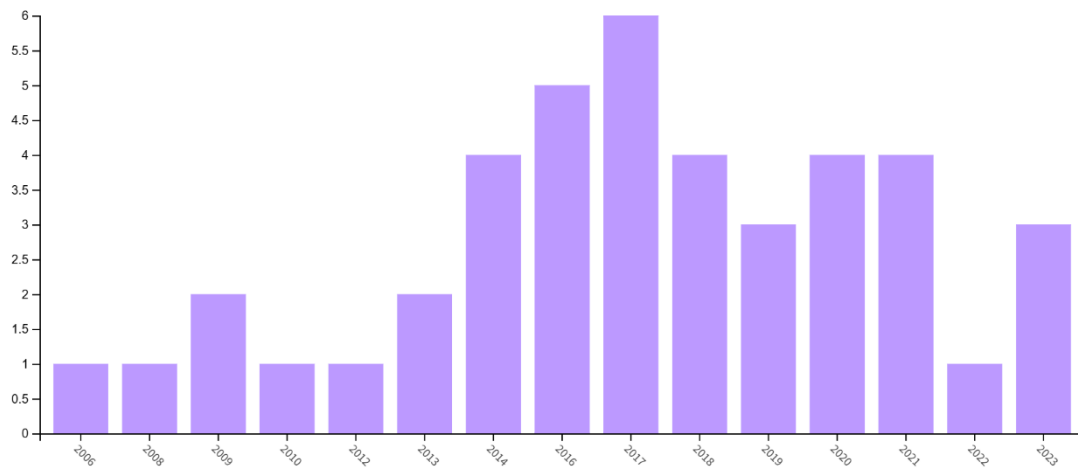
Figure 4.12. Publication Years "Clothing Disposal Behaviour". Source: WoS

A notable peak appeared in 2017, suggesting heightened academic interest or increased topic relevance during that year. Publication numbers fluctuate afterwards but remain relatively steady, suggesting that Clothing Disposal Behaviour has become an established area within business research. There is a slight decline in 2022, but interest appears to pick up again in 2023, indicating ongoing engagement with the theme. This trend might reflect an evolving recognition of the importance of consumer behaviour in clothing disposal, particularly as environmental concerns and interest in sustainable fashion continue to grow.

4.5.1. Evolution of research on clothing disposal behaviour

To answer the third research question, an analysis of keyword occurrences and clustering was carried out to better comprehend the main themes and links found in business research on clothing disposal behaviour, complemented by an examination of the articles on this subject. A visual depiction of keyword co-occurrence in Clothing disposal behaviour research from VOSviewer is illustrated in Figure 4.13.
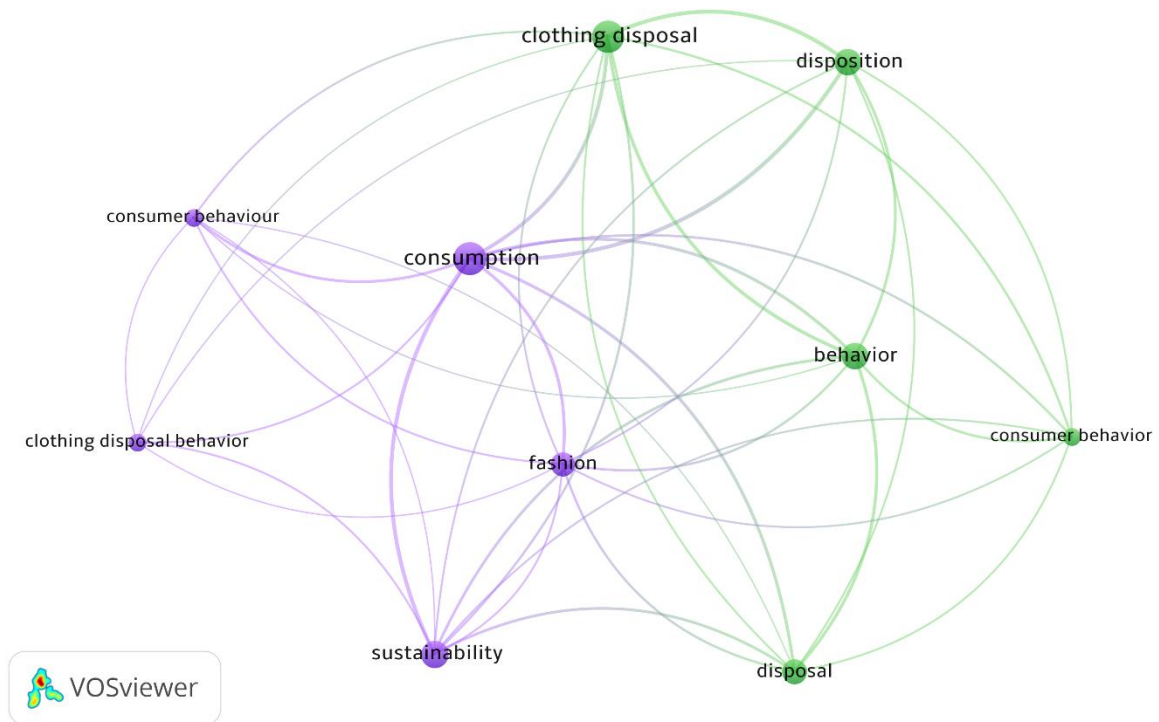
Figure 4.13. Keywords Occurrence "Clothing Disposal Behaviour". Source: Vosviewer

Figure 4.14 points out the clusters regarding clothing disposal behaviour, identifying two main groups. The first cluster represents themes related to consumer behaviour within the context of sustainability. It includes keywords like *clothing disposal behaviour*, *consumption*, *fashion*, and *sustainability*. The second cluster focuses on the practical aspects of clothing disposal, including keywords like *behaviour, clothing disposal* and *disposal*, Therefore, these clusters have been named Sustainable Fashion Behaviour and Disposal Practices, respectively.

Cluster 1 Sustainable Fashion Behaviour	Cluster 2 Disposal Practices
Clothing Disposal Behaviour	*Behaviour*
Consumer behaviour	*Clothing Disposal*
Consumption	*Consumer Behavior*
Fashion	*Disposal*
Sustainability	*Disposition*

Figure 4.14. Clusters "Clothing Disposal Behaviour". Source: Self-Elaborated

In the first cluster, *Sustainability* is strongly connected with *clothing disposal behaviour*, highlighting an awareness of environmental responsibility in disposal decisions. This connection suggests that some consumers are motivated to dispose of clothing sustainably, opting for environmentally friendly methods like recycling or donating, influenced by their knowledge of sustainability practices (Bianchi & Birtwistle, 2012). Also, it points to an increasing focus on how disposal contributes to waste and pollution, aligning with the rising global awareness of environmental degradation caused by fast fashion and overconsumption (Wang et al., 2020)**.** The interconnections of these clusters' keywords suggest that sustainability, consumption habits, and fashion trends are major factors influencing clothing disposal behaviour. It suggests that people's disposal behaviour is shaped significantly by their consumption patterns and concerns about sustainability (Potdar et al., 2023).

Despite the increasing emphasis on environmental sustainability, *consumption* and *fashion* remain central over time. This may indicate that while the research has evolved to include sustainability, it still recognizes that, as Zhang et al (2020) note, consumer choices and fashion trends play a critical role in clothing disposal practices.

In the second cluster, the close connections are consistent with Počinková et al. (2023), who noted that higher consumption leads to a greater need for disposal, particularly in the context of fast fashion, which drives frequent garment replacement. This ongoing relevance underscores the complexity of changing disposal behaviours, which are influenced by both social trends and environmental consciousness. Furthermore, there has been a marked increase in the research on the topics of sustainability and clothing disposal behaviour. This shift seems to suggest that interest is no longer just in how consumers dispose of clothing, but about how disposal practices fit within broader goals of sustainability and reducing environmental impact (Niinimäki et al., 2020).

It is important as well to emphasise the noteworthy relationships between keywords from different groups. *Behaviour* and *Consumption* are connected to *Fashion*, suggesting that clothing disposal behaviour is influenced by consumer behaviour in the fashion industry, possibly due to trends such as fast fashion, which encourages frequent disposal and purchase of new items. The term *fashion* connected to *disposal* and *consumption* seems to indicate that fashion trends play a critical role in disposal behaviour. Consumers driven by fashion are more likely to discard clothing quickly to stay on trend, contributing to a cycle of rapid consumption and disposal (McNeill et al., 2020b).

Lastly, the keyword occurrence map suggests that research on *clothing disposal behaviour* has increasingly focused on the impact of evolving consumer attitudes and growing environmental concerns (Alevizou et al., 2021). As awareness of sustainability has risen, studies have begun to examine how consumers' environmental values and behavioural intentions influence their disposal choices. The frequent links between *sustainability*, *consumer behaviour*, and *disposal* indicate a shift in the literature towards understanding disposal as a conscious, environmentally motivated action rather than a mere byproduct of consumption.

CHAPTER 5

Conclusions, Limitations and Suggestions

This research aimed to examine the critical yet often overlooked aspect of clothing disposal behaviour within the context of the fast fashion industry. It highlighted the urgent need to address the environmental and social ramifications of overconsumption and rapid garment disposal, which have been exacerbated by the fast fashion model. A bibliometric analysis was carried out to map the academic literature on the topic of clothing consumption, disposal, and sustainable practices within the field of management, identifying key trends, influential works, and gaps in research. This study aspires to stimulate further inquiry and discourse on responsible consumption and the necessity for a more sustainable approach to clothing disposal.

The main findings show that Clothing Consumption has been given primacy over Clothing Disposal in academic research, with disposal behaviours being underexplored in comparison to consumption. As the fashion industry strives to be more sustainable, a thorough understanding of consumption and disposal behaviours is essential. This balanced focus is crucial for addressing sustainability challenges within the fashion industry comprehensively and for developing comprehensive strategies to address the full lifecycle of clothing, from production and consumption to disposal (Sarigöllü et al., 2021)**.**

The prominence of behaviour suggests that the research on Clothing Disposal and Consumption is heavily centred on understanding consumer behaviour. This focus highlights the importance of psychological and social factors in shaping how consumers acquire, use, and dispose of clothing. It also underscores the connection between consumption and disposal behaviours, with significant implications for promoting sustainability and informing policy and intervention strategies aimed at fostering more responsible consumer practices in the fashion industry. Sustainability is perceived as a key driver of research in this area. Understanding how and why consumers dispose of clothing is vital for developing strategies that promote more sustainable disposal practices, such as increasing rates of recycling and reuse and reducing landfill waste. By better understanding the disposition behaviour of consumers, stakeholders can design targeted initiatives that encourage more responsible disposal practices, such as incentivizing recycling or educating consumers about the environmental impacts of their disposal choices.

This study corroborates the underrepresentation of business-focused research on clothing disposal behaviour compared to consumption, urging a more balanced exploration of the full lifecycle of clothing. By identifying key clusters, this study provides a clearer understanding of how these themes intersect, offering a foundation for future interdisciplinary research. Also, by mapping the evolution of disposal behaviour studies, this work underscores critical shifts in research priorities and highlights emerging areas.

Furthermore, it is important to mention some limitations of this study. Firstly, the reliance on Bibliometric Tools. While the tool VOSviewer is effective for visualizing keyword relationships, it is limited in its ability to interpret the distinctive context of each study. For instance, while sustainability is frequently discussed, the tool cannot assess the quality or rigour of the sustainability approaches taken in each study. However, combining bibliometric analysis with a detailed review of key articles could provide richer insights into the context and depth of sustainability practices, strengthening the study's overall findings.

Another limitation of the bibliometric analysis as applied in this study is the lack of qualitative insights. Keyword mapping provides a quantitative overview but lacks the qualitative analysis of how these concepts are framed in the literature. For example, terms like slow fashion and circular economy may be included in recent discussions, but the maps do not reveal the specific strategies, or challenges related to these concepts. For this reason, it would be interesting for future research to focus on this.

Regarding future research directions, there are some main aspects to emphasize. In this study, the results conclude that SHC a sustainable alternative within the fashion industry. The business research reviewed in this study predominantly highlights its positive aspects, such as waste reduction and garment lifecycle extension. However, this largely positive portrayal overlooks critical perspectives that address potential downsides of SHC, such as its role in encouraging continued consumption and rapid disposal behaviours. This lack of a balanced view suggests an important gap in business research. Exploring the complexities and potential drawbacks of SHC in future studies could provide a more nuanced understanding, enriching the field's approach to sustainable fashion and fostering more comprehensive strategies for addressing both consumption and disposal challenges.

Also, future research can focus on more specific topics within the disposal area, such as investigating new business models such as clothing rental, clothing swaps or upcycling that are aligned with circular economy principles and how they compare in sustainability performance to traditional fast fashion models and exploring gaps in understanding how effective circular models are in practice, the influence of consumer behaviour on the growth of sustainable fashion, and the role of policy in regulating fast fashion's environmental impact, examining whether these models can significantly reduce waste and how they can be integrated across global supply chains. To conclude, the keyword analysis highlights the growing importance of consumer behaviour in sustainability efforts, but consumer behaviour is highly complex and influenced by various cultural, economic, and psychological factors, which researchers would do well to continue to examine.

Lastly, this thesis fits into the field of International Management by addressing the global challenges posed by fast fashion and its implications for sustainable business practices. The issues of clothing consumption and disposal behaviour transcend national boundaries, as the fashion industry operates within complex, international supply chains and diverse consumer markets. By exploring sustainability through business research, this study provides valuable insights into how organisations can adopt circular economy models and responsible management strategies to mitigate environmental impact. Furthermore, this work highlights the need for systemic change, making it highly relevant for international management discussions on sustainability and corporate responsibility.

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