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Sustainability in the Fashion Industry: Current Practices and Challenges in India

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A B S T R A C T

The fashion industry has major socio-economic value because it is key to both every-day clothing and identity formation. It is based on the model of large-scale production and fast-paced consumption, which has environmental consequences. India being a hub of manufacturing and retail, exemplifies the externality of extracting limited resources at a rate faster than they can be restored. Due to the rising threat to the planet's safe operating zone, there is a need to integrate biocentric and socio-ecological principles into the industrial model of fashion. There are also extrinsic and intrinsic value-based motivations to localise sustainability that coexist with psychological and economical barriers. Existing sustainable initiatives span across product design and system changes. However, localised efforts are faced with a lack of cohesion due to lack of coordination amongst stakeholders. The study seeks to identify, analyse and collate information across various stages and stakeholders of the fashion industry.

Keywords:Fashion Industry, Sustainability, Challenges, Sustainable Initiatives

1. Introduction

The fashion industry is the world's third largest industry, after automobile and technology (Angelis & Devetag). It has a major contribution to the economy and a major impact on the environment. According to the Pareto principle, 80% of the consequences come from 20% of the causes (Mizrachi & Tal, 2021). So, there is a need to focus on the choke points or hotspots in a product's life-cycle (Notten, 2020). The shift from linear models to nested models map anuanced understanding of a system (Ingold, 2013).In the Indian context the fashion industry is diversified, yet integrated in the retail supply chain. It involves yarn manufacturers, fabric manufacturers, dyeing and processing units, garment manufacturing units, and trims and accessory suppliers. Fabrics are produced in India and also imported. The garment manufacturing units cater to the global supply chain and the domestic fashion industry. There are fabric recycling units that convert pre-consumer fabric waste to yarns.

Sustainability aims for the harmonious coexistence and equitable development of people, planet, and profit i.e., triple bottom line (Geissdoerfer et al., 2017). In the marketplace, it lays out systems to efficiently use limited resources (supply) to meet unlimited wants (demand) (Ponnath, 2016). There are extrinsic and intrinsic incentives for the stakeholders to adopt those systems and close the gap of cognitive and ethical dissonance towards environment-related issues (Angelis & Devetag, 2019). Sustainable fashion comprises of tangible and intangible variables in a product's life-cycle (Thorpe, 2007). It addresses challenges in consumption practices, disposal channels, information pools, labour practices, material sourcing, pricing policies, product design, workplaces etc (Östlund et al., 2020). It uses tools such as circular economy, economic policies, educative initiatives, multi-stakeholder collaboration, product design and manufacturing, smart textiles etc to overcome those challenges (Fletcher, 2014).

However, despite continued efforts, some challenges persist and spillover to have a compound effect on the industry's inability to close the loop (Tambovceva & Titko, 2020). A major cause is the lack of enterprise resource planning i.e., lack of integration and optimization of information (Li et al., 2013). The study aims to identity, analyse and collate the current practices of and challenges to implementing sustainability by various stakeholders in the fashion industry in India, using systematic literature review.

2. Objective

The purpose of the study is:

- To study the current status of sustainable practices in the fashion industry.
- To study the challenges to maintaining sustainable practices in the fashion industry.

3. Research methodology

The methodology is based on desk research which is descriptive and analytical in nature. It comprises of 2 sections: (1) Search and selection of secondary resources, (2) Analysis of secondary resources.

3.1. Search and selection of secondary resources

The search was conducted through convenience sampling, using keywords such as "behavioural economics," "circular economy," "corporate social responsibility," "ethical brands in India," "fashion retail," "sustainability," etc. Digital databases were used to collect resources dating 2000-2022 except for 4 resources from the 20th century. Resources were in 3 formats: (1)Audio-visual: documentary, interview, news episode, and webinar, (2)Textual: assessment report, blog post, company's audit report, conference proceeding, discussion paper, field report, journal article, lecture notes, non-fictional book, policy paper, PowerPoint slides, primer, restricted substance list, survey, thesis (bachelor's, master's, and doctoral), toolkit, training guide, and white paper (3) Visual: diagram, and illustration. The source of secondary resources used in the study are mentioned in the following table.

Table 1 - Source of Secondary Resources Used in the Study

Tool	Example
Educational entity	Aalto, Agder, Arkansas, Baltic, Borås, Cambridge, Chalmers, Colorado, Columbia, Delft, Göttingen, Harvard, Houston, Johns Hopkins, Jönköping, Lund, Oxford, Sogang, South Carolina, Stockholm, Utrecht, and Victoria.
Environmental entity	Convention on biological diversity, Eco age, EEB, Ellen MacArthur foundation, Forest stewardship council, Forum for the future, Greenpeace, IOAS, MSI integrity, Natural step, Slow factory foundation, Verité,World resources institute, and Zero waste alliance.
Fashion entity	(1) Domestic:Aastey, Abraham and Thakore,Ahmev, Ananas Anam,Atelange, B label, Behno, Bhusattva, Blue made green, Bodice, Brown boy, Buna, Button masala,Doh tak keh, Doodlage, Ekaya, Eleven eleven, Elfin house,Everyday Rafu, Good earth, Grassroot, Gur organics, Hemp kari, House of wandering silk, I am so wasted, I was a sari, Increscent, InSom, Jodi, Kanelle, Kardo,Ka-sha, Khadi cult, Khara kapas, Leaf age, Lota, Lovebirds, Maati, Malai, Mio borsa, Mishé, Mix mitti, Moborr, Nicobar, Nimboo, No nasties, Nool, Ode, Oshadi,Paiwand studio, Pero, Phabio, Pomogrenade, Pratibha syntax,Rajesh Pratap Singh,Relove closet, Rengé, Runaway bicycle,Saltpetre, Shift, Six buttons down, Soham dave, Sui, Terra tribe, Tiny twig, Twirl store,Ura maku, Urban darzi, and We are labeless.
	(2) International: AFWA, Aid to artisans, Apparel impact institute, BCWS, Fashion for good, Fair wear foundation, Fashion revolution, GFA,Labour behind the label, PACE, Redress, Sustainable apparel coalition, Textile exchange, War on want, and WRAP.
Financial entity	ADB, Changing markets foundation, FICCI, IBEF, IFC, McKinsey, OECD, S&P, Wazir advisors, WB, and WEF.
International organisation	Anti-slavery international, Design exchange, Fair labour organisation, Forum for the future, G7, HRW, ILO, Oxfam, UNGC, UNCTD, UNEP, UNIDO, WFTO, WIPO, WTO, and WWF.
Journalistic entity	Al-jazeera, BBC, Bloomberg, Boston globe, DW, The Economist, The Guardian, The Hindu, and The Indian Express.
Private company	Deloitte, Edelman, IBM, Ipsos, Oeko-tex. PwC, Testex, WIPRO, and YouGov.
Research database	CBS, DiVa, Elsevier, ERIC, Google scholar, GUPEA, Impact journals, JStor, MDPI, NCBI, RePEc, ResearchGate, Routledge, ScholarWorks, Sciendo, Springer, SSRN, and Taylor & Francis.

3.2. Analysis of secondary resources

The information about sustainable fashion was divided into 6 sections: aim, context or factors, focus group, need, stakeholder, and tool of implementation. The aforementioned sub-systems were based on the DPSIR framework which illustrates a chain of causal links in a system. It comprises of 5 elements: (1) Driving force or need of humans, (2) Pressure on environment, (3) State of environment, (4) Impact on environment, (5) Response by humans (Kristensen, 2004). The information was analysed using the discourses of behaviouralism and economics (both micro and macro) to understand the complex socio-economic roots of unsustainability. Behaviouralism provided theories such as attitude-behaviour gap, bounded rationality, ethical dissonance, nudge theory etc to understand decision-making (Delmas & Burbano, 2011). Economics provided theories such as commodity fetishism, cowboy economy, linear inertia, purchasing power parity etc to understand market functions and motivations (Ponnath, 2016).

4. Research findings

The research findings through the review of literature are divided into3 sections: (1) Fashion industry, (2) Practices of sustainability in the fashion industry(3) Challenges to sustainability in the fashion industry.

4.1. Fashion industry

The fashion industry comprises of apparels and accessories. Its core utility entails adorning oneself, conducting rituals, making one's identity, and protecting oneself from external elements (Frame et al., 2010). Its augmented benefit entails desire, emotional attachment, and social competition (Gordon, 2021; Grosse-Hering, 2013). It functions using either of the 2 models: (1) Fashion systems model based on the work of Georg Simmel and Thorstein Bunde Veblen, states that few mainstream groups in one place create fashion (Hemphill & Suk, 2009), (2)Populist model based on the work of Herbert George Blumer states that diverse subcultures in different places create fashion (Ahuja, 2021).

It produces 62-80 million tons' worth of products every year (Brigden et al., 2012; Creagh et al., 2019; Cornell et al., 2021), a volume that doubled in 2000-2015 (Acaroglu & Segal, 2019) and is forecasted to triple by 2050 (The Economist, 2018). According to Raymond Vernon, a product goes through 6 stages in the marketplace: introduction, rise, acceleration, general acceptance, decline, and obsolescence (Wang, 2010). It is segmented as follows: (1) Age-wise: child, and adult. (2) Gender-wise, androgenous, and cisgender-based. (3) Market-wise: designer or historical, luxury, industrial or premium, and fast fashion (Angelis & Devetag, 2019). (4) Style-wise: antique, avant-garde, camp, classic, couture, custom fit, fad, haute couture, retro, and street (Ahuja, 2021). (5) Utility-wise: every-day use, and occasional use (Naqvi, 2018).

The life-cycle of a fashion product comprises of 5 stages: (1) Cultivation and extraction of fibre, (2) Production (design and manufacture) of yarn, fabric, and apparel (3) Distribution via retail chains, (4) Consumption, (5) Disposal. The design stage is majorly located in the global north (Brooks, 2015). The manufacturing stage is majorly located in Asia: Bangladesh, Cambodia, China, Hong Kong, India, Indonesia, Malaysia, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam (Barnhoorn et al., 2018; Parviainen et al., 2021). Non-Asian hubs are Italy, Morocco, Poland, Portugal, Spain, and Turkey (Barnhoorn et al., 2018). Africa is anemerging hub withEthiopia, Kenya, Nigeria, and Tanzania taking the lead (Korde, 2021).

It is valuedat $1.3-3.3 trillion and $67-78 billonat the international and domestic level respectively (Angelis & Devetag, 2019; Wazir Advisors, 2020). In India, its CAGR is 10.23% (India Brand Equity Foundation, 2021b). Its contribution is as follows: (1) GDP: 2-5%, (2) Export: 13% i.e., worth $35 billion (Summerton, 2021), (3) industrial production: 10% (Textile Exchange & KPMG, 2019).It employs 40-45 million people and 60 million directly and indirectly (ancillary sectors) respectively (Prasad et al., 2014; Summerton, 2021). Women account for 68-80% of the workforce (Organisation for Economic Co-operation and Development, 2017).

4.2. Practices of sustainability in the fashion industry

Sustainable fashion in an umbrella term for ideas, processes, and outputs that integrate the triple bottom line into the model of large-scale production and fast-paced consumption (Thorpe, 2007; Geissdoerfer et al., 2017). It is nested in sustainability which has progressed in 4 stages: (1) Traditional: substitute, (2) Lean: decrease waste, (3) Green: 3R (reduce, reuse, and recycle), (4) Sustainable: 6R or 9R (recycle, reduce, refurbish, refuse, remanufacture, repair, repurpose, rethink, reuse) (Östlund et al., 2020). It protects the future at the expense of the present instead of protecting the present at the expense of the future (Frame et al., 2010). It also complements a spaceship economy wherein limited resources are managed to handle unlimited wants, according to Kenneth Ewart Boulding (Adaina, 2017).

4.2.1. Need:

The safe operating zone of earth is exposed to risks such as loss of species, overexploitation of resources, tragedy of commons, urbanism, waste disposal etc (Adaina, 2017). As a result, natural processes have shifted away from the 10,000-year stable baseline of Holocene (Cornell et al., 2021). According to the planetary boundary framework, issues such as bio-chemical flow, biodiversity, climate change, and land-use change are imminent risks (Steffen et al., 2015). Currently, there are 3 economic derivatives from the environment: resource supplier, utility supplier, and waste assimilator (Rizos et al., 2017; Muthu, 2019). The fashion industry relies heavily on natural capital; it will account for 25% of the carbon budget by 2050 (Fashion for Good, 2019).It introduces resources into the system faster than they can be accommodated into reverse chains (Butterworth et al., 2013).Following is the climate impact of a fashion product's life-cycle: production (16%), yarn production (10%), fabric production (14%), wet treatment (23%), confectioning (16%), transport in production (1%), distribution and retail (3%), transport in consumer use (11%), laundry in consumer use (3%), and end-of-life treatment (3%) (Östlund et al., 2020). Hence, there is a need to address the real-time impact of the industry on the environment (Niinimäki, 2015).

4.2.2. Motivation:

The producers are largely motivated by sustainability-driven revenue uptake valued at $160-192 billion (Brink, 2018; Textile Exchange & KPMG, 2019). The access to greener and newer markets increases net profit (Choraria et al., 2020; Notten, 2020). For instance, companies that had positive press about climate change saw their share price increase by 26% (Haller et al., 2020; Organisation for Economic Co-operation and Development, 2011). Also, the volume of product sale increases due to increased use per user, increased users per product, and emotional connect between product and user (Ruiz-Real et al., 2018; Ellen MacArthur Foundation, 2020). On the administrative front, the risk of legal trouble related to foreseeability and negligence, or regulatory pressure decreases (Naidoo & Gasparatos, 2018).

The consumers are motivated to engage with entities that are accountable, authentic, credible, equitable, functional, local, respectful, and transparent (Frame at al., 2010; Wiese, 2013; Meinke & Mustorp, 2017). Life experiences such as communal responsibility, guilt of climate change, health

and wellness, and parenthood nudges them to partake in socially responsible activities (Haller et al., 2020; Oeko-Tex, 2020; Valtanen, 2021). They want to overcome information asymmetry (United Nations Conference on Trade and Development, 2020). Its relevance amongst consumers is as follows: China (60%), India (81%), Italy (62%), Japan (55%), Mexico (69%), UK (54%), and USA (55%) (Albouy & Adesida, 2018).

4.2.3. Tool:

Some of the interdisciplinary tools used to implement sustainability in the fashion industry are mentioned in the following table.

Table 2 - Tools of Sustainability in the Fashion Industry

Tool	Example
Awareness	Academic activity (Ellen MacArthur Foundation, 2013), art installation (Frayer, 2013), behaviouralism, campaign (Speranskaya & Caterbow, 2020), habit disruption (Acaroglu & Segal, 2019), scientific temper (Davis, 2013), and wardrobe audit (McIntyre, 2019).
Circular economy	Collaborative lifestyle (Długosz, 2014), process engineering (Heshmati, 2015), product-service system (Brooks, 2015), and value creation (Tambovceva & Titko, 2020).
Economic policy and practice	Carbon pricing (Vikhlyaev, 2021), contingent valuation (Adaina, 2017), cost-benefit analysis, doughnut economics (Raworth, 2017), earmarked fund, eco-efficiency analysis, eco-investment (Ellen MacArthur Foundation, 2013), energy subsidy (Organisation for Economic Co-operation and Development, 2008), externality's analysis, fair trade (World Fair Trade Organisation, 2017), hedonic pricing (Ozdamar-Ertekin, 2016), nega-demand (Fletcher, 2014), polluter pays principle (Mizrachi & Tal, 2021), and viability gap funding (National Institution for Transforming India, 2017).
Multi-stakeholder collaboration	Activist, civil society organisation, consumer, designer, dyeing and processing unit, fabric manufacturer, factory worker, fibre supplier, funding agency, government institution, innovator, pattern maker, product developer, recycler, researcher, retailer, sourcing specialist, textile engineer, yarn manufacturer etc.
Product design and manufacturing	Ability to disassemble (Brown et al., 2021), biomimicry (Tambovceva & Titko, 2020), corrective action plan (Organisation for Economic Co-operation and Development, 2017), decoupling (Frame et al., 2010), emotional design (Haines-Gadd et al., 2018), localised size (Dockterman, 2016), near-shoring (Parés, 2020), regeneration, reverse logistics (Fashion for Good, 2019), slow design (Pschetz et al., 2016), transformative design, and zero-waste production (Niinimäki, 2013).
Smart textile	Conductive ink (Berglin, 2008), digital twins (Federation of Indian Chambers of Commerce and Industry, 2018), phase-change material, RFID tag (Chen et al., 2021), self-cleaning material (Dang & Zhao, 2021), sensor (Syduzzaman et al., 2015), shape-memory alloy (Ruckdashel et al., 2021), temperature control textile etc.

4.3. Challenges to sustainability in the fashion industry

The industry's existing approach is more anthropocentric than biocentric or socio-ecological (Thorpe, 2007). It values commercial growth instead of social change (Mukendi et al., 2020). There is a need to understand the cross-scale and cross-level externalities (Palm et al., 2021). However, to focus on only increased profits and imitable trends as the sole causes of a wicked problem is incorrect (Frame et al., 2010). The following paragraphs illustrate how macro-changes in socio-economic systems drive the existence of unsustainable fashion.

4.3.1. Extrinsic value system

Extrinsic value equates a good life to external achievements such as attractive appearance, financial success, and social recognition (Parker et al., n.d.). According to Shalom Schwartz, it values individualism over collectivism. Indulgence is on the rise, which is 1 of the 6 parameters of the cultural dimensions theory (Hofstede, 2011). According to Mihaly Robert Csikszentmihalyi, the inability to tune into one's consciousness through simple and non-rewarding activities such as having hobbies, spending time with loved ones, witnessing natural landscapes etc causes psychological distress (Thorpe, 2010) i.e., affluenza: negative impact of the dogged pursuit of more (Bly et al., 2015; Roach et al., 2019).

Consequently, there is a lack of *tempo guisto* (right inner speed or tempo), according to Carl Honoré (Fletcher, 2014).The internal strife is tried to be overcome by indulging in cheap, impulsive and quick product purchases for instant gratification i.e., being on a hedonic treadmill (Denisova, 2021, Pucker, 2022). It is an escapist consolation amidst the difficulty or expensiveness of accessing basic needs such as education, housing, insurance etc (Morgan, 2016). One becomes a mere end-user instead of an active citizen (Ng, 2020) wherein one's identity is defined by what one owns (Wang, 2010). It morphs into a habit of buying positional goods to keep up with peers especially reference groups i.e., bandwagon effect (Lambert, 2014).

4.3.2. Capitalistic consumption

Capitalism is an economic system where private entities own and control goods in a free market. It has had major failures such as depression (1873-1896), wall street crash (1929), oil crisis (1973-1974), financial crisis (2008) etc but it continues to function (Brooks, 2015). It uses the cowboy economy model where resources are exploited at a rate faster than they can be regenerated or restored(Ponnath, 2016). According to Karl Heinrich Marx, commodity fetishism leads to the use of durable goods ("things that people use") as perishable goods ("things that people use up") (Morgan, 2016). So, quantity of textiles produced is likely to be more of a concern for sustainable fashion that the features of textiles (Palm et al., 2021).80 billion apparels are consumed per year; a 400% rise in the last 20 years (Morgan, 2016; Koszewska, 2018).

Rising disposable income and a desire for higher living standards (Naqvi, 2018; Andersson & Hoffner, 2020) increases the propensity to consume instead of the propensity to save (Summerton, 2021). In India, the purchasing power parity $716 (National Institution for Transforming India, 2017). Furthermore, due to planned obsolescence, 75% of people buy at-least 1 apparel every 1-3 month(s) (Butterworth et al., 2013; Preuit, 2016). Ezio

Manzini states that product-basedwell-being disables or de-skills people (Thorpe, 2010). The law of diminishing marginal utility also states that a continuous flow of new rewards decreases one's capacity to enjoy them (Fletcher, 2014).

4.3.3. Profit-driven production

Production uses capital, entrepreneurship, labour, and land(Ponnath, 2016). But the model has remained stagnant since the industrial revolution (1760-1840) (Vikhlyaev, 2021) i.e., linear economy inertia (The Warren Centre, n.d.). It focuses on net profit and shareholder value instead of production efficiency (Ineichen et al., 2015). For example, GDP is seen as the mark of growth but, its inventor Simon Smith Kuznets himself said that it is anon-inclusive measure (Greenfield, 2021). According to Vandana Shiva, it only measures economic value of products that are traded and not their socio-cultural externalities (Morgan, 2016). Hence, the current model uses entrepreneurship and liberalisation with a top-down approach (Pucker, 2022).

Globalisation comprising of ethnoscape, finanscape, ideoscape, mediascape, and technoscape (Appadurai, 1990) impacts logistics and supply chains. Delicate interconnections increase exposure to risks such as asset bubble, commodity shock, debt crisis, price instability or volatility etc (Brink, 2018; World Economic Forum, 2021b). Wealthier nations make policies to shift the burden to low-income and middle-income nations (Notten, 2020). To maintain profits, compliance loopholes are used in the manufacturing stage: absent unionism, ill-maintained machinery, lack of social safety nets, long working hours, low wages, hazardous workplaces etc (Walter, 2019; Salter, 2020; Bharadwaj et al., 2021).

4.3.4. Pricing model

The fashion industry functions on economies of scale because it caters to a mass audience. Product purchase is price sensitive (Ghemawat & Nueno, 2006), at-least for 77.03% of consumers in the world (Quirós, 2019; Ersoy & Fu, 2021) and majority of consumers in south-east Asia (Parviainen et al., 2021). An apparel's average price has decreased by 26.2% (UK) and 17.1% (USA) (Killy, 2016). Also, except for high-income consumers, people do not desire to pay a premium price for a sustainable product (Moraes et al., 2011; Han et al., 2016). Except the high-end segments, product prices do not often reflect the economic and ecological costs (Gourville & Soman, 2002; Molderez & Elst, 2015; Lisca et al., 2021). 30-40% of apparels are sold at a mark-down price because supply exceeds the demand (Koszewska, 2018, Pucker 2022).

Companies often use dumping (persistent, predatory, or sporadic) to export a product at a price lesser than its domestic price (Adaina, 2017). According to Greenpeace, on the consumer front, 40% of apparel bough is never used (DW Documentary, 2021), and 31 kilograms of apparel is disposed per capita per year (Forum for the Future, 2020). Despite negative externalities, the existing model has not changed due to the risk of price volatility and foreign currency fluctuation (Ellen MacArthur Foundation, 2013; Andersson & Hoffner, 2020). So, the low-price model continues to complement the take-make-waste model (Paoli, 2015). However, "Cheap apparel is not cheap. Someone always has to pay for it and that someone is the worker," according to Kalpona Akter, executive director of Bangladesh Centre for Worker Solidarity (Parés, 2020).

4.3.5. Lack of regulation

The market has economic, ethical, legal, and philanthropic responsibilities (Ponnath, 2016). Hence, there are laws to protect environmental and intellectual resources in major industries such as construction, food, forestry, logistics, petroleum etc. But there is a lack of legal oversight for the fashion industry (Organisation for Economic Co-operation and Development, 2017). The existing laws on forestry, labour, wage, workplace etc do not specifically address nuances of the fashion industry (Hatley, 2021). Expansionary trade policies such as FTA (for example, CEPA and SAFTA), knock-offs' legalisation, multiple exchange rates, SEZ etc further remove checks and balances (Adaina, 2017). When the multi-fibre arrangement ended in 2004, it allowed high-income nations to remove the cap on import quotas and shift major part of the manufacturing to Asian and African nations (Connor & Dent, 2006).

Civil society organisations' efforts to promulgate regulations are hard to align with the objectives of industrial lobbyists (Brooks, 2015; Niinimäki, 2015). Existing metrics and tests focus on specific variables and do not account for social ramifications (Palm et al., 2021). For instance, LCA does not account for impact on biodiversity, land use change etc. Existing pacts and protocols have either of the following disadvantages: (1) Jurisdiction issues in a globalised market (Ozdamar-Ertekin, 2016), (2) Lack of evaluation upon implementation, (3) Lack of extended producer responsibility (Greenfield, 2021), (4) Non-enforceability by judiciary, (5) Non-standardisation due to ill-defined or interpretative terminology (Butt et al., 2021), (6) Reliance on classical theories of economics (World Economic Forum, 2021b).

A major area of deregulation is the disposal stage of a fashion product i.e., leak in material loops (Tambovceva & Titko, 2020). Wastage of textile has increased by 811% in 1960-2015 (Parés, 2020). Three-fifth of apparels are disposed within a year of being produced (Denisova, 2021). Current practices of disposal such as donation, dumpsite, incineration, and landfill do not value the resourcefulness of end-of-life stage (Federation of Indian Chambers of Commerce and Industry, 2018). Apparels worth $183 million and 73% of textiles end up in landfills (Chen et al., 2021).

4.3.6. Cognitive dissonance

Cognitive dissonance is the gap between what one says one will do and what one actually does i.e., attitude-behaviour gap (Acaroglu & Segal, 2019; White et al., 2019). People are bombarded with complex and voluminous environment-related data (Horiuchi et al., 2009; Meinke & Mustorp, 2017). The cognitive miser theory encourages one tonot use effort-intensive ways to understand a given concept (Montero, 2009). For example, there is a misconception that cotton is completely sustainable solely because it is a natural fibre. But its cultivation is land-intensive (8% of arable land in India) (Coscieme et al., 2020) and water-intensive (7,000-29,000 litres for 1 kilogram) (Allwood et al., 2006). Ethical dissonance is the gap between moral self-image anddesire to profit from unethical behaviour. It is caused by present bias or myopic loss aversion wherein one values short-term gain over long-term benefit (Organisation for Economic Co-operation & Development, 2013). There are 2 examples of bounded rationality (Delmas & Burbano, 2011): (1) Licensing: initial ethical behaviour gives one the permission to behave less virtuously in the future (2) Slacktivism: support a cause using only online petition, social media etc because it requires little commitment or effort (White et al., 2019). It is exacerbated by the producers' effort to shift the responsibility to consumers i.e., "Products are green until, consumers use them" (Horiuchi et al., 2009).

Producers exemplify the following statement by Upton Beall Sinclair: "It is difficult to get a person to understand something when their salary depends upon not understanding it" (Green, 2016). Greenwashing uses selective transparency (Sustainable Apparel Coalition, 2019) to either fix only a small part of the life-cycle or not to address core issue altogether (Perreault, 2021) or to mislead consumers about a product's environmental impact (Acaroglu & Segal, 2019). It uses deceptive recycling campaigns, falsified audit reports, misleading vocabulary, nature-related imagery in packaging, undisclosed raw materials etc (Delmas & Burbano, 2011).They are aspirational instead of realistic with their sustainability efforts (Bly et al., 2015). They use delaying and distracting tactics such as "until more research is done." (Changing Markets Foundation, 2021). They equate being less unsustainable to being sustainable (Pucker, 2022). They tend to treat information with a hostility that economists reserve for monopolies and tariffs (Stigler, 1961). They use deception: 42% of 344 claims chosen for a study had exaggerated or false terms (European Environmental Bureau, 2021). They use hard technology to fix complex socio-economic problems and remain unaccountable for their behaviour (Li et al., 2013; Fletcher, 2014).

4.3.7. Lack of multi-stakeholder engagement

Awareness and initiatives about sustainable fashion is rising but fragmented in India. The industry is a diverse set of function-specific providers: artisans, dyeing and processing units, fabric suppliers, seamsters, trims and accessory suppliers, waste recyclers, yarn manufacturers etc. Each of them goes through certain cycles to reach the end-output and thus face challenges in coordination (Li et al., 2013). Each of them has a unique point to integrate sustainability into the organised and unorganised operations of the industry (Textile Exchange & KPMG, 2019).So, exchange of data is key to well-informed decision-making (Summerton, 2021).

On the global stage, governments lead initiatives which trickle down to private players: carbon label by French Agency for Environment and Energy Management, circular economy report by Vancouver Economic Commission (Canada), fashion pact by G7, report by Environmental Audit Committee in the House of Commons (UK),Sustainable product policy framework by European Commission, tax deduction for consumers who donate apparels (USA) etc.In the Indian context,government policies exist but theydo not tend to address the environmental impacts of the fashion industry: ATUFS, IPDS, MITRA, PLI, PM MITRA, SITP etc (National Portal of India, 2022).

A major factor for stakeholders to view sustainability as more than just a compliance issue, is economic conduciveness (Parviainen et al., 2021). In the past few years, unilateral fiscal policy has overridden monetary policy: CPSE's privatisation,demonetisation, GST, IBC etc. It alongwith other factors has led to inflation, NPL, reduced investment, unemployment etc that dilute the willingness to find an alternative to 'business as usual' (Brown et al., 2021). There is a need to adopt sustainability-centric policies such as doughnut economics which accounts for ecological ceiling and social foundation (Raworth, 2017).

In the private sector, homegrown brands and mom-and-pop stores (mentioned in Table 1 on pp. 2) are serving as alternatives to fashion giants despite struggling both in the marketing space and the market space. Bodice uses buttons made of natural sources (coconut shell, seashell, and wood), hand-stitches, and plant-based dyes (Kumar et al., 2019). Elfin House uses GOTS-certified organic fabrics (Elfin House, n.d.). Leaf Age uses barks, leaves and twigs to apply natural dyes on fabrics (Nath, 2022). Malai uses bacterial cellulose cultivated using agricultural waste (Mehra, 2021).Rengé uses leftover fabrics in factories and mills to make limited collections (Dundoo, 2020).

There is a rising focus on reintroducing pre-consumer and post-consumer waste into the cycle(Summerton, 2021). Finland-based Pure Waste Textiles has a plant near Coimbatore (Chhabra, 2016). IKEA has partnered with CAIF for 5 years to make a textile-waste handling system suited to India(Bora, 2021).Fashion for Good has partnered with major brands to start 'Sorting for circularity' project with the aim to document the scale and direction of textile waste in India (Fashion for Good, 2021). However, there is a lack of a common platform where stakeholders can share, update, compare and measure, and manage data about ongoing initiatives (United Nations Climate Change, 2020).

5. Limitation

The study relies heavily on the discourses of psychology and economics, and does not provide counter-arguments from other relevant discourses. Furthermore, it presents a skewed perspective. For instance, nudge theory is not used only by producers to override consumer sovereignty but, also by civil society organisations to create meaningful awareness (Naidoo & Gasparatos, 2018). Another example is that of capitalism and free market being highlighted as a cause of current consumption habits whereas many factors of zeitgeist have a role in it.The study tends to simplify certain macro-economic concepts. For example, trade instruments such as FTA or SEZ are not intended to only benefit producers. They also have a spillover effect on transfer of knowledge and rise in employment in localised contexts. The fashion industry, like any economic entity, has to balance market demand and stakeholder expectation (Ruiz-Real et al., 2018). So, the trajectory of the fashion industry adopting sustainability is complex and not as simple as input-output (Niinimäki, 2015).

6. Conclusion

Sustainability in the fashion industry is evolving from a linear model to a holistic approach. For instance, 12.5% of the fashion industry intends to adopt circular economy (Fashion for Good, 2019) such that it functions within local contexts (Bly et al., 2015). Furthermore, nested systems help to identify choke points or hotspots that need immediate attention: closed loops, information cycles, economic policies (both private and public), labour conditions, product-service systems, multi-stakeholder partnerships, and product design. However, the macro-systems conducive to unsustainability stay intact. According to Greenpeace, companies project the image of working towards sustainable products when their core business itself is unsustainable (Horiuchi et al., 2009). Psychological factors such as hedonic consumption and cognitive dissonance drive decision-making. Economic models based on classical thinking, support initiatives that value profit over people and planet. Both the factors do not account for ecological and socio-cultural externalities (Rizos

et al., 2017). There is a need to balance the focus on materials' characteristics as well as materials' handling in the discourse of sustainable fashion (Palm et al., 2021). An effective approach is to use interconnections amongst stakeholders wherein each contributes using their expertise to increase the local efficiency of a given sustainability initiative (Li et al., 2013; Brad et al., 2018).

REFERENCES

Acaroglu, L., & Segal, E. (2019). *The anatomy of action for active sustainable living: data validation report.* https://anatomyofaction.org/unep_unschool_anatomyofaction_datavalidationreport_june2019.pdf

Adaina, K. C. (2017). [Lecture notes on environmental economics]. Department of International Studies, Political Science and History, Christ (Deemed to Be) University.

Ahuja, N. K. (2021). *Concept of fashion.* Publishers grid, Delhi.

Albouy, D., & Adesida, O. (2018). *Sustainable fashion blueprint* [PowerPoint slides]. http://www.technofashionworld.com/files/2018/07/mamoq-sustainable-fashion-blueprint-2018.pdf

Allwood, J., Laursen, S. E., Rodriguez, C. M. D., & Pocken, N. M. P. (2006). W*ell dressed? The present and future sustainability of clothing and textiles in the United Kingdom.* University of Cambridge. https://www.ifm.eng.cam.ac.uk/uploads/resources/other_reports/uk_textiles.pdf

Angelis, M. D., & Devetag, M. G. (2019). *Sustainability in fashion luxury: an atypical paradox evolving into reality: case study of Gucci wallet.* http://tesi.luiss.it/27015/1/700001_placella_sarah%20alexia.pdf

Appadurai, A. (1990). Disjuncture and difference in the global cultural economy. *Theory, Culture, and Society, 7,* 295-310. https://journals.sagepub.com/doi/10.1177/026327690007002017

Barnhoorn, A. H. M., Fiszman, B. P., & Poldner, K. A. (2018). *Sustainable fashion: an evaluation of potential strategies to positively influence the Dutch students' purchase behaviour of sustainable clothes* [Master's thesis, Wageningen University and Research] https://edepot.wur.nl/440067

Berglin, L. (2008). *Interactive textile structures: Creating multifunctional textiles based on smart materials* [Doctoral dissertation, University of Borås]. http://www.diva-portal.org/smash/record.jsf?pid=diva2%3a876879&dswid=-6050

Bharadwaj, R., Bishop, D., & Hazra, S. (2021). *Climate-induced migration and modern slavery: a toolkit for policy-makers.*Anti-Slavery International. https://www.antislavery.org/wp-content/uploads/2021/09/climatemigrationreportsep2021_low_res.pdf

Bly, S., Gwozdz, W., & Reisch, L. (2015). Exit from the high street: an exploratory study of sustainable fashion consumption pioneers. *International Journal of Consumer Studies, 39*(2), 125-135. https://research-api.cbs.dk/ws/portalfiles/portal/45650153/wencke_gwozdz_exit_from_high_street_postprint.pdf

Bora, G. (2021, October 15). *IKEA Foundation, Enviu and CAIF to build textile waste model, provide jobs to waste workers*. The Economic Times. https://economictimes.indiatimes.com/small-biz/sme-sector/ikea-enviu-and-caif-to-build-textile-waste-model-provide-jobs-to-waste-workers/articleshow/87017929.cms?from=mdr

Brad, A., Delemare, A., Hurley, N., Lenikus, V., Mulrenan, R., Nemes, N., Trunk, U., & Urbancic, N. (2018). *The false promise of certification: how certification is hindering sustainability in the textiles, palm oil and fisheries industries.* Changing Markets Foundation. https://changingmarkets.org/wp-content/uploads/2018/05/false-promise_full-report-eng.pdf

Brigden, K., Casper, K., Cobbing, M., Crawford, T., Dawe, a., Erwood, S., Harjono, M., Hojsik, M., Li, Y., Tremschnig, T., Vilimaviciute, I., Wang, Y., & Wüthrich, M. (2012). *Toxic threads: the big fashion stitch-up: how big brands are making consumers unwitting accomplices in the toxic water cycle.*Greenpeace. https://www.greenpeace.org/static/planet4-international-stateless/2012/11/317d2d47-toxicthreads01.pdf

Brink, J. V. (2018). *Expectations of the circular economy in the fashion industry* [Master's thesis, Utrecht University]. https://dspace.library.uu.nl/bitstream/handle/1874/368026/thesis%20jelle%20van%20brink%203879100.pdf?sequence=2&isallowed=y

Brooks, A. (2015). Clothing poverty: the hidden world of fast fashion and second-hand clothes. Zed books.

Brown, M., Haselsteiner, E., Apróm, D., Kopeva, D., Luca, E., Pulkkinen, K.-l., Rizvanolli, B. V. (2021). *Sustainability, restorative to regenerative: an exploration in progressing a paradigm shift in built environment thinking, from sustainability to restorative sustainability and on to regenerative sustainability.* https://www.eurestore.eu/wp-content/uploads/2018/04/sustainability-restorative-to-regenerative.pdf

Butt, A., Khan, S. N., Zakir, M. M., Rana, W., & Laila, A. (2021). Firms greenwashing practices and consumers' perception: role of marketing and non-marketing external stake holders in firms greenwashing practices. *Indian Journal of Economics and Business, 20*(3), 689-706. http://www.ashwinanokha.com/resources/ijeb%20v20-3-38.pdf

Butterworth, J., Morlet, A., Nguyen, H. P., Oppenheim, J., Stuchtey, M., Studer, E., Vanthourmout, H., Waughray, D., & Zils, M. (2013). *Towards the circular economy: accelerating the scale-up across global supply chains.* World Economic Forum. https://www3.weforum.org/docs/wef_env_towardscirculareconomy_report_2014.pdf

Capgemini Research Institute. (2020). Consumer products and retail: how sustainability is fundamentally changing consumer preferences. https://www.uk.sogeti.com/globalassets/reports/final-web-report-sustainability-in-cprd.pdf

Changing Markets Foundation. (2021a). *Synthetics anonymous: fashion brands' addiction to fossil fuels.* http://changingmarkets.org/wp-content/uploads/2021/07/syntheticsanonymous_finalweb.pdf

Chen, X., Memon, H. A., Wang, Y., Marriam, I., & Tebyetekerwa, M. (2021). Circular economy and sustainability of the clothing and textile industry. *Materials Circular Economy, 3*(12). https://link.springer.com/content/pdf/10.1007/s42824-021-00026-2.pdf

Chhabra, E. (2016, July 28). India: two entrepreneurs turn waste into a business [Blog post]. Pulitzer Center on Crisis Reporting.https://pulitzercenter.org/stories/india-two-entrepreneurs-turn-waste-business

Choraria, R., Jain, M., & Goel, P. (2020). Global fashion brands: does sustainability make business sense? *International Journal of Recent Technology and Engineering, 9*(1), 895-903. https://www.switch-asia.eu/site/assets/files/2463/does_sustainability_make_sense.pdf

Connor, T., & Dent, K. (2006). *Offside! Labour rights and sportswear production in Asia*. Oxfam International. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2545713

Cornell, S. Häyhä, T., & Palm, C. (2021). *A sustainable and resilient circular fashion and textiles industry: towards a circular economy that respects and responds to planetary priorities.*Stockholm Resilience Centre. https://www.stockholmresilience.org/publications/publications/2021-04-12-a-sustainable-and-resilient-circular-fashion-and-textiles-industry.html

Coscieme, L., Samtani, K., & Pulawska, G. (2020). *The untapped inter-regional link of sustainable garment production and consumption: what bridges Asia and Europe?* https://www.switch-asia.eu/site/assets/files/2638/the_untapped_inter-regional_link_of_sustainable_garment_production_and_consumption.pdf

Creagh, M., Clark, C., Coffey, T., Davies, G., Dunne, P., Goldsmith, Z., Goodwill, R., Gray, J., Lucas, C., McCarthy, K., Mcorrin, A., McJally, J., Offord, M., Poulter, D., Ryan, J., & Sobel, A. (2019). *Fixing fashion: clothing consumption and sustainability.* House of Commons Environmental Audit Committee. https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1952/1952.pdf

Dang, T., & Zhao, M. (2020, October 15-17). *The application of smart fibres and smart textiles* [Conference session]. Sustainability innovation and fashion technology international conference, Shanghai, China. https://iopscience.iop.org/article/10.1088/1742-6596/1790/1/012084

Davis, G. R. (2013). Appraising weak and strong sustainability: searching for a middle ground. *Consilience: the Journal of Sustainable Development, 10*(1), 111-124. https://journals.library.columbia.edu/index.php/consilience/article/view/4635

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review, 54*(1), 64-87. https://www0.gsb.columbia.edu/mygsb/faculty/research/pubfiles/14016/cmr5401_04_printversion_delmasburbano.pdf

Denisova, A. (2021). *Fashion media and sustainability: encouraging ethical consumption via journalism and influencers* [policy brief no. 6]. University of Westminster. https://www.uwestminsterpress.co.uk/site/books/m/10.16997/book50/

Długosz, P. M. (2014). *The rise of the sharing city: examining origins and futures of urban sharing*[Master's thesis, Lund University]. https://www.lunduniversity.lu.se/lup/publication/4696439

Dockterman, E. (2016, August 31). *Inside the fight to take back the fitting room.* TIME. https://time.com/how-to-fix-vanity-sizing/

Dundoo, S. D. (2020, December 26). *The slow, conscious edits.* The Hindu. https://www.thehindu.com/life-and-style/fashion/greendigo-renge-increscent-and-vrone-adopt-sustainable-measures/article33279144.ece

DW Documentary. (2021, October 19). *The truth behind fast fashion: are fashion retailers honest with their customers?* [Video]. YouTube. https://www.youtube.com/watch?v=23vuvqn-r1y&ab_channel=dwdocumentary

Ellen MacArthur Foundation. (2013). *Towards the circular economy: economic and business rationale for an accelerated transition.* https://emf.thirdlight.com/link/x8ay372a3r11-k6775n/@/preview/1?o

Ellen MacArthur Foundation. (2020). *Circular business models: redefining growth for a thriving fashion industry* [PowerPoint slides]. https://emf.thirdlight.com/link/circular-business-models-report/@/preview/1?o

Elfin House. (n.d.). Story [Blog post]. https://elfinhouse.in/pages/about-us

Ersoy, A. B., & Fu, S. (2021). The effect of sustainable marketing on millennials' attitudes and behaviour in the fast fashion industry. *American International Journal of Business Management, 4*(6), 79-98. https://www.aijbm.com/wp-content/uploads/2021/06/J467998.pdf

European Environmental Bureau. (2021). *Wardrobe change: recommendations for the EU strategy for sustainable textiles, from environmental civil society organisations.* https://wardrobechange.eu/wp-content/uploads/2021/06/environmental-csos-recommendations-for-the-eu-strategy-for-sustainable-textiles-june-2021.pdf

Fashion for Good. (2019). *The future of circular fashion: assessing the viability of circular business models.* https://fashionforgood.com/wp-content/uploads/2019/05/the-future-of-circular-fashion-report-fashion-for-good.pdf

Fashion for Good. (2021, November 24). Fashion for good launches the sorting for circularity India project [Blog post].https://fashionforgood.com/our_news/fashion-for-good-launches-the-sorting-for-circularity-india-project/

Federation of Indian Chambers of Commerce and Industry. (2018). *Accelerating India's circular economy shift: a half-trillion USD opportunity: future-proofing growth in a resource-scarce world.* https://ficci.in/spdocument/22977/ficci-circular-economy.pdf

Fletcher, K. (2014). Sustainable fashion and textiles: design journeys. Routledge.

Forum for the Future. (2020). *Making the leap to circular fashion: insights from leading Asian fashion manufacturers driving circular innovation.* https://www.switch-asia.eu/site/assets/files/2763/forum_for_the_future_circular_fashion_study.pdf

Frame, B., Gordon, R., & Mortimer, C. (2010). *Hatched: the capacity for sustainable development.*Manaaki Whenua Landcare Research.

Frayer, L. (2013, June 19). Fashion's victims: an artist's focus on garment workers [Blog post]. National Public Radio.https://www.npr.org/sections/parallels/2013/06/19/192760190/fashions-victims-an-artists-focus-on-garment-workers

Geissdoerfer, M., Savaget, P., Bocken, N., & Jan, H. E. (2017). The circular economy: a new sustainability paradigm? *Journal of Cleaner Production, 143,* 757-768. https://research.tudelft.nl/en/publications/the-circular-economy-a-new-sustainability-paradigm

Ghemawat, P., & Nueno, J. L. (2006). *Zara: fast fashion case study.*Harvard Business School. http://didierdiaz.com/wp-content/uploads/2019/10/zara-fast-fashion-case-study-hvr.pdf

Gordon, J. (2021, September 28). Components of a product (marketing) [Blog post]. The business professor. https://thebusinessprofessor.com/en_us/principles-of-marketing/components-of-a-product-marketing

Gourville, J. T., & Soman, D. (2002). *Pricing and the psychology of consumption.* Harvard Business Review. https://hbr.org/2002/09/pricing-and-the-psychology-of-consumption

Green, D. (2016). *How change occurs.* Oxford University Press.

Greenfield, E. (2021). *The sustainability yearbook: tackling parity, plastics and petroleum: reflecting on values, anticipating risks, and identifying opportunities.* Standard and Poor's Global. https://www.spglobal.com/esg/csa/yearbook/files/spglobal_sustainability-yearbook-2021.pdf

Grosse-Hering, B. (2013, April 27-May 2). *Slow design for meaningful interactions* [Conference session]. CHI '13 proceedings of the SIGCHI conference on human factors in computing systems, Paris, France. https://diopd.org/slow-design-book-of-inspiration/

Haines-Gadd, M., Chapman, J., Llyod, P., Mason, J., & Aliakseyeu, D. (2018). Emotional durability design nine: a tool for product longevity. *Sustainability, 10*(6). https://www.mdpi.com/2071-1050/10/6/1948

Haller, K., Lee, J., & Cheung, J. (2020). *Meet the 2020 consumers driving change: why brands must deliver on omnipresence, agility, and sustainability.*International Business Machines Corporation.https://www.ibm.com/downloads/cas/exk4xkx8

Han, J., Seo, Y., & Ko, E. (2016). Staging luxury experiences for understanding sustainable fashion consumption: a balance theory application. *Journal of Business Research,74,* 162-167. https://isidl.com/wp-content/uploads/2017/06/e4178-isidl.pdf

Hatley, N. (2021). *The impact of fast fashion, consumer behaviour and fashion brand communication on sustainability*[Master's thesis, Manchester Metropolitan University]. https://e-space.mmu.ac.uk/627507/1/noelle%20hatley%20-%20final%20thesis.pdf

Hemphill, C. S., & Suk, J. (2009). The law, culture, and economics of fashion. Stanford Law Review, 61, 101-151. https://cyber.harvard.edu/people/tfisher/suk%20fashion%202-5.pdf

Heshmati, A. (2015). *A review of the circular economy and its implementation* [Discussion paper no. 9611]. Sogang University. https://ftp.iza.org/dp9611.pdf

Hofstede, G. (2011). Dimensionalising cultures: The Hofstede model in context. *Online Readings in Psychology and Culture, 2*(1). https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1014&context=orpc

Horiuchi, R., Schuchard, R., Shea, L., & Townsend, S. (2009). *Understanding and preventing greenwash: a business guide.* Business for Social Responsibility. https://www.bsr.org/reports/understanding%20_preventing_greenwash.pdf

India Brand Equity Foundation. (2021b). *Textiles and apparel* [PowerPoint slides]. https://www.ibef.org/download/textiles-and-apparel-september-2021.pdf

Ineichen, M., Lilliefeldt, A., Lynch, P., McEvoy, T., Starrenburg, O., & Toutou-Mpondo, F. (2015). *A human rights defender toolkit for promoting business respect for human rights.* International Service for Human Rights. https://academy.ishr.ch/upload/resources_and_tools/ishr_hrd_toolkit_en.pdf

Ingold, T. (2013). Ways of living: Timothy Ingold on culture, biology and the anthropological task. *Revista De Antropología Iberoamericana, 8*(3), 285-302. https://dialnet.unirioja.es/descarga/articulo/4570787.pdf

Killy, W. (2016). *Fashion history before Christ to present times* [PowerPoint slides]. https://www.fortbendisd.com/cms/lib/tx01917858/centricity/domain/4040/bc%20to%20present%20fahion%20history.pdf

Korde, K. (2021). [Lecture notes on textile products and sourcing]. Department of Design, National Institute of Fashion Technology.

Koszewska, M. (2018). Circular economy: challenges for the textile and clothing industry. *AUTEX Research Journal, 18*(4), 337-347. https://sciendo.com/pdf/10.1515/aut-2018-0023

Kristensen, P. (2004). *The DPSIR framework.*National Environmental Research Institute. https://wwz.ifremer.fr/dce/content/download/69291/913220/.../dpsir.pdf

Kumar, S. P., Mathew, S., & Reddy, T. K. (2018). *Runway to green: sustainable fashion in India.* The Hindu. https://www.thehindu.com/life-and-style/fashion/runway-to-green-sustainable-fashion-in-india/article22704341.ece

Lambert, M. (2014). *The lowest cost at any price: the impact of fast fashion on the global fashion industry* [Master's thesis, Lake Forest College]. https://core.ac.uk/download/pdf/48614342.pdf

Li, W-Y., Choi, T-M., & Chow, P-S. (2013). Fashion ERP systems and supply chain coordination.*Advances in Systems Science and Applications, 13*(2), 144-166.https://ijassa.ipu.ru/index.php/ijassa/article/download/421/359/

Lisca, A., Feeley, J., Lozano, A. O., Wang, K., Hearn, B., Ropp, C. V. D., & Tung, R. (2021). *Circular economy action agenda: textiles.* Platform for Accelerating the Circular Economy. https://pacecircular.org/sites/default/files/2021-02/circular-economy-action-agenda-textiles.pdf

McIntyre, M. P. (2019). Shame, blame, and passion: effects of (un)sustainable wardrobes. *Fashion Theory: the Journal of Dress, Body and Culture*, *25*(6), 735-755. https://doi.org/10.1080/1362704x.2019.1676506

Mehra, P. (2021, March 21). *Clean tech: when waste becomes the trendy winner.* The Hindu Business Line.https://www.thehindubusinessline.com/specials/clean-tech/when-waste-becomes-the-trendy-winner/article34123012.ece

Meinke, K., & Mustorp, O. (2017). *Understanding how awareness of a fashion company's social sustainability practices influences consumers' perception of brand image, as compared to one's interest in fashion* [Master's project, University of Gothenburg]. https://gupea.ub.gu.se/bitstream/2077/52832/1/gupea_2077_52832_1.pdf

Mizrachi, M. P., & Tal, A. (2021). Regulation for promoting sustainable, fair and circular fashion. *Sustainability, 14*. https://econpapers.repec.org/article/gamjsusta/v_3a14_3ay_3a2022_3ai_3a1_3ap_3a502-_3ad_3a717082.htm

Molderez, I., & Elst, B. V. (2015). Barriers towards a systemic change in the clothing industry: how do sustainable fashion enterprises influence their sector? *Journal of Corporate Citizenship, 57,* 99-114. https://www.jstor.org/stable/pdf/jcorpciti.57.99.pdf

Montero, C. (2009). *Consumer behaviour and eco-friendly fashion apparel* [Master's project, Old Dominion University]. https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1069&context=ots_masters_projects

Moraes, C., Shaw, D., & Carrigan. M. (2011). Purchase power: an examination of consumption as voting. *Journal of Marketing Management, 27*(9-10), 1059-1079. http://oro.open.ac.uk/50075/3/50075.pdf

Morgan, A. (director). (2016). *The true cost.* Untold creative, and Life is my movie entertainment.

Mukendi, A., Davies, I., McDonagh, P., & Glozer, S. (2020). Sustainable fashion: current and future research directions. *European Journal of Marketing, 54*(11), 2873-2909. https://doi.org/10.1108/ejm-02-2019-0132

Muthu, S. S. (2019). (2018). *Sustainable fashion: consumer awareness and education. Springer*.

Naidoo, M., & Gasparatos, A. (2018). Corporate environmental sustainability in the retail sector: drivers, strategies and performance measurement. *Journal of Cleaner Production, 203,* 125-142. https://doi.org/10.1016/j.jclepro.2018.08.253

Naqvi, B. (2018). *Apparel consumptions trends in India.* Wazir Advisors. https://wazir.in/pdf/apparel%20consumption%20trends%20in%20india.pdf

Nath, D. (2022, February 24). *Pune inc: with leaves as raw materials, start=up turning sustainable fashion into business idea*. The Indian Express. https://indianexpress.com/article/cities/pune/pune-inc-with-leaves-as-raw-material-startup-turning-sustainable-fashion-into-business-idea-7785091/

National Institution for Transforming India. (2017). *Strategy paper on resource efficiency.* http://www.indiaenvironmentportal.org.in/files/file/strategy%20paper%20on%20resource%20efficiency.pdf

National Portal of India. (2022). *Policies and schemes by ministry of textiles.* https://www.india.gov.in/policies-and-schemes-ministry-textiles

Ng, S. K. I. (2020). *Consumer attitudes towards sustainability in the garment industry: a consumer study in Hong Kong* [Master's thesis, Uppsala University]. https://www.diva-portal.org/smash/get/diva2:1448580/fulltext01.pdf

Niinimäki, K. (2013). *Sustainable fashion: new approaches*. Aalto university.

Niinimäki, K. (2015). Ethical foundations in sustainable fashion. *Textiles and Clothing Sustainability, 1*(3).https://doi.org/10.1186/s40689-015-0002-1

Notten, P. (2020). *Sustainability and circularity in the textile value chain.*United Nations Environment Programme.https://www.switch-asia.eu/site/assets/files/3079/unep_sustainability_and_circularity_in_the_textile_value_chain.pdf

Oeko-Tex. (2020). *The key to confidence: consumers and textile sustainability mindsets, changing behaviours, and outlooks.* https://www.oeko-tex.com/fileadmin/user_upload/aktuelles/blog/2020/thekeytoconfidence_a4_en_1_.pdf

Organisation for Economic Co-operation and Development. (2008). *Promoting sustainable consumption: good practices in OECD countries.* https://www.oecd.org/greengrowth/40317373.pdf

Organisation for Economic Co-operation and Development. (2011). *Sustainable manufacturing toolkit.* https://www.oecd.org/innovation/green/toolkit/48704993.pdf

Organisation for Economic Co-operation and Development. (2013). *Improving financial education effectiveness through behavioural economics.* https://www.oecd.org/daf/fin/financial-education/trustfund2013_oecdimproving_fin_ed_effectiveness_through_behavioural_economics.pdf

Organisation for Economic Co-operation and Development. (2017). *Due diligence guidance for responsible supply chains in the garment and footwear sector.* https://mneguidelines.oecd.org/oecd-due-diligence-guidance-garment-footwear.pdf

Östlund, Å., Roos, S., Sweet, S., & Sjöström, E. (2020). *Investor brief: sustainability in textiles and fashion.*Swedish Foundation for Strategic Environmental Research.https://www.mistra.org/wp-content/uploads/2020/09/mistradialogue_rapport_investor_brief_textiles_final.pdf

Ozdamar-Ertekin, Z. (2016). Conflicting perspectives on speed: dynamics and consequences of the fast fashion system. *Markets, Globalisation and Development Review, 1*(1). https://digitalcommons.uri.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1001&context=mgdr

Palm, C., Cornell, S. E., & Häyhä, T. (2021). Making resilient decisions for sustainable circularity of fashion. *Circular Economy and Sustainability, 1*(2), 651-670. https://link.springer.com/content/pdf/10.1007/s43615-021-00040-1.pdf

Paoli, A. D. (2015). *Towards the circular economy: Identifying local and regional government policies for developing a circular economy in the fashion and textiles sector in Vancouver, Canada.* Vancouver Economic Commission. https://www.vancouvereconomic.com/wp-content/uploads/2016/04/textiles_policyreport.pdf

Parés, J. G. (2020). *The true cost of fast fashion model* [Bachelor's thesis, University of Barcelona]. http://diposit.ub.edu/dspace/bitstream/2445/169553/1/tfg_adeus_gilibets_julia_jul20.pdf

Parker, N., Spence, A., & Hayes, O. (n.d.). *Goals 4 good: values to transform our world: a framework for student well-being and a healthier planet.*Transfom Our World. https://www.transform-our-world.org/files/values_to_transform_our_world_white_paper.pdf

Parviainen, J., Xue, A. S., Beddari, E., Ramanathan, M., Birch, E., Rota, C., Ji, C. R., Wong, C., Tuft, N., & Shen, X. (2021). *Fashion sustainability report: focus on change and southeast Asia.*Fashion Revolution. https://issuu.com/fashionrevolution/docs/final___fashion_sustainability_report_2021

Perreault, M. (2021). *How companies can overcome the barriers to sustainability in the fashion industry* [Bachelor's thesis, University of Arkansas]. https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1057&context=finnuht

Ponnath, D. (2016). [Lecture notes on macro-economics and micro-economics]. Department of International Studies, Political Science and History, Christ (Deemed to Be) University.

Prasad, B., Tapsall, P., & Simlai, N. (2014). *Global practices in promoting environmental sustainability: a roadmap for Indian retail.* World Wide Fund for Nature. http://awsassets.wwfindia.org/downloads/report.pdf

Preuit, R., & Yan, R.-N. (2017). Fashion and sustainability: increasing knowledge about slow fashion through an educational module. *International Journal of Environmental and Science Education, 12*(5), 1139-1153. https://files.eric.ed.gov/fulltext/EJ1278171.pdf

Pschetz, L., Bastian, M., & Speed, C. (2016, June 27-30). *Temporal design: looking at time as social coordination* [Conference session]. Future focused thinking - DRS, international conference, Brighton, United Kingdom. https://dl.designresearchsociety.org/cgi/viewcontent.cgi?article=1453&context=drs-conference-papers

Pucker, K. P. (2022, January 13). *The myth of sustainable fashion*. Harvard Business Review. https://hbr.org/2022/01/the-myth-of-sustainable-fashion

Quirós, D. I. E. (2019). *The impact of fast fashion on the environment: perspectives from consumers and retailers in Ireland*[Master's thesis, National College of Ireland]. http://norma.ncirl.ie/4009/1/danielisaacemmenquiros.pdf

Raworth, K. (2017). Doughnut economics: seven ways to think like a 21st-century economist. Random House Business.

Rizos, V., Tuokko, K., & Behrens, A. (2017). *The circular economy: a review of definitions, processes and impacts.*Centre for European Policy Studies. http://aei.pitt.edu/85892/1/rr2017-08_circulareconomy_0.pdf

Roach, B., Goodwin, N., & Nelson, J. (2019). *Consumption and the consumer society: a GDAE teaching module on social and environmental issues in economics.*Tufts University.https://www.bu.edu/eci/files/2019/10/consumption_and_consumer_society.pdf

Ruckdashel, R. R., Venkataraman, D., & Park, J. H. (2021). Smart textiles: A toolkit to fashion the future. *Journal of Applied Physics, 129*(13).https://doi.org/10.1063/5.0024006

Ruiz-Real, J. L., Uribe-Toril, J., Gázquez-Abad, J. C., & Valenciano, J. D. P. (2018). Sustainability and retail: analysis of global research. *Sustainability, 11*(1). https://doi.org/10.3390/su11010014

Salter, K. H. (2020). *Reducing and reusing: the difference you can make when you stop supporting fast fashion and start creating*[Bachelor's thesis, Southern New Hampshire University]. https://academicarchive.snhu.edu/bitstream/handle/10474/3593/hon2020salter.pdf?sequence=1&isallowed=y

Speranskaya, O., & Caterbow, A. (2020). *Sustainable fashion: how companies provide sustainability information to consumers.* HEJSupport. https://hej-support.org/wp-content/uploads/2020/03/hejsupport_sustainablefashion_march2020_web_with-active-links.pdf

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., Biggs, R., Carpenter, S. R., Vries, W. D., Wit, C. A. D., Folke, C., Gerten, D., Heinke, J., Mace, G. M.,Persson, L. M., Ramanathan, V., Reyers, B., & Sörlin, S. (2015). *Planetary boundaries: guiding human development on a changing planet.* http://precaution.org/lib/steffen_planetary_boundaries(incl_supplemental).150213.pdf

Stigler, G. J. (1961). The economics of information. *Journal of Political Economy, 69*(3), 213-225. https://www.jstor.org/stable/1829263

Sustainable Apparel Coalition. (2019). *Empowering consumers through transparency: report on global consumer research.* http://apparelcoalition.org/wp-content/uploads/2019/07/research-report-empowering-consumers-through-transparency.pdf

Syduzzaman, M., Patwary, S., Farhana, K., & Ahmed, S. (2015). Smart textiles and nano-technology: A general overview. *Journal of Textiles Sciences and Engineering, 5*, 1-7.https://doi.org/10.4172/2165-8064.1000181

Tambovceva, T., & Titko, J. (2020). *Introduction to circular economy.* EKA university of applied science. https://www.augstskola.lv/upload/book_introduction_to_circular_economy_2020.pdf

Textile Exchange & KPMG (2019). *Threading the needle weaving the sustainable development goals into the textile, retail, and apparel industry.* https://store.textileexchange.org/wp-content/uploads/woocommerce_uploads/2019/04/textile-exchange-kpmg-threading-needle-report.pdf

The Economist. (2018, November 29). *The true cost of fashion* [Video]. YouTube. https://www.youtube.com/watch?v=tlfnud0-8ts&ab_channel=theeconomist

The Warren Centre. (n.d.). *The circular economy: global trends and future challenges.* University of Sydney. https://www.sydney.edu.au/content/dam/corporate/documents/faculty-of-engineering-and-information-technologies/industry-and-government/the-warren-centre/circular-economy-the-warren-centre.pdf

Thorpe, A. (2007). *The designer's atlas of sustainability.* Island press.

United Nations Climate Change. (2020). *Fashion industry charter for climate action: climate action playbook.* https://unfccc.int/sites/default/files/resource/20_rep_un%20fic%20playbook_v7.pdf

United Nations Conference on Trade and Development. (2020). *Framework for the voluntary sustainability standards assessment toolkit.* https://unctad.org/system/files/official-document/ditctabinf2020d5_en.pdf

Valtanen, L. (2021). *Consumer motivations and value creation from sustainable fashion consumption: a qualitative study of sustainable fashion consumers* [Bachelor's thesis, Aalto University]. https://aaltodoc.aalto.fi/bitstream/handle/123456789/107310/bachelor_valtanen_laura_2021.pdf?sequence=1&isallowed=y

Vikhlyaev, A. (2021). *Climate change, green recovery, and trade.* United Nations Conference on Trade and Development. https://unctad.org/system/files/official-document/ditcted2021d2_en.pdf

Walter, K. (2019). *Country of origin impact on consumer perception of value in fast fashion*[Master's thesis, University of Nebraska]. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1016&context=textilesdiss

Wang, T. Y. (2010). *Consumer behaviour characteristics in fast fashion* [Master's thesis, Swedish School of Textiles]. http://www.diva-portal.org/smash/get/diva2:1312256/fulltext01.pdf

White, K., Hardisty, D. J., & Habib, R. (2019). *The elusive green consumer: people say they want sustainable products, but they do not tend to buy them. Here's how to change that.* Harvard business review. https://hbr.org/2019/07/the-elusive-green-consumer

Wiese, A. (2013). *Sustainability in retailing: environmental effects of transport processes, shopping trips and related consumer behaviour* [Doctoral dissertation, University of Göttingen]. https://d-nb.info/1044769726/34

World Fair Trade Organisation. (2017). *Ten principles of fair trade*. https://wfto.com/sites/default/files/wfto%20-10%20principles%20%20of%20fair%20trade%20%282017%29.pdf