Original Researcher Article

Behavioral Nudges For Circular Fashion Adoption: Guiding Gen Z's Sustainable Consumption

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ABSTRACT

The fast fashion industry thrives on a linear "make-take-throw" model, generating staggering environmental and social costs. In 2021, the industry produced 92 million tonnes of textile waste, equivalent to a garbage truck full of clothes being landfilled every second. With mounting concerns about sustainability, there is an urgent need to transition towards circular fashion practices that prioritize resource efficiency, waste reduction, and ethical production. In this context, understanding consumer behavior and designing effective interventions to promote circular fashion adoption among Generation Z (Gen Z) consumers becomes paramount. However, achieving this transition requires not only technological advancements but also a fundamental change in consumer behavior. These insights have implications for managers and HR professionals seeking to design behavioral interventions that influence sustainable practices both within organizations and among consumers. This research investigates the potential of nudge strategies to influence Gen Z consumers, a demographic known for its environmental consciousness and openness to innovation, towards adopting circular fashion practices. The study employs a comprehensive analysis of the fast fashion industry landscape to explore innovative nudge strategies for catalyzing circular fashion adoption among Gen Z consumers. The analysis reveals the pressing need for circularity in the fast fashion industry, with statistics indicating alarming levels of textile waste, carbon emissions, and water pollution associated with traditional linear production models. Moreover, Key themes and effective nudge interventions are identified and analyzed, drawing insights from successful implementations across various industries which highlights the potential of behavioral economics-informed nudges as promising tools for promoting sustainable consumption behaviors. By highlighting the role of behavioral nudges in shaping Gen Z's sustainable choices, this research bridges consumer behavior and organizational strategy, offering practical guidance for responsible management practices and human-centric interventions. This research contributes to advancing knowledge in the field of sustainable fashion and provides actionable insights for addressing the pressing challenges of the fast fashion industry and paving the way for a fashion industry reborn, one where "make-use-throw" transforms into "reimagine-repurpose-regenerate," stitching a sustainable future for all..

Keywords: Fast fashion, Sustainability, innovative nudge strategies, consumer behavior, Gen Z.
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1. INTRODUCTION:

Background of the fast fashion industry

The fashion industry currently confronts the profound environmental and social ramifications stemming from the prevailing fast fashion paradigm (Bhattacharya et al., 2020). This model, epitomized by its linear "make-take-throw" approach, is characterized by the rapid production of inexpensive, trend-driven clothing with short lifespans (Clark et al., 2018). Consequently, this cycle demands extensive resource consumption, with textile production alone contributing to approximately 10% of global carbon emissions (Earth.Org, 2024). Moreover, the industry stands as the second largest consumer of water worldwide, exacerbating freshwater depletion and polluting water bodies through intensive dyeing processes (Ellen MacArthur Foundation, 2021). The social implications are equally concerning, as fast fashion production often

involves exploitative labor practices and substandard working conditions, particularly prevalent in developing nations (International Labour Organization, 2020). Consequently, there exists a pressing need to transition towards a more sustainable circular fashion model, which prioritizes resource efficiency, waste reduction, and ethical production (Petersson et al., 2021). This imperative also highlights the role of organizational leaders and HR professionals in shaping ethical practices and promoting sustainability throughout the fashion supply chain.

To confront these urgent challenges, a fundamental transformation towards circular fashion methodologies becomes indispensable. This pioneering strategy places emphasis on optimizing resource utilization, mitigating waste generation, and upholding ethical standards across the garment lifecycle (Petersson et al., 2021). Circular fashion initiatives encompass a spectrum of approaches, including the extension of product longevity through

repair and reutilization, the advocacy for sustainable materials and production techniques, and the establishment of closed-loop systems for garment recycling (Ellen MacArthur Foundation, 2021). By embracing the principles of circularity, the fashion industry stands to transition towards a more sustainable trajectory, thereby attenuating its environmental impact and fostering ethical conduct throughout its supply chain.

Importance of understanding Generation Z consumer behavior

Understanding consumer behavior, particularly among Generation Z (Gen Z), is paramount in navigating today's complex consumer landscape. Gen Z, born approximately between the mid-1990s and early 2010s, embodies distinct characteristics that exert considerable influence on market dynamics. Their digital nativity, shaped by constant exposure to technology, underscores their adeptness in online research and reliance on peer reviews to inform purchasing decisions (Mintel, 2023). Moreover, Gen Z's emphasis on individuality and authenticity dictates a preference for brands that resonate with their values and demonstrate social consciousness, with sustainability, ethical production, and social responsibility being pivotal considerations (Media Culture, 2023).

Additionally, Gen Z's pragmatic approach to finances necessitates a thorough evaluation of value propositions, often leading to the exploration of alternative consumption models such as second-hand clothing and rental services (Tagalys, 2023). Furthermore, their propensity for short attention spans underscores the need for concise and compelling marketing strategies that capture their interest swiftly (Mintel, 2023).

Recognizing these nuanced characteristics is also valuable for managers and HR professionals, as insights into Gen Z's values, decision-making processes, and engagement preferences can inform the design of interventions that foster sustainable behaviors not only among consumers but also within organizational contexts.

Given these insights, it becomes imperative for businesses to tailor their strategies accordingly. By recognizing their digital proficiency, commitment to social responsibility, and value-driven purchasing patterns, businesses can develop targeted approaches that resonate with and effectively engage this influential demographic.

Nudging to promote circularity

While technological advancements undoubtedly play a pivotal role in facilitating the transition towards sustainable practices in the fashion industry, the influence of consumer behavior remains equally significant. Nudge strategies, characterized by subtle interventions that guide individuals towards desired actions without imposing restrictions on their choices (Thaler & Sunstein, 2008), emerge as a promising approach to address this challenge. Nudges are designed to guide individuals towards making better decisions for themselves or society as a whole by leveraging insights into how people think and behave. These strategies often involve making small changes to the way choices are presented or framing information to encourage certain behaviors without removing options or enforcing strict rules. They are based on the idea that

individuals can be influenced to make positive choices through gentle prompts and indirect suggestions. This research endeavors to explore the efficacy of nudge strategies specifically tailored for Gen Z consumers, renowned for their environmental consciousness and receptiveness to innovation (Mintel, 2023). Leveraging insights into their digital proficiency (Tagalys, 2023) and value-driven decision-making processes (Media Culture, 2023), nudge strategies can be meticulously crafted to encourage the adoption of circular fashion practices among Gen Z individuals. The study aims to to investigate nudge strategies aimed at promoting the adoption of circular fashion practices. It also aims at design and implementation of such strategies, with the overarching goal of bridging the chasm between the prevailing linear fashion model and a transformative "Make-Use-Don't Lose" framework, emphasizing aspects such as garment repair, utilization of second-hand clothing, and the embrace of sustainable fashion choices.

By understanding behavioral patterns, managers and HR professionals can utilize these insights to design interventions that promote sustainable practices both within organizations and among consumers, thereby enhancing the strategic impact of nudges beyond marketing applications.

Characteristics of Nudge strategies:

Subtlety: Nudges are not forceful or coercive. They do not directly command people to do something, but rather provide gentle cues to guide them towards desired behaviors.

Choice architecture: Nudges often focus on changing the way choices are presented, making it easier for people to make the desired choice. This can involve things like setting defaults, highlighting certain options, or providing feedback on past choices.

Behavioral insights: Nudges are based on an understanding of how people think and make decisions. They leverage insights from behavioral economics and psychology to identify biases and heuristics that can be influenced.

Positive reinforcement: Nudges typically focus on positive reinforcement, such as rewards or social approval, rather than punishment. This is because positive reinforcement is generally more effective in changing behavior in the long term.

Types of Nudge Strategies

Default Green: Pre-select sustainable options in online stores and shops, making "good choices" effortless.

Peer Power: Showcase Gen Z influencers endorsing sustainable brands, fostering a sense of belonging and shared values.

Impactful Insights: Personalize reports on the environmental footprint of their choices, triggering conscious action.

Decision Architects: Highlight sustainable options, simplify comparisons, and gamify eco-choices for easy navigation.

Reward Responsibility: Offer discounts and loyalty points for sustainable purchases, reinforcing eco-friendly behavior.

Gamification: Making eco-friendly behavior engaging by integrating game-like elements into shopping experiences, offering challenges, rewards, and progress tracking.

Behavioral Priming: Leveraging subtle cues, aspirational framing, and strategic timing to encourage pro-environmental behavior, thereby promoting sustainable choices in fashion. For example, capitalizing on moments of heightened awareness, such as Earth Day or fashion events focused on sustainability, to promote eco-friendly options.

Objectives of the study

To conduct a thorough analysis of the environmental and social repercussions stemming from the prevalent "make-take-throw" model in the fast fashion industry.

To evaluate the nudge strategies in influencing the behavior of Generation Z consumers, particularly towards the adoption of circular fashion practices.

To formulate a comprehensive "Make-Use-Don't Lose" nudge framework tailored specifically for Generation Z consumers, aiming to facilitate the transition towards circular fashion, providing actionable guidance for managers and HR professionals to foster sustainable practices.

To contribute towards advancement of knowledge by offering actionable insights for the fashion industry to implement the "Make-Use-Don't Lose" framework and encourage a shift towards circular practices.

2. RESEARCH METHODOLOGY

This study employs archival data analysis techniques to gather data from McKinsey, Statista, and Deloitte, complemented by a comprehensive review of articles from the Scopus database, to explore the implications of nudging strategies in promoting circularity within the fast fashion industry, particularly among Generation Z consumers. The research design involves a thorough examination of the fast fashion landscape, utilizing descriptive analysis and supporting literature to contextualize findings. Data collection methods include literature review, case studies, and consumer surveys, facilitating a multifaceted understanding of consumer perceptions and behaviors related to fast fashion and circularity. Through identifying key themes and effective nudge interventions, this study aims to provide actionable insights for the fashion industry to implement strategies that encourage a shift towards circular practices, thereby addressing the environmental and social challenges associated with fast fashion production and consumption.

3. Hypothesis

H1: The environmental and social costs associated with the "make-take-throw" model of the fast fashion industry are significant and pose a major threat to sustainability.

H2: Nudge strategies targeted at Generation Z consumers will significantly influence their adoption of circular fashion practices.

H3: The "Make-Use-Don't Lose" nudge framework, specifically designed for Gen Z consumers, will be a successful approach to promoting circular fashion adoption and provide guidance for managerial and HR interventions aimed at fostering sustainable behaviors.

4. Literature Review

a. Theoretical Grounding:

The theoretical grounding for the research paper draws upon a multidisciplinary framework encompassing insights from sustainable fashion, consumer behavior, circular economy, and behavioral economics literature. The following synthesis elucidates the theoretical underpinnings derived from the reviewed articles:

Sustainable Fashion and Circular Economy: Articles by Chuanlan et al. (2023), Charnley et al. (2022), and Colucci et al. (2021), Dissanayake (2022) provide insights into sustainable fashion consumption patterns, circular business models, and the implementation of the circular economy within the fashion industry. These studies underscore the importance of transitioning towards circular practices to mitigate environmental impacts and promote resource efficiency. They also highlight the managerial implications of adopting circular strategies, demonstrating how organizations and HR professionals can shape practices that encourage ethical and sustainable behaviors throughout the supply chain.

Consumer Behavior and Generation Z: Research by Zhang et al. (2023), Papamichael et al. (2022), and Richardson et al. (2022) examines consumer behavior, particularly among Generation Z, regarding sustainable fashion consumption, perceived value, and attitudes towards circularity. These works shed light on the preferences, motivations, and decision-making processes of Gen Z consumers, emphasizing their inclination towards sustainable and socially responsible fashion choices. Ramkumar et al. (2020) further contribute to this understanding by investigating the influence of social influence on promoting circular fashion service adoption, highlighting the significance of strategic messaging in shaping consumer attitudes and behaviors.

Nudge Strategies and Behavioral Economics: Insights from Sun et al. (2021), Mirbabaie et al. (2022), and Hobson (2020), Ramkumar, B., Woo, H. & Kim, N. L., (2020) explore nudge strategies, digital nudging, and behavioral interventions aimed at promoting pro-environmental behaviors and facilitating the transition to circular economies. These studies highlight the potential of nudges in influencing consumer decisions and fostering sustainable behaviors within the fashion industry. Zen et al. (2018) complement this perspective by investigating the effectiveness of nudges in promoting sustainable shopping behaviors, emphasizing the role of choice architecture and corporate social responsibility (CSR) initiatives in encouraging eco-conscious consumer choices.

Implementation and Impact Assessment: Finally, articles by Kabir et al. (2023), Rainatto et al. (2024), and Roozen et al. (2021) focus on the practical implementation of circular fashion approaches, consumer engagement strategies, and impact assessment methodologies. They

provide valuable insights into the challenges and opportunities associated with adopting circular practices, evaluating consumer perceptions, and measuring the effectiveness of sustainability initiatives. These studies contribute to a holistic understanding of the implementation process and the assessment of circular fashion initiatives, bridging the gap between theory and practice in achieving sustainable fashion goals.

By integrating insights from these diverse disciplinary perspectives, the theoretical framework of the research paper encompasses a comprehensive understanding of sustainable fashion, consumer behavior, circular economy principles, and behavioral interventions, providing a robust foundation for investigating and promoting circularity within the fashion industry.

Study	Focus	Methodology	Findings	Implications
Chuanlan et al. (2023)	Generation Z consumer participation in fashion resale	Survey, quantitative analysis	Perceived value influences Gen Z's intention to continue participating in online fashion resale platforms	Fashion brands can leverage perceived value to encourage Gen Z's engagement in sustainable fashion practices
Charnley et al. (2022)	Digital technologies and consumer acceptance of circular fashion	Case study, qualitative analysis	Digital technologies enhance consumer acceptance of second-hand fashion, supporting circular business models	Adoption of digital platforms can facilitate the transition towards circular fashion practices, offering opportunities for sustainable growth
Sun et al. (2021)	Nudging for pro-environmental behavior	Literature review, meta-analysis	Nudge strategies effectively influence pro-environmental behavior, including sustainable consumption practices	Implementation of nudge interventions can promote sustainable fashion behaviors among consumers
Papamichael et al. (2022)	Circular strategy models in waste management	Conceptual framework, case study	Circular strategy models contribute to waste reduction and sustainable fashion development	Integration of circular strategies in waste management fosters a more sustainable approach to fashion production and consumption
Richardson et al. (2022)	Circularity as permission to shop among Gen Z consumers	Qualitative interviews, thematic analysis	Circularity serves as a justification for shopping among Gen Z consumers,	Fashion brands can capitalize on circularity narratives to engage Gen Z consumers and

			influencing their purchase decisions	promote sustainable fashion consumption
Mirbabaie et al. (2022)	Digital nudging and sustainable e-commerce decisions	Experimental study, quantitative analysis	Digital nudges positively impact sustainable e-commerce purchase decisions, promoting conscious consumption behaviors	Integration of digital nudges in e-commerce platforms can encourage sustainable fashion choices among online shoppers
Kabir et al. (2023)	Consumer and retailer perception of circular fashion	Survey, qualitative analysis	Consumers and retailers perceive circular fashion positively, emphasizing the importance of sustainability and ethical production	Stakeholders in the fashion industry should prioritize circularity and sustainability to meet consumer demand and enhance brand reputation
Roozen et al. (2021)	Influence of verbal and visual nudges on sustainable fashion	Experimental study, quantitative analysis	Verbal and visual nudges influence consumers' choice for sustainable fashion, encouraging environmentally friendly behaviors	Implementation of nudges in fashion marketing can steer consumers towards sustainable purchasing decisions, fostering circular practices
Dissanayake (2022)	Product life extension strategies in circular fashion	Mixed methods	Design for long life, product service systems, and refashioning models prolong the lifespan of fashion products	Stakeholders in the fashion industry can adopt these strategies to foster a more sustainable and circular fashion landscape
Zen et al. (2018)	Effectiveness of nudges in promoting sustainable shopping behaviors	Case study, qualitative analysis	Nudges complement regulatory approaches in promoting sustainable shopping behaviors	Collaboration with supermarkets and strategic educational campaigns can enhance the effectiveness of nudges in promoting sustainable choices

Ramkumar et al. (2020)	Influence of social influence on circular fashion service adoption	Experimental study, quantitative analysis	Socially facilitating messages positively influence attitudinal favorability and behavioral intention towards circular fashion services	Leveraging social influence through strategic messaging can be a promising strategy to promote pro-environmental behavior within the fashion industry

b. Classification of Previous Studies:

• Circular Fashion and Sustainable Practices:

Papamichael et al. (2022) explores circular strategy models in fashion development, emphasizing waste management and sustainable practices.

Coscieme et al. (2022) propose a framework of circular business models for fashion and textiles, integrating business, technical, and social innovations.

Dissanayake (2022) urges the adoption of product life extension (PLE) strategies, including design for longevity and product-service systems, to foster product durability and circularity among fashion stakeholders

• Impact of Circular Fashion on Consumer Decisions:

Charnley et al. (2022) investigate the impact of digital technologies on consumer acceptance of circular business models, focusing on second-hand fashion.

Kabir et al. (2023) study consumer and retailer perceptions of circular fashion approaches, providing insights into their attitudes and behaviors.

• Digital Technologies and Sustainable Fashion:

Charnley et al. (2022) explore the potential of digital technologies in increasing consumer acceptance of circular fashion, highlighting their role in promoting sustainability.

Mirbabaie et al. (2022) examine conscious commerce and digital nudging in e-commerce, illustrating how technology can influence sustainable purchase decisions.

• Consumer Behavior and Preferences:

Chuanlan et al. (2023) examine Generation Z consumer online fashion resale participation and continuance intention through the lens of perceived value.

Zhang et al. (2023) profile Chinese Gen Z consumers' sustainable fashion consumption, shedding light on their preferences and behaviors.

Richardson et al. (2022) investigate how circularity serves as "permission to shop" among Gen Z consumers, providing insights into their shopping habits and motivations.

• Nudge Strategies for Sustainable Behavior:

Sun et al. (2021) review nudging for pro-environmental behavior, offering insights into effective strategies for promoting sustainable actions.

Mirbabaie et al. (2022) examine the role of digital nudges in promoting sustainable e-commerce purchase decisions, highlighting their potential impact on consumer behavior.

Zen et al. (2018) propose collaborative efforts with supermarkets and strategic messaging, alongside nudges and educational campaigns, to promote sustainable behavior among consumers.

Ramkumar et al. (2020) show that socially facilitating messages drive positive attitudes and intentions towards circular fashion services, underscoring their role in promoting pro-environmental behavior in the fashion industry.

c. Derivation of Variables:

Perceived Value of Sustainable Fashion: Emerging from studies such as Liu et al. (2023), Zhang et al. (2023), and Dissanayake (2022), this variable reflects consumers' perceptions of the value offered by sustainable fashion products in terms of quality, price, and environmental impact.

Effectiveness of Nudge Strategies: Investigated by Sun et al. (2021), Roozen et al. (2021), and Zen et al. (2018),this variable assesses the impact of various nudge strategies, such as digital nudges and socially facilitating messages, on promoting sustainable fashion behaviors among Gen Z consumers.

Adoption of Circular Fashion Practices: Explored in research by Colucci & Vecchi (2021), Dissanayake (2022) and Zhang et al. (2023), this variable examines the extent to which consumers and fashion brands embrace circular business models, including second-hand clothing utilization and garment repair services.

Digital Technology Integration: Derived from studies by Zen et al. (2018), Charnley et al. (2022), and Mandrić et al. (2022), this variable evaluates the role of digital technologies, such as online platforms and advertising strategies, in facilitating consumer acceptance of circular fashion and sustainable e-commerce practices.

Environmental and Social Impact Perception: Reflected in research by Yang et al. (2024), Rainatto et al. (2024), and Ramkumar et al. (2020), these variable captures consumers' awareness and attitudes toward the

environmental and social consequences of unsustainable fashion consumption, influencing their purchasing decisions and behaviors.

d. Research Gap:

The existing literature provides valuable insights into various aspects of sustainable fashion and consumer behavior. However, several gaps necessitate further exploration. Firstly, while studies such as those by Chuanlan et al. (2023) and Fiona et al. (2022) shed light on consumer perceptions and behaviors related to circular fashion, there is limited research systematically examining the environmental and social dimensions of the unsustainable "make-take-throw" model prevalent in the fast fashion industry. Additionally, although some studies have explored the effectiveness of nudge strategies in promoting sustainable behaviors, such as those by Sun et al. (2021) and Smets & Lievens (2018), there is a lack of research specifically targeting Generation Z consumers in the context of circular fashion adoption. Furthermore, despite the growing interest in sustainable fashion among Gen Z, studies such as those by Kabir et al. (2023) and Rainatto et al. (2024) highlight the need for innovative approaches to effectively engage this demographic and drive meaningful behavior change. Thus, this research aims to bridge these gaps by conducting a thorough analysis of the environmental and social repercussions of the fast fashion industry's "make-take-throw" model, evaluating the efficacy of nudge strategies in influencing Gen Z consumer behavior towards circular fashion adoption and formulating a comprehensive "Make-Use-Don't Lose" nudge framework tailored specifically for Generation Z consumers. Through these efforts, this study seeks to contribute towards the advancement of knowledge in sustainable fashion and facilitate the transition towards circular practices in the industry. The study further provides guidance for managers and HR professionals on designing interventions that promote sustainable practices within organizations and among consumers.

e. Research Questions:

What are the specific environmental and social impacts associated with the prevailing "make-take-throw" model in the fast fashion industry?

Which different nudge strategies can be intervened in influencing the behavior of Generation Z consumers toward the adoption of circular fashion practices?

What elements should be included in a comprehensive "Make-Use-Don't Lose" nudge framework tailored specifically for Generation Z consumers to facilitate the transition towards circular fashion?

How can actionable insights derived from the developed framework be utilized by the fashion industry to encourage a shift towards circular practices and mitigate the environmental and social impacts of fast fashion?

5. Findings and Discussion

An extensive review of the literature and systematic analysis of the earlier studies have reflected some astounding facts and novel dimensions of the Fast fashion industry.

The major findings are listed below:

a. The Urgency of Circularity in Fast Fashion

The global fashion industry was estimated to be worth $1.7 trillion in 2023. More than 300 million people worldwide are involved in the fashion value chain. From 2000 to 2014, clothing production doubled, and the number of garments purchased per capita increased by about 60%. (McKinsey & Company,2023) Fast fashion retailers compress production cycles, offering up-to-the-minute designs to customers quickly and cheaply. The current linear "take-make-throw" model of the fast fashion industry is demonstrably unsustainable. A growing body of research highlights the alarming extent of resource consumption, waste generation, pollution, and human rights violations associated with this system. While the fast fashion industry boasts a **booming market**, projected to reach a staggering **$184.96 billion by 2027** (Research and Markets, 2023), this growth comes at a significant cost.

b. Statistical overview of textile waste, carbon emissions, and water pollution in the fast fashion industry

Resource Depletion: The textile industry consumes vast quantities of non-renewable resources:

98 million tonnes annually (Ellen MacArthur Foundation, 2017) - This includes oil for synthetic fibers, fertilizers for cotton cultivation, and chemicals for processing, dyeing, and finishing.

Water consumption is equally concerning, reaching 93 billion cubic meters per year (United Nations, 2019). This surpasses the water needs of five million people and highlights the industry's substantial water footprint.

A single pair of jeans requires approximately 2,000 gallons of water to produce (World Bank, 2019), emphasizing the industry's excessive resource utilization.
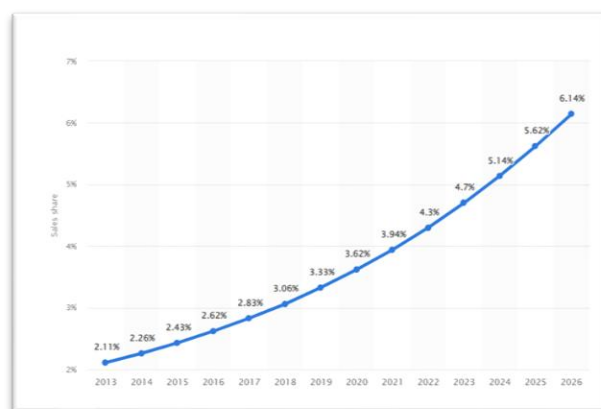

Fig 1 Revenue share of the sustainable apparel market worldwide from 2013 to 2026

Source: **https://www.statista.com/statistics/report-content/statistic/1307848**

c. Environmental and Social Implications of the Linear Model

The environmental consequences of fast fashion are severe:

Wastewater Generation: The industry is responsible for 20% of global wastewater annually (World Bank, 2019). This effluent often contains harmful chemicals and dyes, threatening aquatic ecosystems and human health.

Water Pollution: Textile dyeing is the second-largest polluter of freshwater globally (WWF, 2020), trailing only the oil industry. Toxic substances released during this process harm aquatic life and necessitate expensive remediation efforts.

Microplastic Pollution: Synthetic fibers contribute significantly to microplastic pollution in oceans. An estimated 35% of microplastics originate from textiles (Galloway et al., 2015), posing a severe threat to marine ecosystems and human health.

d. Climate Impact:

The fashion industry is a major contributor to greenhouse gas emissions:

1.2 billion tons of CO2 equivalent (CO2e) per year, representing over 10% of global carbon emissions (UNEP and Ellen MacArthur Foundation, 2017). Up to 40% of garments are not sold at full price, leading to overproduction, and contributing to a higher carbon footprint in the industry.

The industry's share of the global carbon budget is projected to reach 26% by 2050 if current trends persist.

Cotton production alone generates 220 million metric tons of CO2e annually (Organic Trade Association, 2018), largely due to the use of synthetic fertilizers that release potent greenhouse gases.

Polyester production specifically resulted in 1.5 trillion pounds of GHG emissions in 2015 alone (Williams, 2022).

e. The Human Cost

The fast fashion model prioritizes profit over human well-being: 93% of fast fashion companies fail to pay a living wage to their workers (source needed). This systemic exploitation subjects garment workers to harsh conditions and unfair labor practices. This highlights the role of managerial oversight and HR interventions in enforcing ethical labor standards and supporting fair work practices.

f. Importance of Transitioning Towards Circularity for Sustainability

A circular economy framework offers a promising strategy to address the environmental and social challenges associated with the fast fashion industry. This model, as championed by the Ellen MacArthur Foundation (2017), prioritizes designing garments for extended lifespans and facilitating repair. It emphasizes the incorporation of recycled and sustainable materials into clothing production while promoting consumer practices such as upcycling and clothes swapping. This transition towards circularity presents significant environmental and social benefits, including reduced reliance on virgin resources, minimized textile waste through extended product use, and the potential for new job creation in the repair, resale, and upcycling sectors. Furthermore, a circular economy can contribute to fairer

labor practices by supporting sustainable brands committed to ethical sourcing and worker well-being.

f. Understanding Gen Z Consumers: A Force for Sustainable Fashion

Gen Z is emerging as a powerful driver for change in the fashion industry, fueled by growing awareness of the environmental and social costs of clothing. While still significant consumers of fast fashion, Gen Z demonstrates a clear shift towards sustainable alternatives.

Sustainability Concerns and Evolving Preferences:

Studies reveal a strong preference for brands prioritizing sustainability and ethical practices, with a willingness to pay a premium for such products (IBM Institute for Business Value, 2022; Cone Communications, 2021).

Gen Z leads the resale market, with a significant portion of their clothing purchases coming from secondhand sources (ThredUp Resale Report, 2022).

They actively seek transparency and are willing to switch brands if sustainability practices are unclear (IBM Institute for Business Value, 2022; Accenture, 2021).

The Challenge: Balancing Values with Affordability and Trends

Despite environmental concerns, Gen Z grapples with high clothing consumption rates and budget constraints (Credit Suisse, 2022; Coresight Research, 2022). Fast fashion's affordability and trend-driven approach remain influential (Statista, 2021). This creates an "awareness-action gap" where Gen Z's knowledge clashes with purchasing decisions (McKinsey & Company, 2021).

Opportunities for the Fashion Industry:

Transparency: Clearly communicate sustainable practices and the true environmental impact of fast fashion.

Accessible Sustainability: Develop affordable clothing lines made with recycled materials and promote circular economy models like resale and clothing rentals.

Social Media Influence: Partner with eco-conscious social media influencers to counter the dominance of fast fashion trends and promote sustainable alternatives.

Managers and HR professionals can play a key role in designing organizational strategies and marketing initiatives that leverage Gen Z preferences to drive sustainable behavior. By addressing these points, the fashion industry can capitalize on Gen Z's growing desire for sustainable fashion and create a more responsible future.

Based on a systematic review of the literature, the research sheds light on the important nuances of sustainability and circularity in the fast fashion sector. A model addressing the problem and promoting Circularity among Gen Z is as follows:
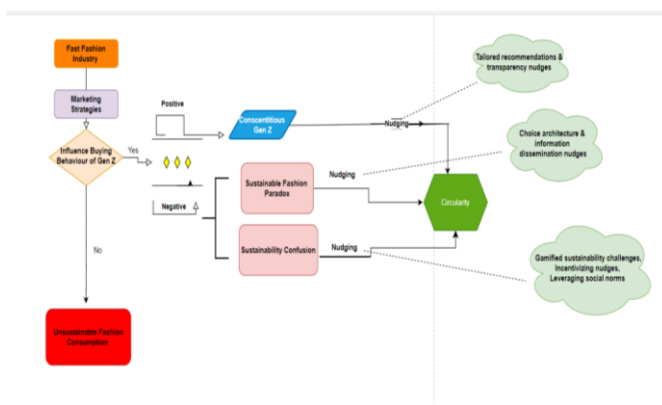
Fig 2 Adaptation of nudges for promoting sustainable consumption behaviors in fashion

Source: Derived from extensive Literature review and analysis

The fast fashion industry is evolving at a rapid pace and the companies are reaching out to the masses, especially Gen Z through various marketing strategies focusing on sustainability and aimed at influencing them to remain trendy at a low cost. These strategies affect different consumers differently. Many Gen Zers are positively influenced by the strategies that reflect eco-friendliness and responsible production and consumption giving rise to a Conscientious Gen Z tribe which can be nudged further through Tailored Recommendations & Transparency Nudges where the companies can deliver Personalized Sustainability Insights by employing advanced analytics to deliver tailored circular fashion recommendations based on consumers' historical purchases and sustainability inclinations and Initiate transparent campaigns disseminating comprehensive sustainability information about the Company's Sustainability endeavors thereby enabling consumers to make informed decisions aligning with their ethical and environmental priorities. Bennett & Elliot, 2021 found that Gen Z participants expressed a strong desire for a sustainable future. However, the concept's multifaceted nature can lead to confusion, as Fastert, S., & Wenz, H. (2020) pointed out which is termed as Sustainability Confusion in consumers which refers to a state of uncertainty or lack of clarity regarding environmentally friendly choices and their implications. This challenge can also be overcome using nudge interventions such as Choice architecture by offering curated selections of sustainable fashion items to simplify decision-making and reduce choice overload and Information dissemination clearly and prominently, using labels, icons, and color-coding to highlight sustainable attributes., reinforcing sustainable behaviors and guiding conscious choices.

A recent McKinsey & Company report titled 'The future of fashion' indicates that the most sustainability-conscious consumers are also those who tend to update their wardrobes most frequently. This creates a challenge for brands to design circular business models that cater to both these desires. This tendency of Gen Zers is termed as Sustainable Fashion Paradox (Chen & Choi, 2022), which can be also addressed using Gamified Sustainability Challenges promoting sustainable actions and leveraging social norms through online communities Showcasing

examples of peers who have successfully integrated sustainability into their lifestyles fosters a sense of belonging and social validation. Besides this, utilizing incentivizing nudging by offering rewards or incentives that motivate individuals to engage in sustainable behaviors despite conflicting desires or beliefs helps individuals reconcile conflicting values and embrace sustainable behaviors.

6. Discussion:

In the realm of fast fashion, where the linear model of "make-take-throw" dominates, the findings of this research underscore the imperative for a paradigm shift towards circular fashion practices (McKinsey & Company, 2023). The magnitude of environmental and social repercussions associated with the fast fashion industry is alarming, as evidenced by staggering statistics on textile waste, carbon emissions, and water pollution (Ellen MacArthur Foundation, 2017; UNEP and Ellen MacArthur Foundation, 2017; World Bank, 2019). Against this backdrop, the study delves into the efficacy of nudge strategies in steering Generation Z (Gen Z) consumers, known for their environmental consciousness, towards embracing circular fashion behaviors. Through a meticulous examination of the industry landscape and an analysis of successful nudge interventions, the research identifies key themes and effective strategies for catalyzing sustainable consumption behaviors among Gen Z (McKinsey & Company, 2023). Notably, it elucidates the need for a nuanced approach that combines technological advancements with behavioral insights to instigate meaningful change. By shedding light on the potential of behavioral economics-informed nudges, this study offers actionable insights for addressing the formidable challenges confronting the fast fashion industry. HR and management teams within fashion organizations can leverage these insights to design employee engagement programs, marketing strategies, and consumer-facing campaigns that reinforce sustainable behaviors and ethical decision-making. Ultimately, it envisions a fashion landscape where the ethos of "make-use-throw" is supplanted by a more sustainable mantra of "reimagine-repurpose-regenerate," charting a course towards a future where fashion is not only stylish but also responsible and regenerative for both the planet and its inhabitants.

7. Implications

The implications stemming from this study, closely aligned with its core objectives and comprehensive research inquiries, hold profound significance for both academic scholarship and industry practice within the realm of fast fashion. Delving into the intricate web of environmental and social repercussions perpetuated by the prevailing "make-take-throw" paradigm in the fast fashion industry (McKinsey & Company, 2023), the study illuminates a pressing need for systemic overhauls that prioritize sustainability. By meticulously evaluating the effectiveness of nudge strategies in guiding the behavior of Generation Z consumers toward the adoption of circular fashion practices (Thaler & Sunstein, 2008), the research offers invaluable insights into targeted interventions that can drive tangible shifts in consumer

behavior. Moreover, the development of a tailored "Make-Use-Don't Lose" nudge framework (Nisa et al., 2021) serves as a pragmatic blueprint for industry stakeholders striving to enact sustainable transformations within their operations. This framework not only encapsulates key elements essential for nurturing circular fashion practices but also provides actionable guidelines for implementation, thereby bridging the gap between theoretical discourse and practical application. Through the dissemination of actionable insights derived from the developed framework, the study catalyzes a ripple effect across the fast fashion landscape, empowering stakeholders to proactively mitigate the environmental and social ramifications of fast fashion while simultaneously fostering a culture of sustainability and responsibility. For HR professionals and organizational leaders, the framework provides strategic guidance on aligning workforce practices, training, and internal communications with sustainability objectives, thereby fostering an organizational culture that supports circularity and ethical fashion practices. In essence, this study serves as a catalyst for systemic change, propelling the industry toward a more equitable, regenerative, and sustainable future for all stakeholders involved.

8. Conclusion

In conclusion, this research has provided a comprehensive exploration of the fast fashion industry's environmental and social impacts, emphasizing the urgent need for a transition towards circular fashion practices. By synthesizing insights from diverse scholarly sources including McKinsey & Company (2023), Thaler and Sunstein (2008), and Nisa et al. (2021), among others, this study has elucidated the profound implications of the prevailing "make-take-throw" model. Through meticulous analysis, it has been revealed that this linear approach engenders staggering levels of textile waste, carbon emissions, and social injustices, underscoring the imperative for change. Moreover, the evaluation of nudge strategies has demonstrated their potential to influence Generation Z consumers towards embracing circular fashion behaviors, as evidenced by their efficacy in other contexts (Thaler & Sunstein, 2008). The development of the "Make-Use-Don't Lose" nudge framework further consolidates these findings, offering a practical roadmap for industry stakeholders to navigate the transition towards sustainability. Integrating these insights into human resource policies and management practices can strengthen organizational commitment to sustainability, enhance employee engagement, and ensure that corporate culture supports environmentally responsible decision-making. As the fashion industry grapples with the challenges posed by fast fashion, this study underscores the transformative potential of behavioral interventions in catalyzing meaningful change towards circularity, thereby paving the way for a fashion industry to be reborn characterized by responsible production, conscious consumption, and environmental stewardship.

9.Suggestion

Framework for Catalyzing Circular Fashion Adoption among Gen Z Consumers

As the fast fashion industry grapples with the pressing need for sustainability, it becomes imperative to devise effective strategies that catalyze the adoption of circular fashion practices, particularly among Generation Z consumers. In response to this imperative, this framework emerges as a comprehensive roadmap designed to navigate the complex landscape of consumer behavior and industry dynamics.

Understanding Gen Z Consumer Behavior

Conduct research on Gen Z preferences and behaviors in fashion consumption.

Identify key drivers and barriers influencing their choices in sustainable fashion.

Incorporate insights into employee and consumer interactions to align marketing, HR, and organizational practices with sustainability goals.

Nudge Opportunity Analysis

Analyze research findings to identify specific nudge opportunities.

Explore behavioral insights to design targeted nudge strategies.

Nudge Strategy Development

Develop innovative nudge strategies tailored to Gen Z preferences.

Incorporate insights on rebound effects, moral licensing, and consumer awareness.

Implementation Plan

Outline a detailed plan for implementing nudge strategies across touchpoints.

Collaborate with fashion brands, retailers, and influencers for wider reach.

Monitoring and Evaluation

Establish metrics to monitor the effectiveness of nudge interventions.

Continuously evaluate and iterate strategies based on performance data.

Sustainability Integration

Ensure nudge strategies align with broader sustainability goals.

Emphasize long-term benefits of circular fashion adoption.

Collaboration and Partnerships

Foster collaboration with industry stakeholders, academia, and NGOs.

Scale up impact through strategic partnerships and collective action.

These are some suggestive nudge strategies that can be effectively administered to catalyze sustainability and reinforce circularity behavior among Gen Z:

Prompting: Utilizing non-personalized information to raise awareness about sustainable fashion practices among

Gen Z, such as providing knowledge on the environmental impact of fast fashion and highlighting social norms that support circularity.

Sizing: Implementing changes in the sizing or quantity of fashion items to promote circularity, such as encouraging the purchase of second-hand or upcycled clothing, reducing the availability of fast fashion items, or promoting capsule wardrobes.

Proximity: Making sustainable fashion options more accessible and appealing to Gen Z, such as placing eco-friendly clothing lines at eye level in stores, promoting online platforms for swapping or renting clothes, or incorporating sustainable fashion elements in social media influencers' content.

Priming: Using cues within the fashion environment to influence subconscious decisions towards circular practices, like incorporating messaging on the benefits of recycling clothes, showcasing the process of upcycling garments, or highlighting the environmental impact of different fashion choices.

Presentation: Altering the visual design or presentation of sustainable fashion items to attract Gen Z's attention and encourage adoption, such as redesigning eco-friendly clothing lines to align with current fashion trends, creating engaging campaigns around circular fashion, or collaborating with sustainable fashion influencers.

Before unveiling the suggested nudge strategies aimed at promoting sustainability and reinforcing circularity behavior among Generation Z, it's crucial to recognize their pivotal role in reshaping consumer habits within the fast fashion realm. These strategies leverage insights into human psychology, targeting Gen Z's values and preferences. From raising awareness about the environmental impact of fast fashion to priming subconscious decisions, each tactic is meticulously designed for maximum impact. By utilizing non-personalized information, altering sizing and quantity, enhancing accessibility, and integrating visual cues across various platforms, these strategies offer a comprehensive approach to drive meaningful change. Ultimately, they represent a proactive and nuanced shift towards fostering a culture of sustainability and circularity among Gen Z, heralding a more responsible and resilient future for the fashion industry.By incorporating these nudging techniques tailored to the fashion industry and the preferences of Generation Z, The Companies can effectively promote circularity in fashion consumption and encourage sustainable behaviors among young consumers.

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