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Awareness Of Fast Fashion's Environmental Effects and Its Correlation To Thrifting Habits In Private University

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ABSTRACT (10 PT)

The 2019 Fast Fashion Brand Ranking list, published by Internet Weekly and eNet Research, identified Uniqlo, ZARA, and H&M as the top three fast-fashion brands in terms of popularity. However, the rapid growth of fast fashion has led to significant environmental damage, including increased water usage, chemical pollution, and CO2 emissions. This study aims to explore whether the younger generation's adoption of thrifting habits, motivated by knowledge of fast fashion's environmental impact, can contribute to environmental sustainability. The researchers employed a literature review method to examine the negative effects of the fast fashion industry and the potential benefits of reusing clothing items, such as through thrifting. Secondary data, including research papers on textile waste and sustainable approaches, were gathered. Additionally, an online survey was conducted using Google Forms and voluntary response sampling, targeting students at Sampoerna University to gather primary data from a diverse population. The literature review revealed that reusing garments can yield environmental benefits, as a significant portion of recyclable textiles ends up in landfills. Extending the lifespan of clothing items reduces greenhouse gas emissions and saves energy. Despite the advantages of fast fashion, the study emphasizes the need for sustainable methods of clothing consumption. The authors found a positive correlation between awareness of fast fashion's environmental effects and the adoption of thrifting habits among the surveyed university students. This indicates that individuals are more likely to embrace thrifting after learning about the detrimental effects of fast fashion, leading to waste reduction and supporting the study's hypothesis. The study acknowledges limitations, including the anonymous nature of the survey, which may have led to slight variations in the age distribution of the respondents. To address this, collecting age data of the survey participants is recommended to confirm the demographic representation.

Introduction

The 2019 Fast Fashion Brand Ranking list by Internet Weekly and eNet Research released in April 2019 reveals Uniqlo, ZARA, and Hando as the top three of the Fast-Moving Consumer Goods (FMCG) fashion brands, followed by H&M and other fast fashion brands (Sun and Shan), revealing an increasing amount of interest in fast fashion. Fashion is an expression widely accepted overtime by a group of individuals,

characterized by factors such as low predictability, high impulse purchase, shorter life cycle, and high volatility of market demand, hence to profit, the ‘speed to market’ approach, also called Fast Fashion, must be adopted by fashion retailers, in which they capitalize on designs not available in their competitor’s stores, with collections frequently inspired by styles as shown on Fashion Week runways (Bhardwaj and Fairhurst) or known to be worn by celebrities, enabling mainstream consumers to get the trendiest look at an affordable price.

However, the increase in interest in fast fashion causes an extensive increase in the volume of clothing consumed (Rukhaya et al. 517), which eventually leads to environmental damage, specifically, water use, chemical pollution, and CO2 emissions. The fast fashion industry impacts local water supplies by producing wastewater (Niinimäki et al. 192), the large volumes of wastewater generated contain various chemicals used throughout processing that can cause damage if not adequately treated before being discharged into the environment (Rukhaya et al. 519), leading to water pollution. Furthermore, according to various estimates, the industry contributes 8-10% of global CO2 emissions (Niinimäki et al. 189), and garment production is still responsible for 71% of the total impact, which is linked to synthetic materials used in fiber production, textile manufacturing, and garment construction (Niinimäki et al. 189). With the increase in interest in the fast fashion industry, fashion consumption has escalated, leading to environmental damage. Hence, a sustainable method of fashion consumption such as “Thrifting” is needed.

Thrifting refers to the activity of searching for and purchasing second-hand goods, that are still feasible to use, particularly used clothing items, originating from the word “thrifty” or “frugal” (Ghilmansyah et al. 2, 5; Lestari and Asmarani 1). Thrifting originated in the 19th-century Industrial Revolution which introduced the mass production of clothing items, altering society’s view of the fashion world during the time, as clothing items were very cheap, causing individuals to consume more and consider clothing to be disposable after one-time usage, increasing textile waste which would be worn by immigrants (Ghilmansyah et al. 5). In 1897, the Salvation Army formed the "Salvage Bridge" where individuals could donate used clothing items, which proved to be useful as during the Great Depression in the 1920s, many individuals were unemployed and unable to purchase new clothes, hence, opting to purchase items from places such as the "Salvage Bridge", which after years became routine in the society, eventually becoming a modern trend called “thrifting” (Ghilmansyah et al. 5). Furthermore, the occurrence of the Covid-19 pandemic affected the economy significantly, causing decreased income and impacting people's purchasing power, causing thrifting habits to be considered appropriate by young people despite being taboo in the past, even becoming a trend as many thrift shops utilize digital media to operate, becoming a safe shopping alternative (Lestari and Asmarani 3), that is more convenient. Besides lower prices and convenience, thrifting also protects the environment from the negative effects of fast fashion as it can decrease textile waste (Ghilmansyah et al. 3). Hence, thrifting habits cause positive effects such as cost-effectivity, convenience, and environmental impacts.

Previous research regarding thrifting by Adji and Claretta, Ghilmansyah et al., Laitala and Klepp, Lestari and Asmarani, and Park et al., have demonstrated the motivation for thrifting among young people but not the environmental impacts of thrifting, while research from Filho et al., indicates that the environmental impacts of textile wastes could be reduced by reusing textiles, but not mentioning thrifting as a method, presenting a research gap. Hence, despite the existence of prior research regarding the motivation

for thrifting and methods of reducing the waste produced by the fast fashion industry, limited data is known regarding the impacts of thrifting among the younger generation as a way to help recycle fast fashion waste.

The aim of this study is to discover if thrifting habits by the younger generation as the result of knowledge regarding fast fashion's environmental damage would impact environmental sustainability by conducting a literature review and survey with university students. Supported by data collected in the field, the authors hypothesize that thrifting habits would help in reducing fast fashion waste, therefore helping the environment heal from excessive fashion waste from the fast fashion industry.

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Method

The research approach for this project utilized the literature review method to demonstrate the environmental damage caused by the fast fashion industry, as well as the potential benefits reusing clothing items, similar to thrifting habits, could cause. According to Creswell, the term "literature review" can refer to a written summary of journal articles, books, and other materials that define the past and present state of knowledge, categorizes the literature into subjects, and establishes the necessity of a proposed study (79), which can be useful in giving a general overview of fields where interdisciplinary and diverse research is being done as it integrates perspectives and discoveries from many empirical findings (Snyder, Hannah 1). The authors gathered secondary data in the form of research papers that were related to the negative effects of the fast fashion industry such as textile waste, as well as papers related to sustainable approaches to counter the environmental damages of fast fashion, namely reusing clothes.

Moreover, the authors conducted an online survey to collect primary data, as surveys provide the authors with the ability to garner large amounts of information through the analysis of a large population, therefore providing greater statistical power (Jones et al.). The online survey was conducted in the month of March, utilizing google forms and voluntary response sampling, targeting students of Sampoerna University, as the institution consists of diverse individuals from many regions of Indonesia and even foreign countries, providing the authors a wide category of individuals. Questions included in the survey had the purpose of discovering the level of awareness possessed by the university students regarding the phenomena of fast fashion and thrifting, their prior engagement with both fast fashion and thrifting, their awareness of the environmental effects caused by both fast fashion and thrifting, and their willingness to adopt thrifting habits in response to the awareness of fast fashion's environmental damage, among other questions. The results of the survey were then compared with the data gathered from the literature review using Microsoft Word software to help analyze the correlation between Sampoerna University students' awareness of the environmental damage caused by the fast fashion industry towards their willingness to adopt thrifting habits to help reduce the negative impacts.

Result and Discussion

1. Literature Review Results

1.1. Environmental Effects of Fast Fashion

Title	Finding
Is the Transition to Bioeconomy a Sustainable Solution in the Fast-fashion Industry, Considering the Overconsumption? - Premises for Future Research	The fast fashion industry is not environmentally sustainable as the result of individual overconsumption (Ciornea).
Mathematical Analysis of the Environmental Impact of Throwaway Fashion	Fast fashion is the second largest cause of pollution in the world after the oil industry, with approximately 100,000,000 tons of collective apparel ending up in landfills each year (Raj and Bajpai).
Waste Couture: Environmental Impact of the Clothing Industry	The fast fashion industry has increased the need for new apparel and has caused clothing to be disposed of as soon as it goes out of style, this causes an increased production of clothing items in which production of synthetic fabrics such as polyester requires extensive amounts of energy and releases emissions which aggravate or cause respiratory disease (Claudio).
The Environmental Price of Fast Fashion	The fashion industry possesses a complex and long supply chain, in which each step of production has an environmental impact as the result of the usage of water, material, chemical, and energy, with large volumes of textile waste produced as a result of fast fashion's increased material throughput in the system, causing the need for fundamental modifications to the fashion industry's business model which include a slowdown in production, the adoption of sustainable methods throughout the supply chain, and a change in customer behavior (Niinimäki et al.).
The Global Environmental Injustice of Fast Fashion	Fast fashion causes a disproportionate burden of environmental health hazards to those working or living near textile manufacturing facilities with low and middle-income nations lacking the necessary resources to develop and enforce environmental and occupational safeguards to protect the health of individuals, hence, consumers possess a role in promoting sustainable production and ethical consumption in an equitable manner (Bick et al.).
The Need to Decelerate Fast Fashion in a Hot Climate - A Global Sustainability Perspective on the Garment Industry	Over the 15 years leading up to 2015, the climatic effect of apparel and footwear consumption increased from 1.0 to 1.3 Gt carbon dioxide equivalent. The enhanced efficiency of the fast fashion industry resulted in a reduction in emissions per garment, however, eliminating fossil-fueled electrical sources and fast fashion as a business model will result in

	much larger reductions in the industry's total carbon footprint (Peters et al.).

1.2. Environmental Effects of Reusing Clothes

Title	Finding
Life Cycle Assessment of Clothing Libraries: Can Collaborative Consumption Reduce the Environmental Impact of Fast Fashion?	Increased garment service life is crucial for achieving environmental benefits (Zamani et al.).
Environmental Impact of Discarded Apparel Landfilling and Recycling	Over 90% of discarded textiles are recyclable and reusable, however, over 87% of them end up in landfills, hence, integrating the reuse of clothing items can potentially cause environmental benefits (Moazzem et al.).
Environmental Benefits from Reusing Clothes	According to a survey of more than 200 customers in second-hand shops, buying 100 used clothes to reuse would prevent the purchase of between 60 and 85 new garments, causing a 14% decrease in global warming caused by producing cotton shirts and a 45% decrease in human toxicity resulting from the production of polyester/cotton trousers (Farrant et al.).
Greenhouse Gas Emission Reductions by Reusing and Recycling Used Clothing in Japan	Recycling and reusing used clothing items can reduce GHG emissions by 6.60 x 109 kg CO2e (Semba et al.).
A Carbon Footprint of Textile Recycling: A Case Study in Sweden	Reusing 1 tonne of clothing items saves 10 tonnes of carbon dioxide equivalents (CO2-eq) and 169 gigajoules (GJ) of primary energy per tonne of textile waste (Zamani et al.).
The Social, Environmental and Economic Benefits of Reuse by Charity Shops	Approximately 95% of clothing that is donated to charity stores is recycled or used again, saving 331,000 tonnes of textiles from landfills and 6.9 million tonnes of CO2 in 2015–16 (Osterley and Williams).

1.3. The Potential Correlation between Awareness of Fast Fashion's Environmental Effects and Sustainable Fashion Consumption

Title	Finding
The Fast Fashion vs Environment Debate: Consumers' Level of Awareness, Feelings, and Behaviour towards Sustainability	Precise and accurate knowledge of aspects related to the sustainable supply chain which includes fabric, materials, recycling, or re-using fashion items are lacked by consumers, hence, providing information regarding the

within the Fast-Fashion Sector	environmental and social impacts of fast fashion and the creation of strong emotions appear to be promising in facilitating a shift towards more sustainable fashion consumption (Papasolomou et al.).
Sustainability in the Fast Fashion Industry	Education programs that heighten consumer awareness of quality can result in long-term environmental benefits (Long and Nasiry).

The literature review conducted by the authors revealed that after the oil industry, fast fashion is the second largest cause of world pollution (Raj and Bajpai) as it increases the need for new garments causing increased garment production and the disposal of approximately 100,000,000 tons of clothes to landfills each year (Ciornea; Claudio; Raj and Bajpai). Each step of production in fast fashion's long and complex supply chain impacts the environment negatively with a large amount of textile waste produced and the usage of water, material, chemicals, and immense energy to produce polyester or other synthetic fabrics, releasing emissions that cause respiratory disease, particularly to those working or living near textile manufacturing facilities (Bick et al.; Claudio; Niinimäki et al.), with the climate impact of clothing and footwear consumption increasing from 1.0 to 1.3 Gt carbon dioxide equivalent (CO2-eq) over the 15 years leading up to 2015 (Peters et al.). Such effects on the environment cause the necessity for a change in consumer behavior which encourages ethical consumption and the elimination of fast fashion's business model (Bick et al.; Niinimäki et al.).

Moreover, the literature review conducted to assess the re-usage of clothing as a sustainable approach to counter the environmental damages of fast fashion revealed that reusing garments can cause environmental benefits as 87% of recyclable discarded textiles eventually go to landfills (Moazzem et al.), hence, increasing the service life of a garment is essential to achieve environmental benefits (Zamani et al.) as recycling and reusing previously used garments reduces greenhouse gas (GHG) emissions by 6.60 x 109 kg CO2e (Semba et al.) with 10 tonnes of carbon dioxide equivalents (CO2-eq) and 169 gigajoules (GJ) of primary energy per tonne of textile waste saved by the re-usage of 1 tonne of garments (Zamani et al.). Moreover, purchasing 100 previously used garments to reuse prevents the purchase of 60-85 new clothing items, decreasing global warming by 14% caused by the production of cotton shirts and decreasing 45% of human toxicity from producing polyester or cotton trousers (Farrant et al.), with charity shops saving 331,000 tonnes of textiles from landfills, reducing 6.9 million tonnes of CO2 in 2015–16 (Osterley and Williams).

Furthermore, the literature review conducted to assess the potential correlation between awareness of fast fashion's environmental effects and sustainable fashion consumption revealed that consumer's heightened awareness of garment quality alongside knowledge of the environmental and social impacts of fast fashion, creating strong emotions within consumers, seem to be promising in facilitating a shift towards more sustainable fashion consumption, including reusing clothes or thrifting (Long and Nasiry; Papasolomou et al.).

Hence, the literature review conducted confirmed that the fast fashion industry causes negative effects on the environment, particularly the disposal of tonnes of

garments in landfills and the production of greenhouse gasses (GHG) such as carbon dioxide equivalent (CO2-eq) which can cause respiratory diseases and global warming, therefore, also supporting the notion that a sustainable method of garment consumption such as thrifting is needed. A subsequent literature review also validated reusing clothes as a viable method to reduce the negative environmental effects of fast fashion, namely in reducing carbon dioxide equivalent (CO2-eq) and primary energy per tonne of textile waste, therefore also reducing global warming, confirming the author's hypothesis that thrifting is indeed a sustainable method to consume garments as thrifting is reusing previously used garments. The correlation between awareness of fast fashion's negative environmental effects and sustainable fashion consumption was also shown to have a positive relationship through the literary review, possibly confirming the correlation between knowledge of fast fashion's effects and the adoption of thrifting habits.

2. Survey Results

Based on the survey that the authors conducted, a number of facts regarding Sampoerna University students' awareness of fast fashion's environmental effects and its correlation to thrifting habits have been discovered. 21 anonymous responses were received for the survey, with a demographic that consists of students both male and female in age groups ranging from 18 to 24 years old. Given below are the pie charts depicting whether they are aware of fast fashion, the environmental effects of fast fashion, and whether they are engaged in thrifting and willing to thrift instead of consume fast fashion products.

Hence from the survey, the authors concluded that the adoption of thrifting habits is heavily impacted by knowledge of the effects that fast fashion has on the environment, therefore showing a positive correlation between Sampoerna Universities students' awareness of fast fashion's environmental effects and the adoption of thrifting habits, confirming the authors' hypothesis.

Conclusion

The growing amount of e-waste in Indonesia is due to several factors, including a lack of information, inaccurate data, and limited sources regarding e-waste and also the number of uses of electronic devices that the public can access, an inadequate knowledge in managing e-waste on small scale, and different perception between government institutions about e-waste regulations as well as management procedures. The management of e-waste in DKI Jakarta is in its early stages, and there are various obstacles to the management of e-waste in DKI Jakarta. One strategy for e-waste management is to lower the volume produced. To handle hazardous products in the e-waste stream, technical specifications, public-private partnerships, and government involvement are all required. Electronic waste management is also highly supported by enforcement laws and regulatory sectors. Public participation in e-waste management should be encouraged to reduce the impact of e-waste on the environment and public health. Further research on the full scientific viewpoint is required to acquire a more detailed scenario regarding the management of electrical and e-waste in DKI Jakarta.

There are currently various programs sponsored by the government on a regional level to manage e-waste in Jakarta, Indonesia's capital city. However, most Indonesian provinces have yet to implement such programs, and the national government has yet to develop explicit legislation for the management of e-waste. An intelligent environment can be created by implementing an effective e-waste management system, enforcing clear electronic waste legislation, and educating the general public about the risks and detrimental effects of e-waste with the help of individuals, businesses, and the government.

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