


Chapter 3

Algorithmic Nudging for Eco-Friendly Fashion: A Framework for Ethical AI Interventions

Muhammad Usman Tariq

 <http://orcid.org/0000-0002-7605-3040>

Abu Dhabi University, UAE & University College Cork, Ireland

ABSTRACT

This chapter examines how algorithmic nudging may inspire environmentally friendly decisions within the fashion sector, particularly if it's conducted in ethical and sustainable manners. It applies concepts from behavioral economics, consumer psychology, and AI ethics to develop a comprehensive framework for designing, testing, and applying AI-driven nudges on internet shopping websites. The chapter outlines several nudges, including default options, social proof, visual cues, and immediate feedback, and discusses them theoretically as well as in real-world examples. It also explores issues like greenwashing, trust, and discriminatory AI bias and calls for strong rules, transparency, and fairness. The article suggests potential future steps such as the use of generative AI, emotion detection technology, and industry standardization to support ethical innovation. It argues that if used in a neutral and reflected way, algorithmic nudging could be a powerful tool for influencing green fashion choices without unconstraining user liberty or trust.

INTRODUCTION

Fashion has always been perceived as a place where creative forces, self-expression, and expressing oneself are an option. However, in recent decades, it has also begun

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to be associated with aspects such as damaging the environment, unfair treatment of labor, and stimulating individuals to purchase and discard clothes too fast. The role of fast fashion is significant because it always requires new fashion and manages to create garments in a short time. This has created a culture where individuals tend to purchase garments and dispose of them in a very short period of time. Cheap costs, numerous offers, and fluctuating trends lure people into purchasing more than they require, generating excessive waste. In the last 20 years, the amount of clothing bought has doubled, but people are wearing it less frequently than before. The impact of these actions on the environment is massive: the industry not only generates a substantial amount of greenhouse gases but also causes water pollution and is a source of waste because of clothing that goes to waste. Workers, especially those in poor working conditions, have been exploited due to the demand to manufacture more apparel at a low cost. The way clothes are produced and the way people behave and feel when shopping are not the only causes of this phenomenon. Such behaviors are difficult to change; however, technological solutions, particularly artificial intelligence, can provide new solutions. Artificial intelligence is already being experienced across much of life, from how people shop, communicate, and make purchasing decisions. Brands and web-based retailers leverage AI to understand what individuals want, predict what can be done and what cannot be done in terms of fashion trends, improve how items are made and delivered, and enhance the overall purchasing experience.

Social influence, such as demonstrating the product's broad appeal among environmentally conscious people or using testimonials from sustainable influencers, can also be added. Such nudges may create a sense of community and shared values and make the sustainable choice not just easier but also more socially beneficial. Over time, these nudges may alter what people consider "normal" and can push fashion forward toward more intelligent and responsible consumption patterns. Of course, to the degree algorithmic nudging works at all, it will depend on how well it has been designed and how well it has been tracked over time. Adopting nudges and hoping for the best is not going to cut it; we need to pay attention to how well they work in real life and tweak them accordingly. You can observe what is effective and what is not by examining factors such as the frequency of service use, how often they purchase something, or their evolution. You should also listen to what people say about you. This prevents nudges from being intrusive or irritating. Being honest and transparent is very significant: people should realize that they are being nudged and have the freedom to change how they are presented with content or even refuse to see it in the first place. With most fashion choices made online, such tools have the potential to turn sustainable options into a default and not an exception. The key will be to use these tools well, with care, and for the sake of a better world. As the fashion world keeps changing, the blending of AI with a focus on sustainability

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