Editors Kirsi Niinimäki and Kirsti Cura,
Aalto University

PROCEEDINGS
5th PLATE Conference
Espoo, Finland

31 May – 2 June
2023

**Aalto University
School of Arts, Design
and Architecture**

Regulating Fast Fashion out of Fashion

Ingun Grimstad Klepp[a]**, Kerli Kant Hvass**[b]
a) Oslo Metropolitan University, Oslo, Norway
b) Aalborg University, Copenhagen, Denmark

Keywords: Fast fashion; Clothing use and durability; Textile waste management; Extended Producer Responsibility (EPR); Targeted producer responsibility.

Abstract: Among sustainable fashion and textile themes, product durability has recently come into focus within EU policy making. The dominant understanding is that increased textile lifespan will reduce environmental impacts, but this intrinsic link is not supported by research. The volume of clothing produced poses the greatest environmental burdens. Increased clothes availability leads to longer lifespan due to reduced utilization. To reduce the environmental impact of increased textile volumes measures should be expanded to encompass not only product design, life-prolonging, and end-of-life strategies, but also the volume of products to market. This concept paper contributes to the debate on how to address the growing amount of textile waste by applying the knowledge gained from consumer research regarding clothing use and proposing a regulatory measure called Targeted Producer Responsibility (TPR). The central method of TPR is waste analyses which relies on actual use - or non-use - of products as the starting point for eco-modulated fees. TPR reverses EPR and uses waste for overproduction knowledge, thus proposing a tool that can potentially reduce the total environmental impact of textiles.

Introduction

Attention related to clothing and the environment is gaining momentum worldwide and the EU is at the forefront with its Circular Economy Action Plan and EU Strategy on Sustainable and Circular Textiles (European Commission, 2022). A dominant theme in the EU strategy and relevant literature around "sustainable" and "circular" textiles is increased product durability. There is a widespread view that the increased lifespan of textiles will reduce environmental burdens. This intrinsic link is not supported by research. We stress that to reduce the environmental impact of textiles, measures should be developed that encompass the volume of products produced or imported. The aim of this concept paper is to enrich the debate on how to tackle overproduction, building on the knowledge gained from consumer research on clothing use, and to propose a future policy measure called Targeted Producer Responsibility (TPR) (Klepp et al., 2022b). TPR is a proposal on how Extended Producer Responsibility (EPR) for textiles might reduce fast fashion, over-production and thereby also the environmental footprint of the sector. TPR uses the actual use - or lack of use - of products as the starting point

for criteria for EPR fee-modulation, rather than potential lifetime.

Background

Fast fashion and overproduction

Fast fashion is a business model that relies on cheap manufacturing, frequent consumption and short-lived garment use offering consumers regular novelty in the form of low-priced, trend-led products (Niinimäki et al., 2020). By its very nature, fast fashion encourages overproduction because new products are constantly appearing in stores, making the old ones obsolete. The Oxford Learner's Dictionary (n.d.) defines overproduction as "*the act of producing more of something than is wanted or needed*". This means that the total amount of clothing and other textiles exceeds consumers' actual clothing use and thus represents a surplus of clothing. Surplus clothing are goods that are unsold, returned goods that are not resold, goods that are discarded after purchase or stored unused in consumers' wardrobes. At the same time, FF makes garment repair unnecessary (because garments are discarded before they are damaged), uneconomical

(because new garments are very cheap) or impossible (because garments are too flimsy) (Middleton, 2015). In a sales-driven FF business model, product durability is neither a major concern for the consumer nor the manufacturer (Ekström & Salomonson, 2014). Overproduction is also visible as waste export. Recent studies show that the amounts of used textiles exported from the EU have tripled over the last two decades from over 550,000 tonnes in 2000 to 1.7 million tonnes in 2019, and the fate of these exported clothes is highly uncertain (EEA, 2023).

Consumption of clothing: The relationship between longevity and quantity
Consumer research that provides information on the use of clothing has not been adequately considered in sustainable textile strategies and policies (Klepp et al., 2023a; Klepp et al., 2023b; Klepp, et al., forthcoming). At the same time, the use phase (wears and years) is crucial for impact per wear (Klepp et al., 2020; Watson & Wiedemann, 2019). Although, the use phase is complex, because the clothes are part of a system where their mutual relationship in wardrobes is decisive for their use.

We see a trend that various policy discussions and documents are based on the belief that making garments more durable with the help of eco-design requirements will reduce the textiles' impact on environment. For example, the EU Textile Strategy says: "*extending the life of textile products is the most effective way of significantly reducing their impact on the climate and the environment*" (EC, 2022. p.3). However, this only applies if there is a clear product replacement, but as Maldini (2019) argues, most clothing is not acquired as a replacement. Acquisition and disposal are connected, but independent processes. The quantity of owned garments plays a main role in this relationship (Maldini & Stappers, 2019). One reason for disposal is the limited space in wardrobes, which is a consequence of purchasing and not its cause (Laitala & Klepp, 2015). This is also the case for second hand, hand-me-downs, home-made garments, and gifted clothes (ibid).

Studies on disposal of clothing show a threefold division between lack of perceived value, bad fit, and wear and tear problems (Laitala & Klepp, 2022). Only a third of the clothes go out of use because they are worn out. The same pattern occurs in textile waste streams (Klepp et al., 2022b). More durable clothes will therefore not affect the disposal of 2/3 of the clothes. For example, in the work with EU's Product Environmental Footprint Category Rules (PEFCR), longevity is mainly understood as strength and thus favours synthetic fibres (Klepp, et al. 2023a). Confusing strength with longevity is a serious misunderstanding because plastic is incredibly durable. Therefore, future policy measures should not only target individual products and their design, for example in the form of stronger products, but also what is characterised by fast fashion, high volumes and, consequently, low utilisation rates for clothing. This will ensure that measures taken to reduce environmental burden of textiles must cover whether clothes are used and not just that they can potentially be used, and that measures must target systems, not just individual products.

Textile policies and strategies
The fashion and textile industry remains largely unregulated with respect to social and environmental impacts, which is one of the root causes for the growing negative impacts of textiles throughout the lifecycle (Vase, 2022).
In a recent study (Klepp et al., fortcoming), 11 textile strategy documents from public, private, and non-profit organizations were analysed with regards to whether and how growth and plastification (the synthetic fibre content in textile products) is being addressed. The study shows that several reports include overproduction and the desire to reduce fast fashion. However, this wish is not reflected in the measures proposed in these documents, as the study found no measures nor clearly formulated goals aimed at reducing the amount of manufactured or imported products. The most important themes that were highlighted in connection with growth were not quantities produced, but quality of products and production processes. For example, the EU Textile Strategy recognizes that "*the trends of using garments for ever shorter periods before throwing them away contribute the most to unsustainable patterns of overproduction and overconsumption. Such trends have become known as fast fashion, enticing consumers to keep on buying clothing of inferior quality and lower price, produced rapidly in response to the latest trends*" (EC, 2023, p. 1). It acknowledges

the urgent need to address quantities towards a transition from linear to sustainable circular system, by saying *"Reversing the overproduction and overconsumption of clothing: driving fast fashion out of fashion"* (EC, 2023, p. 8).The above-mentioned analyses of strategy documents by Klepp et al., (forthcoming) show that growth is often discussed as something that needs to be decoupled from the environmental effects. This is in line with previous analyses of the textile multi-stakeholder initiatives by Payne and Mellick (2022) and could be one of the reasons why, despite of intense effort from the fashion industry over the last 15 years to improve sustainability, the environmental impacts keep growing (Lehmann et al., 2019; Palm et al. 2021; Tham, 2008).

Producer responsibility
The fashion and textile industry has been largely unregulated when it comes to overproduction, textile waste and end-of-life practices of textiles. Textiles waste has been handled by municipalities or it has been an important revenue source for the charity sector, often by selling good quality clothing on the local markets and the rest is channelled to global low-income markets (Palm et al., 2014; Kant Hvass, 2014).

In the last decade, producers and retailers have started taking proactive steps in engaging with the post-retail phase of their products (Kant Hvass, 2014; Stål & Corvellec, 2018). However, these voluntary industry-driven initiatives remain incremental in addressing the big amounts of used textiles (Kant Hvass, 2014; Kant Hvass & Pedersen, 2019). At the same time, there is no clear evidence that these initiatives, such as take-back, repair or re-commerce, have any direct effect on the amount of clothing produced. At the same time, growing volumes of FF clothing make it difficult for such business models to be profitable.

*Extended producer responsibility*The EU Waste Framework Directive from 2018 requires Member States to establish systems for the separate collection of textiles by 1st January 2025. In this context, Extended Producer Responsibility (EPR) has seen increased political momentum, as collection itself will not solve the sector's problems. The need to make

the polluter responsible is recognized by EU, and the upcoming revision of the EU Waste Framework Directive will include a proposal for harmonised EPR rules for textiles, with eco-modulation of fees (EC, 2022).

Originally, EPR is defined as a "policy principle to promote total life cycle environmental improvements of product systems by extending the responsibilities of the manufacturer of the product to various parts of the entire life cycle of the product, and especially to the take-back, recycling and final disposal of the product" (Lindhqvist, 2000, p.v). While the original idea considers the responsibility of producer across the entire life cycle of the product, for a long time, the objective of retaining the primary value of products has been linked to waste prevention, which is the main priority of the waste hierarchy, as laid out in the earlier version of the EU Waste Framework Directive, 2008/98/EC (Maitre-Ekern, 2021). This approach is too narrow if systemic change is desired. The experiences from other sectors across the globe also show that the incentives provided by EPR scheme are limited when it comes to promoting upstream changes (Micheaux & Aggeri, 2021; Maitre-Ekern, 2021; Laubinger et al., 2021). Additionally, there are no evidence available, that the various EPR schemes operating today aim to deliberately regulate short-lived products, such as FF. The several legislative measures currently proposed in the EU Textiles Strategy (e.g., the Ecodesign Directive, PEFCR) focus on the product design and end-of-life strategies, and do not address the essential questions of whether products are needed, whether they are used and for how long. Hence, they do not address the root causes of the problems.

Proposal: Extending producers' responsibility via Targeted Producer Responsibility

Targeted Producer Responsibility (TPR) is a proposal for criteria for EPR fee-modulation to affect the production volumes and FF. The TPR proposes a new approach to eco-modulation by incorporating data on used textiles from streams such as household waste and donated textiles. The TPR fee is based on information on the quantity, age, and recycling costs of textiles according to the EU waste hierarchy, differentiated at brand level. TPR is therefore in

line with the 'polluter pays' principle: those who produce clothes that are used the least or never at all, and/or clothes that are difficult or expensive to recycle, pay the most. As more textiles are collected for reuse and recycling in Europe, and utilised at higher levels of the waste hierarchy, costs will increase, and producers will have to contribute to these costs.

Measuring the average lifetime of a product is central to TPR. This measurement should be conducted when a product goes out of use (discarded or donated) by using picking analysis, which is a type of waste audit (Nørup et al., 2018). Based on waste picking analyses, an average usage timespan can be estimated. It requires that the production date is included in the labelling of clothing, a long overdue requirement. The time-lapse from when the product is put on the market until it goes out of use will give the manufacturers a score which is multiplied by the volumes of the various brands or other suppliers on the market. In addition, textile waste analyses provide knowledge on textile consumption and textile waste and might be important for research on durability.

Overall, there is a growing interest in durability of textiles both academically and in regulation, but it is still debated how to measure and integrate this in policy. We agree with Vanacker et al., (2022) that there is a lack of methods for measuring durability in the current literature, but we disagree in the usefulness on discussing extrinsic (or emotional) as something separate. The important difference is whether the measurement looks to the future based on various design parameters (including what is called the emotional or extrinsic) or looks at it historically, when the use phase has ended. To our knowledge, the assumptions about design parameters' impact on durability have not been empirically validated (Maldini & Balkenende, 2017). Design parameter is one of many elements that influence the lifetime of clothing. This element can be studied in terms of how people explain why their clothes go out of use (Laitala & Klepp, 2022). Another option is to use information about the garment, user, garment use practices, and aspects like price and number of new items in the wardrobe (ibid). In summary, durability is a result of many aspects of a product, such as product design, business model, marketing, and price. The advantage of TPR is that it summarizes all

these parameters because it measures the actual product use. The brands that are most used are those that make products that people like and use and have a responsible business model.

TPR can be used and combined with different varieties of EPR and other political instruments. If it is to have the effect of reducing overproduction and making FF out of fashion, it depends on the fee being high enough to affect the producers, their business models, and down-stream decisions. However, it is not the size of the fee that distinguishes TPR from other EPR systems, but the way it is calculated.

Conclusion

We argue that to reduce the environmental impact of increased volumes of textiles measures should be developed that go beyond product design and life-prolonging and end-of-life strategies. TPR shows how the facts about consumption and the use phase, could be embedded in the design of eco-modulation fees. Picking analyses ensures that the instrument is based on empirical facts rather than assumptions. The extent to which it will have an impact on FF, will depend on the size of the fee, the larger, the more effective. That is, it will be expensive to put goods on a market that will not be sold, will be bought but not sufficiently used or not used at all. TPR addresses the misunderstood fact that the use phase is important, but that more durable products do not necessarily mean less production.

The TPR concept contributes to the collection of knowledge and data on the use and durability of products and can therefore also have a positive impact on other policy measures, such as the PEF, the Ecodesign Directive and LCAs. We hope that TPR concept inspires policymakers to consider incorporating empirical insights from use and end-of-life phase into environmental regulation of products on the EU market. Finally, we hope the proposal inspires additional researchers to investigate the use phase and waste streams to create better data sets for measuring product lifetimes. and managing textile and other products flows.

Acknowledgments

References

EC. (2022). EU strategy for sustainable and circular textiles. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM (2022) 141 final. European Commission.

EEA. (2023). EU exports of used textiles in Europe's circular economy. Briefing no. 01/2023. European Environmental Agency. https://www.eea.europa.eu/downloads/422c5167f5eb4f62966039b4c90cd26e/1677498718/eu-exports-of-used-textiles.pdf

Ekström, K. M., & Salomonson, N. (2014). Reuse and recycling of clothing and textiles—A network approach. Journal of Macromarketing, 34(3), 383-399. DOI: 10.1177/0276146714529658

Kant Hvass, K. (2014). Post-retail responsibility of garments–a fashion industry perspective. Journal of Fashion Marketing and Management, 18(4), 413-430.

Kant Hvass, K., & Pedersen, E. R. G. (2019). Toward circular economy of fashion: Experiences from a brand's product take-back initiative. Journal of Fashion Marketing and Management: An International Journal, 23(3), 345-365.

Klepp, I. G., Laitala, K., & Wiedemann, S. (2020). Clothing lifespans: what should be measured and how. Sustainability, 12(15), 6219.

Klepp, I.G., Måge, J., Kant Hvass, K. & Tobiassen, S.T. (2022a). How to make sure Extended Producer Responsibility becomes a silver bullet. https://clothingresearch.oslomet.no/2022/10/24/how-to-make-sure-extended-producer-responsibility-becomes-a-silver-bullet/

Klepp, I.G., Sigaard, A.S,. Berg, L.L. & Rabben, K. (2022b). Foreløpige resultater fra plukkanalyse av kasserte tekstiler. SIFO. https://uni.oslomet.no/klesforskning/2022/10/12/forelopige-resultater-fra-plukkanalyse-av-kasserte tekstiler/.

Klepp, I. G., Laitala, K., Løvbak Berg, L., Tobiasson, T. S., Måge, J., & Kant Hvass, K. (2023a). Critical Review of Product Environmental Footprint (PEF): Why PEF currently favors synthetic textiles (plastics) and therefore also fast fashion. Oslomet. https://clothingresearch.oslomet.no/wp-content/uploads/sites/1026/2023/02/Background-paper-on-PEF.pdf

Klepp, I. G., Fletcher, K., Maldini, I., Berg, L. L., Tobiasson, T. S., Måge, J. & Kant Hvass, K. (2023b). Research briefing: Input for policy development based on understanding of clothing consumption. March 2023. SIFO. https://clothingresearch.oslomet.no/research-briefing-on- clothing-consumption/

Klepp, I.G., Berg, L.L., Sigaard, A.S., Tobiasson, T.L., Kant Hvass, K. & Gleisberg, L. (forthcoming). THE PLASTIC ELEPHANT: overproduction and synthetic fibres in sustainable textile strategies. SIFO.

Laitala, K., & Klepp, I. G. (2015). Clothing disposal habits and consequences for life cycle assessment (LCA). In S. S. Muthu (Ed.), Handbook of life cycle assessment (LCA) of textiles and clothing (pp. 345-365). Cambridge: Woodhead Publishing.

Laitala, K., & Klepp, I. G. (2020). What affects garment lifespans? International clothing practices based on wardrobe survey in China, Germany, Japan, the UK and the USA. Sustainability, 12(21).

Laitala, K., & Klepp, I. G. (2022). Review of clothing disposal reasons. SIFO. https://clothingresearch.oslomet.no/2022/10/19/review-of-clothing-disposal-reasons/

Laubinger, F., Brown, A., Dubois, M., & Börkey, P. (2021). Modulated fees for Extended Producer Responsibility schemes (EPR). OECD Environment Working Papers No. 184. https://doi.org/10.1787/2a42f54b-en

Lehmann, M., Arici, G., Boger, S., Martinez-Pardo, C., Krueger, F., Schneider, M., Carrière-Pradal, B. & Schou, D. (2019). Pulse of the fashion industry - 2019 update. Global Fashion Agenda, Boston Consulting Group, Inc. and Sustainable Apparel Coalition. http://media-publications.bcg.com/france/Pulse-of-the-Fashion-Industry2019.pdf

Lindhqvist, T. (2000). Extended producer responsibility in cleaner production: Policy principle to promote environmental improvements of product systems. Lund University.

Maitre-Ekern, E. (2021). Re-thinking producer responsibility for a sustainable circular economy from extended producer responsibility to pre-market producer responsibility. Journal of Cleaner Production, 286, 125454

Maldini, I. (2019). From speed to volume: reframing clothing production and consumption for an environmentally sound apparel sector. Paper presented at the Product Lifetimes and the Environment Conference Proceedings, Berlin.

Maldini, I., & Stappers, P. J. (2019). The wardrobe as a system: exploring clothing consumption through design fiction. Journal of Design Research, 17(1), 3-25.

Micheaux, H., & Aggeri, F. (2021). Eco-modulation as a driver for eco-design: A dynamic view of the

French collective EPR scheme. Journal of Cleaner Production, 289, 125714.

Middleton, J., (2015). Mending. In Fletcher, K., & Tham, M. (Eds.), The Handbook of Sustainable Fashion (pp 262-275). Routledge.

Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T., & Gwilt, A. (2020). The environmental price of fast fashion. Nature Reviews Earth & Environment, 1(4), 189-200.

Oxford Learner's Dictionary. (n.d.). Overproduction. in oxfordlearnersdictionaries.com dictionary. Retrieved January 10, 2023, from https://www.oxfordlearnersdictionaries.com/definition/english/overproduction?q=overproduction

Palm, D., Elander, M., Watson, D., Kiørboe, N., Salmenperä, H., Dahlbo, H., Moliis, H., Lyng, H., Valente, C., Gíslason, S. and Tekie, H. & Rydberg, T. (2014). Towards a Nordic textile strategy: collection, sorting, reuse and recycling of textiles. Nordic Council of Ministers.

Palm, C., Cornell, S. E., & Häyhä, T. (2021). Making Resilient Decisions for Sustainable Circularity of Fashion. Circular Economy and Sustainability, 1(2), 651-670.

Payne, A., & Mellick, Z. (2022). Tackling Overproduction? The Limits of Multistakeholder Initiatives in Fashion. International Journal for Crime, Justice and Social Democracy, 11(2), 30-46.

Stål, H. I., & Corvellec, H. (2018). A decoupling perspective on circular business model implementation: Illustrations from Swedish apparel. Journal of Cleaner Production, 171, 630-643.

Tham, M. (2008). Lucky people forecast - a systemic futures perspective on fashion and sustainability. (PhD Thesis). University of London. https://research.gold.ac.uk/11301/1/Tham_PhD%20reduced.pdf

Vanacker, H., Lemieux, A. A., & Bonnier, S. (2022). Different dimensions of durability in the luxury fashion industry: An analysis framework to conduct a literature review. Journal of Cleaner Production, 377, 134179.

Vase, R., 2022. Driving a Circular Economy for Textiles through. Changing Markets Foundation. Netherlands. https://policycommons.net/artifacts/2481229/driving-a-circular-economy-for-textiles-through-epr/3503447/

Watson, K. J., & Wiedemann, S. G. (2019). Review of methodological choices in LCA-based textile and apparel rating tools: key issues and recommendations relating to assessment of fabrics made from natural fibre types. Sustainability, 11(14), 3846.