

Regulation Promoting the New Circular Economy

Subjects: **Environmental Sciences**

Contributor: Meital Peleg Mizrahi

Over the past few decades, the production and consumption of clothing has increased exponentially, leading to a dramatic increase in the negative environmental consequences produced by the fashion industry. Given the rising pace of global warming and the rising concern about the fashion industry's contribution to the climate crisis and its exploitative social dimensions, decision makers, politicians and government officials have begun to promote sustainable fashion through public policy. This article reviews the main barriers facing a circular economy in general and the fashion industry in particular. It considers nascent regulations emerging throughout the world in the field of sustainable fashion, applying circular economic principles to the fashion industry.

sustainable fashion

circular economy

sustainability

regulation

public policy

economic barriers

policy proposals

Fashion

Sustainable fashion

1. The Circular Economy

Promotion of a circular economy, combined with economic regulation, can be a very important tool for influencing consumers to prefer sustainable fashion over fast fashion. The circular economy offers an alternative economic model to the linear economy, promoted by the liberal worldview since the beginning of the Industrial Revolution ^[1]. A circular economy seeks to sever the link between growth and economic activity and the consumption of virgin and perishable natural resources ^[2]. It proposes an alternative model that supports sustainable development, social justice and economic well-being ^{[1][2]}. A circular economy strives to eliminate the waste outside the system, by relying on new business models (such as collaboration or use without ownership) ^[3]; designing products for long-term use with minimal residuals in production ^[4], as well as designing products and materials in a way that allows them to be repaired, or at least easily recycled ^[1]. In short, it designs a production process that reflects the circular patterns found in natural systems ^[5], with minimal depreciation and emissions along with maximum reuse of materials.

Wise consumption means minimizing unnecessary purchases, preferring products with circular characteristics and choosing cooperative models of consumption that prevent the storage and disposal of finished products and also contributes to the circular economy ^[6]. Finally, reusing, repairing and recycling addresses the by-products of production and consumption processes, enabling the creation of secondary raw materials, capable, in some cases, of replacing virgin raw materials mined from nature ^[7]. This model strives for efficiency and is supported by technological innovation that contributes to business competitiveness, job creation and, at the same time, environmental protection. Hence, creating a circular economy requires substantial and profound changes in existing production paradigms, as well as a more equitable sharing of environmental burdens in production and consumption. Expediting such changes requires a more supportive infrastructure of public policies and regulation ^[8].

A circular economy approach in the field of fashion addresses design strategies which include reduced utilization of virgin raw materials, efficiency, recycling, reuse, and remanufacturing, new business thinking, avoiding textile waste, slowing down consumption. It also embraces new business strategies which include renting, sharing, swapping, and borrowing, while at the same time increasing sustainable fashion consumption (See **Figure 1**) ^[9].

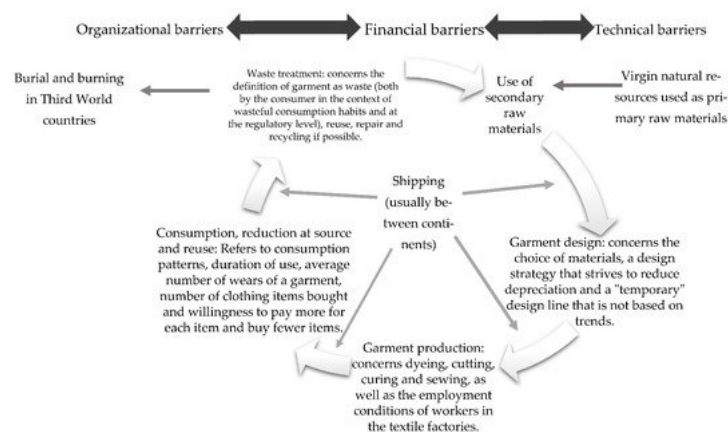


Figure 1. An abstract model of a circular economy, including barriers, in the field of fashion.

It should be mentioned that the definition of sustainable fashion is not uniform and can even be controversial ^[10]. Buying clothes from sustainable materials contradicts the broader objective of reducing purchases of new products. Buying from local designers can conflict with the use of existing clothes or buying second-hand clothes. It also makes it significantly more difficult to maintain transparency in the production process. Common to all approaches, however, is the desire to create an alternative to the fast fashion industry and reduce the environmental and social impacts of the fashion industry ^[11].

2. Dilemmas Pertaining to Sustainable Fashion and Its Expression in the Business World

We find it appropriate to point this out, as there are also voices in the field of sustainability who would argue, with some justification, that reducing and stopping fashion consumption, which unlike food is not a life-sustaining product, is the most environmental solution to the problems posed by today's fashion industry ^{[12][13]}. It is, however, important to emphasize the distinction between fast fashion and sustainable fashion. In our view, increasing the market share of sustainable fashion should lead to a reduction in the consumption of fast fashion as well as fashion in general, in a way that still allows the world to enjoy the creativity and joy of fashion without excessive environmental and social costs. At the very least, the transition from fast fashion to sustainable fashion, is an important intermediate step on the way to reducing overall consumption. In this spirit, in July 2021 seventeen leading UK fashion companies, representing 50 per cent of the country's clothing and textile sales, signed a voluntary agreement: "Textiles 2030", to reduce their greenhouse gas emissions by 50 percent, their water consumption by 30 percent, and integrate new approaches of circular economy into their business model by 2030 ^[14].

The agreement includes a clear plan for achieving the goals over the next decade and a detailed blueprint to guide the fashion industry should it seek to become circular. Among other measures, the report recommends producing clothes that will last longer and that are easier to recycle at the end of their lives ^[14]. The proposed production systems would not produce waste and rely primarily on recycled raw materials. The *Textiles 2030* report is the product of a collaboration between government, business, community organizations and NGOs. It was written with the aim of encouraging governments, businesses, financiers, investors and non-profit organizations to take broader action that includes "radical and significant changes".

Along with its recommendations, the report also emphasizes the inherent need for supportive regulation. In fact, according to the report, without supportive economic regulation, it will not be possible to reach the report's stated objectives, as well as global emission reduction targets ^[14].

This conclusion is consistent with the UN *Fashion Industry Charter for Climate Action*. The charter laid out new goals for its 130 signatories. It was launched during the second week of the UN Climate Conference COP26, under the leadership of Stella McCartney and the United Nations. Under the Charter, signatories must submit action plans within the next 12 months detailing their pathway to achieve the Charter's upgraded goals. Under the updated charter, signatories must pledge to reach net-zero emissions by no later than 2050 and either halve their emissions by the end of the decade or set science-based targets within the next 24 months ^[15].

About a week before the launch of the Charter, the *Nonprofit Textile Exchange* launched a call backed by more than fifty fashion and textile companies. The exchange includes such industry leaders as Gucci-owner Kering, Gap and H&M Group. In addition to its declared "burning need" for regulation and environmental policy in the field of fashion ^[15], the Charter called for changes to trade policy that would encourage the use of so-called preferred materials, such as organic cotton or recycled fibers:

"It's time to accelerate progress", said Stefan Seidel, Puma's head of corporate sustainability and chair of the Fashion Charter steering committee. "Now with the new ambition level, we're all clear on where we need to go" ^[15].

3. Barriers to a Circular Economy

In the last decade, many examples of business models that combine a circular economy, such as lease, pay-per-use and take-back schemes, have become widespread. Several evaluations of present production systems indicate that the current institutional economic frameworks hinder an expeditious transition to a circular economy ^[16]. These studies suggest that in order to achieve the United Nations Sustainable Development Goals (SDGs), we will have to change the rules that currently govern our economic system in close cooperation with government institutions ^{[1][7][16]}. In this context, it is worth mentioning that the UN has defined the fashion industry as being "of high relevance to integrating the targets of the seventeen Sustainable Development goals". ^[17].

Accordingly, in order to promote a transition to a circular economy and to achieve the SDGs, the main barriers facing a circular economy in general, and to sustainable fashion in particular, must be mapped.

A circular economy requires changes on three fronts: technical, financial and organizational ^[16]. The technical “circularity” aspect refers to thinking about how we manufacture the products. Production of products within a circular economy refers to the recycling, renewal, repair and extension of product life. In this context, most of the barriers merely interfere with firm capacity—that is, they require new technological-industrial developments. However, initially, changes must also take place in the visions and decisions of the relevant manufacturers. Such factors are greatly influenced by the two other forces: the financial dynamics and the organizational structures ^{[18][19][20]}.

As to the financial aspects, from an economic point of view, four main barriers have been identified that directly relate to the revenue model of businesses:

- Common depreciation standards in accountancy incentivize organizations to regard a product's value as declining rapidly toward EUR 0. This stimulates a take-make-waste model ^[6]. Present rules serve to increase the tax benefits that producers can obtain. Rapid depreciation rates lower the perceived market value of used products, which constitutes a barrier to the development of a circular economy for which used product value is a necessary precondition. Furthermore, depreciation standards also limit the maximum length of rental, lease or pay-per-use periods ^[19].
- VAT favors the traditional sales model over the more circular rent-purchase model. In a linear economy, most producer–user relationships rely on traditional sales relationships that involve paying the full value of the product at the time of sale. As a result, manufacturers are required to pay VAT on the income earned at the time of sale. Producers, however, operating rent-purchase relationships with customers, still need to pay VAT on all projected revenues obtained during the rental period, as rent-purchase is seen as the deferred supply of goods ^{[16][21]}. This results in negative business dynamics. If entire businesses are built on this relationship, upfront costs will have negative impacts on liquidity and business viability.
- VAT currently does not favor used products and materials over new ones. In addition to the barriers described above, concerning VAT, in B2C transactions, new, second-hand and recycled products are all taxed equally. This means that for all products that are not new, the sales tax is paid twice or even more by users—once at every transaction of the product. This reduces business competitiveness, especially considering the extra costs incurred in creating take-back systems ^[22].
- Common financial assessment practices favor linear economic models over circular economic models. The less-certain financial nature of circular revenue models (CRMs) makes them riskier from a traditional financial risk assessment's point of view. CRMs are characterized by recurring periodic revenue streams and therefore longer payback periods. They also represent a value shift from assets to contracts ^{[6][20][23]}.

Traditional risk assessments of CRMs tend to address them as posing greater financial risks than traditional revenue models. There are several reasons for this: balance sheet extension due to producer ownership; uncertainty about incoming cash, especially with B2C relationships (debtor risk); uncertainty regarding contract length due to increased contract flexibility; and contract financing, which is seen as riskier than asset financing ^{[6][16][23]}. On the other hand, CRMs offer a number of advantages, which are rarely accounted for in traditional financial risk management. Beyond the obvious environmental benefits, there are also longer product lifetimes; higher residual values; more resilience towards future resource scarcity; and opportunities to expand to new (second-hand) markets.

These barriers ensure that linear income models are maintained as a status quo and continue to serve as the default paradigm for business models. Other finance barriers relate to accountancy standards for leasing (i.e., IFRS). These include easy access to finance for governments, waste legislation and taxing labor as opposed to taxing resources. Nonetheless, with simple changes in economic regulation, these four main barriers can be overcome with relative ease, generating disparate benefits in the field of CRM ^[16].

In addition, circular reuse must be organized “up front”, in order to ensure the product's circularity throughout the value chain. Otherwise, a product, in theory, can be designed and produced according to the “technical” principles of circularity. However, there is no guarantee that in reality the product (and its components/raw materials) will indeed be used in a circular manner, either by manufacturers or by consumers. As Mark Hogarth, creative director at Harris Tweed Hebrides, explains: “Clothes can be very sustainable, but what will determine their sustainability is how they are used by consumers” ^[24]. For example: a Cradle-to-Cradle pair of jeans is circular in theory. However, it will only contribute to a circular economy if we prevent it from ending up in a landfill ^{[16][24]}. Therefore, cooperation between the chain partners, including business owners, consumers and policy makers, is essential for the transition to a circular model.

An additional significant organizational barrier is that the suppliers are not sufficiently stimulated to redesign their products to facilitate value retention, nor is value retention actually being incentivized. Value retention means designing a product so that

it can last for as many years as possible, both in terms of quality and relevance. With regard to fashion, it means the production of high-quality clothing that are resistant to the dangers of time and laundry. The design of high-quality clothing also contrasts with the rapid pace, at the heart of today's fast fashion model.

Indeed, there is a fundamental conflict with the defining ethos that informs the fashion industry. The concept of value retention conflicts with the need to promote the purchase of new products, even if they are clothes in the spirit of the circular economy, for example, made from recycled materials. Hence, frequently, model programs designed to promote a circular economy can lead to recycling. While preferable to disposal, the programs usually lower the value of the material, creating many environmental impacts and making it technically almost impossible for the fashion industry to pursue maintenance, reuse or remanufacturing initiatives. Yet, we argue that the approach applied in the circular economy can be significantly less expensive. Given the state-of-the-art technology for textile recycling, today, more than ever, a circular approach is achievable.

Another organizational barrier concerns the willingness of consumers to purchase products. Here, utility models of a circular economy, as opposed to a linear economy are relevant. Many consumers are not aware of the environmental benefits of a circular economy and the value of using recycled materials in consumer products. In the absence of a significant incentive, economic or social, they a priori, consider circular economy products in all forms, to be inferior and as a result, avoid purchasing them ^{[25][26]}.

4. Barriers to a Circular Economy in Fashion

Many of the barriers facing a circular economy described above are manifested in the fashion industry. In just one of many examples, the economic barrier of VAT, which does not favor rent-purchase relationships, negatively affects the dynamics of MUD Jeans: MUD Jeans rents jeans for a fixed monthly fee through its Lease-a-Jeans concept ^{[16][27]}. After one year, users can decide to keep the jeans, and turn the rental transaction into a purchase transaction, or swap them for a new pair. Thus, MUD Jeans encourages its customers to use jeans for a longer period, while at the same time, recycling the returned jeans as new jeans.

Notwithstanding the obvious environmental benefits of the circular economic model of MUD jeans upon first payment of the jeans, MUD Jeans only obtain 1/12 of the alternative sales revenues. However, retailers need to pay the full VAT on all revenues obtained during the subscription period. Thus, current VAT rules have a negative effect on the revenue model of MUD Jeans, limiting its scalability.

One telling instance of this distortion in taxation can be seen in the case of ThredUP. ThredUP is a one of the largest online thrift stores in the US, offering second-hand items from a variety of brands such as H&M, Forever 21, Gap, and Banana Republic, alongside premium brands from top designers ^[28]. ThredUP also allows customers to sell clothes in which they have lost interest in exchange for the transportation and handling costs. Despite the many environmental benefits of this transaction, from the point of view of many consumers, the second-hand clothes it offers are an inferior product, when compared to the same apparel sold in its original form in retail stores.

Unlike conventional clothing stores, ThredUP sells clothes after they have already undergone a number of uses and washes. This can detract from their quality. In addition, each garment appears once and in one size, so the range of sizes is significantly reduced. As a result, many consumers expect to find the clothes at a lower price than the price at which they were first sold by producers. Additionally, indeed, on the ThredUP website, they guarantee a price lower than the original price by up to 90% ^[29]. Despite the significant reduction in profit, ThredUP is taxed no differently than a fast fashion corporation. This individual case faithfully represents the fiscal reality of most of second-hand shops, which constitute an important part of a circular economy in the field of fashion. It is particularly true, given the astonishing fact that there are already enough clothes in the world to dress humans for the next fifty years ^[29].

Another critical technical barrier facing sustainable fashion concerns the recycling of clothing. Worldwide, 130 billion garments are produced annually, of which 80 billion are sold, yet less than a single percent are recycled ^{[30][31][32]}. Low recycling rates can be attributed to a number of factors: most of the clothes produced today are made of mixed materials (cotton, polyester, Lycra—Spandex, etc.) which are essentially non-recyclable; textile recycling programs requiring a substantial human workforce to sort the clothes according to the compound of the fabric and color, as a preliminary stage for recycling; present recycling technology today remains significantly more expensive than burning or burying clothes. When these technological factors combine with the absence of sufficient regulation prohibiting burning and burying clothes, most clothing manufacturers simply take the "path of least resistance" and choose not to recycle ^[32].

It should be mentioned that the environmental impact of low-cost garments typically is not felt in the location where they are purchased but rather primarily affect the locations where they are produced, buried or burnt ^[33]. This geographic disconnect constitutes an additional barrier, allowing low-cost, garment manufacturers to overlook, or intentionally ignore the

environmental costs in the final price of the product. Basic regulatory axioms involving the “polluter pays principle” as well as policy tools designed to internalize externalities have not yet been applied to this globalized market.

Accordingly, a significant organizational barrier facing textile recycling involves legislation ^{[34][35][36]}. Neither European nor American environmental laws target textile waste management. Regulations vary between countries and there is no legal mechanism that mandates or regulates the collection of textiles. A collection requirement for post-consumer textiles offers the potential of establishing reverse supply chains and rearranging industrial operations, as well as influencing the disposal practices of consumers ^{[37][38]}.

Accordingly, one of the most significant, prevailing organizational barriers to a sustainable fashion industry involves consumers. A circular economy is not solely about technical processes, recyclable materials or recovery in a transition to renewables” ^[39]. Attention in the discourse surrounding a circular fashion economy tends to focus on manufacturers, with reference to production methods and new business models. When it comes to fashion, it is simply not possible to promote a circular economy without the thoughtful integration of consumers. As the Swiss, sustainable production expert, Walter Stahel posits: “the optimization of use. Or utilization of manufactured objects, is at the core of the circular economy” ^[9].

It is therefore important to note that most fashion consumers not only fail to optimally utilize their clothing, but actually exhibit wasteful patterns of usage. On average, 80% of the time, fashion consumers use 20% of their clothes ^[30]. Moreover, 21% of the clothes in the closets of developed countries will never be worn ^[26]. An estimated 85% of clothes purchased, whether in a circular economy or in a fast fashion outlet, will be disposed of in less than a year ^{[40][41]}. Hence, the effectiveness of efforts to promote sustainable fashion, which do not require consumers to make radical changes in their consumption practices are likely to be limited. Circular economy programs that only include alternative manufacturing methods and focus solely on manufacturers are not sufficiently comprehensive to solve the fundamental problems associated with the fashion industry.

Another lacuna in present circular economy methods involving the fashion industry is the narrow focus on the environmental aspects of production at the expense of adequate consideration of social aspects. As mentioned, the fashion industry is not only one of the most polluting industries in the world, but also one of the most exploitative. The collapse of the Rana Plaza textile factory in 2013 in Dhaka, Bangladesh, in which more than 1000 workers were killed and another 3000 injured, brought the issue of workers’ rights in the textile factories to international attention, due to the extraordinary scale of the disaster ^[42].

Tragically, work accidents in the fashion industry remain very common: Since January 2021, there have been thirty-six incidents and fatal accidents as a result of faulty safety measures in textile factories, leading to the deaths of 109 workers and 153 serious injuries in Pakistan, India, Egypt, Morocco, China, and Cambodia ^[43]. Furthermore, accidents leading to occupational deaths and injuries typically frequently are not reported at all. It can therefore be assumed with high probability that the number of preventable deaths from clothing manufacturing is significantly greater than present estimates ^[43].

Therefore, it is important to remember that sustainability, in its broad conception, relates to the tripartite relationship between humans, environment and economy ^[5]. It is not possible to chart a sustainable course for the fashion industry without addressing the conundrum of employee protection and occupational health and affording it the same importance as environmental protection. A broader concept is needed, one which sees a circular economy as a means of promoting sustainable fashion and not merely a goal.

Finally, it is clear that voluntary regulation on the part of fashion manufacturers, despite its symbolic significance, is not sufficient to address the many problems posed by the fashion industry. In order to realize the SDG and UNFCCC emission reduction targets, as well as ensure the safety of textile workers around the world and achieve a radical change in consumers’ fashion consumption patterns, local, national and in particular, Transboundary regulation is essential. The following section reviews existing regulations and proposes possible regulatory strategies for promoting sustainable fashion, with an emphasis on establishing a circular economy.

References

1. Murray, A.; Skene, K.; Haynes, K. The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *J. Bus. Ethics* 2017, 140, 369–380.
2. Ghisellini, P.; Cialani, C.; Ulgiati, S. A Review on Circular Economy: The Expected Transition to a Balanced interplay of environmental and economic systems. *J. Clean. Prod.* 2016, 114, 11–32.
3. Kneese, A. The Economics of Natural Resources. *Popul. Dev. Rev.* 1988, 14, 281–309.
4. Stahel, W.R. Policy for material efficiency—Sustainable taxation as a departure from the throwaway society. *R. Soc. Publ.* 2013, 371, 1–19.

5. Bruntland Report. Our Common Future: The Report of the World Commission on Environment and Development; Oxford University Press: New York, NY, USA, 1987; pp. 127–134.
6. The Ellen MacArthur Foundation. Towards the Circular Economy Vol. 1: An Economic and Business Rationale for an Accelerated Transition; Ellen MacArthur Foundation: Cowes, UK, 2013; Available online: <https://ellenmacarthurfoundation.org/towards-the-circular-economy-vol-1-an-economic-and-business-rationale-for-an> (accessed on 23 November 2021).
7. Hysa, E.; Kruja, A.; Rehman, U.R.; Laurenti, R. Circular Economy Innovation and Environmental Sustainability Impact on Economic Growth: An Integrated Model for Sustainable Development. *Sustainability* 2020, 12, 4831.
8. Pheifer, A.G. Barriers & Enablers to Circular Business Models 2017. Available online: <https://bit.ly/3x305qF> (accessed on 23 November 2021).
9. Niinimäki, K. Sustainable Fashion in a Circular Economy; Aalto University: Espoo, Finland, 2018.
10. Jung, S. A theoretical investigation of slow fashion: Sustainable future of the apparel industry. *Int. IJC* 2014, 38, 5.
11. Ecologist Informed by Nature—Slow Fashion. Available online: <https://theecologist.org/2007/jun/01/slow-fashion> (accessed on 23 November 2021).
12. STAND Earth. Available online: <https://www.stand.earth/> (accessed on 23 November 2021).
13. Extinction Rebellion Call on Fashion to Transform Our Culture of Consumption and Destruction. Available online: <https://extinctionrebellion.uk/2020/09/29/extinction-rebellion-call-on-fashion-to-transform-our-culture-of-consumption-and-destruction/> (accessed on 23 November 2021).
14. WRAP—Textiles 2030, A New Ground-Breaking, Expert-Led Initiative. Available online: <https://wrap.org.uk/taking-action/textiles/initiatives/textiles-2030> (accessed on 23 November 2021).
15. Kent, S. Fashion Steps Up Climate Commitments the UN Fashion Charter Upgraded Its Targets to Drastically Slash Emissions by the End of the Decade and Added LVMH as a Signatory. *Business of Fashion* 2021. Available online: https://www.businessoffashion.com/articles/sustainability/fashion-steps-up-climate-commitments?utm_source=newsletter_dailydigest&utm_medium=email&utm_campaign=Daily_Digest_091121&utm_term=S43O7PIDDJA2LD67GQT4 (accessed on 23 November 2021).
16. Van der Laan, K. Circular Revenue Models—Required Policy Changes for the Transition to a Circular Economy; Copper8; KPMG Advisory N.V.: Amsterdam, The Netherlands, 2019; pp. 2–20.
17. SDG's for Better Fashion. Available online: <https://sustainabledevelopment.un.org/partnership/?p=28041> (accessed on 23 November 2021).
18. Palea, V. Fair Value Accounting and Its Usefulness to Financial Statement Users. *J. Financ. Report. Account.* 2014, 12, 102–116.
19. Kraaijenhagen, C.; van Oppen, C.; Bocken, N. Circular Business: Collaborate and Circulate; Ecodrukkers: Nieuwkoop, The Netherlands, 2016.
20. ING Economics Department. Rethinking Finance in a Circular Economy-Financial Implications of Circular Business Models 2015. Available online: <https://think.ing.com/reports/rethinking-finance-in-a-circular-economy-financial-implications-of-circular-business-models> (accessed on 23 November 2021).
21. EUR—Lex Access to European Union Law—COUNCIL DIRECTIVE 2006/112/EC 2006. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32006L0112> (accessed on 23 November 2021).
22. Overheid.nl-Omzetbelasting, Margeregeling; Regeling Voor Gebruikte Goederen, Kunstvoorwerpen, Voorwerpen Voor Verzamelingen en Antiquiteiten—2019. Available online: <https://wetten.overheid.nl/BWBR0035390/2019-01-01> (accessed on 23 November 2021).
23. The Ex'tax Project. New Era. New Plan. Europe. A Fiscal Strategy for an Inclusive, Circular Economy; The Ex'tax Project Foundation: Houten, The Netherlands, 2016; Available online: www.ex-tax.com (accessed on 23 November 2021).
24. How Can the Industry and Education Foster Sustainable SKILLS to Ensure New Talent Entering Industry Has the Expertise and Knowledge Required to Champion Sustainability? In Addressing Sustainable Goals in the Fashion Industry through Education and Employability, Glasgow, Scotland, 4 November 2021.

- 7/8

berlin.de%2Fforschung%2FGarments%2FMedien%2F2018-Anner-Research-Report-Binding-Power.pdf&clen=1827523 (accessed on 24 November 2021).

43. Clean Clothes Campaign Deaths and Injuries in the Global Garment Industry. Available online: <https://cleanclothes.org/campaigns/protect-progress/deaths-and-injuries-in-the-global-garment-industry> (accessed on 23 November 2021).

Retrieved from <https://encyclopedia.pub/entry/history/show/42318>