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TRACEABILITY INFORMATION TO INFORM CONSUMER IN TOTAL TRANSPARENCY

Pantxika Ospital ^{1,2} - Dimitri Masson ¹ - Cédric Beler ³ - Jérémy Legardeur ¹

¹ ESTIA Recherche

² UB - Université de Bordeaux

³ ENIT - Ecole Nationale d'Ingénieurs de Tarbes

The textile industry is facing ecological and economic crises. Since the rise of fast fashion, the textile industry is one of the major and ever-increasing contributors to pollution and waste. Fashion brands are now producing twice the amount of clothing today compared with before the year 2000 (Ellen MacArthur Foundation, 2017). In the meantime, more consumers become aware of both social and ecological risks in the textile industry and do not want to encourage such practices. In 2018, 44% of consumers bought less clothing and for 40% of them, it was a chosen de-consumption. Among them, more than a third of young people (18-25 years old)

(Ditty, n.d.). This phenomenon reveals a growing consumer awareness and a growing distrust of the industry's companies. A survey conducted in April 2020 across 2035 British and German consumers reveals that 64% of them would spend less on fashion during the crisis, and half of them expect that trend to continue after the crisis passes. As well, consumers are open to purchasing more durable fashion items, as well as repairing and keeping them longer. This survey reveals a shift in purchasing behavior, customers want to make informed purchases (Granskog *et al.*, n.d.). The globalized and fragmented textile supply chain requires different laws and regulations (Fletcher and Grose, 2012) to improve its transparency.

The paper is structured as follows: The first part presents the current situation regarding the transparency of information communicated by brands in store and online, and in the second part, we will describe what information could be shared with informed consumers, after an experiment with 3 products from 3 French brands.

The first part is the result of a study both in store and online about legal requirements and recommendations about traceability information related to products and environmental displays. We compare these requirements with actual data gathered in store and in online-shop. From our initial observations: The consumer survey by Fashion Revolution in 2018 and 2020 suggests that fashion labels should be transparent with the disclosure of information to consumers: Manufacturer's address, the origin of fabric, and raw material.

In the second part of the article, we focus on the importance of traceability for gathering the information necessary for a full transparency. We leverage how information technology could be used to gather, collect, sort, and select information to render to the consumer. A first prototype of such a tool is presented in around three use cases from three brands. The prototype includes each product supply chain model, as well as a mock of the information that can be shared through a mobile application. We will collect consumer feedback from members of the Paris Good Fashion movement.

1. INTRODUCTION : TRANSPARENCY AND TRACEABILITY DEFINITIONS

Brands are more transparent analyses Jestratijevic comparing data from four consecutive Fashion Transparency Index (2017–2020) to evaluate transparency in sustainability reporting. (Jestratijevic *et al.*, 2021) This study benchmarks sustainability reporting across five areas: policies (social and environmental standards), governance (business executives and their roles), traceability (supplier networks), audits (audits and remediation plans/procedures) and issues (business risks and negative impacts). Overall, disclosures are more frequent between 2017 and 2020 but disproportionately distributed between 30% transparency leaders and 70% transparency laggards. "retailers cannot be trusted that their

supply chain is safe, ethical, and abuse-free, since they failed to publicly show concrete knowledge of who their suppliers are”(Jestratijevic *et al.*, 2020)

Today's consumer wants to have information related to a product to buy following his values. To do so, companies must give information to their clients regarding their Supply chain and their sustainable purchasing practices to reach UN Sustainable Development Goal 12: Ensure sustainable consumption and production patterns. To go further : SDG 12.8 defines “by 2030 ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature”

According to (Egels-Zandén *et al.*, 2015) Transparency can be defined as disclosure of “traceability information”. He develops this idea of Supply Chain transparency as a corporate disclosure of :

- i) the names of the suppliers involved in producing the firm’s products (i.e., traceability)
- ii) information about the sustainability conditions at these suppliers
- iii) the buying firms’ purchasing practices.”

This general corporate information can give an idea to the consumer about general CSR strategy but it doesn’t help with product information. Distrusting consumers expect “radical transparency” with disclosure of information about product origins, the geographic history, environmental impact of manufacturing, labor and safety conditions of workers, transport, and eventually costs of materials, duties, and mark-up. (The Business of Fashion and McKinsey & Company, 2019)

Transparency to consumers is only one benefit of Traceability, this recordkeeping of all steps of the supply chain allows company to pilot a sustainable business strategy that may be profitable with the convergent area of three dimensions –economic, environmental and social–, where none of which is compromised for the benefit of the others, triple-bottom-line (TBL) concept (Elkington, 1998).

According to United Nations Global Compact Office ” A Guide to Traceability, A Practical Approach to Advance Sustainability in Global Supply Chains” Traceability definition is:

“the ability to identify and trace the history, distribution, location and application of products, parts and materials, to ensure the reliability of sustainability claims, in the areas of human rights, labor (including health and safety), the environment and anti-corruption.”

This definition combines International Organization for Standardization (ISO) traceability definition with sustainability criteria. We choose this definition as a base of our study because the goal is to study what information consumers have access to and compare it to what information consumers would like to have access to make an informed purchase.

Some consumers are both curious and organized before making a clothing purchase. “Millennials are at the vanguard, with 52 percent agreeing that they always research for background information before buying, compared with 45 percent of Gen Z consumers and 41 percent of baby boomers. Reviews and articles are common sources of information. The State of Fashion 2019”
Without this step of research before buying, what kind of traceability information can I expect?

RQ1 : On today engaged leader fashion brands, what traceability information can we get on product?

RQ2 : what info would consumers like to see to make informed purchases?

2. TRACEABILITY INFORMATION AVAILABLE : FASHION PACT BRANDS STUDY

STUDY CONTEXT

The Fashion Pact is a global coalition of companies in the fashion and textile industry that is committed to three areas :stopping global warming, restoring biodiversity and protecting the oceans. This project was launched as a mission given to Kering Chairman and CEO, François-Henri Pinault by French President, Emmanuel Macron. The Fashion Pact was presented to Heads of State at the G7 Summit in Biarritz. On August 2019 the signatories are originally 32, on April 2021, the signatories are 77. These companies are suppliers and distributors, they originate from 14 countries and in total these groups include more than 200 brands, which represents one third of the fashion industry.

We believe that this selection is representative of current fashion landscape with brands that address a diverse range of customers (luxury, middle market, fast fashion, sport) and are collectively committed to sustainable development. Traceability is a key of sustainability and information that can be transparently communicated to the end customer.

METHODOLOGY

We performed a study on what the Fashion Pact brands communicate in-store compared to what they communicate on their commercial website

This study covers 54 brands among the 77 companies involved in the Fashion Pact, provided that they are distributed and accessible in France online and in-store. For groups, we have picked one brand to consider. We have excluded from our selection the companies involved in the Fashion Pact that are distributors, manufacturers or merchandising suppliers. We also excluded brands whose shops were geographically inaccessible (2 cases). Annex 1, tab "all Fashion Pact Signatories".

Our survey was conducted between January and July 2021, which corresponds to the Spring-Summer 2021 collection. All collected data is available on Annex 1

IN STORE STEP

Firstly, we observed in the shop what information is present on all products for each brand. We evaluate whether the following information is mentioned for All/Some/No products:

- The origin of the raw material
- The country of manufacture
- Visibility of the label (yes/no)
- Technological support available (yes/no)
- The name of the Supplier or Factory
- Material certification
- Presence of an environmental impact rating (carbon footprint, water consumption or environmental display, that is a national French environmental labeling project)

If a technological support is available (mobile application, blockchain, connected screen, QR code), we look for the available information.

Where possible, we asked sales staff about Traceability around 2 pieces of information for all products on the sales floor: the origin of raw materials and the country of manufacture.

We took a photograph of a product and its paper and sewn labels.

ONLINE STEP

We compared the information available attached to the photographed product and on the website for the same reference. If the product cannot be found, we look for a similar product, in the same range, in a different color.

See Appendix 2 for a visual comparison of the information available for a product of the selected brands in the shop and online.

This photo/website comparison is complete for the 54 brands.

More broadly, for each brand, we look at the presence of institutional information that would demonstrate a concern for traceability and transparency towards consumers:

- CSR report of the group (extra-financial performance declaration)
- Publication of the list of suppliers
- Environmental and social commitments
- Also for all the products presented on the brand's online shop, we look to see if for All/Some/None of the products are mentioned:
- The origin of the raw material
- The country of manufacture
- The name of the supplier or factory
- Material certification
- Presence of an environmental impact rating (carbon footprint, water consumption or environmental display, that is a national French environmental labeling project)
- The existence of a specific range (sustainable, eco-designed, traced) and possible observations.

FINDINGS

- These committed brands produce a CSR report (Extra-Financial Performance Statement) for 45 of them (i.e. 83%) and more generally: 53 of these 54 brands (i.e. 98%) communicate their social and environmental commitments.
- Also, for 16 of these 54 brands (i.e. 30%), the list of their first-tier suppliers is published, however without linking this information to the products.
- Among these 54 brands, we noticed that little traceability information was present for each product both in the shop and on the internet.
- For 49 brands (i.e. 90%) the “Made in label ” in shop is systematically displayed on the articles, only 8 brands (i.e. 15%) publish this same information on their website.
- The origin of the raw materials is rarely displayed, only 3 brands publish this information on a very limited selection of articles
- The only traceability information systematically attached to the product in shop is the Made in.
- Only 4 brands have technological aids to display traceability information: 2 publish information about the manufacturing process and 2 make it possible to guarantee the authenticity of products.
- Only 5 brands display information about the environmental impact of their products, such as environmental display for 2 of them. In all cases this relates to a limited part of their collection
- We would like to repeat this study every year until the end of the thesis to see the evolution of the information provided.

LEARNING FROM THE LEADERS

TECHNOLOGICAL SUPPORT

Armani Exchange products have Certilogo certification service. Every garment comes with a QR code called Certilogo: the certification service can be accessed by anyone from a PC, tablet or smartphone in order to verify the authenticity of a product before buying.

For the same authentication purpose, Moncler products have a RFID Chip with a QR code for verification on code.moncler.com. After login, customer is asked to enter the name of the point of sale and to upload photographs of entire garment and specific parts such as labels, zip puller or buttons.

For more detailed information disclosed about tier 1 manufacturer in a specific product, Etam and H&M have technological support.

In the Etam stores, the customer can scan a product label using a QR code giving them immediate access to a video or information regarding the factory in which the product was made. This information is also available in the website for a selection of products tagged Wecare. For tier 1 manufacturer, information is available such as : name and address of the factory, length of partnership, number of employees, specialty

of the factory, if an audit has been performed such as BSCI, SMETA, ICS or SA8000, and a video of manufacturer.

On H&M website, a tab "product background" is available for all products : name, address of the factory and number of employees for tier 1 manufacturer is disclosed.

ENVIRONMENTAL IMPACT

Okaidi and Decathlon as a part of environmental display pilot in France display a scoring (A to E) for some products. At Decathlon it represented 61,1% of all ranges in 2019, at Okaidi in 2019, it represented 120 products.

At H&M, for a selection of products from Conscious range, Higg Index Sustainability Profile is displayed (Baseline, levels 1 to 3). It is a scorecard sharing data on a product's environmental impact across four areas : water use, global warming, fossil fuel, water pollution.

As well, some Jeans at Celio and Bonobo have EIM product score : low, medium, high. Spanish based company Jeanologia created Environmental Impact Measuring software (EIM)scoring with 3 criteria : water consumption, energy use and chemical use.

3. TRACEABILITY TOOL TO INFORM THE CUSTOMERS

INFORMATION TO COLLECT

Our survey results show that brands that show the most information about a specific product are using technology to increase the information available on printed labels.

In this way, consumers can access data about the manufacturing of the products they wish to purchase. By moving from a printed label displaying only the composition of the product and its place of manufacture to a technological application, the consumer can understand the origin of his product in a more detailed way, "made in" becomes "made by".

We can follow (OECD, 2018) recommendations :

Type of information related to:

- Products: Origin, composition, technical characteristics, product identification, quality, management data: costs and sales, sustainability*.
- Processes: Inputs and outputs, events, process identification, sustainability*.
- Facilities : Details of economic operators, activity, location, identification of facility and economic operator, sustainability*.
- Transport: Details of economic operators, location, transport, sustainability*

*Sustainability refers to information on the environment, human rights and labor, health and safety, and ethics.

At each stage in a supply chain, proof of transaction follows in order to constitute a chain of custody. This term originates from a legal expression that refers to "a chronological documentation of the processing of evidence throughout a criminal investigation." Indeed, each actor of the supply chain must be able to transmit verifiable information, simple statements cannot give credibility to a total traceability. This can be invoices, transaction certificates, test results, inspection reports for certification.

METHODOLOGY

We conducted an experiment with 3 brands to create a mockup for client restitution for a specific product. We established a list of collectible data for several uses including information for client, company and industry, legal department and sustainability. This spread sheet is divided in 3 tabs : product history, detailed bill of material and consumer restitution.

This file is completed during and after an interview with brand, brands have to do a research about components traceability. During interview we ask about their procurement strategy and their engagements.

So far, we completed this research only with one brand.

This luxury brand wants to keep the addresses of its suppliers secret. However, the company has carried out a very thorough investigation into the sourcing of its materials. It has chosen to develop five themes: Composition, Manufacturing, Impact, Commitments, Craftsmanship.

DISCUSSION AND FUTURE WORKS

It's hard to get brands to commit to transparency in their supply chain.

They find it difficult to know all the stages in the manufacture of their products, especially the supply of raw materials, and particularly when they buy finished products directly.

Digitalization of all Supply Chain from raw material to consumer, could create a dynamic relationship between brand, manufacturer, consumer, and NGO. Each product with individual identification would have a Digital passport to enhance information on label and create a link between all actors.

Our future works will include experiment of digital passports for brands in our research ecosystem.

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