

Moving Textile Artisans' Communities towards a Sustainable Future – A Theoretical Framework

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Abstract: The current economic crisis is building momentum for designers to challenge the linear take-make-waste model and explore sustainable strategies, services and systems. With this in mind, this research explores how service design can encourage textile artisans' communities towards a sustainable future, providing social engagement, rescuing cultural heritage, boosting economic development and enhancing environmental stewardship. Service design is here proposed as an approach to empower such communities, co-design collaborative services and sustain innovations within an enabling ecosystem. The paper focuses on the first study of this research where a theoretical framework to help textile artisans' communities transitioning to a sustainable future was co-developed with academic experts in the field. A Nominal Group Technique and semi-structure interviews were used to collect data; results and findings are presented as barriers, enablers and a manifesto to encourage a sustainable future. To conclude, next steps and challenges posed by the envisioned future are discussed.

Keywords: textile artisans' communities; social innovation; sustainable future; service design

1. Introduction

In order to face the complex challenges of the current and future world, design is moving its focus from product and manufacturing issues towards strategies, services and systems, addressing social and environmental problems (Buchanan 2001). Within this arena, we are also witnessing an upsurge of interest in artisanship, considered as a resilient response to the increasing demand for flexible, customised and redistributed manufacturing, reconnecting communities to their local material culture and reaching global markets. In particular, within the craft landscape, this research is focused on textile artisanship, here defined as the human-centred economic activity of giving form and meaning to local fibres, by hands or directly controlling mechanised and digital tools, and managing the process of



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making small and flexible batches of culturally and socially significant apparel. For the purposes of this research, the textiles sector is chosen for its high employment of skilled artisans, wide range of applications, and ever-increasing consumption trends, causing urgent environmental and social challenges (Earley et al. 2010; DEFRA 2011; Crafts Council 2014). Recent evidence suggests that the textile sector is one of the most complicated productive chains, involving different actors (i.e. farmers, manufacturers of fibres, yarns, fabrics and apparel, retailers), service sectors and waste management (DEFRA 2011). Although technical reports produced by several organisations (e.g. Department for Environment, Food & Rural Affairs – DEFRA; Waste & Resource Action Programme – WRAP) assess the environmental sustainability of textiles, there is still a shortage of literature seeking to envision sustainable futures in this field, which this research intends to contribute to. Moreover, this research intends to overcome the shortage of studies on the artisan and his/her social implications, beyond environmental issues.

2. Sustainability Challenges within the Textiles Value Chain

Increasing global competition is leading many artisans to live in a precarious, fractured and marginalised condition (Scrase 2003). Due to exclusionary policies, lack of investment, poor infrastructure and rapid urbanisation, we are witnessing an overall decrease in the number of artisans and an increase of those who have joined an informal economy (Seth 1995), undertaking low-quality jobs and not covered by social benefits or wage protection laws (International Labour Organisation 2014). As the working condition of artisans is precarious, craftsmanship itself is under threat too. For instance, a hybrid form of “bricolage” (Scrase 2003) is emerging (consisting of items inspired by foreign archetypes and mass produced in global peripheries, then sold in cheap supermarkets to cosmopolitan consumers and used out of context), challenging the real concept of artisanship. Artisans are even more endangered in the developing world, where they often face subjection to large monopoly businesses, market corruption and unreliability, as well as lack of perception of international consumers’ trends (Nash 1993). In fact, due to price competitiveness, production is often outsourced to developing countries, where artisans are usually at the “bottom of pyramid” (BOP) (Prahalad and Hart 2002). In this context, BOP artisans have little opportunities to overcome their poverty due to the lack of long-term market access, regular wages and opportunities to learn new skills (Kulick 2015). Furthermore, the lack of innovation opportunities makes young artisans less inspired and motivated, therefore fewer of them carry on production of traditional crafts (Mirza 2015). To preserve traditional artisanship, government and non-government organizations (NGOs) implement aid policies, but such top-down support often fails in setting labour conditions and rights, quality standards and competitive prices for craft products, as well as in recognising artisans’ needs and translating them into a strategic agenda (Scrase 2003). Even fair-trade bodies, while focusing on fair prices, sometimes undervalue artisans’ labour, and most of the income often go to charities and NGOs without reaching the producer. In particular within the textiles sector, dwindling of resources and re-localisation of urban manufacturing are making natural

fibres expensive and unaffordable for artisans who have consequently turned to mass production (Scrase 2003). Many of the items once produced by skilled textile artisans have been replaced by fast fashion, which means mass-production of low quality cheap garments (Mirza 2015). These fast consumption trends do not take producers, heritage and the environment into account, resulting in the parallel emergence of “fast landfill” (Earley et al. 2010). For instance, 2 million tonnes of clothing waste are produced per annum in the UK, increased by around one third from 2000 to 2006 (DEFRA 2007). According to WRAP (2012), the process from raw material to garment supply contributes for around one-third of the waste footprint, three-quarters of the carbon impact and most of the water footprint of clothing (for the production of natural fibres such as cotton). 40% of consumers claim the lack of sufficient environmental information about clothes. Furthermore, if the average life of clothes was extended by three months (over an estimated lifetime of 2.2 years) of active use per item, each of the carbon, water and waste footprints could be reduced by 5-10%. In the UK every year, at the end of their life 34% of clothes goes to overseas reuse, 31% to landfill, 14% to recycling and to UK re-use and 7% to incineration. These facts and figures drawn from WRAP (2012) make evident the need for changing the way we supply, use and dispose of clothes in order to reduce the footprints associated with the textiles supply chain. In this regard, Forum for the Future (2015) suggests that such complex global problems cannot be solved by single top-down policies or global institutions without systemic thinking. With this in mind, this research proposes an enabling ecosystem as a platform for sustaining bottom-up and cross-disciplinary collaborations among different stakeholders encouraging textile artisans' communities towards a sustainable future.

3. Research Opportunities towards Sustainable Textile Artisanhip

Several design approaches could be adopted to develop textiles which are environmentally responsible, socially just and economically fair, as well as culturally meaningful and enriching at a personal level (Walker and Giard 2013). The designer's imagination could be summoned to encourage sustainable development, building resilient interconnections between environmental, technological and economic resources, social and cultural values. This could be achieved through the shared efforts of policy makers, artisans' communities and individuals, as summarised in Table 1.

Table 1 Key findings from the literature on the potential for textile artisanship to move towards holistic sustainability. Considering the four pillars of environmental, social, economic and cultural sustainability, this means going beyond mere improvement of what textile artisanship is, to considerate what it could be in the future.

Environmental Sustainability	Social Sustainability
- Zero-waste pattern curring (Aakko and Niinimäki 2013; Rissanen 2013)	- Boosting human and social capital, besides profitable products and processes (Margolin 2002)
- Designing garments with versatile fits	- Empowering “bottom of pyramid” producers, beyond top-down support based on charity logics (Pralhad and Hart 2002)
- Using natural and low-impact fibres	- Bringing grassroots communities into decision-making processes (Forum for the Future 2015)
- Using single materials (design for disassembly and disposal) (Lanzavecchia 2004)	- Infrastructuring collaborations among cross-disciplinary stakeholders (Armstrong et al. 2014)
- Avoiding chemical dyestuff and its discharge into water supplies	- Setting Social Innovation labs to co-design policies and services with social aims (Armstrong et al. 2014)
- Resizing production at human scale avoiding product obsolescence (Mazzarella and Engler 2014)	- Sharing social aims (cooperation, shared use of space and time, social interactions)
- Providing richer environmental information (WRAP 2012)	- Collective making to encourage happiness, wellbeing, conversation, relax, memory (Griffin 2012)
- Traceability and transparency of supply chain (Maffei and Villari 2011)	- Enabling user-generated technologies (Tapscott 2008)
- Cradle to Cradle: making the output of a production system become the input for another (Braungart and Mc Donough 2002)	- Enabling making and mending against passive consumption (Fletcher 2008)
Economic Sustainability	Cultural Sustainability
- Co-designing sustainable business models for micro-economies	- Design-led systemic and cultural change (Fletcher and Grose 2008)
- Targeting market niches through flexible specialisation (Chibinick 2000; Wood 2000)	- Shifting the focus of consumption from quantity to quality (Fletcher 2008)
- Redistributing manufacturing (lowering energy use and transport of goods)	- Providing platforms for clothes’ sharing, collecting, repairing, leasing, reselling, upcycling (Von Busch 2008; Chapman 2013)
- Providing employment of marginalised youth through participation in service development	- Improving infrastructure and access to environmental education, especially in developing countries (Marras and Bala 2007)
- Boosting local markets for global tourists (Miettinen 2007)	- Educating through craftsmanship, to develop creativity, problem solving and practical intelligence (Crafts Council 2014)
- Triggering sharing economies (Light and Miskelly 2014)	- Developing and Craft Certificate for young artisans (valuing aesthetic record of practice, technical skills, development of theory with academic value)

The above-mentioned practices (which will be continuously reviewed throughout the research project) are just some of the possible directions that design for sustainable textile artisanship could undertake. However, to ensure the most likely adoption and sustainability of such innovations, it is recommendable to deeply understand the context of design intervention and define together with relevant artisans what strategy is better to adopt to address specific issues.

4. Service Design as Innovative Research Approach

This section suggests service design as a user-centred, relational and systemic approach to implement some of the above-mentioned sustainable guidelines in context-specific design interventions. Service design is here defined as the process of “prosuming” (i.e. producing and consuming) services, which are based on intangible frames (i.e. social and cultural) and tangible interactions (i.e. technological) (Morelli 2002; Meroni and Sangiorgi 2011). Service design could be a sustainable alternative to the take-make-waste model, providing customers with the same level of performance but with less use of resources and lower environmental impact (Meroni and Sangiorgi 2011). Additionally, product-service-system design (PSSD) is evidenced to be more sustainable than mere product design (Vezzoli et al. 2014), if combined with localization (Walker 2009), community engagement (Meroni 2007), lightness (Thackara 2005), and changes in consumer’s behaviour (Tukker and Tischner 2006; Marchand and Walker 2008). With this in mind, this research does not focus on textile craft products themselves, but on the relational infrastructure (of service providers and users) behind sustainable products. By adopting service design methods (e.g. shadowing, contextual interviews, co-creation workshops, stakeholders mapping, service blueprinting), this research proposes to elicit (or empathise with) textile artisans’ needs, evaluate current systems and envision future ones, in relation to some of the service design paths outlined in Table 2 below.

Table 2 Possible service design directions to encourage textile artisans’ communities towards achieving holistic sustainability (adapted from DESIS DOP 2013).

Empowering Textile Artisans’ Communities	People & Skills	Enabling the rise of micro artisanal enterprises, managing design and production processes in relation to future scenarios
Codesigning Collaborative Services	Processes	Open and collaborative redistributed production processes, interpreting technological potential, while dealing with social challenges
Envisioning Enabling Ecosystems	Places	Micro-factories involving design, hybrid manufacturing and interactions with users’ networks
	Platforms	Infrastructures for facilitating co-design and co-production experiences

4.1 Empowering Textile Artisans' Communities

In order to trigger the process of social innovation, Meroni (2007) recommends the designer to understand communities' creative ways of organizing, triggering social interactions, and co-designing strategies for collaborative innovation involving multidisciplinary stakeholders. A hybrid "middle-up-down" (Stakowski 2010) process involving bottom-up engagement and top-down support is envisaged to help activate and sustain social innovations. With this in mind, this research proposes the need for textile artisans to be empowered by gaining access to information, skills and independency, therefore becoming less vulnerable and more resilient (Medvedev 2010; Kulick 2015). This means fostering mutual help and community structure, a pattern more recurrent – out of necessity of cultural values – in developing countries rather than in industrial societies, which are, instead, more driven by individualistic consumption and functionalism (Marras and Bala 2007). Furthermore, within collaborative communities, the success of interpersonal relationships, the feeling of active participation in solving a common problem, the freedom of expression and self-determination have been shown to be key factors for sustainable innovation, contributing to happiness and wellbeing (Escobar-Tello 2011). Also real-world context, service orientation, and a network of relationships among local participants are advocated as key success factors for social projects (Thackara 2005).

4.2 Co-designing Collaborative Services

Once creative assets and social bonds within a community are empowered, Jégou and Manzini (2008) suggest the opportunity for designers to develop collaborative services. These are bottom-up solutions grounded in the paradigm of users as resources rather than problems, as they are co-designed with community members and require participants' interactions to exist. Collaborative services are based on the skills and resources available in a specific place and boost interpersonal encounters between participants who co-produce and share the material and immaterial benefits of the service (Cipolla and Manzini 2009). Therefore, beyond the tangible evidences of a service, designers are also required to deal with intangible values, such as trust, harmony, empathy, usability, transparent anticipation of service rules, coherent service identity (Lo 2011). Moreover, Lo (2014) highlights that collaborative services are increasingly reliant not only on face-to-face encounters, but also on online interactions. These are enabled by the proliferation of digital media and peer-to-peer technologies, such as websites, mobile devices, apps, social media, crowd-funding platforms (e.g. Kickstarter), e-shop channels (e.g. Etsy), etc. Although most communities rely more on ideology than on technology, Information and Communication Technology could contribute to improve existing services, enable followers to join a service or start up new ones, introducing some digital innovations as those outlined in Table 3 (Luiten 2007). However, from case to case, it is important to assess what kind of added value technology can really introduce.

Table 3 Potential digital innovations within textile artisans' communities (adapted from Luiten 2007).

Aim	Outcome
Synchronising	Practical collaboration among artisans' community members and synergies with multidisciplinary stakeholders
Sharing	Accessible platforms for sharing skills, resources, time
Personalising	Customised artisanal products according to user's demands
Ranking	Bottom-up quality evaluation through sharing of service experiences
Quality assurance	High quality and precision of production enabled by digital technologies
Tracking	Tracked resources throughout the textile supply chain and communication of its transparency
Moving	Efficient logistics
Payment	Fluid interactions and complementary currencies
Environmental friendly technologies	Shared investments for sustainable makespaces

4.3 Envisioning an Enabling Ecosystem

In order to maximise sustainability and scalability of collaborative services, Jégou and Manzini (2008) recommend connecting small and distributed initiatives via social networks and platforms. As services tackle different issues in specific contexts, local solutions cannot be replicated, yet inter-connected within a wider network enabling mutual learning. Such platforms could be equipped with tools for organizing and maintaining collaborative services, and designed so that enabling solutions share the same base and new modular services could be added as the system evolves (Voss and Mikkola 2007). Connecting artisans' communities within an enabling ecosystem requires systemic thinking and engagement at all levels, encouraging open sharing of resources and information among artisans, designers, local communities and policy makers. An enabling ecosystem is envisioned to be autopoietic, that is self-sustaining and self-reproducing thanks to balanced intra- and inter-connections among its actors, who interact and co-evolve without affecting each other (Mazzarella 2013). Finally, an enabling ecosystem is sought to give birth to new forms of active communities, trigger new ideas of locality and build a strong sense of belonging and social responsibility (Mazzarella and Engler 2014).

5. Scoping Study “Challenging Sustainable Futures”

To address the shortage of comprehensive studies on long-term sustainability of textile artisans' communities, the scoping study “Challenging Sustainable Futures for Textile Artisans' Communities” was conducted during the Nordes 2015 Conference at Konstfack University in Stockholm (Figure 1), and followed by online semi-structured interviews with international academics. The aim of this study was to review and consolidate an initial

theoretical framework for a sustainable future tailored to textile artisans' communities and inform future Participatory Action Research (PAR) phases of the research project.



Figure 1 Nominal Group Technique at Konstfack.

5.1 Data Collection Methods

Nominal Group Technique (NGT) and semi-structured interviews were chosen as methods to explore the scope of specific textile artisans' communities in relation to future trends. The former consisted of interactions within a group of academics who discussed a topic supplied by the researcher, gathering collective rather than individual views (Morgan 1988). The small sample size and different backgrounds of the participants allowed yielding large and in-depth data in a short period of time. As a follow-up of this study, short semi-structured interviews were conducted via Skype with selected academics from different locations and at times more convenient to them. Interviews were chosen as flexible data collection method of building knowledge through discussion about interviewees' interpretations of the world (Kvale 1996; Cohen et al. 2011). Respondents to both the NGT (Table 4) and the semi-structured interviews (Table 5) were sought from international locations, with expertise in environmental, social, cultural and economic sustainability and holistic understanding of the textiles landscape.

Table 4 List of participants at the NGT.

Name	Affiliation	Expertise
Kate Fletcher	London College of Fashion, UK	Sustainable fashion
John Wood	Goldsmiths University, UK	Sustainable futures and meta design
Mugendi K. M'Rithaa	Cape Peninsula University of Technology, South Africa	Social innovation and sustainable development
Anja Crabb	University of Brighton, UK	Product longevity in fashion design
Ruby Hoette	Goldsmiths University, UK	Fashion design and activism
Tania Splawa-Neyman	RMIT University, Australia	Fashion design practices for a sustainable future
Nanci Takeyama	Nanyang Technological University, Singapore	Participatory design, cultural heritage, contemporary crafts
Tau Ulv Lenskjold	The Royal Danish Academy of Fine Arts, Denmark	Speculative design, social and political futures
Håkan Edeholt	The Oslo School of Architecture and Design, Norway	Design futures and innovation in developing countries
Gwendolyn Kulick	Wuppertal University, Germany	Fair business models for artisanal production
Akapan Thienthaworn	University for the Creative Arts, UK	Design thinking and business innovation withn SMEs

Table 5 List of interviewees.

Name	Affiliation	Expertise
Hazal Gumus	Imagination Lancaster, UK	Sustainable design for traditional craft (pilot interview)
Pammi Sinha	University of Leeds, UK	Management of fashion enterprise and society
Kirsi Niinimäki	Aalto University, Finland	Ethics in sustainable fashion and textiles futures
Vikki Du Preez	Cape Peninsula University of Technology, South Africa	Social innovation and sustainable product service systems
Timo Rissanen	Parsons The New School, USA	Environmentally sustainable fashion systems

Future trends identified from the literature review and supported by case studies were shared with the experts, with the aim of being tailored to the scope of this study. The disruptive challenges posed by slow fashion, alternative economies, redistributed manufacturing, flexible production, circular economy, advanced artisanship, design entrepreneurship and enabling ecosystems were considered (Figure 2).



Figure 2 Future trends used for the scoping study.

5.2 Data Analysis

To ground the future trends on real world issues in relation to textile artisans' communities, respondents explored different case studies that allowed consolidating literature review and enriching the initial theoretical framework. At the end of the NGT, suitably designed templates were hanged in the exhibition space at Konstfack, so that new ideas could be added via post-its, widening the spectrum of responses (Figure 3).



Figure 3 Contribution to NGT's templates at the exhibition space at Konstfack.

Subsequently, the data collected through the NGT and the interviews were subject to thematic analysis; clusters and codes are summarized in Table 6.

Table 6 Coding system used for the study.

Cluster	Code
Consumers' Values	Slow Fashion (Slo-Fash)
Market Models	Alternative Economies (Alt-Eco)
Business Models	Redistributed Manufacturing (Red-Manu)
Production Models	Flexible Production (Fle-Prod)
Design Processes	Circular Economy (Circ-Eco)
Product Types	Advanced Artisanhip (Adv-Art)
Designer's Roles	Designer-Entrepreneur (Des-Ent)
Systemic Relationships	Enabling Ecosystem (Ena-Ecos)

5.3 Results and findings

The following section summarises the results and findings of this study. They have been collated under the following eight future trends.

Consumers' Values: Slow Fashion

One of the biggest barriers to achieving a sustainable future was identified as the lack of consumers' awareness of the sustainability challenges within the textiles supply chain. The participants suggested that the designer could play an educational role (for instance, through communication campaigns or co-creation workshops) to trigger consumers' sustainable behaviours. Instead of pushing trends from the market, a slow approach to textiles and fashion was proposed, grounded on beauty, quality, know-how, longevity and sustainability. To imbue such meanings into garments, some participants proposed to explore the design of product-service-systems and convey the origins of products (e.g. Fashion Revolution's campaign "Who made my clothes?"). Storytelling (e.g. by means of packaging and labels indicating origin and authenticity) and environmental certifications (e.g. Cradle to Cradle) were suggested as powerful tools to market sustainable garments to mindful customers. Many case studies were cited to reinforce these ideas. For example, Maiyet, Maria Cornejo and Prabal Gurung are exemplary for their deep synergy and long-term commitment to designers and artisans, who produce garments, that are expensive but sold to last a lifespan. In the UK, Toms Shoes offers fair trade to a worldwide community of consumers who, through their purchases, may feel committed to the artisans who made their shoes.

Market Models: Alternative Economies

The perception of most interviewees was that weak and uncertain global regulatory systems, resource scarcity, and high commodity and transport costs boost "onshoring", that is relocating production processes to lower-cost locations. This poses the challenge for designers to systematically map and engage suitable stakeholders, setting up fair regulations, policies and supplies to prevent artisans from joining an informal economy. As an example of empowering currently vulnerable artisans, People Tree was mentioned as a social enterprise outsourcing manufacturing of apparel to collectives of artisans; in this case, the revenue of online sales aids not individuals, but the community. In Bangladesh, the Grameen Bank is a credit delivery system, which provides banking services to rural poor people, overcoming exploitation by moneylenders, and generating employment and income opportunities. Furthermore, participants suggested boosting artisans' marketing skills and triggering their understanding of different socio-economic contexts to target suitable markets. The Cape Craft and Design Institute in South Africa for example, provides creative and business support to artisans and designers at various level. Furthermore, digital communication, social media and fundraising campaigns were proposed as ways to enable

artisans to reach a wider portfolio of customers, while receiving further feedback to sustain and innovate artisanship. The participants suggested the need to disrupt the “business-as-usual” and challenge the cheapness associated with artisanal products, setting fair prices, which value all the people involved in the textiles supply chain. A restoration of the ecosystem, but also of our human, social and cultural systems, was advocated as a way to provide everybody with an opportunity for flourishing.

Business Models: Redistributed Manufacturing

Technological advancements (in terms of information, retailing, transaction speed, etc.) are disrupting the textiles value chain, negatively impacting our desire to consume more and faster, but also positively democratising the fashion system. As a matter of fact, textile design is no longer centralised in Europe and USA and then manufactured in the Far East; it is getting redistributed all over the world. This is creating new opportunities to set up re-localised business models (more networked and less hierarchical), while also reducing labour costs, increasing product quality, facilitating business management and encouraging closer customer relationships. A good example of this is the designer Jane Solomon (South Africa) who sources local fabrics and prints textile collections locally under the brand FabricNation. Additionally, social enterprises were proposed as a sustainable business model for small artisans specialised in niche processes (i.e. remanufacturing or recycling) supporting the supply chain of larger manufacturers and generating profit for a good cause. For instance, the English company Good One upcycles textiles and outsources sustainable fashion manufacturing to Bulgaria. Another example of sustainable business model is adopted by the American company Alabama Chanin, which follows a lean manufacturing system, where garments are only produced on demand. In fact, when the company receives a customer order, the worker is contacted and commits to produce (and sign) the garment at his/her home, without discarding any material. Finally, the participants highlighted the raise of platforms for sharing skills, resources and time within an artisans' community (e.g. the “sharing economy”). For example, a collaborative approach to sourcing, manufacturing and selling is adopted by Threadcount, a South African collective of independent textile artisans who share their workspace within a former mill.

Production Models: Flexible Production

Although the handmade and the digital are generally regarded as binary opposites, the view of most participants was that we are witnessing the raise of synergies between these two realms. Making things by hand was advocated as a way to re-educate consumers about the origin of clothes, rescuing the value of the hand-made and preserving traditional know-how. However, the participants highlighted that technology needs to be used astutely as a tool to develop creative ideas, while rethinking new aesthetics and meanings, but without compromising the tradition of hand-making durable garments. For instance, in response to

cultural exchanges and the advent of new technologies, Shehal Bathwal in New York designs and digitally prints quilts, which are then embroidered by hand in India. Moreover, the participants highlighted that artisanship embodies a form of flexible production, which is scaled to real needs, reducing planned obsolescence, logistics and waste and allowing lower cost for product personalisation. This was recognised as an opportunity for textile artisanship, as customers are willing to pay more for some degree of product customisation, as in the case of the fashion design studio Unmade that has patented a machine to produce one-off custom garments. Furthermore, mending old garments was recommended as an approach to extend product lifespan, making items more personal, therefore more durable and sustainable.

Design Processes: Circular Economy

Issues of resource scarcity, increases in commodity prices and tighter waste regulation were recognised as a fertile ground for the transition from a linear take-make-waste model towards a closed loop of resources (i.e. the “circular economy”). The latter was recommended as an approach to use locally sourced fibres (e.g. organic cotton), and natural dyes as well as providing transparent environmental information. This is the case of the company Honest By whose e-shop provides customers with in-depth information about the supply chain behind each garment. Several approaches to the circular economy were recommended, such as waste minimisation (e.g. zero-waste pattern cutting), repairing (e.g. hands-on workshops to creatively mend damaged garments), services for waste collection (e.g. collecting used clothes to be sorted, hanged, tagged, priced and merchandised to reuse and resell, as in the case of the charity Traid), remanufacturing (i.e. giving a second life and value to otherwise discarded garments) upcycling (i.e. breaking down textiles into their constituent fibres to be used for other quality products), and biodegradation. Ananas Anam was presented as an example of a social enterprise, which produces Piñatex, a sustainable alternative to leather, obtained from waste leaves of pineapple used to manufacture bags, footwear and furnishing. Finally, the participants agreed that the circular economy is expected to rapidly gain pace over the next decades; however, the need for regulatory change, new technology, cross-industry collaboration and shifts in consumer behaviour were identified as barriers to the implementation of a circular economy.

Product Types: Advanced Artisanship

The participants suggested that long tail markets are emerging and are disrupting the “best seller” model with niche products, locally and flexibly produced in small batches, with low stock, low distribution costs, and customised on demand. New product types were envisaged to embed iconic and functional values, material and immaterial features, do-it-yourself and digital technologies. Future artisanal textiles were envisioned to be ethical, desirable, durable, repairable, smart, developed through collaboration between artisans and

lead users. In order to develop new product types, the participants pointed that artisans should deeply understand the potential of materials and manufacturing techniques, empathise with their target customers and use contexts, and collaborate with professionals from other disciplines. Consequently, traditional aesthetics, identities, functionalities and design processes will be disrupted. The Masai people in Kenya were highlighted as an example of an artisans' community, which is responding to the exposure to foreign cultures by rescuing the prestige of its own fashionable authenticity and uniqueness. Moreover, the case of the Kente cloth in Ghana, whose gold thread is iconic of aristocracy, was discussed as an example of "genius loci" to be conveyed to consumers through textiles.

Designer's Roles: Designer-Entrepreneur

To address the development of complex artefacts, long networks and outsourcing, design has become a complex, interactive and collective process. Besides facilitating the multidisciplinary process of co-designing, the role of the designer was identified as providing contextual understanding, envisioning a sustainable future, building connections within an enabling ecosystem, making sense and telling the story of innovation. A deep understanding of technology, economics, marketing and management of the supply chain were outlined as skills to be nurtured within design education, in order to address issues of environmental, social, cultural and economic sustainability. In order to manage innovation, the participants highlighted that the designer could draw on a palette of skills, such as data visualisation, product-service-system thinking, participatory design, making, and customer experience prototyping. Among the resources available to support the designer's role, the Higg Index was mentioned as an open source tool to assess environmental impact within the clothing value chain. Finally, creating a certification system was recommended as a way to promote the value of artisans' entrepreneurship as a living treasure to be acknowledged within crafts schools and as a means to encourage the professional development of craftspeople.

Systemic Relationships: Enabling Ecosystems

The participants agreed that the diversity of the artisan landscape is an essential resource, and suggested the need to create synergies within this diversity. Building an enabling ecosystem at glocal level could help finding fair and resilient ways to overcome the "artisanship for survival" which does not allow room for creativity or innovation. With this in mind, ethnographic research (supported by online and offline services, platforms and networks) was recommended as a possible way to empathise with local contexts. At the same time, the participants suggested facilitating collaborations between multidisciplinary stakeholders while catalysing expression of artisans' identity, awareness, self-confidence, professionalism and pride. In this regard, the Party project was brought as an example of an enabling ecosystem involving international design educators who conduct participatory

action research with marginalised communities in South Africa and Namibia, with the aim to develop sustainable products and services. Also the Legacy Collection was provided as an example of building collaborations between fashion design students from London and New York and artisans in the developing world.

5.4 Barriers, Enablers and a “Manifesto for a Sustainable Future”

Generalisation and displays in the form of “conceptually clustered matrices” (Robson 2002) were used as analytical research tools to draw meaning out of the data collected. This gave way to the identification of barriers, enablers and the proposition of an initial “manifesto for a sustainable future”. These data displays (Figures 4 and 5) also provided an effective tool which was shared with the participants throughout the semi-structured interviews.

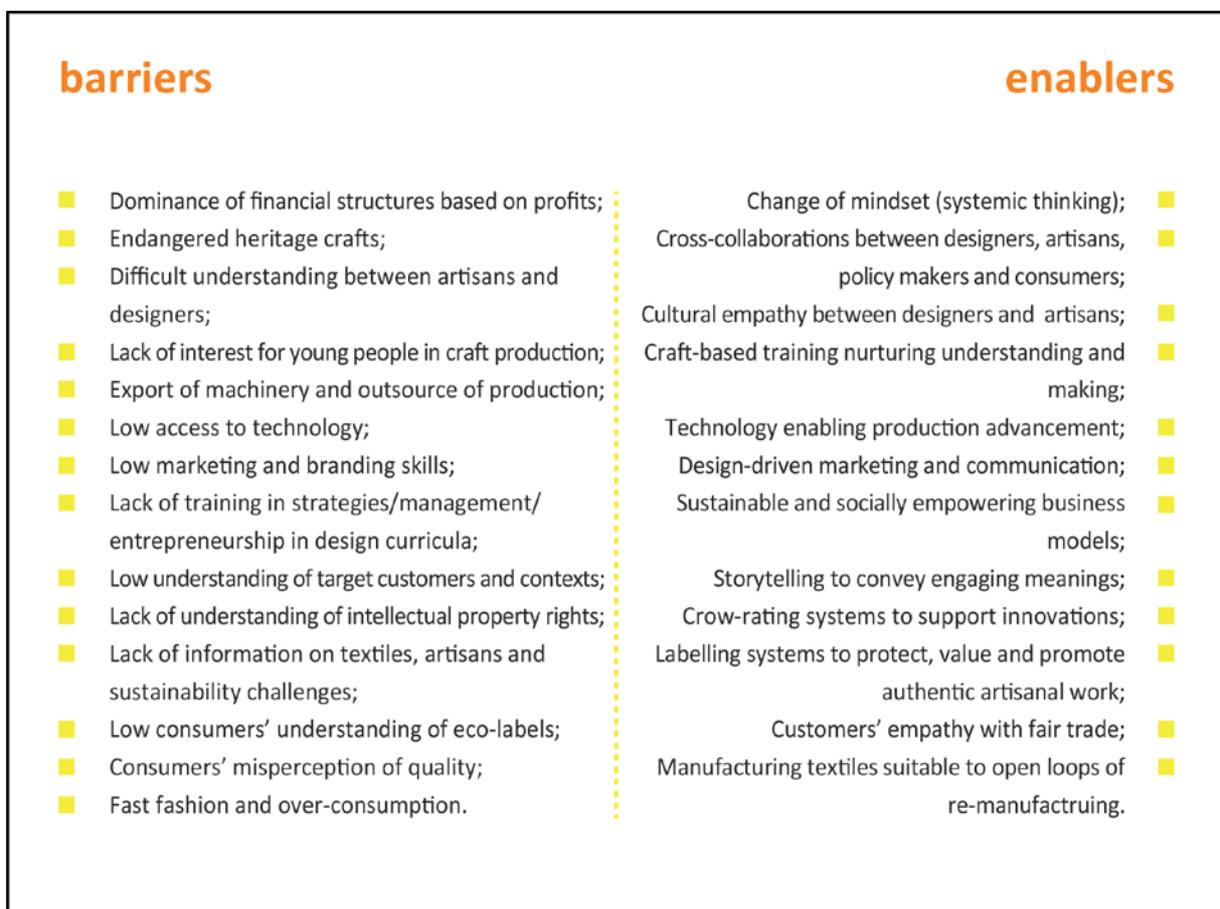


Figure 4 Barriers and enablers to achieve a sustainable future.

manifesto for the sustainable future of textile artisans' communities

- Deeply embracing aesthetics at systems level, shifting from styles to meanings: 'less bad' is not 'good'; 'being' vs. 'having'.
- Disrupting the fast fashion, through a slow craft, grounded on beauty, quality, know-how, longevity, locality.
- Thoroughly synchronising the handmade and the digital as tools to innovate our aesthetic and ethics.
- Challenging the 'business as usual' and making all the assets within the supply chain flourish.
- Interconnecting textiles to their wholeness, closing the loop of resources: materials, processes, people, places.
- Holistically restoring the ecosystem, but also our human, social and cultural systems.
- Empowering local textile artisans' communities, sharing resources, skills, time as a collective wisdom.
- Weaving enabling ecosystem with diverse assets and sustaining innovations at glocal level.
- Making the intangible tangible and perpetuating our immaterial heritage.
- Designing: understanding, envisioning, connecting, sense-making, story-telling.

Figure 5 Manifesto for the sustainable future of textile artisans' communities.

6. Discussion & Next Steps

The study benefited from a high response rate (considering the qualitative type of this study) from participants who were highly knowledgeable, and representatively contributed with different backgrounds and international experiences. The participant information pack successfully enabled all the planned topics to be discussed within the given timeframe. Due to time limitations, the NGT did not allow collecting in-depth data, but the follow-up interviews successfully enriched the theoretical framework. The major challenge posed by the participants was the difficulty to achieve an overarching consensus on future trends, barriers and enablers, as they are too context-specific and each case is unique in terms of economy, society and culture. In response to this critique, it was necessary to clarify that this research does not intend to replicate specific collaborative services, but rather to conduct subsequent self-reflective cycles within a service design process in different contexts and draw generalizable conclusions on the contribution of its methods towards a sustainable future. Overall, no contrasting opinions emerged, but participants presented a good plethora of case studies to support the findings. The participants showed enthusiasm about the original contribution of this study. Overall, the systemic approach of this research was valued by the participants but engagement of a wider range of stakeholders within the

next stage of the action research was recommended. The proposed list of barriers and enablers was judged to be comprehensive, and the manifesto for a sustainable future meaningful. The latter - to be continuously refined throughout the PAR - was suggested to be regarded as a tool to help artisans self-assessing their practices in relation to the shared values. Finally, it was identified that in order to enhance validity of the findings across cultures, research methods will need to be adapted for specific contexts. With this in mind, the theoretical framework co-developed with academics will be enriched through further literature review; its real-world implication will be assessed through participatory action research with the relevant textile artisans' communities involved in the next stages of the project.

7. Conclusions

This paper has contributed to the current discourse on textile crafts, which is mainly based on individual artisans, who are many in number yet economically too small to become a critical mass to draw the attention of governmental and non-governmental bodies. For this reason, here it is intended to shift the worldviews from individual practices to communities of practice, strengthening the human and social assets of artisanship. The research so far has suggested that the textile sector is facing significant social and environmental challenges, evidencing the need for further research on holistic sustainability within the textiles value chain. The first study of this research has confirmed artisanship to be a timely issue, and outlined a theoretical framework for a sustainable future tailored to textile artisans' communities. The findings summoned the adoption of a slow approach to manufacturing and consumption as an interesting way to disrupt the fast fashion and embrace new ethical and aesthetic values at systems level. It was also highlighted the opportunity for textile artisans to explore sustainable business models (i.e. based on sharing and circular economies) within flexible and redistributed manufacturing, making our social and cultural ecosystem flourish. With this in mind, this paper has highlighted the original contribution of applying service design in a new area, such as textiles, and has proposed a strategic approach to co-design tangible and intangible values within the textiles supply chain. Furthermore, the need for developing an enabling ecosystem of multidisciplinary stakeholders was emphasised to trigger holistic sustainability. Finally, the findings of this theoretical study will inform the next stage of participatory action research with the aim of transitioning textile artisans' communities towards a sustainable future.

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