

Business of Fashion, Textiles



and Technology

ual: Mapping the UK Fashion, Textiles and
Technology Ecosystem

Identifying opportunities for investment, research and development, business growth, job creation and tackling skills gaps

**By Professor Jane Harris, Dr Lipi Begum
and Dr Alessandra Vecchi**

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Forewords



Christopher Smith, Executive Chair, Arts and Humanities Research Council
Andrew Chitty, Challenge Director, Creative Industries, UK Research and Innovation

How we dress is a matter of intense interest to ourselves and to others. Costume, clothing and textiles are more than practical defences against the weather (though they can also be that); they have been associated from the earliest times with adornment and self-fashioning. How we look is part of who we are. In some times and places, this has been and still is rigorously policed and controlled. But for many in the contemporary western world, the way we dress, and interface the world, is a mark of our choices over identity and individuality.

This makes fashion, and its many adjacent fields, a fascinating business – in all senses. This includes the degree to which fashion has become such a defining element of modern culture; it is after all one of the most visible ways in which we reveal our consumer choices. And the way we consume – the extent to which that consumption is ethically driven, and expresses cultural and political choices around sustainability, or the avoidance of forced labour, or choices of local production over mass produced international products, is all part of the story.

But despite this centrality to modern culture and to our economy, the dynamics, creative geography organisational structure and creative evolution of the fashion, textiles and wider apparel industry are less well understood than for other creative sectors. That's what makes this report such a significant milestone and for industry, researchers and

policymakers such essential reading. It challenges us to see beyond conventional views of the fashion sector to an emerging, agile and dynamic ecosystem of Fashion, Textiles and Technology businesses that span the UK from Cornwall to Na h-Eileanan Siar, from Derry/Londonderry to Lowestoft, with East London, the world's number 1 ranked fashion district (and home to the Business of Fashion, Textiles and Technology partnership) at its heart.

The Creative Industries Clusters Programme was established as an experiment in scaling up creative research and development (R&D) funding through partnerships where researchers and businesses could work together to deliver innovation, growth and employment in a given geography. The depth of analysis in this report, the insights into how young companies tick and the clear identification of opportunities for innovation in technology, materials, manufacturing and supply chains, with circularity and sustainability at the core, demonstrates the value of the approach. The identification of opportunities for R&D programmes to support fashion's transition to a more sustainable future provides both leadership for the sector and inspiration to others seeking a route to a more circular economy.

As we build the case for a long-term support for research and innovation in the Creative Industries this report shows very clearly why Fashion, Textiles and Technology must be at the heart of that mission.

Adam Mansell, CEO, UK Fashion & Textile Association

The UK fashion and textiles sector has changed significantly in the past 20 years. It is no longer defined by traditional designer fashion. Today, the UK's fashion, wider apparel and textiles manufacturing sector produces over £9 billion of product for export, ranging from designer creations seen on the top catwalks to growing specialist markets in sportswear products to fabrics used in medical, defence and transport industries. Yet the sector receives limited R&D funding compared to other sectors. My role as CEO of the UK Fashion & Textile Association (UKFT) is to make sure that a broader industry perspective encompassing technology is recognised. That R&D funding is going to small, medium and micro businesses, which make up over 80% of the UK fashion, textiles and technology sector.

The uncertainty of Brexit has been the main issue for our industry over the past three years and is further complicated by the post-Covid-19 recession. Now more than ever, we must continue the work we are doing to address the shortage of skills and training in the sector and in UK-based advanced manufacturing. The UKFT is the government-appointed sector skills body for the industry and responsible for all the apprenticeships in England. We continue to lobby on issues from national minimum wage negotiations to modern slavery to environmental legislation. Yet there is also a pressing need to understand the sector's breadth and geographic spread, the position of trade bodies and intermediaries such as UKFT, and the challenges and opportunities for growth and research and development investment as the UK enters the next 20 years of fashion, textiles and technology.

Membership is key for UKFT. We have around 2,500 members UK-wide, including those across the university-led Future Fashion Factory (FFF) and Business of Fashion, Textiles and Technology (BFTT) Creative R&D Partnerships. We support our members' activities, including the production of this timely report led by BFTT.

The report shares the UKFT's belief that, with sufficient R&D funding, academic and cross sectoral business support, the creative industries, a skilled workforce and small business growth will be essential drivers of the UK's economic recovery and growth. Insights shared during the consultation process of the report, which took place before the pandemic, have retained their relevance during Covid-19, making this report an essential read that forms the baseline for further study, and investment into the sector.

Professor Jane Harris, Director, Business of Fashion, Textiles and Technology, report co-author

This report is the first to squarely position textiles and apparel as part of a much wider network or ecosystem that encompasses an enormous variety of significant and highly investable 21st-century sectors, from materials design and engineering to software imaging and gaming to smart and bio technology, as well as more integral industries, ranging from agriculture to advertising – some of which are not perceived as obvious partners.

When we began our research, no one could have foreseen what lay ahead. But, despite the significant disruption caused by Covid-19 and Brexit, and also the essential focus on the sustainability and circular economy agendas, the sector is holding its own. The UK Fashion, Textiles and Technology (FTT) industry has been growing at a faster rate than the economy as a whole, according to the Creative Industries Federation^[1]. According to the UK Fashion & Textile Association (UKFT), UK consumers spent over £74 billion on clothing, clothing accessories, household textiles and carpets in 2018, supporting strong growth levels exhibited since 2011; garment sales alone grew to over £53 billion in 2018, up from £36 billion in 2008^[2].

There are entirely new opportunities for research and development (R&D) funding to support the established industry, in addition to an emergent, technology-savvy, environmentally engaged and agile FTT culture based around small, medium and micro enterprises. This makes it critical at this point to establish a fuller understanding of the UK FTT ecosystem, both pre-Covid-19 and with initial insights for progress post-Covid.

This report focuses primarily on pre-pandemic, pre-Brexit FTT positions; our extensive survey and consultation work and case studies were completed by March 2020. A follow-up survey is under way, and will inform a report to be published in late 2021. This will provide an initial position

[1] Creative Industries Federation, 2019, <https://www.creativeindustriesfederation.com/news/shaping-future-sustainable-development-uk-fashion-textiles-technology-industries-national>, accessed February 2021
[2] UKFT Industry Overview, <https://www.ukft.org/business-advice/industry-reports-and-stats/>, accessed February 2021

for UK FTT that takes Covid-19 into greater account, and offers better-informed understanding of the impact of Brexit, and of further opportunities that are being identified by UK FTT businesses.

While this report identifies many challenges (Section 4), it also identifies significant levels of opportunity (Section 5) – with recommendations provided in Section 6. These opportunities are exemplified by young companies that are responding to the imperatives of environment, human and societal issues. These companies are also inspired by the potential innovation opportunities fuelled by increasing access to technology, due to the opening up of wide-ranging university expertise via schemes such as the Industrial Strategy-funded Creative Industries Clusters Programme (CICP) – and by increased individual agency, due to FTT industry-led funding.

In addition to addressing day-to-day consumer needs, many UK FTT businesses are experiencing significant flux; for many reasons, engagement in FTT markets by consumers is both a cultural and an increasingly experiential activity. Sector members are rising to that challenge, and we anticipate that while the market for FTT products and services changes and evolves technically, it will continue to provide a buoyant environment for new ways to innovate.

Despite the current global challenges, the Business of Fashion, Textiles and Technology considers this a vibrant time for UK SMEs that are building new types of business, are seeking technological capability and connectivity, and are establishing R&D partnerships with academics and industry – making those technological advances easier to identify and more accessible. The combination of specialist design, business, STEM expertise and funding is generating unprecedented interest in novel methods of business and innovation support. It is also preparing FTT SMEs in particular for participation in further similar funding schemes, such as the long-established and highly successful Knowledge Transfer Partnership initiative.

There is tremendous potential for the future of the UK FTT industry. Over time, affiliated industry organisations such as UKFT and BFC, working with university-led clusters such as the BFTT and FFF Creative Research & Development Partnerships, have identified strong existing networks across the textile and apparel sector and a range of other industries. Our understanding of the extent of these networks has been further enhanced by our work on this report. This can only help make the FTT industry more visible to other relevant potential partners and attract vital technical stakeholders – as long as we draw effectively on this significant and highly valuable repository of knowledge, and deliberately support our FTT industry technologically, financially and with improved access to the expertise it needs.

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1.0

Executive Summary



Making for Change Training Programme at Poplar Works, run by London College of Fashion, UAL and Newham College. Photo by Rehan Jamil

1.0 Executive Summary

The UK fashion, apparel and textiles industry is a globally competitive growth sector. The 2015 Value of Fashion report by Oxford Economics, commissioned by the British Fashion Council, found that the direct economic value of a flourishing sector including retail, manufacturing and textiles was £28.1 billion – and calculated its indirect impact at a further £22.6 billion, making a total contribution to gross domestic product of over £50 billion^[3]. However, it is less well understood than other creative industries. The final product is generally perceived as catwalk-related in some way. In order to shift that perception, the Business of Fashion, Textiles and Technology (BFTT) report considers the fashion, textiles and technology industry as a wide range of intersecting sectors, spanning – quite literally – from agriculture to advertising.

To date, the industry has been constrained by lack of innovation in business strategy and the late adoption of technology. These structural factors have severely limited investment in research, development and knowledge exchange within the broader Fashion, Textiles and Technology (FTT) ecosystem. **Currently, the industry lacks robust data and compelling evidence compared to other creative industries regarding research and development (R&D) opportunities, business growth options, job creation and investment.** Official data sources on the fashion industry are limited to ‘designer fashion’, which is conflated with ‘other design’ activity, and focuses on established brands and large retailers, and unrelated textiles manufacturers. **In response to this deficit and to concerns around R&D, identified through the development of the BFTT creative R&D partnership proposal (2017), the BFTT’s first task was to launch a UK-wide survey of the FTT ecosystem (2019).**

Approximately one year later, the survey consultation (the launch of which preceded Covid-19 and Britain’s exit from the EU) had engaged over 2,400 small, medium and micro businesses (SMEs) and over 100 stakeholders and intermediaries, including industry specialists, trade bodies and workspace providers. **The consultation received 814 survey responses and led to 65 stakeholder interviews, making it one of the most extensive baseline studies to date on FTT SMEs.**

BFTT surveyed and interviewed across the entire UK fashion and wider apparel value chain. Therefore, **this report for the first time positions the UK sector as not weighted toward fashion only. It illustrates the textile, materials and technology elements as key parts of this ecosystem** and shows the industry is highly heterogeneous, made up of intersecting textiles and technology companies that inform an array of multiple sectors.

The report also provides an in-depth understanding of the polycentric nature of the sector, and its geographical spread, capturing a fine-grained evaluation of the R&D needs of SMEs and the sector’s skills gaps. It provides diverse industry stakeholders, including founders, CEOs, sole traders, freelancers and family business owners, with the

^[3] Oxford Economics/British Fashion Council, 2015, The economic value of the UK’s fashion industry in 2015, https://www.britishfashioncouncil.co.uk/uploads/files/1/J2089%20Economic%20Value%20Report_V04.pdf

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Geo-tagged respondents FTT Ecosystem Survey, 2020.
Geodata Source: BFTT FTT Ecosystem Survey, 2020.
Map Source: Ordnance Survey, OpenData, Boundary-Line™ 2020



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opportunity to voice their needs and identify the critical barriers to and opportunities for future sustainable growth.

The report is the first comprehensive insight into the UK FTT ecosystem leading up to March 2020 – pre-Covid-19.

The report also positions the FTT sector within a particularly challenging period, due to Brexit decision-making and further transitions yet to come; Covid-19; the necessary focus on sustainability and circularity; and an economic recession.

Despite the difficulties of the times, however, the report strongly demonstrates the UK FTT sector’s resilience, pace, agility and significant potential for investment, led by innovation and technology interests. The resulting data and findings will also inform an extensive evaluation programme across all the BFTT Programme (2023), to help assess innovation processes, identify investment in R&D, and shape advances in policy.

This report maps the findings from the BFTT survey and provides an in-depth discussion of the following **summary of recommendations** for the future growth of the UK fashion and textile economy:

- **Increase government funding support for resilience planning** and importing/exporting guidance for SMEs, to help recovery and growth post-Brexit and post-Covid-19.
- **Tax and business rates reform consultation** is required for SMEs to better align with an increasingly digital marketplace and to offset the rising costs of physical commercial space.
- **Increase skills development funding** to sustain the UK’s reputation for fashion and innovation: to include investment into inclusive digital, technical and craft, and careers skills programmes, executed through UK-wide multidisciplinary university and institute partnerships with primary, secondary, post-18 apprenticeship and industry leadership training programmes.
- Increase the number of R&D investment schemes to **support SME retailers with transitioning to online and mixed/physical business models.**
- There is a need to see the bigger picture around the FTT industry and its impact on the climate. **Larger-scale R&D investment into circular business models, recycling systems and legislation** are required to help FTT SMEs contribute toward driving UK 2030 Sustainable Development Goals (SDGs).
- **Increase SME R&D and materials innovation funding schemes** for the development of small-scale and local manufacturing of luxury, smart and advanced technical textiles, such as biomaterials, automotive and medical textiles.

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- **Introduce R&D-specific funding streams for Local Enterprise Partnerships** to better support regional FTT SMEs with understanding technical and scientific criteria for R&D, and applying for R&D grants and tax relief.
- The UK should capitalise on its rich heritage of both quality and luxury textiles, and of manufacturing networks supporting regional growth – and should strengthen expertise across the UK to attract inward investment and exporting opportunities post-Brexit. BFTT recommends **an increase in culture-based R&D grants, with cultural institutions to support FTT-focused regional storytelling and placemaking.**
- Increase longer-term and consistent funding support for Local Enterprise Partnerships and business growth hubs to strengthen regional growth and cross-regional networks.
- **A review of Standard Industrial Classifications (SICs) for the FTT sector** may help to improve capture of established and emergent business models and facilitate the breaking of silos across the creative sectors.

1.1 Scope and Definitions

The BFTT survey was disseminated across the 12 UK regions^[4]: Scotland, Northern Ireland, Wales, North East, Yorkshire and Humber, East Midlands, East of England, London, South East, South West, West Midlands and North West. The regional spread was deliberately devised to capture the previously poorly documented polycentric nature of the UK's FTT clusters and the relationship between FTT and other supporting or feeder sectors.

The survey and data gathering capitalised on existing creative industry reports (NESTA 2018^[5]; NESTA 2016^[6]), and recent data on the sector from the Office for National Statistics (ONS) database for clothing and footwear retail sales in Great Britain^[7], the British Fashion Council (BFC)^[8], the Alliance Project^[9] and the UK Fashion & Textile Association (UKFT) database^[10], to provide a dynamic picture of the sector, inform policy and support a broader definition of the FTT ecosystem.

The emergent culture of specialist FTT business incubation and enterprise support was an opportunity for the survey to identify, quantify and qualify sector strengths and weaknesses, to allow businesses to evi-

[4] The regional analysis is based on governmental region definitions, of which there are nine in England, plus Scotland, Wales and Northern Ireland

[5] Mateos-Garcia, J., Klinger, J., & Stathoulopoulos, K., 2018, NESTA, Creative Nation: How the creative industries are powering the UK's nations and regions, https://media.nesta.org.uk/documents/creative_nation-2018.pdf

[6] Bakhshi, H., & Mateos-Garcia, J., 2016, NESTA, The Geography of Creativity in the UK, <https://www.nesta.org.uk/report/the-geography-of-creativity-in-the-uk/>

[7] Office for National Statistics, 2020, Retail Sales, Great Britain: August 2020, <https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/august2020>

[8] British Fashion Council, 2020, Annual Report & Accounts FY 2019/20, <https://www.britishfashioncouncil.co.uk/uploads/files/1/BFC%20Annual%20Report%202019-20.pdf>

[9] The Alliance Project and NBrown – National Textiles Growth Programme, 2017, Realising the growth potential of UK Fashion and Textile Manufacturing, <http://www.itma.co.uk/wp-content/uploads/2017/05/The-Final-Alliance-Project-Report-Oct-2012-to-May-2017.pdf>

[10] UK Fashion & Textile Association, <https://www.ukft.org/about/>, accessed February 2021

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dence the need for future investment, and ensure that the proposed R&D meets the requirements of this highly diverse sector. Heavy reliance on investment and promotion of established UK fashion regions called for a comprehensive understanding of regional and economic development clusters outside of these centres.

Definitions

BFTT defines the term **research and development (R&D)** by applying the definition for all knowledge domains proposed by NESTA in its 2017 policy document *Defining R&D for the Creative Industries* (page six):

'Research and experimental development (R&D) comprises creative and systematic work undertaken in order to increase knowledge – including knowledge of humankind, culture and society – and to devise new applications of economic, cultural or social value of available knowledge. Basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena, observable facts and behaviours without any particular application or use in view. Applied research is an original investigation undertaken in order to acquire new knowledge. It is, however, directed primarily towards a specific intended aim or objective. Experimental development is systematic work, drawing on knowledge gained from research and practical experience and producing additional knowledge, which is directed to producing new products, experiences or processes or to improving existing products, experiences or processes'^[11].

BFTT defines the scope of **Fashion, Textiles and Technology (FTT)** as the intersection between the designer fashion, retail and wider textile industries, ranging from automotive to smart textiles, sustainable materials innovation and technology, including, for example, digital systems and processes for advanced manufacturing to augmented reality. The industry term 'fashtech' is also used to refer to the digitalisation of the fashion industry and the impact and prevalence of new technologies and innovations within the fashion supply chain.

BFTT uses the term **creative cluster** to define: a) a place that brings together a community of creative people who share an interest in novelty but not necessarily in the same subject; b) a catalysing place where people, relationships, ideas and talents can spark each other; c) an environment that offers diversity, stimuli and freedom of expression; and d) a dense, open and ever-changing network of interpersonal exchanges that nurture individuals' uniqueness and identity^[12].

BFTT uses the term **intermediaries** to refer to public and private agents that provide a wide range of services to support the activities of the firms in the cluster. These include education and training institutions, private lobbying organisations, government-funded agencies (eg Innovate UK,

[11] Bakhshi, H., & Lomas, E., 2017, NESTA, *Defining R&D for the creative industries*, <https://ahrc.ukri.org/documents/project-reports-and-reviews/policy-briefing-digital-r-d/>

[12] De Propriis, L., & Hypponen, L., 2007, *Creative Clusters and Governance: The Dominance of the Hollywood Film Cluster*, *Creative cities, cultural clusters and local economic development*, ed Cooke, P. & Lazzaretti, L., Edward Elgar Publishing, 258

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UK Research and Innovation, the Accelerated Capability Environment), Local Enterprise Partnerships, cultural influencers, business support services and workspace providers.

BFTT uses the metaphor of an **ecosystem** to refer to both an established and embryonic network of a large number of interconnected fashion, textile and technology businesses and intermediaries that affect each other. Ecosystems comprise the competition, co-evolution and coexistence of various stakeholders and complementary services – including the natural environment (via cultural ecosystem services).

BFTT uses the acronym **SME** to refer to small, medium and micro-sized enterprises. BFTT incorporates micro enterprises into the acronym to illustrate an accurate picture of the UK FTT ecosystem. SMEs and micro businesses dominate the industry, with 82% of companies employing fewer than 10 people, according to the BFTT survey. Business size definitions are taken from the widely used current description provided by the European Commission (Recommendation 2003/361/EC^[13]), which defines SMEs based on their headcount and turnover as follows:

Micro business: fewer than 10 employees, turnover under €2 million

Small business: fewer than 50 employees, turnover under €10 million

Medium business: fewer than 250 employees, turnover under €50 million

1.2 Methodology

Phase 1 | UK BFTT FTT Survey

The survey was open to any SME operating in the FTT cluster. Recent ONS surveys of the fashion and textile industry have drawn on data from VAT-registered businesses from traditional Standard Industrial Classification (SIC) codes such as C: Manufacturing; G: Wholesale and Retail Trade; and R: Arts, Entertainment and Recreation. Recognising that many small businesses are not registered for VAT, and that not all fall into these narrow classifications, our survey was designed to capture a more inclusive range of businesses that more accurately reflect the increasing diversity of the broader BFTT cluster today. As well as enterprises related to FTT, fashion photographers, makers, textile and materials engineers, workspace providers, incubators, policy and advertising agencies were among those encouraged to respond. The BFTT's network, including the UKFT, the BFC, and the Future Fashion Factory Creative Research & Development Partnership led by the University of Leeds supported dissemination of the survey and encouraged take-up.

814 responses^[14] were received. Of these, 157 were partial and deemed unusable and 36 were from outside the UK, leaving 621 UK SME

[13] European Commission, https://ec.europa.eu/growth/smes/sme-definition_en, accessed February 2021

[14] From a total population size of 59,205 UK fashion industry small, medium and micro-sized enterprises (Office for National Statistics, 2018), BFTT obtained a representative sample of 814 survey responses

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responses usable for analysis. Estimated survey engagement and awareness included over 2,400 FTT SMEs nationwide.

Phase 2 | 65 interviews with FTT Intermediaries^[15] and SMEs

The BFTT conducted qualitative interviews with representatives of SMEs and with representatives of three key intermediary categories: those offering physical support, those offering business support and those offering policy support.

Phase 3 | Geospatial data analysis and cluster mapping using geographic location and 648 SIC^[16] codes of SMEs that responded to the survey^[17]

The BFTT mapped the location of FTT clusters across the UK and their diversity, using location-based data and Standard Industry Classification (SIC) codes. SIC codes identify different business activities, and allow companies to classify the fields in which they work.

[15] The BFTT survey and consultation determined that three types of intermediation were required to drive a sustainable fashion economy. Based on the three modalities, BFTT grouped intermediaries into three broad FTT categories: physical support – eg workspace providers, co-working spaces, housing associations; business support – eg accelerators, incubators, Local Enterprise Partnerships; and policy support – eg think tanks, trade and regulatory bodies

[16] SIC codes and sub-sectors were identified through the Companies House register for SMEs that responded to the survey, except for those SMEs that could not be identified under a trading name. The UK Standard Industry Classification (SIC) is a five-digit code that groups companies by business activities. When incorporating a company, businesses can select up to four SIC codes to provide Companies House and banks with an understanding of what the company does: <https://www.ons.gov.uk/methodology/classificationsandstandards/ukstandardindustrialclassificationofeconomicactivities>, accessed February 2021

[17] This methodology was used to better understand the breadth of the sector across a comprehensive range of sub-sectors, including technology industries not captured in previous studies. The geo-mapping was used to identify emergent regional clusters and key industry correlations and spread of the sector across the UK

2.0 The R&D Challenge



Producer of Made to Measure denim. Photo by Carmel King © Blackhorse Lane Ateliers

2.0 The R&D Challenge

In 2017, the UK government launched its Industrial Strategy Sector Deals – partnerships between government and industry that aim to increase sector productivity. The Creative Industries Sector Deal included funding of £80 million for the Creative Industries Clusters Programme (CICP), of which the Future Fashion Factory (FFF, led by the University of Leeds) and Business of Fashion, Textiles and Technology (BFTT, led by UAL) partnerships are part. While the deal has begun to shape the future of the sector – see the CICP Story So Far^[18] – the UK is experiencing the lowest productivity growth for the past 250 years. In January 2020, in the foreword to a RSA/Carnegie UK Trust report, the Bank of England’s chief economist Andy Haldane stated that ‘the UK’s “productivity crisis” is the single most pressing issue facing the UK economy.’ This ‘productivity puzzle’ was attributed to a combination of three ‘adverse circumstances, namely, a financial crisis, a weakening impact of ICT and impending Brexit,’ in a 2019 University of Warwick report. This has impacted the Fashion, Textiles and Technology (FTT) sector in terms of low growth within the UK retail industry, with skills shortages and development addressed, for example, in the London region by the Mayor of London’s Good Growth Fund^[19], launched in 2018, which made capital investment into fashion design, manufacturing, workspace provision and training.

Arguably, another reason for this low growth is that the FTT industry, alongside other creative industries within the Sector Deals, has been less active in seeking research and development (R&D) funding. For example, between 1986 and 2016, Innovate UK (formerly the Technology Strategy Board) awarded 17 Knowledge Transfer Partnerships (KTPs) were broadly focused on FTT, out of over 8,000 projects^[20]. More recently, R&D investment in FTT small, medium and micro enterprises (SMEs) has accelerated through an increasing number of KTP awards, which are proven to deliver R&D and economic growth. According to Haldane, the UK’s productivity problem lies with its ‘long tail’ of less productive small firms, which don’t spend enough on R&D, technology, premises, export promotion, training and management development. This points to a wide gap between the most productive and least productive in larger and smaller FTT companies. Most recently, the FFF and BFTT partnerships established initiatives to support FTT SMEs. FFF’s R&D Programme benefits any UK-based business, SME or large company that is focused on fashion and textiles, providing bespoke R&D, technical, business and investment advice. The level of interest generated by the programme demonstrates nascent growth and an opening up of R&D funding for eligible SMEs within the industry. It will be vital for productivity and growth to build capacity within the sector through transdisciplinary investment across creative and technical sectors, with extensive business support from and for the FTT industry. To achieve this, it is essential to understand the current barriers to R&D investment for smaller businesses and how they define and understand R&D and opportunities for the sector. R&D investment in SMEs at an early stage is crucial for the growth of the sector and of the economy.

[18] Creative Industries Clusters Programme, The Story So Far, <https://bftt.org.uk/wp-content/uploads/2020/02/Clusters-Booklet-Story-So-Far-FINAL-VERSION-web2.pdf>, accessed May 2021

[19] The Trampery, 2018, Mayor pledges £2m to East London fashion hub, <https://thetrampery.com/2018/03/07/mayor-pledges-2m-east-london-fashion-hub/>

[20] <https://info.ktponline.org.uk/action/search/complete.aspx>

2.0 The R&D Challenge

There is a limited understanding among FTT SMEs of how R&D is classified. The lines are blurred between what constitutes business development and business innovation, versus R&D – making it difficult for SMEs to apply for R&D funding successfully and operationalise new product and business innovations. This is amplified by the fact that over 96% of UK SMEs are early-stage micro enterprises, according to 2020 figures from the ONS^[21], with limited capacity for meeting the scientific or technical delivery criteria set out by the HM Revenue & Customs (HMRC) definition of R&D for tax relief and subsidies. Creative (and cultural) industries tend to be located within the fields of the arts and humanities. They are therefore often not recognised as making the necessary scientific advancements to qualify for R&D investment and tax relief.

The crux of the BFTT Partnership value proposition is that feeder sectors – such as advanced textiles and fashion manufacturing, and supply chain innovation – and the breadth of the industry are not encompassed by the ‘designer fashion’ category. A further issue not highlighted by previous studies is that FTT SMEs which are engaging with R&D, as per HMRC’s definition, are not being captured within fashion industry R&D investment statistics, due to limited understanding of the feeder sectors and the polycentricity of the industry beyond ‘designer fashion’.

The BFTT survey and consultation were designed against the backdrop of these R&D challenges. The consultation was intended to capture a fine-grained picture of the specific opportunities for and barriers facing FTT SMEs in the UK. Moreover, it highlights how integrating FTT R&D needs within the development of sustainable apparel and textiles, and intermediary services within regional clusters could provide a focus for R&D investment, and a solution for long-term growth and employment in light of Brexit, economic recession and a shortage of FTT skills.

The BFTT survey was divided into three sections:

- Business Models and Locations
- R&D and Innovation Needs
- Barriers to and Opportunities for R&D and Growth

The three sub-sections of Section 2 each address one element of the survey. In section 2.1, we identify the key FTT regions of the UK and briefly describe the key characteristics of each, along with the business types to be found there. In section 2.2, we identify the broad areas where R&D funding and assistance with innovation are most needed, and note the existence of a considerable skills gap. In section 2.3, we analyse the barriers that are preventing SMEs from accessing R&D, and the opportunities where technological innovation could drive business growth.

[21] Office for National Statistics, 2020, <https://researchbriefings.files.parliament.uk/documents/SN06152/SN06152.pdf>

2.1 Business Models and Locations

Questions in Section A of the survey were designed on the basis that little is understood or well represented in scoping studies and data analyses of creative fashion industries (although NESTA^[22] and the Department for Culture, Media & Sport^[23] have attempted this). The evidence base for R&D, policy and investment strategies is thus poorly served. This is partly due to the divergent nature of sub-sectors in the production chain, including textiles, manufacturing, design and retail, and diverse organisational and corporate structures, including global brands/holding companies (e.g. Kering, LVMH), and large and small retailers and designers.

The mainstream perception of fashion as a standalone industry fails to acknowledge the broad nature of its value chain, which encompasses various sectors behind the garments and apparel ultimately purchased by intermediary and end consumers. These include: design; manufacturing and making; materials production (raw and processed); supporting industries such as agriculture (eg hemp, bamboo, dairy and wool) and chemical processing (eg protein-based fibres); footwear and artefacts; non-garment textiles; media and publishing (eg events, films, blogs, and journalism); advertising and digital content. These sectors operate across retail, museum, performance, physical, virtual and mixed-reality spaces, and feed into other sectors through technical textiles (eg performance sportswear, workwear, interiors, automotive and medical applications), even before accounting for the contribution of feeder sectors such as technology firms.

According to the British Fashion Council's 2019/2020 annual report^[24], the fashion industry contributed £35 billion to the British economy and employed 890,000 people – an increase in gross domestic product contribution of £3 billion, with the same rate of employment, showing greater productivity. The UK Fashion & Textile Association (UKFT), using a broader definition that includes a wider scope of apparel and textiles, found that UK consumers spent over £74 billion on clothing, clothing accessories, household textiles and carpets in 2018, continuing the strong growth levels exhibited since 2011; garment sales alone, which make up by far the most significant component of fashion and textiles, grew to over £53 billion in 2018, up from £36 billion in 2008^[25]. The UK's fashion and textiles manufacturing sector currently produces exports worth over £9 billion annually, according to the UKFT, ranging from designer creations seen on the top catwalks to fabrics used in medical, defence and transport industries^[26].

[22] Bakshi, H., & Mateos-Garcia, J., 2016, NESTA, The Geography of Creativity in the UK, <https://www.nesta.org.uk/report/the-geography-of-creativity-in-the-uk/>

[23] Department for Culture, Media & Sport, 2016, Creative Industries Economic Estimates: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/523024/Creative_Industries_Economic_Estimates_January_2016_Updated_201605.pdf

[24] British Fashion Council, 2020, Annual Report & Accounts FY 2019/20, <https://www.britishfashioncouncil.co.uk/uploads/files/1/BFC%20Annual%20Report%202019-20.pdf>

[25] UKFT Industry Overview, <https://www.ukft.org/business-advice/industry-reports-and-stats/>, accessed February 2021

[26] UK Fashion & Textile Association, 2020, Fashion & Textiles post Brexit, <http://textilehouse.co.uk/wp-content/uploads/UKFT-Brexit-Position-Paper.pdf>

2.0 The R&D Challenge

London, as a world fashion capital, is currently, unsurprisingly, at the centre of this expansion, with east London functioning as a significant incubator for digital and traditional design creativity through its Tech City district and thriving liveries and craft guild culture. East London has been a centre of craft and textile production since the 14th century. The district is home to the Great Twelve Livery Companies, which include the Worshipful Company of Drapers, the Worshipful Company of Goldsmiths, the Worshipful Company of Merchant Taylors, the Worshipful Company of Skinners, the Worshipful Company of Haberdashers and the Worshipful Company of Clothworkers. In 2018, this rich, historical and cultural fashion, craft and manufacturing heritage of the east London region was recognised by the Greater London Authority (GLA). Consultation was held in 2016 with the GLA, the London College of Fashion, University of the Arts London and BOP Consulting, and consequently the East London Fashion District, also known simply as the Fashion District^[27], was formed.

East London is home to 23% of the capital's fashion enterprises and employment and drives the growth of London's fashion design, retail and manufacturing sectors (the concentration of design firms in east London is more than twice the regional norm^[28], according to the East London Fashion Cluster Strategy & Action Plan). **It should be noted that the Outer London NUTS region hosts the largest number of textiles firms in the UK, followed by clusters in East Midlands, West Yorkshire and Greater Manchester (Puig and Marques, 2011^[29]). This textiles cluster includes the Lea Valley corridor, covering the boroughs of Enfield, Haringey, Waltham Forest and Hackney.** The region was successfully regenerated for the 2012 Olympic and Paralympic Games, with the construction of the Queen Elizabeth Olympic Park (QEOP) and related infrastructure investment, and hosts two designated Creative Enterprise Zones in Tottenham Hale and Hackney Wick. The QEOP area stretches to the top of Enfield in the north, and covers Tottenham Hale and Blackhorse Lane; home to an increasing number of fashion workspace providers, it is projected to house an estimated 15,000 new jobs by 2031 across a range of industries and a green industrial hub creating greater learning and employment opportunities^[30]. However, the distribution of innovation outside the London region through the creative corridors of the south east and the London-Oxford-Cambridge golden triangle^[31] is under-explored for long term sustainable competitive advantage, according to property consultancy Bidwells. There is a need to expand the potential of these corridors and innovation districts (**see text box opposite on Emergent UK FTT Innovation Districts**) to support FTT industries, and catalyse growth and manufacturing development.

[27] <https://www.fashion-district.co.uk/>, accessed February 2021

[28] BOP Consulting, 2017, The East London Fashion Cluster Strategy and Action Plan, https://www.fashion-district.co.uk/wp-content/uploads/2018/09/170314_ELFC_SummaryReport_PRESSQUALITY_FINAL.pdf

[29] Puig, F. & Marques, H., 2011, The Dynamic Evolution of the Proximity Effect in the Textile Industry, *European Planning Studies*, 19:8, 1423-1439, p1425

[30] Mayor of London, London Assembly, Upper Lee Valley Area Opportunity Planning Framework, adopted July 2013: <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/opportunity-areas/opportunity-areas/upper-lee-valley>

[31] Bidwells, 2020, Knowledge Networks: London and the Ox-Cam Arc, <https://www.bidwells.co.uk/assets/Uploads/Knowledge-Networks-Report.pdf>

Emergent UK Innovation Districts Supporting FTT-Related Activity

The districts are listed in rough geographical order from northernmost to southernmost.

Glasgow Riverside Innovation District (GRID) is a partnership between the University of Glasgow, Scottish Enterprise and Glasgow City Council. It links the north and south banks of the River Clyde, an area renowned for its shipbuilding heritage and Glaswegian leadership in science, engineering and medicine. **GRID provides an innovation and entrepreneurship hub by co-locating researcher-led start-ups with SMEs and larger local and international companies, as well as providing demonstrator facilities and labs for collaborative R&D activity across the supply chain**^[32].

Smart Belfast is a thriving hub for SMEs in a city that has one of the youngest populations in Europe – 43% are under 30 years old. Around one in every 16 adults aged 18-64, or over 73,000 individuals in the region, is engaged in early-stage entrepreneurial activity^[33]. **Growth areas include creative workspaces, UX and game design, open data innovation, urban innovation, AI, 5G and smart textiles for healthcare.**

Leeds Innovation District encompasses the University of Leeds and BFTT cluster partner Future Fashion Factory^[34]. Future Fashion Factory is a £5.4 million R&D partnership exploring and developing new digital and advanced textile technologies to boost the design of high-value creative products. Leeds city region has 7,300 manufacturing and engineering businesses, two-thirds of which are specialists in advanced processes, R&D and product development. **These businesses employ 144,000 people, representing one of the most extensive manufacturing bases in the UK, generating £7 billion a year, or 12% of the region's economic output**^[35].

ID Manchester, scheduled for completion in spring 2021, is a new neighbourhood in the city that will be an engine for economic growth and has the potential to create over 6,000 jobs. ID Manchester was launched by the University of Manchester, one of the UK's leading centres for research, in partnership with leading UK institutions involved in R&D. **The university's key facilities include the National Graphene Institute, which pioneers smart textiles and heat-adaptive clothing**^[36]. The project links the district to heritage and technical textiles production (eg medical, workwear and defence textiles) across Lancashire, Yorkshire and the Humber, and north-east England.

[32] ReGlasgow, 2019, Massive Investment Proposed For Glasgow City Innovation District, <https://reglasgow.com/massive-investment-proposed-for-glasgow-city-innovation-district/>

[33] Global Entrepreneurship Monitor UK: Northern Ireland Report 2017, 2017, https://www.enterpriseresearch.ac.uk/wp-content/uploads/2018/11/GEM-NI-2017_final-for-upload.pdf

[34] <https://futurefashionfactory.org/>

[35] Leeds City Region Enterprise Partnership, Invest Leeds City Region, <https://www.investleedscityregion.com/key-sectors/manufacturing/>

[36] The University of Manchester, 2020, <https://www.manchester.ac.uk/discover/news/graphene-smart-textiles-developed-for-heat-adaptive-clothing/>

Knowledge Quarter Liverpool (KQ Liverpool) is a 450-acre innovation district covering roughly half of Liverpool city centre. Over £1 billion of new developments have already completed or launched and a further £1 billion is in the pipeline. KQ Liverpool is renowned for research into areas such as sensor technology, materials chemistry and high-performance and cognitive computing. **KQ Liverpool features clusters of facilities, including the Fabric District, aimed at developing multidisciplinary co-production and creative workspaces**^[37].

Midlands Engine is a £250 million investment fund launched to provide growth finance for SMEs. It aims to increase productivity in the region to match or exceed the national average GVA per head and add £54 billion to the Midlands and UK economies by 2030^[38]. The Midlands is home to 27,500 advanced manufacturing businesses, employing 246,100. **It is also home to over 17% of the UK's materials composites companies, with significant strength and expertise in technical textiles and next-generation 2D materials**^[39] for aerospace and automotive industries. The region has a high concentration of ready-made garment manufacturing, a young, diverse population and established research universities.

Western Gateway stretches from Swansea, Cardiff and Newport to Bristol, Bath, Swindon, Gloucester and Cheltenham. It was launched by ministers in November 2019 to boost local economies across business communities in Wales and England, forming a cross-border 'economic powerhouse'. This vision aims to add more than £56 billion to the UK economy by 2030, helping the country's transition to achieve net-zero emissions^[40]. **Critical opportunities for the FTT sector include advanced manufacturing, creative and cultural industries, financial services, innovations in biomaterials such as wool, artificial intelligence (AI), cybersecurity, clean growth and waste management.**

Thames Estuary Production Corridor spearheads the promotion of creative and cultural industries, and is part of a move to generate up to 1.3 million new jobs in the area by 2050^[41]. It is aligned with the Innovation Corridor initiative, which resides at the pivotal axis of London and Cambridge – linked by the M11 motorway – with London Stansted Airport connecting the region to other leading FTT districts^[42].

[37] Knowledge Quarter Liverpool, 2020, <https://www.kqliverpool.co.uk/spaces/fabric-district/>

[38] The Midlands Engine Vision For Growth, 2018, <https://www.midlandsendengine.org/wp-content/uploads/Advanced-Materials-Brochure-Final-Version-Oct-2018.pdf>

[39] Department for International Trade, 2018, Invest in Great Britain & Northern Ireland, Innovation Knowhow Capability: Midlands Opportunities in Advanced Materials, <https://www.midlandsendengine.org/wp-content/uploads/Advanced-Materials-Brochure-Final-Version-Oct-2018.pdf>

[40] Western Gateway, 2020, <https://western-gateway.co.uk/wp-content/uploads/2020/02/Western-Gateway-ENGLISH-WEB.pdf>

[41] Thames Estuary 2050 Growth Commission, 2018, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/718805/2050_Vision.pdf

[42] The UK Innovation Corridor, 2020, <https://innovationcorridor.uk/about>

Fashion District aims to return world-leading fashion manufacturing and design to east London, with sites in East Bank, Queen Elizabeth Olympic Park, Hackney Wick, Haringey and Poplar. It seeks to boost growth by creating new jobs, improving skills and training, and providing affordable workspaces. Current initiatives include the London Fashion Fund, the Retail Futures: Fashion District Innovation Challenge Prize, and The Trampery's Sustainable Fashion Accelerator. **Poplar Works, also part of the Fashion District, is a manufacturing hub created in partnership with Poplar HARCA housing association, The Trampery and the London College of Fashion, University of the Arts London.** Fashion Enter is a tailoring academy that creates training pathways and addresses the manufacturing skills gap by offering accredited qualifications, apprenticeships and short courses in technical skills^[43]. **UAL's emergent Fashion, Textiles and Technology Institute, evolving out of the BFTT Creative R&D Partnership, which includes East Bank partners Loughborough University, UCL and QMUL, will further support this investment and growth of activity.**

The FTT sector is typified, like many cultural and creative industries, by a large number of SMEs and a small number of large brands, conglomerates, retailers and manufacturers. The sector is therefore dominated by micro enterprises – over 82% of firms, according to BFTT survey results – which, despite representing some of the most innovative and creative organisations in the economy, still struggle to secure the investment needed to grow their businesses.

In the early stages of enterprise development, business knowledge and skills, access to finance and affordable workspace are vital. As businesses grow, access to specialist skills, technology, governance and organisational development are also key^[44]. Regional fashion cluster analysis^[45] confirms that this sector experiences systemic barriers to growth in terms of capital investment, access to international markets, distribution and scaling up, as well as intellectual property (IP) protection, particularly given the post-Brexit scenario. **SMEs are ambitious when they aren't limited by entry barriers, with 75% planning to grow within 12 months^[46].** This can make them more agile and open to innovation than large firms.

[43] <https://www.fashion-district.co.uk/>

[44] Creative Industries Council, 2018, Access to Finance, <https://www.thecreativeindustries.co.uk/media/471225/cic-access-to-finance-research-report-june-2018.pdf>

[45] BOP Consulting, 2017, The East London Fashion Cluster Strategy and Action Plan, https://www.fashion-district.co.uk/wp-content/uploads/2018/09/170314_ELFC_SummaryReport_PRESSQUALITY_FINAL.pdf

[46] Creative Industries Council, 2018, Access to Finance, <https://www.thecreativeindustries.co.uk/media/471225/cic-access-to-finance-research-report-june-2018.pdf>

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Notwithstanding asymmetric competition between small and larger creative firms, evidence suggests smaller firms gain from the presence of larger firms in the sector (and vice versa) since they represent an essential source of commissions, capital and expertise through subcontracting and outsourcing arrangements or joint ventures. But these gains are hindered by barriers, including limited time and support to apply for and manage knowledge transfer projects between large firms and SMEs. Significant barriers exist in accessing funding and there are long lead times, making it difficult for SMEs to break even within the current economic climate. SME funding schemes are also perceived to be complicated, restrictive and prescriptive. **Creative SMEs are more enthusiastic seekers of finance than SMEs generally, with 61% happy to use external finance to fuel business growth and development. However, 67% believe that financiers find their sector hard to understand, and 62% agree that lack of funding restricts their growth^[47].**

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SMEs in the sector also face pressure to invest in new business and digital processing functions as a result of the increase in online shopping. This shift has been amplified by the pandemic and is set to continue. 'Before the UK entered lockdown, some 20% of all retail sales were carried out online; in the space of three months, that figure has risen to 30%,' stated a 2020 report by TheIndustry.Fashion. 'While the stores are open, **footfall to Britain's high streets remains down by more than 40%^[48].**' **During the pandemic, brands with an online presence that engaged with issues of social responsibility and sustainability experienced high growth. This suggests a dual pressure for SMEs to invest in adopting online fashion business models, while also addressing sustainability concerns.** Such changes within the business environment require greater access to finance and the ability to engage with customers and early adopters of new products and services. **There is a gap in understanding the impact of translating business models from physical stores to online, and in the geographical spread of the sector across regions and technology sub-sectors.** These gaps were incorporated into the BFTT survey questions to help analyse and evaluate business models, as well as region-based business barriers and opportunities for growth and R&D investment.

[47] Ibid

[48] TheIndustry.Fashion & Torque, 2020, Delivering on demands – how to compete with the major retailers on service in a post-COVID world, <https://www.theindustry.fashion/in-focus-delivering-on-demands-how-to-compete-with-the-major-retailers-on-service-in-a-post-covid-world/>

2.2 R&D and Innovation Needs

Section B of the survey was based on the premise that R&D and innovation are vital in the context of Brexit uncertainty, shifts in consumer behaviour, e-commerce challenges, environmental change, and manufacturing competition from regions with large-scale manufacturing capabilities, such as China^[49]. **UK companies are uncertain about the future and feel ill-equipped to deal with unexpected opportunities for expansion, including the upturn in online shopping. Core challenge areas include business innovation and technology design and adoption, due to a shortage of talent and skills post-Brexit.** ‘In London, where there are 13,650 manufacturing employees, it has been estimated that 70% of the workforce is from the EU,’ says the UKFT’s 2020 working paper Fashion & Textiles Post-Brexit. ‘There have already been instances of skilled workers leaving companies to return home due to the uncertainty of their future, directly impacting these businesses’ abilities to take on additional work. Companies have established training schools to help improve their access to skilled workers, but more often than not, the trainees at these schools are EU nationals^[50].’

The UK’s FTT skills shortages is compounded by shortages within the global industry. A 2020 global report, State of Skills in the Apparel Industry^[51], illustrated the gap between the importance of certain key areas in the coming 12 months and the training given in these subjects in the past 12 months, expressed as a percentage:

- Product development (47% said training was important/21% achieved training, -26% gap)
- Sustainability and environmental management (38%/18%, -20% gap)
- Product design and development software operations (38%/22%, -16% gap)
- Data analytics (29%/13%, -16% gap)
- Patternmaking (34%/19%, -15% gap)
- R&D (28%/14%, -14% gap)
- Production management (27%/13%, -14% gap)
- Customer relationship management (24%/12%, -12% gap)
- Fashion design (24%/12%, -12% gap)
- IT – eg software engineering, system analysis (24%/15%, -9% gap)

[49] Business of Fashion & McKinsey & Company, 2020, The State of Fashion 2020, <https://www.businessof-fashion.com/articles/news-analysis/the-state-of-fashion-2020-download-the-report>

[50] UK Fashion and Textile Association, 2020, Fashion & Textiles post Brexit, <http://textilehouse.co.uk/wp-content/uploads/UKFT-Brexit-Position-Paper.pdf>

[51] Motif, 2020, The State of Skills in the Apparel Industry, https://cf.motif.org/wp-content/uploads/2020/09/26020346/MOTIF_State_of_Skills_2020_Report.pdf

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- Management/leadership/HR training (34%/25%, -9% gap)
- Soft skills (26%/17%, -9% gap)

The UK is currently failing to transfer technological capabilities from innovation districts to the FTT sector, for example in advanced manufacturing, product development, materials innovation, 5G and AI for retail consumption (eg visual search, audio chatbots, machine learning and digital avatars). According to the 2020 Microsoft AI Skills Study UK report, 29% of AI ventures launched by UK businesses had generated no commercial value compared to the 19% global average; 28% of business leaders believed there was an AI skills gap, above the global average of 24%, and only 17% of British employees had been part of AI reskilling efforts, compared to a worldwide figure of 38%^[52]. These figures are likely to be higher for SMEs and the creative industries due to funding barriers and the perception of a lower rate of return on investment^[53].

Covid-19 has pushed SMEs to acknowledge and even reduce skills gaps at pace. This has been delivered, for example, through industrial strategy grant funding initiatives, launched to support growth and leadership, and also, for example, UKFT campaigns such as Made It and the Textile Technical Fund^[54]. While FTT SME numbers engaging in such initiatives has been high^[55], due to the emergent nature of these funding streams, the rate of technology acceptance and successful adoption specifically by FTT SMEs is yet to be fully understood. **During the pandemic there have been signs of new growth opportunities for SMEs. In opposition to fast-fashion business models and unethical labour and supply chain practices, there is an increased appetite for sustainable, local, independent fashion retailers**^[56]. These trends reinforce pre-Covid-19 gaps in knowledge, which were incorporated into the BFTT survey design to better understand specific skills gaps, R&D and business innovation opportunities and barriers to growth for SMEs.

2.3 Barriers to and Opportunities for R&D and Growth

Against the backdrop of these R&D concerns, section C of the BFTT survey explored the main barriers to and opportunities for growth for the UK FTT sector from a comprehensive global industry perspective. **Figure 1 (opposite)** shows the topics raised in the survey, which were drawn from a literature review.

Before the pandemic, the global fashion industry was under pressure to 'change its out-of-date sourcing model characterised by long lead times, maximising order sizes, and relatively low flexibility,' as stated in the McKinsey & Company Time for Change report. 'It was already clear that trans-

[52] Microsoft, 2020, AI Skills in the UK, https://info.microsoft.com/DE-DIGTRNS-CNTNT-FY21-07Jul-24-AISkillsintheUKreport-AID-3013784-SRGCM3647_01Registration-ForminBody.html

[53]

[54] UK Fashion & Textile Association, 2020, Funding for Training, <https://www.ukft.org/skills-and-training/funding-for-training/>

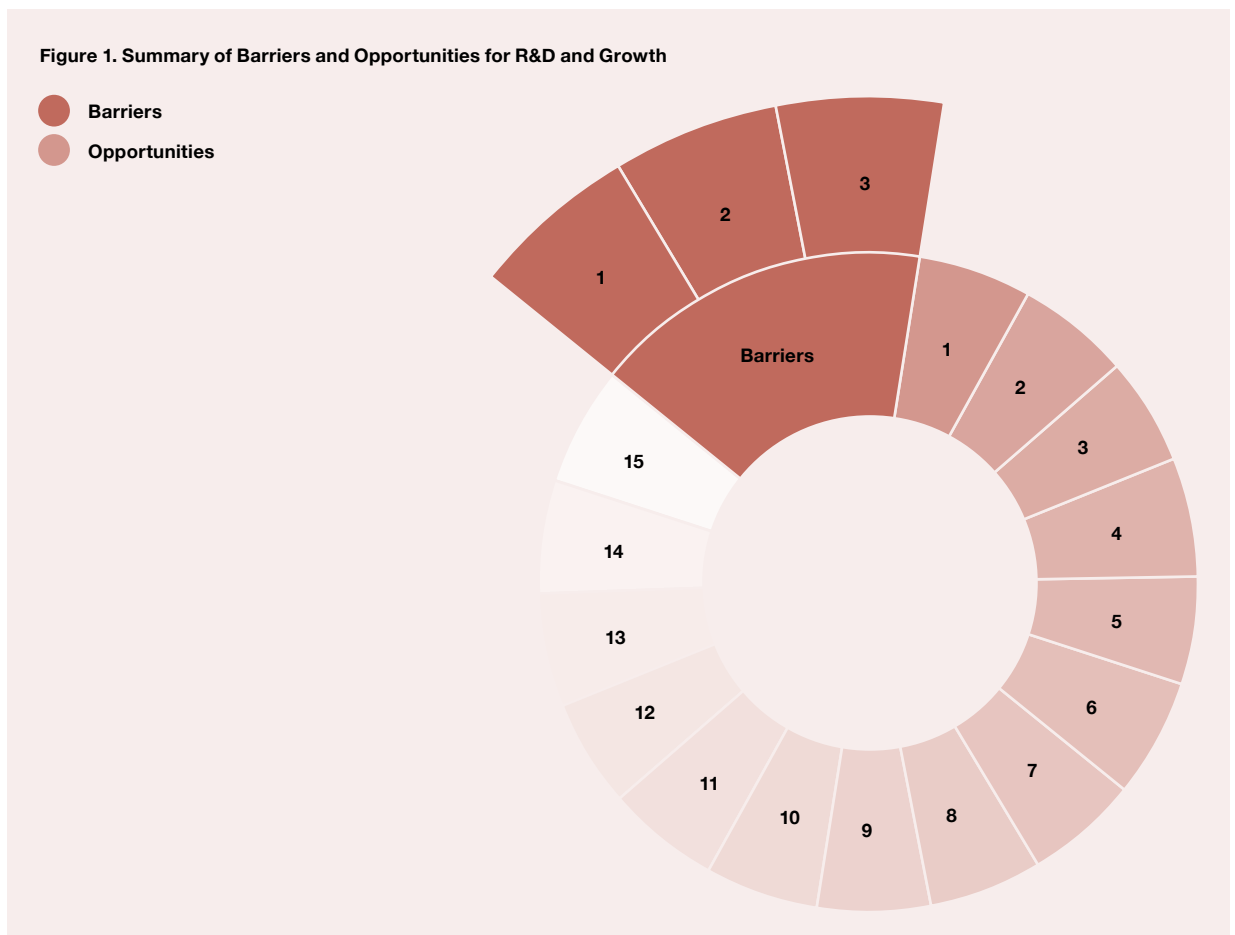
[55] UK Research and Innovation/Arts and Humanities Research Council, Fashion sense: the Creative Industries Clusters driving innovation in difficult times, <https://ahrc.ukri.org/research/readwatchlisten/features/fashion-sense-the-creative-industries-clusters-driving-innovation-in-difficult-times/>, accessed February 2021

[56] Business of Fashion & McKinsey & Company, The State of Fashion 2021, <https://www.mckinsey.com/~media/McKinsey/Industries/Retail/Our%20Insights/State%20of%20fashion/2021/The-State-of-Fashion-2021-vF.pdf>

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formation was needed, particularly in making sourcing more demand-driven and sustainable on both social and environmental dimensions^[57].

In the UK, these pressures have been amplified by Brexit. The decline in local manufacturing over the past 20 years has left the UK with, as identified, a shortage of skills and limited diversity within the workforce, both of which are detrimental to economic productivity. The UKFT's 2019 Fashion & Textiles Post-Brexit paper highlighted the fact that the UK FTT sector is at a crossroads, heading either towards decline or growth. It states that Brexit could have a 'positive impact' on the development of local manufacturing, 'but if access to skilled workers from the EU is not guaranteed then it will be extremely difficult for the manufacturers to capitalise on the increasing interest from designers, brands and retailers to get more made in the UK^[58]'.



[57] McKinsey & Company, 2020, Time for Change: How to use the crisis to make fashion sourcing more agile and sustainable, <https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/Time%20for%20change%20How%20to%20use%20the%20crisis%20to%20make%20fashion%20sourcing%20more%20agile%20and%20sustainable/Time-for-change-How-to-use-the-crisis-to-make-fashion-sourcing-more-agile-and-sustainable.pdf>

[58] UK Fashion and Textile Association, 2020, Fashion & Textiles post Brexit, <http://textilehouse.co.uk/wp-content/uploads/UKFT-Brexit-Position-Paper.pdf>

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Barriers	BFTT Definition
1. Consumer spending and disposable income	Amount of money households have available to spend on consumer goods after deducting direct taxes, eg income tax, National Insurance and council tax.
2. Tax and business rates	Business taxes, eg Corporation Tax, Value Added Tax (VAT), Dividend Tax and National Insurance contributions for businesses with employees. Business rates are taxes charged on properties used for business purposes, eg shops, offices, warehouses and factories.
3. Trade policy (eg tariffs, duties, Brexit)	Existing and emerging (post-Brexit) regulations and agreements that control imports and exports to foreign countries, eg EU trade agreements and regulations, farm subsidies and tariffs.
Opportunities	BFTT Definition
1. Compliance towards sustainability	Sustainability requirements enforced through regulatory and legal frameworks, as well as non-legislative influence through social, environmental and consumer demand for ethical and sustainable business practices, eg waste reduction, resource efficiency, energy use, responsible sourcing and circularity.
2. Social media	Interactive peer-to-peer media and selling platforms with virtual communities, eg Facebook, Instagram, TikTok, WeChat and Twitter.
3. Buying locally made products/brands	Buying from brands that source materials, production and labour from within the UK, or local to where a customer resides.
4. Online/mobile shopping	Shopping via e-commerce platforms on computers or mobile devices such as smartphones and tablets.
5. Transparency (eg blockchain, data, traceability, ethics)	Making visible business processes through accurate data collection across the supply chain. Disclosure of business practices, including ethical practices internally and externally at the level desired by stakeholders and consumers.
6. User-led innovation/ customisation and personalisation	Co-creation of products, designs and experiences by consumers or business-to-business users. Includes customer interaction with virtual environments, customisation, personalisation, crowdsourcing and participatory design.
7. Labour laws (eg working conditions, fair trade, wages)	National and international labour and human rights laws that mediate workers' employment rights and influence general working conditions.

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8. Wearables/smart textiles	Textile and wellbeing products worn on the body, eg watches, T-shirts and medical devices that can interact and detect the environment or wearer through filaments, fibres, yarn, smart fabrics developed with soft electronics, and emergent technology.
9. Protection of brand, IP and design	Intangible and tangible brand protection from counterfeit and damage, eg through IP laws, patents, copyright, trademarks, signs, symbols and design.
10. Funding (eg government, private, venture capital)	Business financing options, eg government grants and subsidies, private and venture capital, crowdfunding and other alternative finance streams.
11. In-store retail shopping	Shopping that takes place within a physical retail space, eg department stores, flagship stores and pop-up shops.
12. Changing consumer demographics	Changing characteristics of a particular group or society of consumers, eg age/generation, ethnicity, gender, income and marital status.
13. Extended reality (XR), an umbrella term for all real and virtual combined environments, and interactions generated digitally	XR combines real- and virtual-world features (AR, MR, VR) via eg digital filters and 3D product visualisation apps, providing a complete simulation of the user's environment through, eg a headset and/or haptic tools, immersive computer games and retail environments.
14. AI	Software used to mimic human cognitive functions such as learning and problem solving, eg predictive analytics, guided sales processes using chatbots, voice-to-speech recognition and machine learning algorithms used for accurate inventory tracking and better customer service.
15. Automation/robotics	Automation includes using computer software, machines or other technology to carry out a task otherwise done by a human. Robotics are part of the automation process and refer to the physical machines that can carry out human tasks, eg with sensors and controllers for warehouse and manufacturing tasks.

2.0 The R&D Challenge

To add to this R&D puzzle, retail productivity has slowed (this was already happening before the pandemic) while **feeder sectors – namely health-care, technology and media – are growing. This demonstrates the opportunity for R&D investment in cross-sector collaboration** but, while larger online fashion and clothing retailers have capitalised on this, the adoption has been slower for SMEs. Despite the threat to bricks-and-mortar spaces, the volatility of the current retail environment has accelerated the need for physical retailers to invest in innovative retail R&D strategies. In **The Future of In Store Experiences, part of Holition's 2020 Reimagining Retail series, the agency stated that 'retailers may want to consider playful strategies that will entice and delight store goers^[59].**' This could include investing in AR-enabled storefronts; try-on beauty apps; interactive 3D window displays; and AI functionalities to create a personalised experience and aid in disseminating product information and touchless formats^[60].

Prior to the outbreak of Covid-19, FTT SMEs were facing a rise in consumer demand for novelty and user-led experiences. The pandemic has since proved a catalyst for consumers to shift away from larger online discount retailers toward local and ethical fashion brands. **IBM's research on the retail consumer of 2020^[61] identified that for today's customer, values are as important as value for money. Nearly six in 10 consumers surveyed for the report were willing to change their shopping habits to reduce environmental impact. Nearly eight in 10 respondents indicated sustainability was important for them.** And for those who said it was very or extremely important, over 70% would pay an average premium of 35% for sustainable and environmentally responsible brands. Boohoo, for example, initially achieved sales growth during the pandemic but saw its share price drop by a third in June 2020 after allegations emerged of low pay and unsafe working conditions within its Leicester-based garment factories. The brand was dropped by retailers ASOS, Zalando and Next^[62].

The pandemic has heightened the need and demand for sustainable apparel and textiles. This is seen in the success of pure play businesses facilitating circular economy models, such as reselling platforms for second-hand and rental fashion (pure play businesses focus on a single line of business and frequently trade online only). Innovative, purely digital fashion experiences are gaining in popularity, offering potential for significant growth and indirectly addressing sustainability without compromising novelty. **The rise of London-based start-up Depop reflects the shift in a younger consumer's mindset toward socially conscious fashion, enabled by social media-style shopping and discount pricing, as well as the importance of R&D finance to help fashion technology SMEs grow.**

Fashion For Good's Financing the Transformation in the Fashion Industry report highlighted that financing is one of the most significant barriers

[59] Holition, 2020, Reimagining Retail: The Future of In Store Experiences, <https://holition.com/play/reimagining-retail-the-future-of-in-store-experiences>

[60] Ibid

[61] IBM Institute for Business Value, 2020, Meet the 2020 consumers driving change, <https://www.ibm.com/thought-leadership/institute-business-value/report/consumer-2020>

[62] BBC, 2020, Boohoo dropped by Next, Asos and Zalando over exploitation claims, <https://www.bbc.co.uk/news/business-53327628>

2.0 The R&D Challenge

to innovation for the worldwide fashion sector. ‘The need for financing is largest at the beginning and the end of the fashion value chain, in raw materials and end of use (reuse and recycling). Between those two ends of the value chain, processing and manufacturing solutions require the most financing. Innovations addressing the consumer-use stage have made the most progress in attracting capital and therefore require less additional financing^[63].’ **The potential for a step-change in UK FTT innovation lies in unlocking financial investment for R&D at the beginning of the fashion chain, in raw materials and textiles innovation.**

According to Clothes Aid UK, which is part of the WRAP 2020 Sustainable Clothing Action Plan commitment, ‘the UK could save around £3 billion per year from the cost of the resources we use to make and clean clothes if we changed the way we supplied, used and disposed of clothing. This would reduce the carbon, water and waste footprints of clothing consumption by 10-20% each^[64].’ R&D investment into physical factories and resources, materials and textiles innovation, and advancing digital methods of design and production that are already helping to reduce waste, will also be crucial to realising these gains.

The UK is renowned for its cashmere, woollen and worsted fabrics, and textiles from tweed, linen and silks through to advanced high-tech fabrics^[65]. Trade body Make it British saw an increase in interest from buyers and retail sourcing teams for nearshoring and locally made products during the pandemic. A survey of 100 of its members revealed that buyers and brands are looking to make products such as knitwear in the UK, with increased orders at UK dress factories and growing demand for face masks^[66].

This reinforces the need to understand barriers to and opportunities for local FTT manufacturing, including an in-depth understanding of the skills shortage and central areas for manufacturing technology investment. In an industry where consumers increasingly expect organic, fair trade and sustainable products, SMEs face pressure to develop transparent and traceable supply chains, requiring vast investment and scaling. Investment into transparency checks, technology such as Blockchain, and quality audits and certifications cannot be overlooked in the light of growing consumer awareness of how fashion impacts biodiversity and society.

The BFTT survey was designed to capture a deeper understanding of the increasingly important barriers to and opportunities for growth, and specifically how they impact SMEs. The survey and interview findings that follow in the next sections are positioned against the background of the UK’s FTT R&D landscape discussed in this section, followed by findings, a conclusion, and recommendations.

[63] Fashion for Good & Boston Consulting Agency, 2020, Financing the Transformation in the Fashion Industry: Unlocking Investment to Scale Innovation., https://fashionforgood.com/wp-content/uploads/2020/01/FinancingTheTransformation_Report_FINAL_Digital-1.pdf

[64] Clothes Aid UK, 2020, <https://clothesaid.co.uk/about-us/facts-on-clothes-recycling/>, accessed February 2021

[65] UK Fashion & Textile Association, 2020, Celebrating UK textile creativity in Paris, <https://www.ukft.org/celebrating-uk-textile-creativity-paris/>

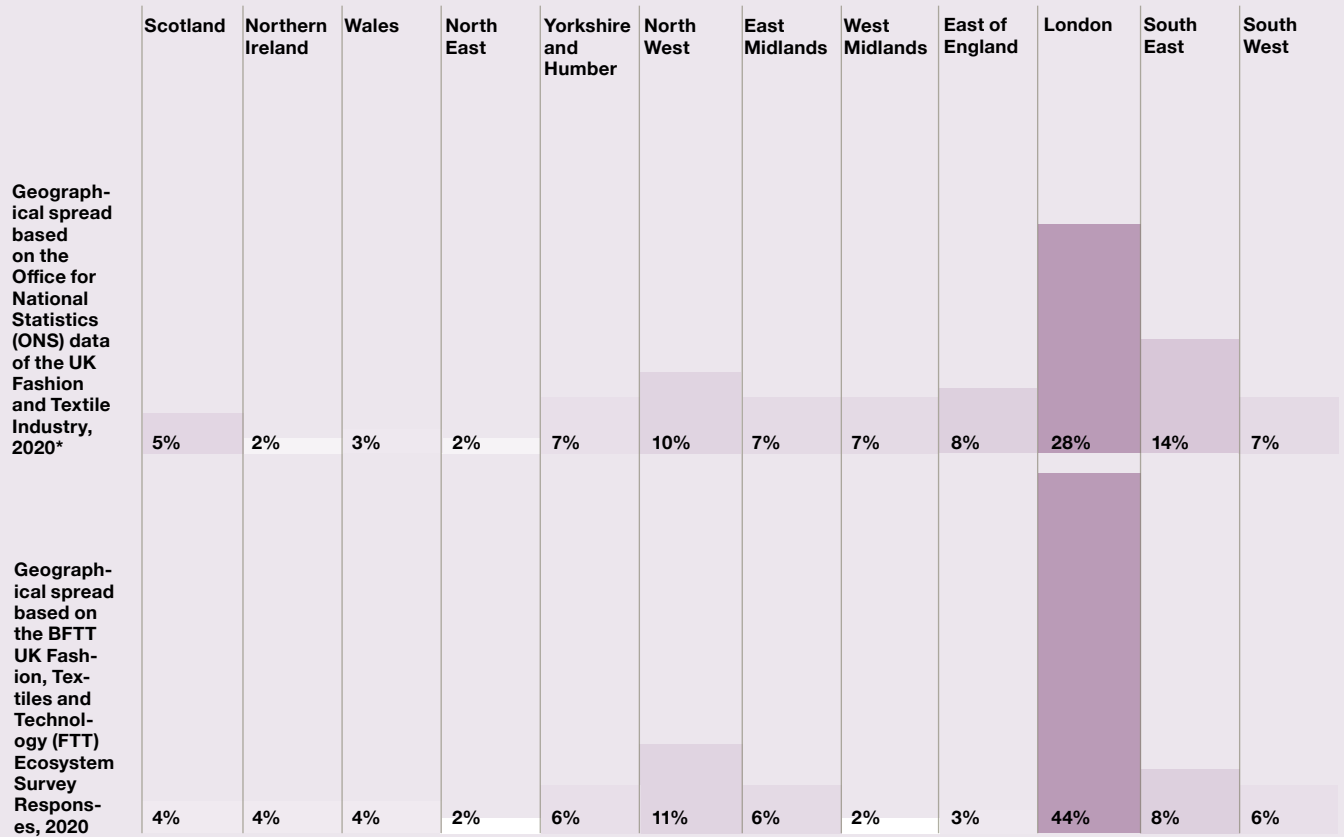
[66] BBC, 2020, Coronavirus prompts buyers to look closer to home, [bbc.co.uk https://www.bbc.co.uk/news/business-51654215](https://www.bbc.co.uk/news/business-51654215)

3.0 Changing Nature of the UK FTT Ecosystem

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The Business of Fashion, Textiles and Technology (BFTT) survey results illustrate the polycentric nature of the UK Fashion, Textiles and Technology (FTT) ecosystem today and a wider geographic spread not captured in previous datasets and studies on the sector.

Table of descriptive data on the geographical spread of the UK FTT industry to date



*Source: Office for National Statistics, 2020. Analysis showing the count, employment, employees and turnover of VAT and/or PAYE based enterprises in Regions of the United Kingdom for the Fashion and Textile Industry, Snapshot of the Inter-Departmental Business Register taken on 13 March 2020

Office for National Statistics (ONS) 2020 fashion and textile industry data^[67] shows that fashion clusters are spread across 12 UK regions – Scotland (5%), North East (2%), East Midlands (7%), East of England (8%), London (28%), South East (14%), South West (7%), Wales (3%), West Midlands (7%), North West (10%), Northern Ireland (2%), Yorkshire and Humber (7%). The BFTT survey (2020) indicates a similar spread across (see regional spread table, above): Scotland (4%), North East (2%), East Midlands (6%), East of England (3%), London (44%), South East (8%), South West (6%), Wales (4%), West Midlands (2%), North West (11%), Northern Ireland (4%), Yorkshire and Humber (6%).

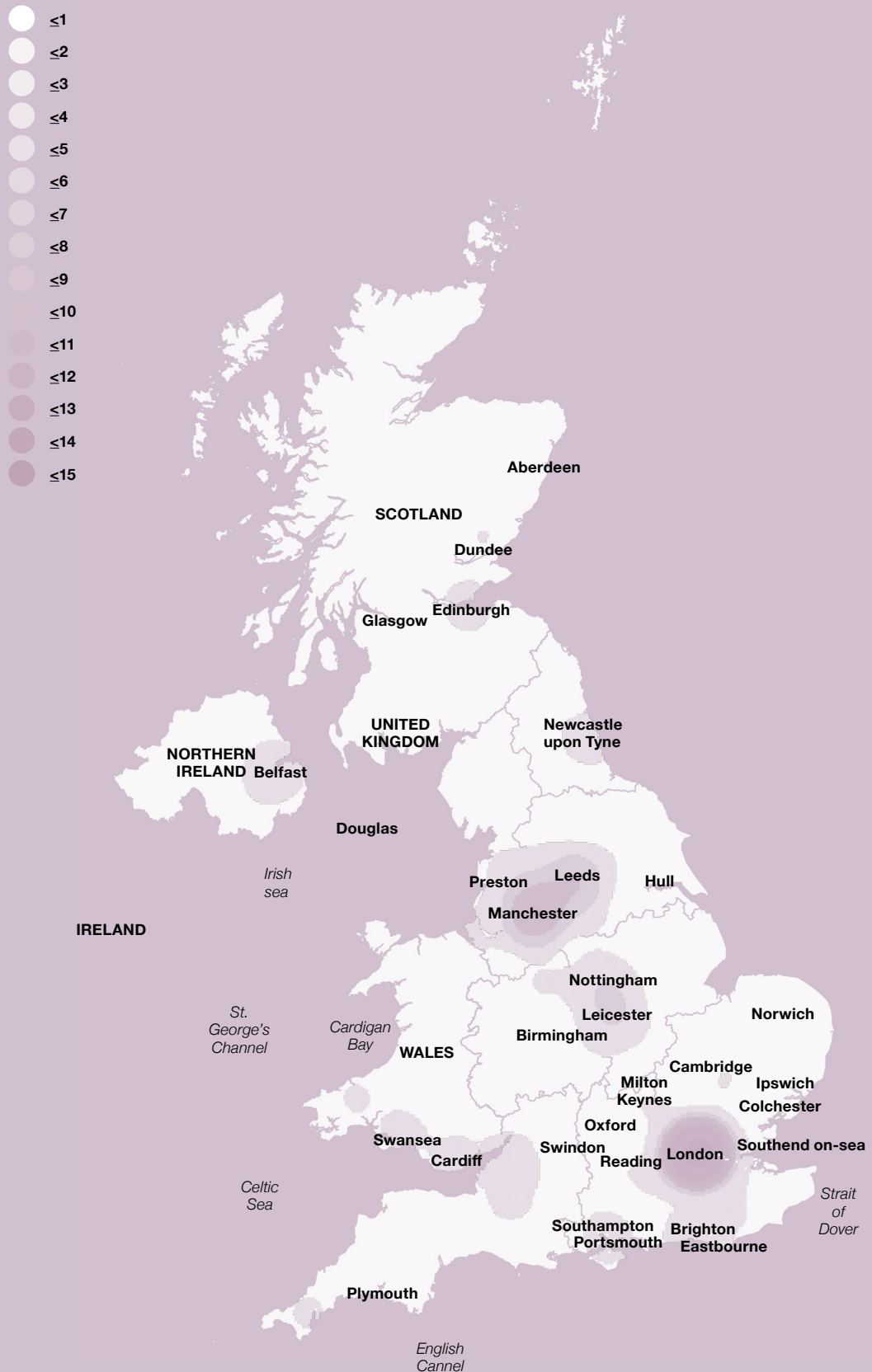
The regional spread of the BFTT survey responses broadly supports other creative industries data^[68] and shows that creative industries tend

[67] Office for National Statistics, 2020. Analysis showing the count, employment, employees and turnover of VAT and/or PAYE based enterprises in Regions of the United Kingdom for the Fashion and Textile Industry, Snapshot of the Inter-Departmental Business Register taken on 13 March 2020

[68] Mateos-Garcia, J., Klinger, J., & Stathoulopoulos, K., 2018, NESTA. Creative Nation: How the creative industries are powering the UK's nations and regions, https://media.nesta.org.uk/documents/creative_nation-2018.pdf

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Kernel Density Map of UK Fashion, Textile and Technology (FTT) Clusters.
 Geodata Source: BFTT FTT Ecosystem Survey Reponses, 2020
 Map Source: Ordnance Survey, OpenData, Boundary-Line™, 2020



to be relatively larger in London's economy and in the South East, with lower median creative industry shares in regions such as Northern Ireland. **Outside Greater London and the South East, the BFTT survey identifies emergent FTT micro clusters of activity in and around Bath, Belfast, Bolton, Birmingham, Bristol, Cambridge, Cardiff, Dundee, Edinburgh, Falmouth, Huddersfield, Leeds, Leicester, Loughborough, Manchester, Nottingham, Preston, Newcastle, Rochdale, Southampton and Swansea (see Kernel^[69] Density Map).**

Outside Greater London and the South East, the BFTT survey identifies emergent FTT micro clusters of activity in and around Bath, Belfast, Bolton, Birmingham, Bristol, Cambridge, Cardiff, Dundee, Edinburgh, Falmouth, Huddersfield, Leeds, Leicester, Loughborough, Manchester, Nottingham, Preston, Newcastle, Rochdale, Southampton and Swansea.

In previous economic and employment studies^{[70] [71]} fashion activity was perceived as being restricted to a very narrow band of SIC categories – just three or four, including C: Manufacturing; G: Wholesale and Retail Trade; and R: Arts, Entertainment and Recreation. In contrast, the BFTT survey responses, while they still skew towards categories C and G, capture SMEs classified across a broader range of categories, as responses were encouraged from a wider range of businesses linked to the FTT cluster, as outlined in the methodology section. These include M: Professional, Scientific and Technical Activities, and P: Education. Within the SIC categories identified, the BFTT survey also captures further sub-classes.

These categories emerged from the SIC codes under which SMEs have officially self-classified their businesses in the UK Companies House register. SIC codes and sub-sectors were identified through the Companies House register for SMEs that responded to the survey, except for those SMEs that could not be placed under a trading name. Therefore, the survey not only shows a broader range of SICs within the sector but also illustrates the breadth of the industry across technology and professional services sectors, previously not captured within creative industry clusters studies. **The self-classification of a broader nature of business classifications by FTT SMEs demonstrates adjacent industries developing links to other sectors, and, notably, the dilution of traditional fashion silos and emergent breadth of the UK fashion sector.**

[69] Kernel density analysis is a statistical analysis that calculates a magnitude-per-unit area from point or polyline features using a kernel function to fit a smoothly tapered surface to each point or polyline, and is useful for fine-grained analysis of regions with densely populated SMEs

[70] Bakhshi, H., & Mateos-Garcia, J., 2016, NESTA, The Geography of Creativity in the UK, <https://www.nesta.org.uk/report/the-geography-of-creativity-in-the-uk/>

[71] Office for National Statistics, 2020, Fashion Industry by Constituency <https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/adhocs/11807fashionindustrybyconstituency>

The self-classification of a broader nature of business classifications by FTT SMEs demonstrates adjacent industries developing links to other sectors, and, notably, the dilution of traditional fashion silos and emergent breadth of the UK fashion sector.

Over 30% of SMEs captured in the BFTT survey are made up of knowledge-intensive business services (KIBS). KIBS are vital components of emergent clusters, particularly in large cities, and essential for the successful growth of the UK economy, as set out in various UK Innovation District plans for the future^[72]. The crossover of traditional designer fashion SIC categories with other categories illustrates the potential for growing employment through sub-sector expansion and the increasing role of connectivity and skills support through SME intermediaries, as seen in emerging clusters across the UK and globally (see **EU and global FTT clusters table opposite**).

Snapshot of EU and Global FTT Clusters

The great strength of the UK and Europe's tech ecosystem is its plurality of industrial background. While Europe may not have the depth of pure technology experience of the US's Silicon Valley, Europe is more specialised in finance, apparel, food, manufacturing and aerospace. There is a relatively precise picture of the European fashion industry, and a good indication of the European tech sector can be identified. Paradoxically, there is a scant understanding of the polycentricity and intersection between the two – i.e. the EU fashion-tech sector.

Based on data from 2017, the EU textile and clothing sector is estimated to directly employ nearly 1.7 million people, in over 175,000 companies, with a turnover of €181 billion^[73]. The industry is primarily comprised of small businesses with fewer than 50 employees. These represent 90% of the overall workforce^[74]. Despite shrinking overall employment levels in the sector, the European Skills Council estimated up to 600,000 jobs becoming available across the EU textiles and fashion sector up to 2025, taking into account those leaving the industry through retirement and other factors^[75]. According to the European Commission, nearly five million people are directly employed in the fashion value chain, with a turnover of over €577 billion^[76]. More than 1.7 million people are employed by the high-end industries that comprise 18% of all EU exports^[77]. As far as the latter is concerned, the tech sector is most often associated with the software industry. According to The State of European Tech 2018^[78] report, the European tech industry contrib-

[72] Examples include Hanna, K., 2016, Centre for London, Spaces to Think: Innovation Districts and the Changing Geography of London's Knowledge Economy, https://www.centreforlondon.org/wp-content/uploads/2016/08/J4234CFL_Innovation_Districts_WEB.pdf

[73] European Commission, Textiles and clothing in the EU, https://ec.europa.eu/growth/sectors/fashion/textiles-clothing/eu_en, accessed February 2021

[74] Ibid

[75] Euratex Bulletins, 2018, <https://euratex.eu/spring-and-autumn-reports/>

[76] European Commission, 2016, Boosting the competitiveness of cultural and creative industries for growth and jobs, https://ec.europa.eu/growth/content/boosting-competitiveness-cultural-and-creative-industries-growth-and-jobs-0_en

[77] Ibid

[78] The State of European Tech 2018, <https://2018.stateofeuropeantech.com/>

3.0 Changing Nature of the UK FTT Ecosystem

utes around \$400 billion to the European economy today, though it remains just a fraction of total European gross value added (GVA), accounting for only 2.5% of total European GVA. The rate of tech workforce growth across Europe is not equally distributed, with workforces in some countries growing much faster than others.

Fintech, enterprise software, energy, health and food have been the greatest beneficiaries of increased capital over the past five years. But, within this context, fashion has been the more under-resourced sector, experiencing a sharp decrease of 59% of the investment received in 2019^[79].

Similar to the problem faced by the UK FTT sector, for countries to attract capital investment into the sector, it is essential to understand the characteristics and emergence of FTT clusters across the globe and the advantages of the clusters for co-growth and collaboration across industries. Yun and Lee (2019)^[80], for instance, analyse global fashion clusters worldwide and explore the effectiveness of each one by investigating its stage of development. Fourteen global fashion clusters were identified and analysed:

Global Fashion Clusters		
Ranking	Name of Cluster	Location
1	East London Fashion Cluster	London, UK
2	Made in New York	New York, US
3	Fashion District	Los Angeles, US
4	Fashion Cluster	Washington State, US
5	Fashion Cluster	Milan, Italy
6	Dubai Design District	Dubai, United Arab Emirates
7	The Textile and Fashion Hub	Cremorne, Australia
8	PMQ	Central, Hong Kong
9	Denim City	Amsterdam, Netherlands
10	ModeNatie	Antwerp, Belgium
11	Made in Japan Project	Nagoya, Japan
12	Shenzhen OCT LOFT	Shenzhen, China
13	Fashion Hub	Shanghai, China
14	Dongdaemoon (DDM) Fashion Cluster	Shanghai, China

Global Fashion Clusters. Source: Adapted from Yun and Lee, 2019

[79] Ibid

[80] Yun, S. J., & Lee, H. K., 2019, A Study on the Types and Characteristics of Global Fashion Clusters, Journal of the Korean Society of Clothing and Textiles, 43(4), 491-505

The fashion clusters identified illustrated three types of formation and operation: self-formation; self-formation and government-based development; and government, institute, and enterprise-based formation and development. The characteristics of global fashion clusters were based on functions related to space, learning, innovation, network, and knowledge. There were also four stages in the development stage of global fashion clusters: professional clusters, industrial clusters, learning clusters and innovative industrial clusters. In particular, innovative industrial clusters, the final stage of development, have high levels of effectiveness in terms of co-growth and collaboration among fashion-related businesses in fashion clusters. Concerning cluster formation, the self-formation type is evident in the case of the Washington and Milan fashion clusters. Fashion brands and factories are aggregated in the local region, which generates fashion clusters. The self-formation and government-based development type is affected by local and social factors. Examples include the East London Fashion Cluster, Made in New York and the Dongdaemun Fashion Cluster in Seoul. Finally, governmental strategic plans contribute to building the fashion clusters categorised as stemming from government, institute and enterprise-based formation and development. These include the LA Fashion District, Dubai Design District, the Textile & Fashion Hub in Cremorne, Hong Kong PMQ, Denim City in Amsterdam, ModeNatie in Antwerp, the Made in Japan Project, Shenzhen OCT LOFT and the Shanghai Fashion Hub.

As technology becomes an increasingly more transformative force across all parts of the economy, there is a considerable opportunity to digitise and reignite traditional industries across the globe through co-growth and collaboration opportunities. Within this context, the fashion industry has only begun to unleash the potential of the digitalisation based on computer sciences, communication and electronics. These technologies are recognised for using higher information intensity and connectedness of physical resources than the fashion industry has ever previously seen.

The global FTT industry has enormous upside potential if it succeeds in building active tech communities in all cities where there are large tech talent clusters. This is because there is, perhaps unsurprisingly, a very high correlation between the strength of tech community engagement within cities, as defined by the number of tech-related Meetups, and the rate of company formation^[81]. Not all cities with large engineering talent pools have been able to build vibrant communities where people meet up frequently to exchange ideas and knowledge. However, when cities succeed in building active communities around their engineering talent, as measured by the number of tech-related Meetup events hosted per local developer, the data suggests that capital investment follows in larger volumes^[82] – as in the case of Berlin. **The strength of tech community development is a critical leading indicator signposting the future potential of the FTT ecosystem globally.**

[81] The State of European Tech 2018, <https://2018.stateofeuropetech.com/>

[82] Ibid

3.1 Importance of Intermediaries and Location for UK FTT Clusters

As we have discussed above, one of the most salient features of creative industries is clustering, even for the ‘non-placed-based’ creative digital sector (Evans, 2019^[83]). Researchers have used different notions of a cluster, covered every creative industry, used different methodologies, and focused on different places and scales or unit of analysis. Consequently, it has been impossible to reconcile these with enough precision. The particular question of interest in our survey has been the reason for the clustering of specific creative industries. Reasons for spatial clustering have been variously explained by regional and urban economics in terms of transaction costs (eg transportation costs), localisation economies (eg specialised labour pool, technical providers through the different phases of the productive chain, knowledge spillovers, trust, learning, so-called ‘creative class’), urbanisation economies (eg size of the local market, productive diversity, social diversity, public goods), incubation, social exchange, and public policies and planning.

While there has been some previous work (see **Global Fashion Clusters table, page 39**) on fashion creative clusters, the UK-wide story is less well-known. Our research shows the importance of different location-based advantages of clustering depending on business status (see **Figure 5, page 43**), business size (see **Figure 3, page 42**), length of trading (see **Figure 6, page 43**), type of business structure, turnover (see **Figure 4, page 42**), and region (see **regional spread table, page 35**). The BFTT survey, for instance, reveals that 60% of respondents state that location is of high importance, followed by 23% who say location is moderately important; just 17% say location is of low priority (see **Figure 2, page 42**). Business location is of higher importance for micro enterprises and businesses at all stages trading for less than one year to more than 15 years.

The importance of location is linked to the forming of clusters and specialised intermediaries. Intermediaries include public and private actors who provide a wide range of services to support the activities of the firms in the cluster. These include traditional intermediaries that can provide pathways to R&D benefits such as education and training institutions, private lobbying organisations, government-funded development agencies/LEPs and chambers of commerce (Lorenzen and Frederiksen, 2008^[84]), including specialist creative industries and sectoral development agencies.

The breadth of activities emphasises the increasing role of sub-sector collaborations, networking, heterogeneity of the sector, and new and emergent fashion production and business models. Advantages of clustering can include:

- a pooled labour market
- knowledge spillovers
- knowledge exchange networks
- sustained local collaborations

[83] Evans, G. L., 2019, Emergence of A Digital Cluster in East London: Birth of a New Hybrid Firm, *Competitiveness Review* 29(3): 253-66

[84] Lorenzen, M., & Frederiksen, L., 2008, Why do cultural industries cluster? Localization, urbanization, products and projects, *Creative cities, cultural clusters and local economic development*, ed Cooke, P. & Lazzeretti, L., Edward Elgar Publishing, 155-179

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Figure 2. In general, how important is your location to your business?

High Importance	60%
Moderate Importance	23%
Low Importance	17%

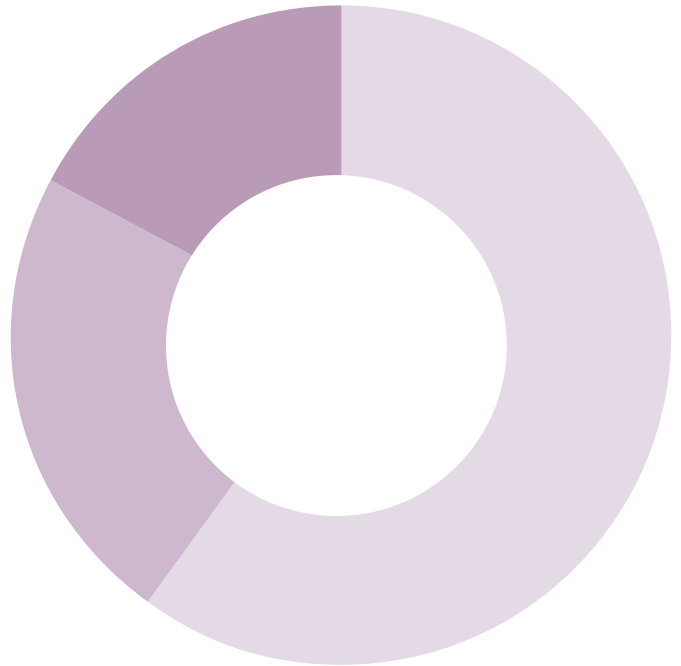


Figure 3. What is the size of your business?

Micro	78%
Small	15%
Medium	7%

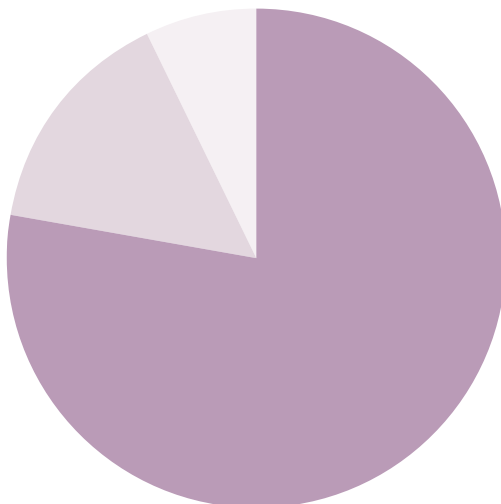
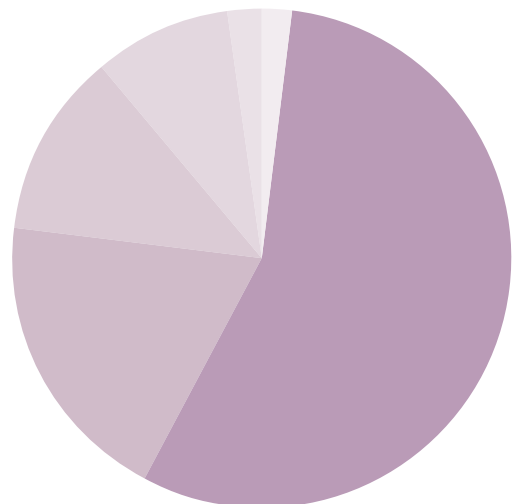
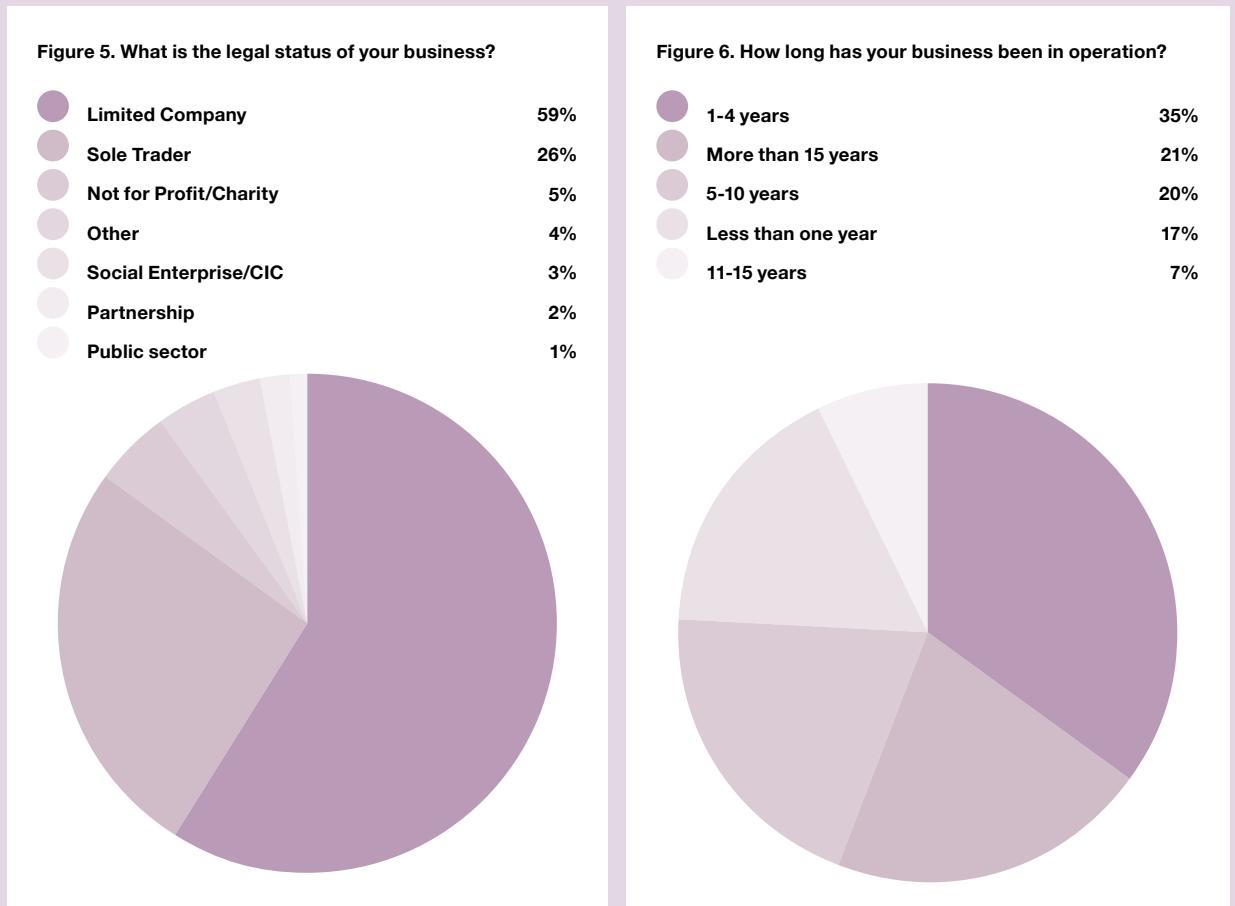


Figure 4. What is the annual turnover of your business?

£0 - £50000	56%
£50000 - £250000	19%
£250000 - £1m	12%
£1m - £5m	9%
£5m - £10	2%
£10m and above	2%



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These advantages are highlighted in the survey responses to how important location is based on the following factors (see **Figure 7, page 44**): quality of life for the respondent and their staff (average mean score 4.0 [out of 5.0, see footnote^[85]]); quality of the infrastructure (average mean score 3.7); access to affordable workspace (average mean score 3.7); access to customers (average mean score 3.4); access to supporting organisations (average mean score 3.3); collaboration with other FTT businesses (average mean score 3.2); provides prestige to the company (average mean score 3.2); availability of skilled labour (average mean score 3.2); access to universities/colleges/training (average mean score 3.0); access to suppliers (average mean score 2.9).

The Covid-19 context has magnified the importance of better quality of life, which can be heavily influenced by location. The emphasis on quality of life is linked to financial stability and better standards of living, which are more achievable in some areas than in others. Hence, on average, a high level of importance is also placed upon access to affordable workspaces. Such facilities are also increasingly hosting hybrid innovation businesses that intersect with FTT interests, such as Open Cell, launched by Ceneic founder Bud Moore, who is also a consultant to Open Cell^[86]:

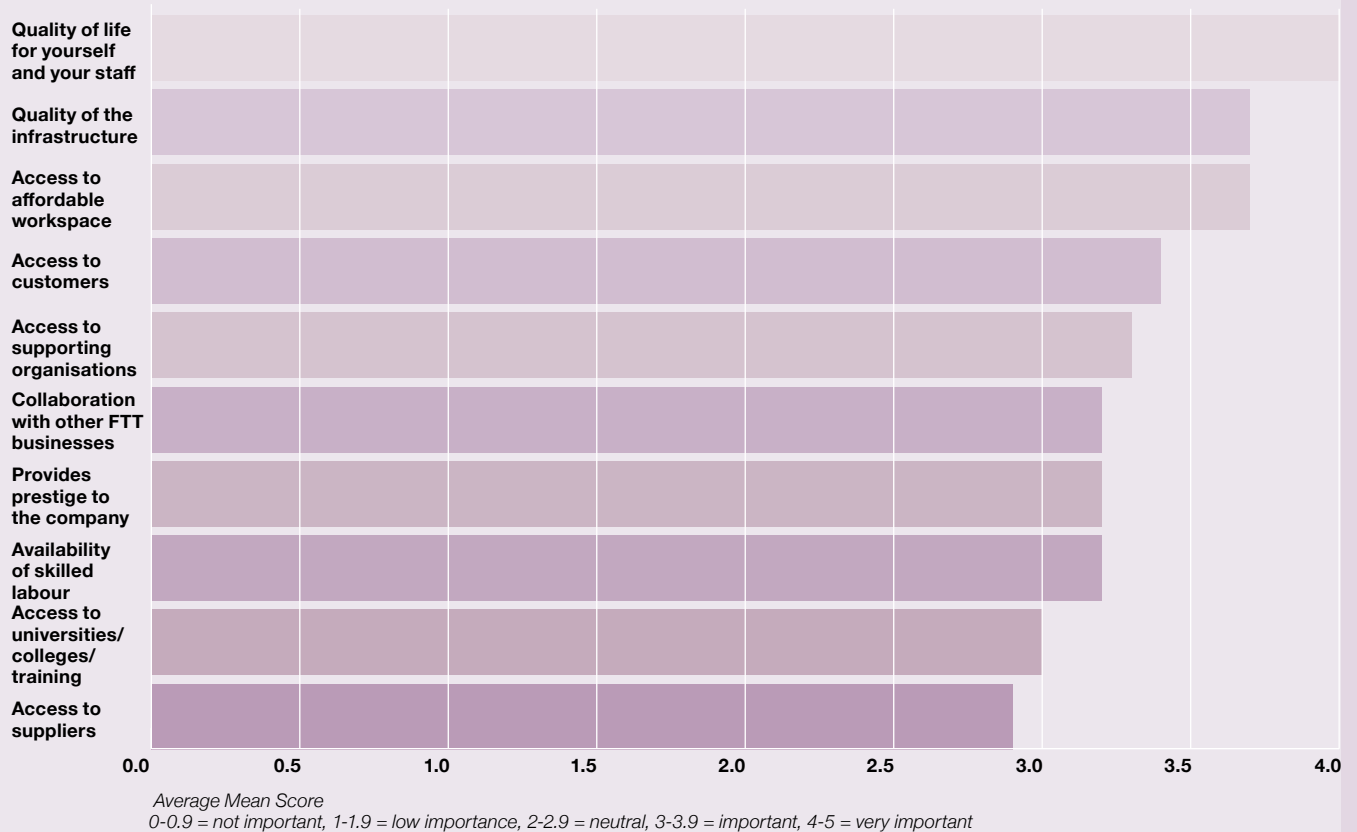
[85] Survey respondents were asked to rate a variety of factors on a five-point scale, classifying them from 1 (not at all important) to 5 (very important). From this data, average mean scores were calculated, interpreted as follows: 1.0 = not at all important; 1.1 to 2.0 = low importance; 2.1 to 3.0 = neutral; 3.1 to 4.0 = important; 4.1 to 5.0 = very important

[86] <https://www.opencell.bio>

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‘Finding affordable space is a challenge for most creatives, and why we started Open Cell. The Open Cell studios were set up so makers could work in good lab conditions at affordable prices and not compromise on the quality of life in an expensive city like London.’

Figure 7: How Important is the location of your business based on the following factors?



The need for affordable workspace has led to the growing importance of workspace providers as essential intermediaries within the FTT ecosystem. Innovative workspace providers included SMEs that were able to capitalise on landlord and property developer rent subsidies under Section 106 of the Town & Country Planning Act 1990^[87]. This enables workspace providers to grow their business by attracting a broader range of SMEs through affordable rents, as well as facilitating community, business, research and experimental creative collaboration opportunities, exemplified by Hajni Semsei, director of Arbeit Studios^[88]:

‘Arbeit Studios is a co-working studio space run under Section 106, which means the property developer of our co-working space is required to provide either affordable workspaces or affordable housing agreement upon sale ... We subsidise our clients’ rent with the rent discount we get

[87] Section 106 agreements, otherwise known as ‘planning obligations’, are legally binding agreements that local authorities make with businesses, individuals or developers in connection with planning permissions. Agreements contain obligations, either financial or non-financial, where it is necessary to offset or mitigate the impacts caused by development, and to promote community gain and development. <https://www.legislation.gov.uk/ukpga/1990/8/section/106>

[88] <https://www.arbeit.org.uk>

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from the property developer. This is one of the main ways that we attract and help to support community development and collaboration.'

Due to economic uncertainty and rising costs of living in bigger cities such as London, the cost of workspace, even when subsidised, is still considered a financial barrier for micro enterprises. To date, this has led to some SMEs relocating to marginally cheaper regions of the UK where rent is affordable. Rising costs of affordable workspace and rent were perceived as a barrier for SMEs across all UK regions.

'Co-working in Manchester city centre is affordable compared to London, but can still be expensive compared to further away from the city. We have a lot of textile manufacturers, B2B online brands outside of the city centre. Still, the investment is more towards collaborations with the four top universities around the centre.' **Rhiannon Hunt, former eco-innovation advisor, The Growth Company**^[89]

Although there is an opportunity for regions outside London to attract business and talent, the challenge remains for emergent clusters to promote their initiatives for further inward investment, and for established clusters to sustain the growth of existing ecosystems. This points towards a need for financial investment into latent clusters, as well as more established regions such as inner-city boroughs of Greater Manchester and London that are at risk of losing talent. This, however, may change again with the advent of new city-centre opportunities, due to the large number of city-dwellers moving to the regions from 2020 onwards.

'Our biggest barrier in Lancashire and Blackburn is that we have a strong historical and industrial heritage linked to the textile industry, but few consider north west England beyond Manchester, and Lancashire for its innovation and automated high-tech facilities used in the Airbus, for example. The future vision of regions outside of the big centres needs to override any negative historical image, to retain talent and attract further investment.' **Participant, The Fabric of Our Times roundtable, British Textile Biennial 2019**

A relatively high level of importance is placed on the location-based advantage of availability and access to skilled labour. It is essential for businesses to find the skills they need quickly. Skilled workers are essential for apparel businesses whose activities require access to multiple skill sets for a limited time. In a pooled labour situation, talents are often accessed through project-based short contracts and freelancing, and managed by so-called creative entrepreneurs or managers (Lazzeretti et al, 2019^[90]).

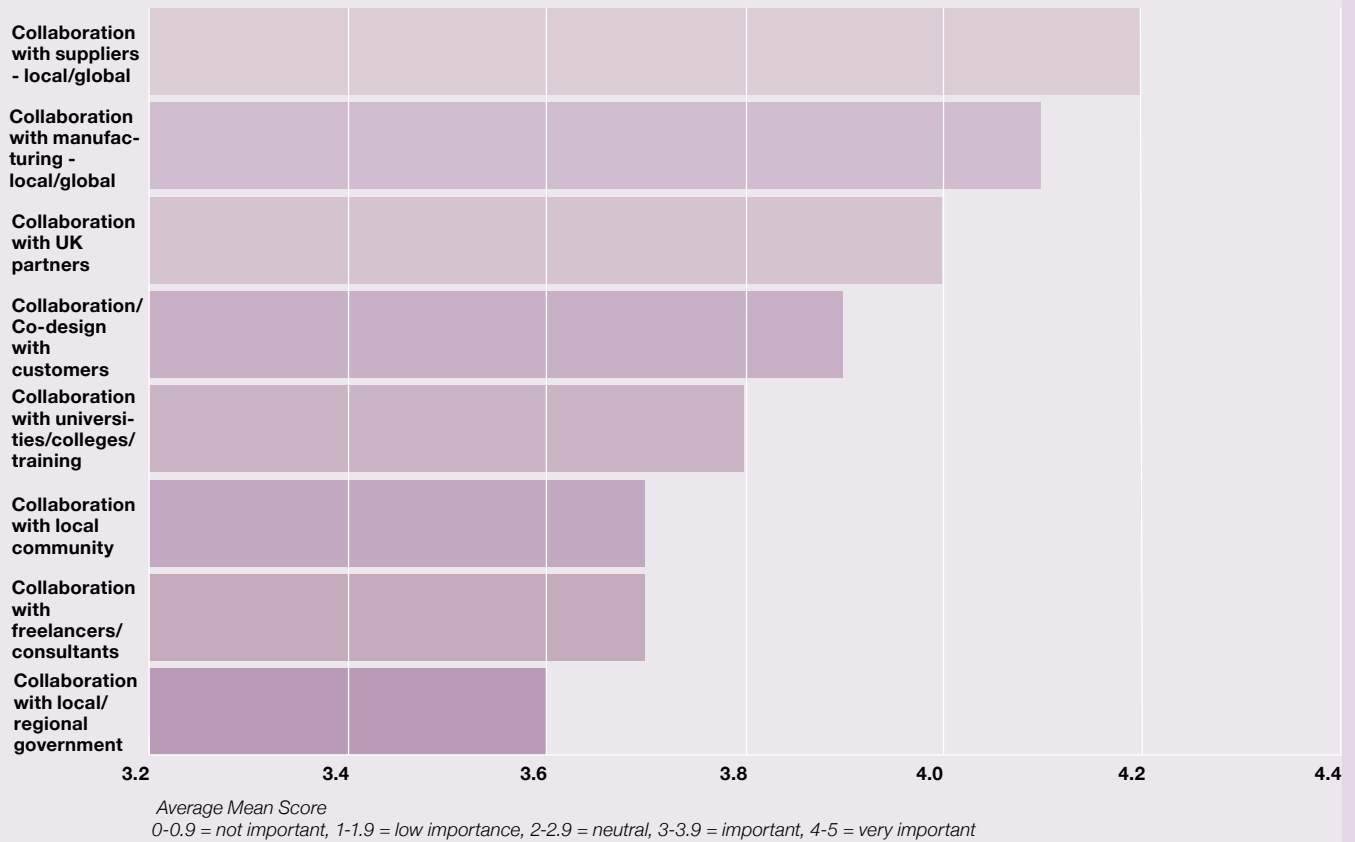
This links to another advantage of location-based benefits: knowledge and network spillovers. The term 'network spillovers' refers to how the presence of a collective of companies, particularly in the creative and technology industries, can offer mutual stimulation of ideas, exchange knowledge and collaborate effectively, making the area more attractive for other firms.

[89] <https://www.growthco.uk/>

[90] Lazzeretti, L., Capone, F., Caloffi, A., & Sedita, S. R., 2019, Rethinking clusters. Towards a new research agenda for cluster research, *European Planning Studies* 27:10, 1879-1903

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Figure 8: How important are the following collaboration and knowledge exchange opportunities for your business in the next three to five years?



In terms of knowledge and network spillovers, **the BFTT survey illustrates that collaboration (see Figure 8 above) with educational establishments – universities, colleges and training providers – (average mean score 3.8) is of high importance for the future of the sector.** SMEs in the early stages of business and trading for less than one year place greater importance on accessing supporting organisations and partnership opportunities within the UK (average mean score 4.0). For early-stage SMEs, intermediaries play a crucial role in providing access to new networks and commercial opportunities. Overall, the importance of collaboration with the FTT sectors for business growth and profits is of high importance to SMEs across all UK regions. Cooperation with the FTT sector is linked to access to supporting infrastructure and the importance of having access to suppliers. Access to suppliers is critical across all UK regions.

The BFTT survey reveals that FTT-based universities^[91] are central to the future of successful knowledge flows within the sector. Historically, fashion courses were situated within art, design and communication programmes. **The increasing crossover between fashion and technology has led to fashion universities and colleges working closely with STEM (Science, Technology, Engineering and Maths) subjects, leading to the broader STEAM agenda,** which encompasses Science, Technology, Engineering, Arts and Maths. Interviews reveal that although traditional

[91] BFTT defines fashion universities as universities in the UK that offer established fashion-related courses, ranging from fashion management and fashion design to communications

STEM-based universities have been successful at attracting R&D funding, the flow of this funding into supporting the fashion industry has been limited. The main reason is that there has been limited research on the role of higher education institutions in the culture and creative sectors, or in the fashion industry beyond the category of designer fashion; leading to limited influence and scope of R&D funding through university fashion programmes and facilities. More specifically, historically, science-based universities have been considered more R&D orientated^[92], and are therefore perceived by respondents as more likely to attract investment and support. Respondents perceive this as an opportunity and point to the need for greater multisector collaboration between traditional fashion universities and STEM universities. **Although there are skills gaps within the sector, with adequate funding, baseline UK university data shows that an increasing number of FTT programmes have been quick to respond to these gaps through new programmes. These include collaborations with research centres and further education establishments, and the development of short courses and online courses during the pandemic, to cite just a few examples.** For 2020/21, UCAS listed 82 providers offering 418 undergraduate courses encompassing subjects such as fashion, textile design, fashion merchandising, textiles, printed textiles, textile arts, fashion design, textile pattern cutting, surface pattern design, woven textiles, textile engineering, textile chemistry, fashion forecasting and textile colouration. For 2021/22, at the time of writing, 641 courses were on offer from 124 providers: an increase of over 50%^[93].

Although there are skills gaps within the sector, with adequate funding, baseline UK university data shows that an increasing number of FTT programmes have been quick to respond to these gaps through new programmes. These include collaborations with research centres and further education establishments, and the development of short courses and online courses during the pandemic.

Yet there is still a need for more UK-wide university support in the fields of advanced manufacturing, new materials and textiles development.

‘There’s one thing that I would like to see improved; it’s the interaction between the fashion and science universities and the industry, for attracting R&D investment in growth areas. In particular, if we could find a way of getting collaboration between the science universities and the fashion universities and industry across the north, the rest of the UK and London

[92] Rantisi, N. M., & Leslie, D., 2013, Significance of Higher Educational Institutions as Cultural Intermediaries: The Case of the École nationale de cirque in Montreal, Canada, *Regional Studies*, 2015, 49:3, 404-417

[93] <https://digital.ucas.com/coursedisplay/results/providers?studyYear=2021&destination=Undergraduate&subjects=Fashion&subjects=Textile%20design&subjects=Fashion%20merchandising&subjects=Textiles&subjects=Printed%20textiles&subjects=Textile%20arts&subjects=Fashion%20design&subjects=Textile%20pattern%20cutting&subjects=Surface%20pattern%20design&subjects=Woven%20textiles&subjects=Textile%20engineering&subjects=Textile%20chemistry&subjects=Textile%20analysis&distanceFromPostcode=25&post-codeDistanceSystem=imperial&pageNumber=1&sort=MostRelevant&clearingPreference=None>, accessed February 2021

3.0 Changing Nature of the UK FTT Ecosystem

and the south, into new advanced manufacturing, materials and textiles, that would better prepare the industry for change.' **Steve Kay, managing director, North West Textiles Network**^[94]

Better links between FTT industry and universities and colleges are perceived as essential for all UK regions, including deprived boroughs of London and the south east, due to a risk of high unemployment in the face of Brexit and the post-Covid-19 recession.

Increasing cross-regional collaboration needs to take place, and, in addition, sustaining local partnerships are essential for the build-up of trust and social capital. The consultation with stakeholders suggests that increasing levels of collaborations that are built upon trust lead to the breaking of regional silos, a process which is essential for the successful growth of the industry. This is shown where SMEs place higher levels of importance on collaboration and knowledge exchange with suppliers (average mean score 2.8), manufacturers (average mean score 2.7) and partnerships, including with local government and local enterprise hubs (average mean score 2.4) (see **Figure 8, page 46**).

Collaboration is deemed an essential business process for reducing hierarchies and silos. Long-term partnerships and sustained partnerships are considered vital for reducing the costs of searching for the right partner, for reducing uncertainty in subsequent transactions, and for building social capital that could help with easier collaboration between network members. The fear of exclusion from a useful web of exchanges creates incentives for trustworthy, co-operative behaviour. Social networks are essential for enhancing cluster-based access to valuable and tacit information, whether that is access to new business opportunities or, importantly, access to talent such as freelancers and consultants (average mean score 3.7) or local and regional government organisations and trade bodies (average mean score 3.6).

The pandemic has accelerated the need for more collaboration, leading to trade bodies and policy bodies actively raising awareness around the R&D needs of the industry across varying regions. Despite the financial challenges that intermediaries face in supporting R&D in the FTT sector, trade bodies such as UKFT have illustrated during the pandemic the positive impact that growing networks and increasing knowledge exchange can have on the future sustainable growth of the industry and on influencing FTT policy at the governmental level. The All-Party Parliamentary Group for Fashion and Textiles has seen an increase in membership due to raising awareness and support on various issues for the sector at parliamentary level.

[94] <https://nwtexnet.co.uk/>

3.0 Changing Nature of the UK FTT Ecosystem

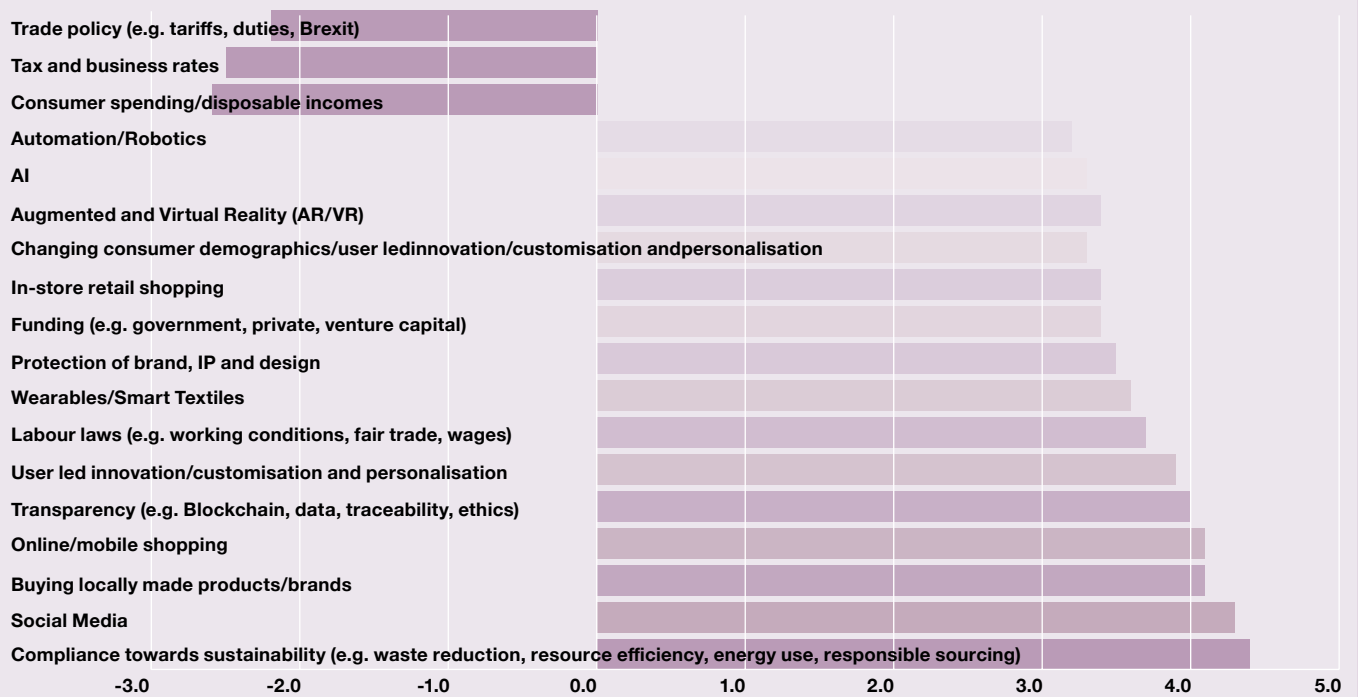
Intermediary profile: Fashion Roundtable

Fashion Roundtable is a membership-based, independent group advocating for long-term strategic and sustainable growth for the entire fashion industry in the global marketplace. Established in 2017 by CEO Tamara Cincik, head of secretariat for the All-Party Parliamentary Group for Textiles and Fashion, Fashion Roundtable consults with public, private and third sectors to develop policy ideas and strategies, including work around climate change, sustainability, modern slavery, representation and inclusion, Brexit and the impact of Covid-19.

‘I’ve created this collaborative and trusting culture for Fashion Roundtable, to work with policymakers, to break traditional silos at Parliament level, hoping it will lead to positive change.’ Tamara Cincik, CEO and founder, Fashion Roundtable

fashionroundtable.co.uk

Figure 9: Summary of Challenges and Opportunities Facing UK FTT SMEs in the Next Three to Five Years



Average Mean Score Level of Challenge and Opportunity
 -3.0 to -2.1 = high threat; -2.0 to -1.1 = moderate threat; -1 to 0.0 = neutral, 0.1 to 1.0 = low opportunity, 1.1 to 2.0 = moderate opportunity, 2.1 to 5.0 = increasingly high opportunity

4.0 Top R&D Barriers



Partlex® - Producer of bioplastic made using potato peels © Chijisj Board®

4.1 Consumer Spending and Disposable Income

The Business of Fashion, Textiles and Technology (BFTT) survey reveals that consumer spending habits poses the highest threat (36%) to the future sustainable growth of the Fashion, Textiles and Technology (FTT) sector. The pandemic has exponentially heightened the prospect of low consumer spending and disposable income. Real wages in the UK have barely increased since the 2008 financial crisis, while house prices have risen dramatically, leaving the average household with less disposable income to spend on consumer goods such as clothing and footwear. In August 2020, a survey by the Office for National Statistics (ONS) showed the highest percentage of businesses reporting decreased footfall were textiles, clothing and footwear stores at 85.7%. The lowest percentage of businesses affected by reduced footfall were non-store retailing at 9.1%^[95]. Helen Dickinson, CEO of the British Retail Consortium, stated in October 2020 that ‘lockdown has permanently changed some consumers’ shopping habits, with online sales continuing to boom despite shops reopening in June^[96].’ Notably, a significant shift has been towards big online brands such as Amazon and Boohoo that can offer lower prices to consumers.

With the uncertainty caused by Brexit and Covid-19, it is yet to be determined how a rise in unemployment will affect long-term spending on FTT goods. Value for money remains a leading concern among younger consumers, and low-cost retail stores such as Primark experienced record queues outside stores during the first easing of lockdown rules in the UK. Despite the rise of shopping based on social values, the complexity of its influence on consumer buying behaviour signifies deep-seated consumer behaviours ingrained by the fast-fashion model of ‘take-make-dispose’ over the past 20 years. The BFTT survey consultation reveals that there is an opportunity for SMEs to capitalise on this complexity. As a way to compete with big online value retailers, FTT SMEs perceive growth opportunities in generating customer value through novelty-based, user-generated products with sustainability at their core. This includes capitalising on climate change initiatives and emergent sustainability and compliance regulations, and online shopping business models (average mean score of 4.1 [out of 5.0, see footnote^[97]]).

‘We sell craft denim of the selvedge and organic raw variety, so the challenge is getting customers to spend more on our sustainable jeans, but those who spend more know their jeans will last longer and are good for the environment. Sustainable and ethical fashion, and offering something different to the standard products on the high street to customers, are big opportunities for small businesses.’ **Annie Guerne, production and partnerships manager, Blackhorse Lane Ateliers^[98]**

[95] Office for National Statistics, 2020, <https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/august2020>

[96] British Retail Consortium, 2020, Retail Sales Monitor, https://brc.org.uk/retail-insight/content/retail-sales/retail-sales-monitor/reports/202008_uk_rsm/

[97] Survey respondents were asked to rate a variety of factors on five-point scales, classifying them from high threat to high opportunity. From this data, average mean scores were calculated, interpreted as follows: -3.0 to -2.1 = high threat; -2.0 to -1.1 = moderate threat; -1 to 0.0 = neutral, 0.1 to 1.0 = low opportunity, 1.1 to 2.0 = moderate opportunity, 2.1 to 5.0 = increasingly high opportunity

[98] <https://blackhorselane.com/>

4.2 Funding, Tax and Business Rates

The second most significant threat to the future growth of SME business over the next three to five years is high taxes and business rates, cited by 34% of our respondents. This threat was linked to the rising costs of physical rental and retail spaces, leasehold agreements and employees. This is borne out by a 2018 survey for Sage carried out by Plum Consulting, which found that SMEs in the UK and globally struggle with disproportionate tax burdens, and notes that tax regimes ‘favour larger corporations’, adding that this contributes to ‘cashflow problems and operational inefficiencies^[99]’. This threat is linked to the rising costs of physical rental and retail spaces, leasehold agreements and employees.

The pandemic exposed a long-standing issue around the need for business and tax rate reforms. With an increasing number of FTT retailers choosing to sell online, the Centre for Retail Research stated that, as almost 20% of total retail sales now take place online, ‘it is sensible to question whether business rates are proportional, fair and efficient^[100].’

Interviews with intermediaries revealed the biggest concern for FTT SMEs is that most are not aware of the different types of business rates relief and tax relief they can apply for, including R&D tax relief.

‘Business rates and tax relief, including R&D tax credits, are not understood by most small businesses. Businesses don’t realise they can go back several years for tax relief – this can make a significant difference to their finances.’ **Sue Tilley, economic strategy manager, Leicester and Leicestershire Enterprise Partnership^[101]**

More support with tax relief also points to the underlying barrier of gaining funding for business growth and development. SMEs mainly focus on business development needs and day-to-day cashflow issues, rather than long-term investments, which consequently emphasises operational costs as more of a threat than R&D expenses. Consultation with stakeholders identifies that the most common barrier (average mean score 4.1) to SME business development (**see Figure 10 opposite**) is access to government and public funding toward business costs. This is perceived as an essential first step, before considering scientific and technical R&D investment and claiming tax relief. Micro enterprises in the earlier stages of business (less than five years of trading) place greater significance on access to business development funding, including private sponsorship funding (average mean score 3.9), and access alternative finance options such as crowdfunding (average mean score 3.3). There is also a slight difference in business development needs depending on the legal status of the business. SMEs that identify as a Community Interest Company (CIC) or a non-profit organisation

[99] Plum Consulting/Sage, 2018, A Taxing Problem: the impact of tax on small businesses, <https://www.sage.com/en-gb/blog/wp-content/uploads/sites/10/2018/05/A-taxing-problem-the-impact-of-tax-on-small-business-es.pdf>

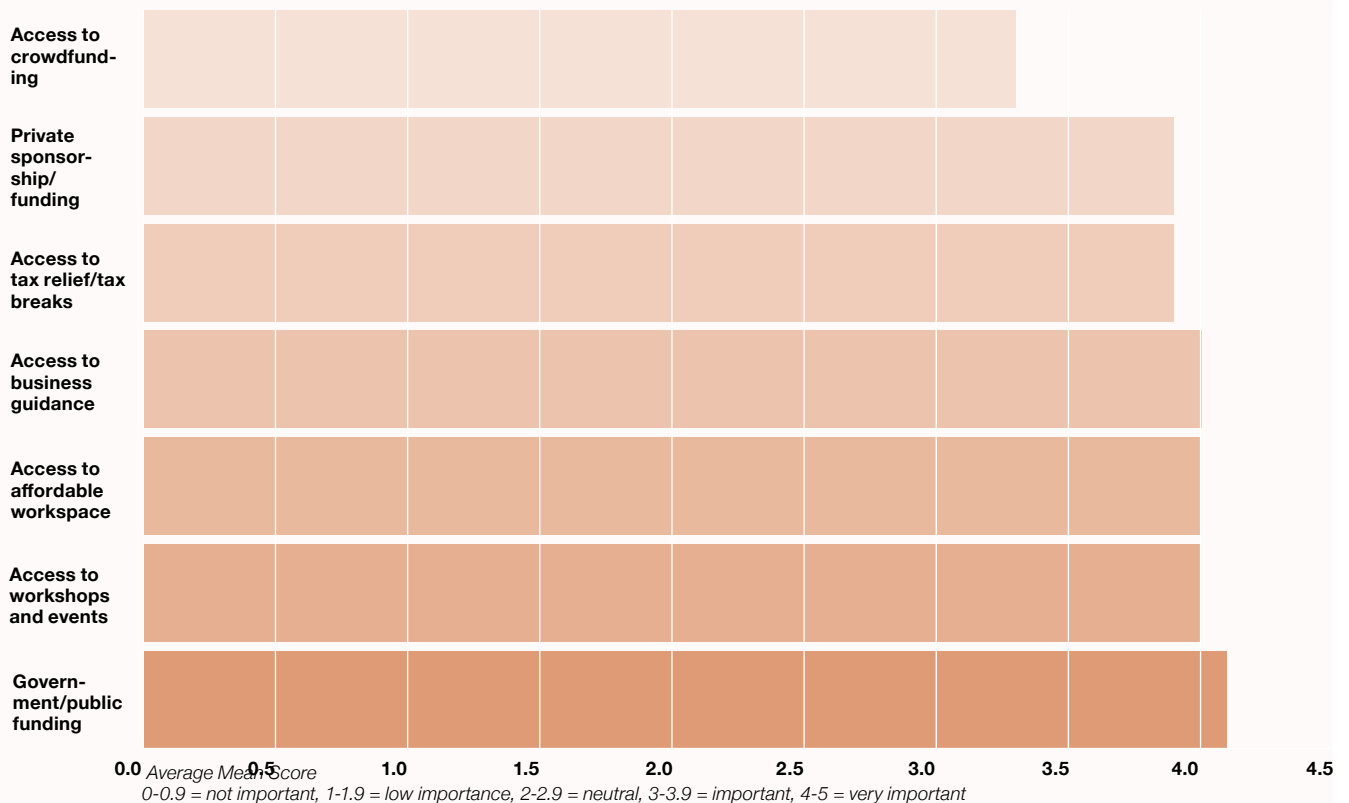
[100] Centre for Retail Research, 2020, Business Rates and the Future of the High Street, <https://www.retailresearch.org/future-of-the-high-street.html>

[101] <https://lep.org.uk/>

4.0 Top R&D Barriers

place less significance on tax relief due to more favourable and discretionary business relief options. Charitable relief rates of up to 80% are available if a property is used for charitable purposes^[102]. Irrespective of whether the SME is non-profit, a limited company, or based in a low-productivity region, there is a shared understanding that access to funding is essential for a step change in business innovation for SMEs. **SMEs and intermediaries consistently emphasise business and innovation grants as essential.**

Figure 10. How important are the following business development activities for your business in the next three to five years?



FTT SMEs perceive current R&D funding schemes as inaccessible. The BFTT consultation shows SMEs that are successful with business and innovation grants tend to have interdisciplinary teams, with CEOs and founders who have scientific and technical backgrounds and expertise. For example, they might have previously worked in venture capital, accounting, engineering or technology. SMEs that are successful in gaining access to government R&D funding understand the scientific and technical criteria of R&D better than those that find obtaining finance challenging.

This points to greater support needed for SME founders who do not have financial services or scientific backgrounds, to help them understand R&D and access to R&D funding.

[102] Gov.UK, Business rates relief, <https://www.gov.uk/apply-for-business-rate-relief/charitable-rate-relief>, accessed February 2021

4.3 Trade Policy and Brexit

The BFTT survey identifies the impact of Brexit as the third highest threat (cited by 30%) and a complicating factor facing the UK FTT sector. Despite negotiations in 2017, 2018, 2019 and 2020, the UK's trade policies regarding clothing and textiles still remain unclear. The UK's fashion sector is heavily reliant upon favourable tax-free trade policies and tariff agreements with the EU. Pre-Brexit, the EU accounted for almost 80% of the sector's exports and 30% of fashion imports. SMEs fear an increase in business costs and loss of trade due to higher prices, delays with samples, border checks and increased administration.

'Brexit was the key issue for lots of our industry over the past three years. We export something like £9.7 billion of product from the UK every year. Seventy-six percent of that currently goes into Europe, so it's our biggest market. The other issue about Brexit is not just about our exports; it's all about our imports as well. Thirty percent of our fashion imports come from Europe, so we need to make sure that those supply chains are still there.' **Adam Mansell, CEO, UKFT**

The threat of Brexit is closely linked to FTT SMEs' fears of a shortage of creativity and skills. This is due to the risk of losing EU designers and workforces to competitive EU cities with increased manufacturing capacity and workers who are more skilled.

'Brexit is the number one challenge because of the uncertainty around retaining my staff. We have tailors who are Ukrainian and eastern European. I would not know where to find skilled tailors if they go. Also, if there are trade barriers, I risk losing sales because my production is in Italy and I might have to pass on the extra costs to my customers.' **CEO, SME**

4.4 FTT Skills Shortages

Throughout the BFTT's consultation period, the shortage of skills within the sector was a hot topic. As part of the inaugural British Textile Biennial in Oct 2019, the BFTT and Creative Lancashire led the Fabric of Our Times^[103] roundtable discussion on the future of the UK fashion industry, at the Blackburn Museum and Art Gallery. The roundtable hosted 14 FTT industry stakeholders, including designers, business owners and educators (see participant list, page 91), with an audience of over 30 delegates.

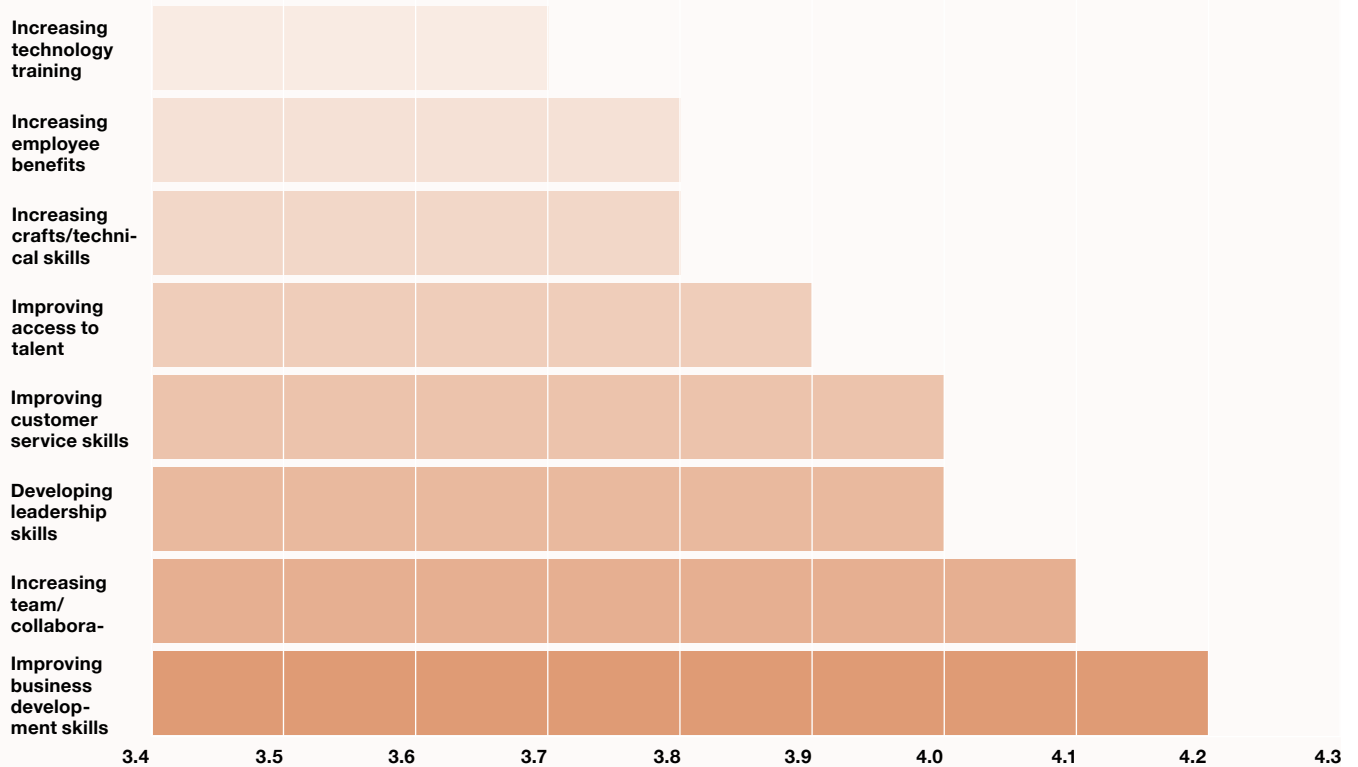
Roundtable stakeholders identified that an essential requirement for the growth of the UK FTT sector is addressing skills shortages (see Figure 11, page 55) in areas such as technology training (average mean score 3.7) and crafts/technical skills (average mean score 3.8). The UK lags behind other European countries in skills such as AI and shows slow adoption of digital and ICT skills^[104]. Roundtable participants emphasised that ICT

[103] Creative Lancashire, 2019, British Textile Biennial Talks 2019: The Fabric of Our Times, <https://www.creativelancashire.org/event/fabric-of-our-times-perspectives-on-the-future-for-uk-fashion-and-textiles>

[104] Crafts, N., & Mills, T. C., 2020, Is the UK productivity slowdown unprecedented? National Institute Economic Review 251, <https://www.cambridge.org/core/journals/national-institute-economic-review/article/abs/is-the-uk-productivity-slowdown-unprecedented/287949348D9BBA0223B3EA7E532C4B22>

4.0 Top R&D Barriers

Figure 11: How important are the following goals for developing your business skills capacity in the next three to five years?



skills shortages are being met by technical skills shortages, for example in making and crafts skills, such as pattern cutting by hand, as well as technical garment and digital technology skills. Deficits were attributed to slow adoption of industry skills training by higher education providers. There was a perception that a university education in the UK is seen as the most credible way to gain skills and employment in the sector, compared to alternative training schemes such as apprenticeships. The slow adoption of skills was also attributed to a lack of perceived interest from a younger generation in technical textiles and manufacturing careers – due partly to a decline in the UK’s manufacturing industry over the past 20 years, and, as Suzanne Jennions, co-director of Liverpool’s Fabric District^[105], comments:

Profile: The National Festival of Making: Art in Manufacturing

The National Festival of Making’s Art in Manufacturing programme creatively raises awareness of Lancashire’s rich making heritage within a global manufacturing community of modern making. The festival seeks to attract the public and young people to explore their own making potential, showcasing the manufacturing industry and its history, and potential future careers.

[105] <https://www.kqliverpool.co.uk/spaces/fabric-district/>

4.0 Top R&D Barriers

‘The Festival of Making takes place in Blackburn, where there’s a higher proportion of the population involved with making skills and careers. It seemed pertinent to have a festival about making and manufacturing skills in the region. It’s a weekend celebration, a family event for the public and young people. It showcases people in making professions, providing insight into the skills involved and making connections, with manufacturing, with engineering, importantly through artistic interventions.’

Ed Matthews-Gentle, senior project officer, Lancashire County Council, and creative industries officer, Creative Lancashire

festivalofmaking.co.uk

‘There are two challenges that we face in Liverpool. Fashion, textiles and technology skills shortages are one, and the other is that young people don’t want to work in factories. We’ve got an ageing workforce as well, so it’s as much a concern for manufacturers as it is for the schools teaching people that making things is positive. We need to make manufacturing set-ups more attractive for people to come and work in.’

BFTT interview with the Poplar Works partnership team: Alex Jeremy, head of partnerships, Poplar HARCA, and Blossom Young, head of operations, Poplar HARCA

What is Poplar Works?

Alex: Poplar Works is our new fashion workspace located in over 100 old garage spaces that came out of a project called Open Poplar. The project presented an opportunity to look at under-utilised garage spaces differently. Following conversations with the London College of Fashion, which was looking for manufacturing space to support skills development in the sector at the time, we initiated Poplar Works.

Blossom: The partnership with the London College of Fashion was crucial for the expertise and huge experience in delivering fashion education it brought, and also to support the wider social and economic growth of the sector through local skills development. The partnership is also with The Trampery, which is managing the co-working space and will target early-stage businesses in most need of skills development with on-site and enterprise support.

Why is there a need to develop manufacturing skills in east London, and why now?

Blossom: The East End has always had a really strong tradition in fashion and particularly in making. The conversations we were having here were with people who said, ‘My granny worked in the rag trade, my dad worked in a factory in Brick Lane. I was a machinist for years.’ There are people living on the doorstep here with rich skills. For me it’s about keeping those skills alive to generate future employment in the sector.

4.0 Top R&D Barriers

How does Poplar Works connect to the broader FTT ecosystem?

Blossom: It connects with supporting a gap in manufacturing skills across the UK. We recognised the potential for small-scale manufacturing in the UK and the potential for innovative production and cross-sector collaboration. We connect early-stage designers with makers who might otherwise get pushed out of the market if they haven't got the skills required to produce the orders that they need to. Poplar Works recognises this potential for growing networks at a localised level which can, with partner support, lead to a cluster and further cross-pollination and growth of the ecosystem.

Alex: Poplar Works is part of the wider fashion and textiles ecosystem because it marries together the skills needs of an industry with the regeneration and industrial needs of a wider area.

poplarworks.co.uk



Helping to create a place where people, communities and businesses grow and thrive
© Poplar HARCA

Stakeholders pointed out that the skills gaps should be addressed before university education level, at primary, secondary, post-18 and further education levels. Since 2018, UKFT and other skills sector trade bodies have actively sought to enhance the UK's provision for highly skilled apprenticeship programmes as a way to close the skills gap in the sector. Despite successful lobbying by sector trade bodies for a T level^[106] in crafts and design, A levels and university degrees are still perceived as

[106] T Levels are new two-year qualifications and an alternative to A levels, other post-16 courses or an apprenticeship. The crafts and design T level is set to launch in 2023. <https://www.tlevels.gov.uk/students/about>

4.0 Top R&D Barriers

more desirable by employers and university recruitment teams. Universities cannot overlook the rising costs of studying for a degree in the UK. The rise in recent vocational qualifications, such as T levels, and the UK government's announcement in September 2020 of plans to expand post-18 education and training with the Lifetime Skills Guarantee programme, emphasise the need for FTT universities to provide more technical and industry-specific skills training.

'Trying to find the staff to produce bespoke leather handbags is a nightmare because university graduates might come to me with a lot of passion, but they don't have the technical skill sets. We need to teach young people more skills required for the industry at the higher education level.'

Denise Pearson, managing director, Deni-Deni^[107]

As well as technical skills, SMEs and stakeholders place high importance on soft skills essential for the ethical and sustainable development of the sector. These include business development (average mean score 4.2), collaborative working (average mean score 4.1) and developing leadership skills (average mean score 4.0). Central to developing these soft skills is the urgent need to improve access to a diverse talent force (average mean score 3.9). SMEs emphasise the need for a more racially and ethnically representative workforce.

'I can see the economic opportunity within the fashion industry and the wider creative industry, and I'm trying to see how I can use my role, how we can support people into that industry. But the creative industry as a whole, from what I've experienced, is an industry that's not very accessible or amenable to working-class communities, and more so when it comes to BME communities. There is a need to raise aspiration for mainstream jobs as well as senior-level management.'

Fokrul Hoque, founder, British Bangladesh Fashion Council^[108]

The business case for diversity is heightened by the need for more decisive leadership across the sector as it transitions to a more technological ecosystem. New business models incorporating digital design, production and online retailing, as well as changing consumer values and consumption patterns, require a shift in leadership styles, including multidisciplinary mindsets.

'There is enormous pressure in retail to deliver results on a daily, weekly, monthly cycle. To make decisions which are shifting away from that is very difficult and requires bold leadership to allow businesses to experiment. Certain mindsets have existed for a very long time and it's going to take a very significant change. I think that is something which, without real, true creative leadership, is not going to change.'

Matthew Drinkwater, head, Fashion Innovation Agency^[109]

'SMEs have a vision for their company, but don't have a vision for developing themselves as leaders. How you go from understanding your brand

[107] <https://www.deni-deni.com/>

[108] <https://www.bbfashioncouncil.com/>

[109] <https://www.fialondon.com/>

4.0 Top R&D Barriers

values as one person to getting a team of people on board and taking that forward is a barrier for SMEs. Executive coaching can be a very effective tool for breaking those barriers.’ **Linda Roberts, director of business and innovation, London College of Fashion**^[110]

SMEs face additional challenges compared to larger businesses. SMEs focus more on day-to-day operations and are therefore unable to access time and resources to develop their leadership skills alongside developing their business. This identifies that executive coaching and leadership skills development is necessary in business development programmes.

‘We offer coaching and leadership skills development as part of our fashion incubator programmes. We do this to help businesses come up with their own ideas, and to enable founders to question their business model, to pivot or add something new that’s going to make them more agile and meet consumer-driven changes better.’ **Judith Tolley, head, Centre for Fashion Enterprise** ^[111]

In terms of the barriers identified in the survey consultation, the resilience and innovativeness of the UK FTT sector will depend on how the main threats discussed in this section are managed in conjunction with each other. This includes favourable trade policies post-Brexit, tax and business rate reforms, closing the skills gap and shifting customer mindsets away from fast fashion.

The next section discusses the opportunities facing the fast-changing UK FTT sector and how SMEs can harness these.



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[110] <https://www.arts.ac.uk/colleges/london-college-of-fashion>
[111] <https://fashion-enterprise.com/>

5.0 Top R&D Opportunities

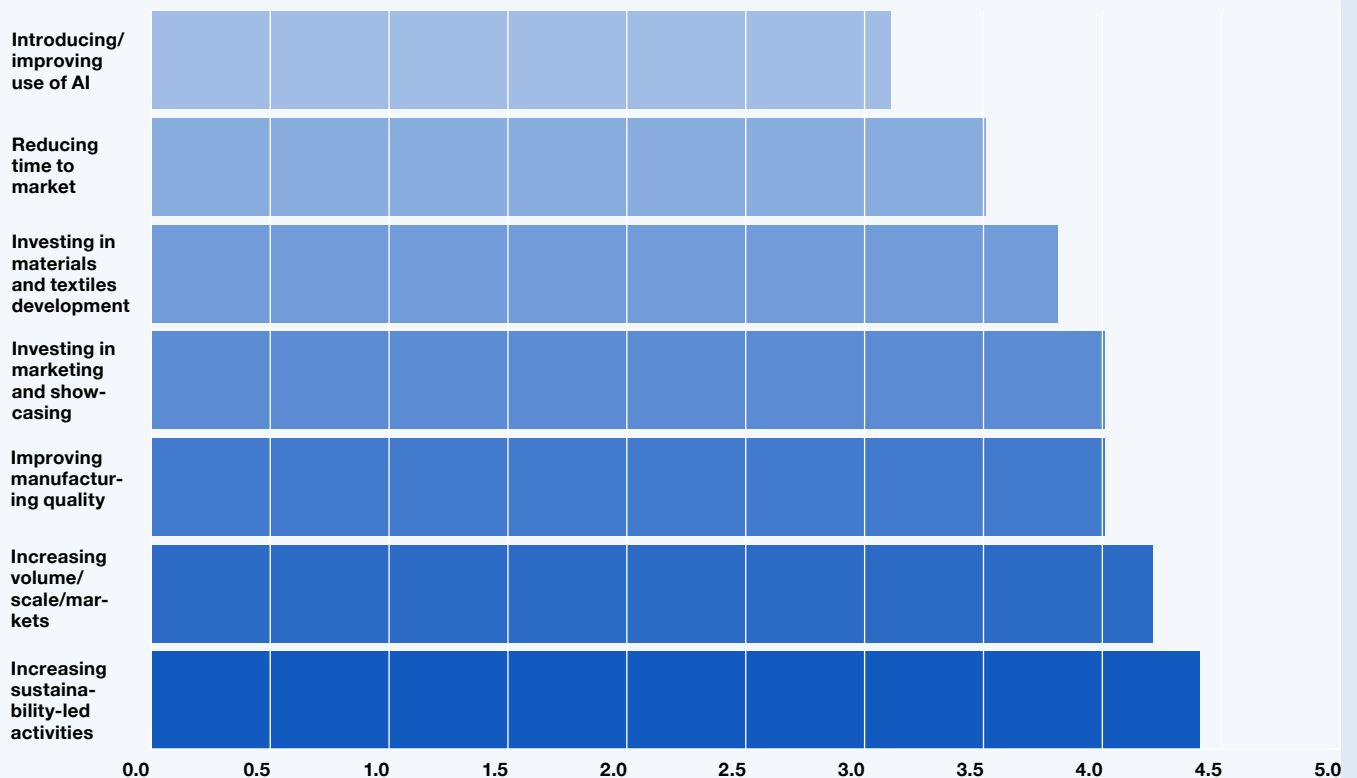


Experiencing virtual reality (VR) © Alys Tomlinson

5.0 Top R&D Opportunities

The good news is that SMEs in the industry perceive more opportunities than threats for the UK Fashion, Textiles and Technology (FTT) sector, and the survey's highest-ranking opportunity is for sustainable and compliant business models (average mean score 4.4 [out of 5.0, see footnote^[112]]). This is followed by capitalising on social media (average mean score 4.3); buying locally made products (average mean score 4.1); and online and mobile shopping (average mean score 4.1). These opportunities are intertwined and closely linked to the main growth areas that SMEs identify for their businesses in the next three to five years.

Figure 12. How important are the following R&D goals for the growth of your business in the next three to five years?

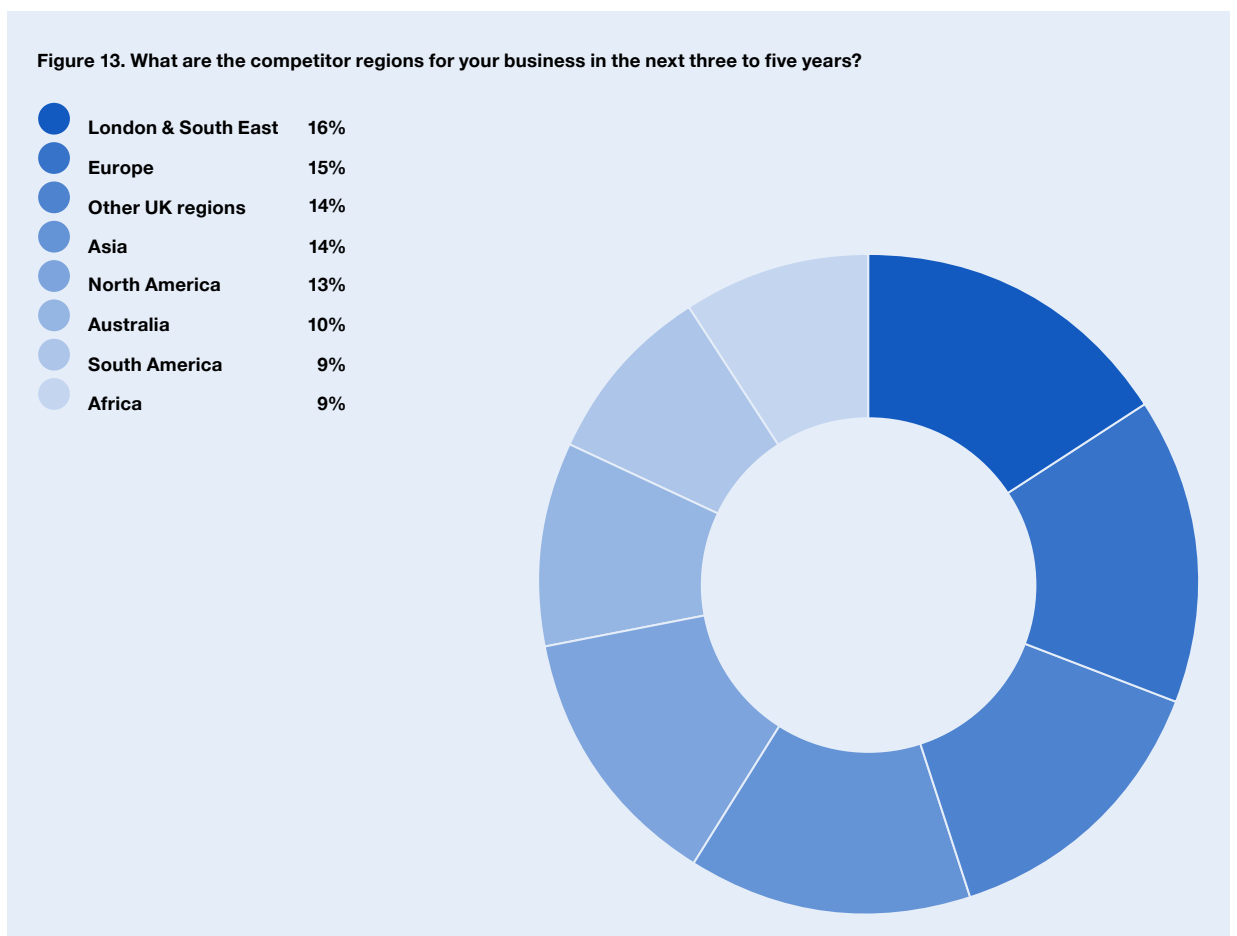


These growth areas include R&D investment (see Figure 12, above) into sustainability-led activities such as fair trade (average mean score 4.4); increasing volume, scaling activities and markets (average mean score 4.2); improving manufacturing quality (average mean score 4.0); investing in marketing and showcasing (average mean score 4.0); investing in new materials and textiles (average mean score 3.8); reducing time to market (average mean score 3.5); and introducing or improving the use of AI (average mean score 3.1). **These growth areas are discussed further under the four main R&D opportunities: circular and sustainable business models; buying locally made products and brands; location-based social media and marketing; and reimagining online and mobile shopping.**

[112] Survey respondents were asked to rate a variety of factors on five-point scales, classifying them from high threat to high opportunity. From this data, average mean scores were calculated, interpreted as follows: -3.0 to -2.1 = high threat; -2.0 to -1.1 = moderate threat; -1 to 0.0 = neutral, 0.1 to 1.0 = low opportunity, 1.1 to 2.0 = moderate opportunity, 2.1 to 5.0 = increasingly high opportunity

5.0 Top R&D Opportunities

Ensuring a fully functioning and successful UK FTT ecosystem will not only depend on its capacity to attract R&D investment and develop its skills pipeline but also on the UK's ability to remain competitive. As stated earlier, the UK must learn from other global fashion innovation districts. The current skills shortage and lack of technical capacity for large-scale manufacturing places the UK FTT ecosystem at risk of losing its position as a world leader to large-scale manufacturing competitor regions. Survey results (see **Figure 13, below**) show SMEs expect to face competition from Asia (14%) and North America (13%). Notably, the survey also identifies that London and the South East (16%) is the highest competitor region in the UK, compared to mainland Europe (15%), due to the risk of losing EU workforces and skills post-Brexit, and other UK regions (14%).



Although Asia and North America are considered competitor regions, UK SMEs are confident about the innovation levels of FTT businesses in the UK and Europe. **Resilience to competition is linked to the UK's strong fashion and textiles heritage, reputation for novelty and experimentation, and the ability to capitalise on the main opportunity areas.**

5.1 Circular and Sustainable Business Models

Circular fashion, wider apparel, textiles and technology business models are perceived as the number-one priority for SMEs (average mean score 4.4) due to the damaging environmental impacts of the

industry. There is a need to move away from a ‘take-make-dispose’ model of fashion consumption, which ‘leaves economic opportunities untapped, puts pressure on resources, pollutes and degrades the natural environment and its ecosystems, and creates significant societal impacts at local, regional, and global scales^[113]’, according to a 2017 report by the Ellen MacArthur Foundation. More recently, WRAP research shows that ‘the production, use and disposal of clothes represents the fifth-biggest environmental footprint of any UK business sector after transport, utilities, construction and food^[114].’ Yet these concerns are seen as less of a challenge for the sector and more of an opportunity for SMEs to explore the circular business model innovation that is essential for the environment and the long-term growth of the industry.

Concerns about the sector’s impact on the environment have been amplified in the past 10 years, from microfibre pollution to water wastage. How FTT SMEs can develop and adopt circular economy business models remains complex, however, and is broadly less understood. Despite barriers to accessing R&D funding, UK SMEs believe adopting sustainable business, design and production methods is imperative to their future growth, due to social pressure and increasing consumer demand from generation Z. According to the Business of Fashion, Textiles and Technology (BFTT) survey consultation, adopting circular economy models is an important opportunity for SMEs to compete against larger and less agile fast-fashion brands that have established linear systems and processes that could take many years to change. **FTT start-ups and early-stage businesses that have a circular economy vision within their brand DNA have a strong chance of responding to increasing and future market demands for sustainable apparel, as well as the ability to establish companies that will evolve with sustainability objectives from the outset, supported by developments in technology.**

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Along with business model innovation, the fibre-to-fibre recycling technology space is also developing at pace, promising circular materials solutions in the medium-term future. The BFTT Circular Synthetics UK Roadmap^[115] report explores this expanding sector within the FTT industries, including recyclers, collectors, sorters and associated technology providers. A summary of early findings was submitted to the UK Parlia-

[113] Ellen MacArthur Foundation, 2017, A New Textiles Economy: Redesigning fashion’s future, <https://www.ellenmacarthurfoundation.org/publications/a-new-textiles-economy-redesigning-fashion-future>

[114] WRAP, <https://www.wrap.org.uk/content/textiles-overview>, accessed February 2021

[115] The BFTT Circular Synthetics UK Roadmap was forthcoming when this report went to press

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ment's Fixing Fashion Environmental Audit Committee enquiry^[116].

BFTT survey interviews also reveal critical sustainability opportunities that link both circular and bioeconomy principles. These include designing new sustainable materials and textiles from bio-based sources; waste management, reduction and recovery; supply chain transparency and compliance; and products manufactured locally on demand.

SMEs do not want to produce large volumes of product in the manner of fast-fashion retailers. They believe further R&D investment is required to help them scale some of the current innovations in materials, textiles and related innovations. They show strong interest in emergent scientific practices to transform food waste and by-products into fibres and materials, or materials that include additional benefits in use such as antimicrobial and antibacterial properties.

'The Resistance Runner is a bio-formulated shoe that utilises cloned bacteriocins and microcococcus in a nutrient broth cocktail; essentially harnessing the bacteria's own defence system as a protective layer. Antibiotic-resistant bacteria have become a serious worldwide public health threat in recent years and we thought a really good example or product to show all of the science and research behind what we're trying to do was through a shoe. There is a lot of uncertainty with synthetic biology and working with live bacteria like in our shoe, but there is nothing to say it can't be made commercial in the future.' **Lindsay Hanson, founder, Immunotex^[117]**

'I realised during my two-year MA that it's not acceptable any more to be producing unsustainable fabric and not have any consideration to why or how you're doing it. I think that the future growth of the fashion industry will be 100% about looking at new materials and textiles, and also looking at bio-design. For example, how we can design fabrics around how our body already functions, without adding finishes that can contain toxic chemicals or new technology?' **Rosie Broadhead, designer, Skin II^[118]**

Despite the acceleration of these innovations in the past decade, many are at early stages of development and are not yet ready to scale. Some are graduate start-ups from across STEAM interests and require further investment to be patented, piloted and implemented in the FTT sector. Some are further along the development trajectory, at pilot stage, but require further investment to take to commercialisation. SMEs believe that UK mills and manufacturers are less able to produce sustainable fabrics at the scale required on a commercial level and at the same scale as European manufacturers.

'The main focus at the moment is making sure most of our denim, or nearly all of it, will be organic, which is a struggle. As a small company, we find minimums are always a challenge with UK mills. We work with

[116] <https://committees.parliament.uk/writtenevidence/15149/pdf/>, accessed February 2021

[117] <https://www.lindsayannhanson.com/bio-design>

[118] <https://rosiebroadhead.com/skin2/>

one of the greenest mills in the world, in Italy, and they can give us the minimums we need.’ **Sara Ladd, senior content manager, Hiut Denim**^[119]

This issue is perpetuated by the limited adoption of manufacturing scaling technologies such as automation and robotics within FTT processes. UK manufacturers often rely on old or outdated equipment and assets.

‘We haven’t had volume garment manufacturing in the UK since the 1980s. Most manufacturers, and this isn’t a negative point, are still installing machines from the 70s. There’s been debate recently about new manufacturing hubs using digitisation. Still, the incentive is limited currently – getting manufacturers to look further ahead than a year and invest for the long term is incredibly difficult.’ **CEO, SME**

The UK does not currently have the capacity for large-scale manufacturing and requires significant investment in smart data-driven manufacturing and R&D. **A critical opportunity for a circular UK fashion and textiles sector is not only restoring old equipment to produce heritage textiles but also producing advanced new technical textiles and recovered or regenerated materials. Pre-Covid-19, stakeholders identified that the UK could capitalise on small-scale digital manufacturing of smart, medical and sustainable technical textiles. Technical textiles include materials and fibres used in the aerospace, automotive and healthcare sectors.**

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‘An idea that should be on the UK FTT roadmap is technical textiles that could be viably manufactured in the UK. For example, the NHS has quite needs various textiles – whether that’s an armband or a strap. The orders might be in the tens of thousands – not the quantities that make it necessary to go offshore, and not for standard designs that can be designed in cheap factories. The new direction would be towards bespoke, small-scale patented products that are technical, made in the UK, and easily accessible for businesses to walk into a factory and order a small number of new product samples.’ **Richard Jennions, co-founder, Try & Lilly Ltd**

[119] <https://hiutdenim.co.uk/>

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Stakeholders identify that currently there is scope for the UK to capitalise on textile recycling (particularly the recycling of technical textiles, which requires specialised processes) through high-value recycling technologies, such as fibre-to-fibre recycling for post-consumer clothing and materials. This includes chemical recovery of polyester, nylon and cellulosic fabrics (which made up over 85% of the fibre market in 2019 and continue to rise^[120]).

Although a number of innovative UK-based companies are making tangible progress in the effective separation of natural and synthetic fibres (**see Presca Teamwear interview, below**), more R&D investment is required to scale up these innovations.

BFTT interview with Rob Webbon, CEO and founder, Presca Teamwear

Can you describe your role and the story behind Presca Teamwear?

Rob: I'm the CEO and sustainability director of Presca Teamwear, started in 2014. Presca makes performance sportswear from recycled materials, including plastic bottles and abandoned fishing nets, and specialises in innovative cycling, triathlon and athletic teamwear. I have 15 years' experience in sustainability and engineering products. Five years or so ago, I recognised a lot of opportunities for sustainable fabrics. I realised that all the fabrics on the market at the time weren't simply sustainable and may not have been ethically made either. I knew companies like Patagonia, for example, were leading the way in recycling plastics, but in terms of our market, in cycling and triathlon, this wasn't on anyone's radar. It was my personal love of cycling and the gap in R&D of fabrics that led to Presca Teamwear.

What challenges have you faced in working with materials from recycled plastics?

Rob: Probably the biggest R&D challenge is the quality, which can be an issue when using mechanically recycled fabrics. Quality can vary at times; so the fabric shade might be slightly different, or one part of the fabric might not quite take the print exactly the same way as the rest, for a number of reasons. That's a function of using a variable feedstock, whereas if you're using a virgin polyester then you go through your refining process and what comes out at the end of it is always the same. We also have to do lots of research to make sure that our sustainability claims are genuine and that we can stand behind them.

[120] Textile Exchange, 2020 Preferred Fiber and Materials Market Report, <https://textileexchange.org/2020-preferred-fiber-and-materials-market-report-pfmr-released/>

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What R&D activities are you doing to tackle these challenges?

Rob: We're going to be researching whether we can put mixed yarns through a chemical recycling process and come out with a fabric that's as good quality as a virgin fibre. We also need to research the life cycle analysis. How much energy does that need? How much waste is produced during the process? Only then can we understand the recycling process. We see the need to work closely with clothing manufacturers who know what they are doing; we ask them to highlight issues with the fabric and then we can understand what's not working. We are also experimenting with the use of chemically recycled polyester nylons and the fishing nets, which don't have any of the quality issues mentioned.

How do you fund your R&D activities?

Rob: We've been lucky to get a government Innovation Voucher. We had some consultancy work done from that, which helped us look at the market for sustainable fabrics and apply for an Innovate UK grant. We also worked with an accountancy firm that supported us with R&D tax relief – money became available in the pot that we weren't aware of. We're looking into funding from the local authority into the circular economy. Most recently, we have been selected for the BFTT's SME R&D Support Programme funding. We are planning to work on our ideas further through industry mentoring and academic research support.

prescasportswear.com.



Producer of high-end sportswear using sustainable materials © GRN Sportswear (Presca)

5.2 Buying Locally Made Products and Brands

Central to the case for circular fashion and textile materials is a strong case for buying locally made products and brands (average mean score 4.1), and bioregionalism, ie the idea of restoring local FTT ecosystems through their biodiversity, cultures, histories and skills. The BFTT survey reveals that UK-based production and manufacturing could gain a competitive edge if SMEs invest in the heritage of regional FTT industries, encompassing traditional and high-end heritage fabrics such as wool and linen. **With the uncertainty around Brexit and the risk of losing certain export markets, SMEs perceive showcasing the history of textiles and manufacturing in UK regions, coupled with quality production and circular FTT processes, to be pivotal opportunities to attract consumers within the UK and EU, as well as globally.**

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‘Scotland has a rich wool manufacturing heritage. Additionally, the point about wool is that it is biodegradable and can be produced organically. This is an opportunity for Scottish wool manufacturers and retailers to attract customers by raising awareness around respecting the high quality of regional manufacturing and, at the same time, the sustainable qualities of wool.’ **Hamish Carruthers, CEO and founder, Scotcloth**^[121]

‘Northern Ireland has a rich history of linen production, offering opportunities for future materials innovation and potentially a market for locally produced, environmentally friendly Irish linen, which can also promote Northern Ireland’s textiles, past and present.’ **Robert Martin, co-curatorial director, R-Space Gallery**^[122], and founder, **Linen Biennale Northern Ireland**

A resurgence of small-scale and regional luxury materials manufacturing is perceived as an opportunity that is best realised if considered alongside ethics. Supply chain transparency is critical for the move towards a more circular and ethical fashion model. Legislation is required to support local manufacturers to meet environmental, sustainable development goals. SMEs identify that, as shown by sustainable manufacturers making locally produced goods in Portugal, certification and traceability could help drive greater demand for local manufacturing and a circular textiles economy (also, see **Garthenor Organic interview, opposite page**).

[121] <https://scotcloth.com/>

[122] <https://www.rspaceisburn.com/>

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‘In the past year, more and more clients have been insisting on the production process being as sustainable as possible and that products are locally sourced, but it’s difficult to find UK factories and manufacturers that have the right quality certifications. We do audits and checks, and it’s easier for product lifecycle management companies like us to work with Portuguese factories, as most of them have OEKO-TEX-100 certifications – there aren’t many UK factories which invest in certificates because of the costs or not looking ahead.’ **Fazane Fox, CEO and founder, Fazane Fox Productions**^[123]

5.3 Social Media and Marketing

Alongside the drive towards circular and sustainable FTT business models, SMEs place high importance on social media marketing and showcasing (average mean score 4.3) for their business growth needs. **SMEs identify that investing in social media marketing and online showcasing is of high importance for their R&D needs in the next three to five years. Social media marketing is perceived as the most popular way to reach younger consumers with product and brand messages.** The growth in engagement with social media channels such as Instagram and TikTok during the pandemic illustrates the potential for SMEs to reach a broad audience and compete with larger businesses through followers and influencers.

BFTT interview with Jonny King, creative director, Garthenor Organic

Can you describe your role and the story behind Garthenor Organic?

Jonny: I’m the creative director of Garthenor Organic. We’re a family-run business based in mid Wales. Garthenor Organic produces exclusively certified-organic, breed-specific UK-made yarns. We started in 1999; as farmers, we had a small flock of sheep and started producing yarn from the wool. Now we work with two mills, one of which is in Yorkshire and one of which is in Lanarkshire. They do all of our commission spinning. The yarn comes back to us here. We have twisting and winding machinery, so we do all the finishing before it goes out to retailers.

How do you ensure your yarn processes are sustainable?

Jonny: It’s all certified organic to the Global Organic Textile Standard (GOTS), and we were the first company in the world to get organic certification for wool yarns through production in 2003. What that means is that we work with organic farms to source the raw materials and then every step of production through to scouring and finishing. Spinning and finishing and dyeing have to be at a certified organic facility. That means all the chemicals

[123] <https://fazanefox.co.uk/>

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that come into contact have to be biodegradable; we're not allowed to use harsh chemicals or heavy metals. There are also checks on fair working conditions and ethical practices.

How important is it for you to be based in Wales?

Jonny: It's important for all our yarns to be easily traceable back to the individual farms that supplied them. It's quite handy when we're working with supplier farms that we ourselves are farmers, admittedly on a very small scale, but it gives that immediate trust. We also have some manufacturing done here. From a heritage point of view, we think it's quite important to be here. There's a huge opportunity and resurgence in interest from consumers for UK-produced goods and as a result UK manufacturing. Interest is also growing in heritage among young consumers, and knowing exactly where something has come from.

What would you say are the biggest barriers for small businesses wanting to produce sustainably in the UK?

Jonny: Probably the biggest one is that there are only three mills in the UK that have organic certification, so businesses are limited in who they can use. If they're particularly busy – like they are at the moment, because everyone is rushing due to Brexit – you can't just look elsewhere to have another run done. The other challenge is that mills have minimum quantity requirements of anywhere from 200 kilos – it's a risk to produce that quantity if the concept doesn't work. It would be good to have a few more facilities that are industry standard in terms of the development of yarns, the testing of yarns. It also means we can commit to bigger quantities, which gets us better pricing on manufacture.



Exclusively certified organic, breed-specific UK-made yarns © Garthenor Organic

What are your recommendations for sustainable manufacturing in the UK?

Jonny: It would work well if small businesses could do test runs of small quantities that can then go to stockists and designers for their feedback. Then businesses have time to adjust and test further before making the

final decision on the blends and the specification. We currently do in-house testing ourselves using tiny hand equipment, which doesn't get us the accuracy immediately that we're after. It's also really time consuming, and it's quite the high skill to be able to do that because it's being produced on hand equipment. It would be good to see the use of more new technology and commercial equipment within UK manufacturing. Another recommendation would be for UK manufacturers to work with their suppliers for better quality. We work directly with the farmers who supply our wool. We have an open dialogue with them about their products to get the quality that we need.

What are the key selling points for buying locally made products?

Jonny: One of our key selling points is that customers know exactly where their products come from at every single step. As a result of that, we can charge a little bit more than some companies because we've found that customers are interested in making purchasing decisions based on their social values. One other thing is the importance of transparency – customers like to see a brand's story and see behind the scenes, because then they can see there's nothing to hide.

garthenor.com

'Being on social media is imperative for small businesses now. It takes a lot of investment in terms of advertising, optimisation, and being able to customise, but helps with the visualisation of products through online retail. Web-based customer experiences over social media to visualise the products, and the wearing of them via AR and VR, will be important.'

Hervé Andrieu, CEO and founder, Vetigrph Fashion Digital Solutions[124]

Social media marketing is an essential tool for place-based branding, placemaking and storytelling to promote local histories and innovations in local manufacturing regions. **For SMEs operating in smaller, less well-known areas, social media is the primary marketing tool to make connections and reach a broad network of consumers and business partners, not only to generate sales but also educate consumers on the region and local craftsmanship.** For SMEs, social media is a cost-efficient, novel and creative way to connect with a broader audience and capture audience data regularly and at scale. These methods of engagement are identified as essential drivers of omnichannel retailing – with brand messaging aligning across all online and offline brand channels. R&D investment into sophisticated social media and marketing support is a crucial opportunity for sustaining SME growth within the sector.

[124] <https://fashiondigitalsolutions.co.uk/>

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Profile: Belfast Design Week

Belfast Design Week, established in 2015, works across social networks to nurture talent in all creative industries around the city, connecting multisector creatives including those in FTT industries.

‘Belfast Design Week relies primarily on social media communications and networking events to convene locals and university students interested in multidisciplinary fashion. There is less support for fashion design in Belfast, but there’s a lot of support for UX design and technology, which fashion is connected to. Graduates from fashion often leave to work elsewhere, such as London or Dublin, but I found a number of exciting collectives and activity in Belfast across different creative spaces and networks. We used our personal networks and social media to create Belfast Design Week, which brings together emerging designers, artists and students from diverse sectors through related interests and themes.’ Karishma Kusrkar, co-director, Belfast Design Week, and founder of Karishma’s World

belfastdesignweek.com, karishmasworld.com

‘We have over 30,000 followers on Instagram and Facebook, and use stories, images, videos and music to attract customers to learn about different emerging designers, their inspirations and where they come from. Our brand moves away from traditional retail and supports emerging designers looking to be showcased with other cool brands. Social media is a good way to showcase our in-store events, meet-ups and collaborations with university degree shows too. For a luxury concept store like us, social media is a way to complement the experiences we offer offline and on our online shopping website.’ **Tracey Suen, founder, 50M**^[125]

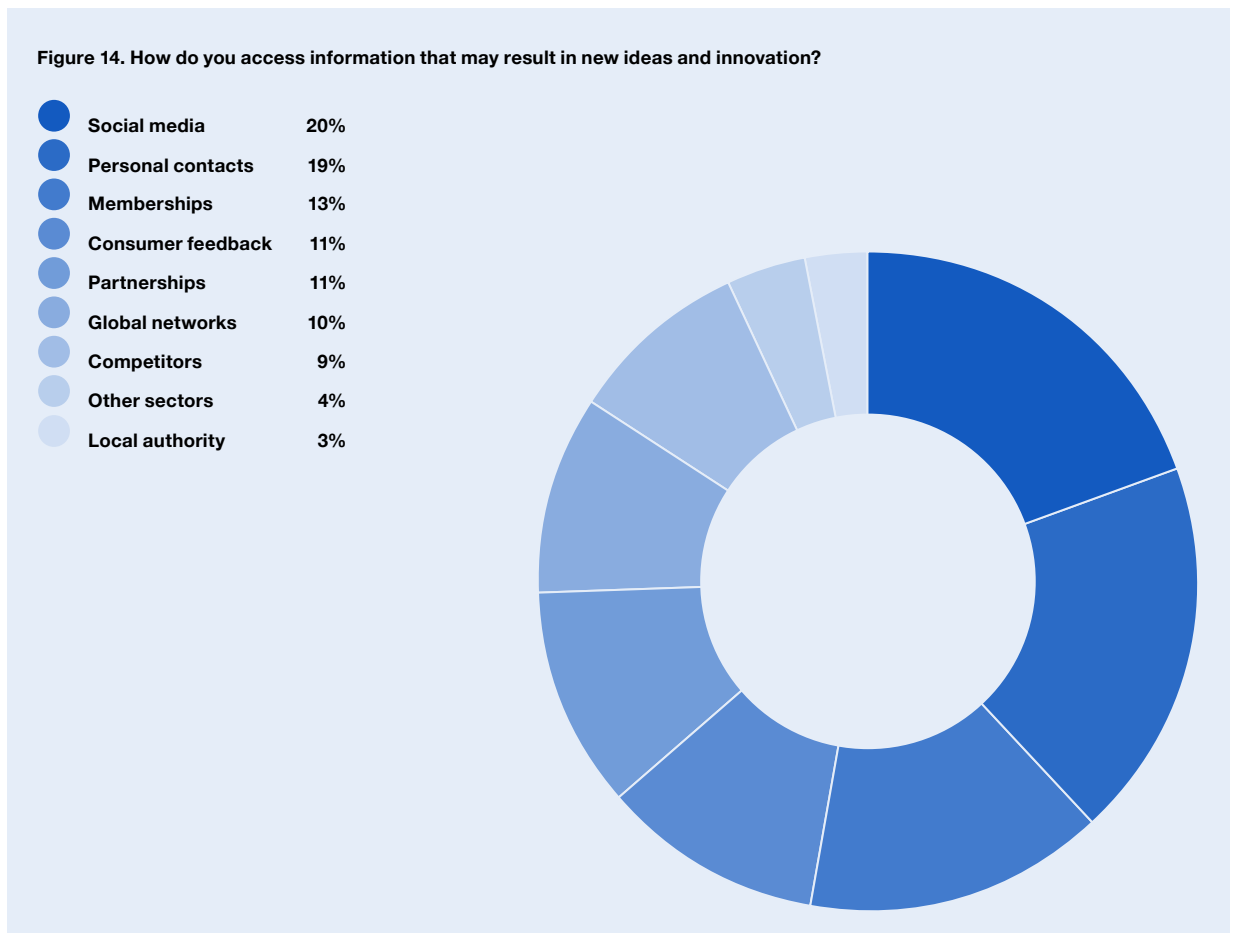
With the increase in sophisticated third-party functions – including video, chatbots, filters, music, Google apps and XR – SMEs identify

[125] <https://50-m.com/>

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that social media marketing requires time, effort and technical expertise. With the rise of influencer marketing and Instagram TV, social media technology has evolved far too quickly for SMEs to keep up with or sustain cost-effectively. Even though personal contacts and word-of-mouth marketing are still crucial for growth, SMEs state that the competition to attract and influence customers away from larger retailers is high. Social media marketing is a useful tool for growing a customer base and networks among niche groups through influencers and nano-influencers.

Social media and marketing is the most popular way for SMEs to expand their professional networks – 20% of survey respondents perceive social media as a critical tool for networking, compared to other methods of accessing ideas and innovation (see **Figure 14, below**) such as personal contacts (19%); memberships (13%); consumers (11%); partnerships (11%); global connections (10%); competitors (9%); other sectors (4%); and local authorities (3%).



Notably, social media is perceived as a multifunctional tool in conjunction with all the types of networking opportunities mentioned above and, therefore, critical for business development and collaboration. This can be seen in instances where, despite the barriers to the costs of keeping up with social media, FTT SMEs are driving forces behind innovative

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social marketing models and catalysts for emerging cross-sector online business models. Examples include cultural interest and lobby groups; re-selling platforms; membership-based networking organisations; and crowd-sourced and sustainable online fashion directories. Social media is one of the primary communication tools to bring together cross-sector synergies with other creative sectors, such as the games and screen industries, and a vehicle to raise awareness of the sectors beyond designer fashion.

At least 20% of the SMEs consulted are using social media for marketing and sales generation. Few, however, have the time or resources to invest further into skills and talent to capitalise on social media and marketing beyond ‘likes’ that would allow for a step change in business processes. SMEs identify functional areas for digital skills investment for the future of the sector (see **Figure 9, page 49**), including social media (average mean score 4.3), user-led innovation and customisation (average mean score 3.9), brand protection and intellectual property regulations (average mean score 3.5), XR (average mean score 3.4), and AI (average mean score 3.3). These growth opportunities point to a need for R&D funding into digital skills workshops and a greater need for multisector collaborations to help develop emerging and scarce digital skills.

‘When we first started posting jobs online through our fashion network, there were many design jobs in merchandising and pattern cutting. Now it’s all about digital design roles, eg blogger outreach, paid social media, tracking and analysing, and data. We noticed these digital skills are newly emerging among fashion talent, so we run professional development workshops with marketing agencies and other digital services in other industries where fashion brands can network with and hire from them.’
Dale Hicks, founder and co-director, The Fashion Network^[126]

5.4 Reimagining Online and Mobile Shopping

The importance of social media is connected to the rise of online and mobile shopping. The BFTT survey identifies that online channels are highly important (average mean score 4.1) for business growth in the next three to five years. SMEs determine that R&D investment into sophisticated online and mobile shopping processes is imperative for the successful development of the sector and capturing younger audiences. A key R&D opportunity area is user-led innovation and customisation platforms (average mean score 3.9) enabled by AI (average mean score 3.3) (see **Figure 9, page 49**), for example, using customer data capture and developing technologies that safeguard customer details to provide a quicker and more efficient customer experience. Niche digital capabilities such as 3D scanning and digital styling are also perceived as central to developing novel consumer experiences (see **Flair Atelier interview, opposite**).

[126] <https://uk.fashionnetwork.com/>

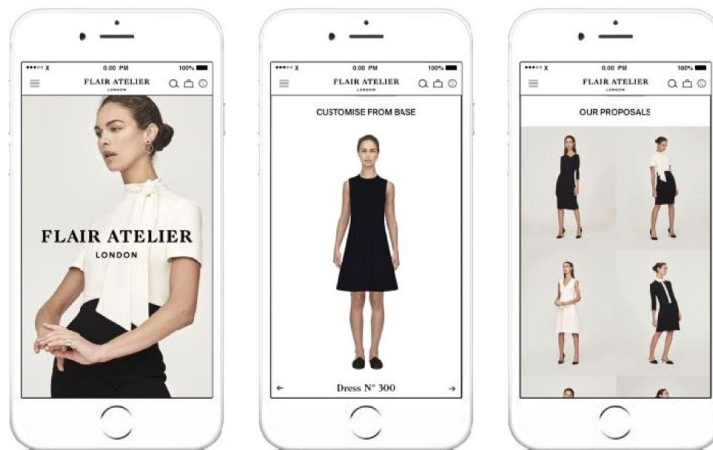
BFTT interview with Marianna Ferro, CEO, Flair Atelier

Can you tell us about Flair Atelier?

Marianna: I'm the CEO of Flair Atelier, a fashtech womenswear brand that started in 2014. The idea behind the brand was to build a sustainable business model instead of only a sustainable end product. We knew that about 40% of products are unsold or dead stock that is wasted or burned. This gap led to the creation of an e-commerce platform that would allow customers to create their own products using digital software and Flair to only produce on-demand.

How does digital software enable stock efficiency?

Marianna: Flair Atelier uses Augmented Reality (AR) software to pre-engineer outfits. The benefit of AR software is that customers can choose seasonless shapes, colours and sizes to build an outfit of their choice. The measurements and selections are sent to our bespoke tailors; this data then helps our tailors in Italy provide a better service and reduce waste.



A customisable collection that reflects different styles and fits
© Flair Atelier

What are the challenges you face as a technology-driven small fashion business?

Marianna: Raising enough finance for R&D into technology as a small business is the main challenge. In the early stages, we had to spend personal money to improve the quality of technology required by tech investors. Initially customers were not quite ready to adopt the concept. The 3D scanning software at that time was new to customers and not sophisticated enough to capture accurate measurements. So we introduced a physical element to the digital process; a personal stylist to take precise measurements to help customers purchase better. This enabled us to become self-sustaining on sales rather than investors in the short-term. In the long-

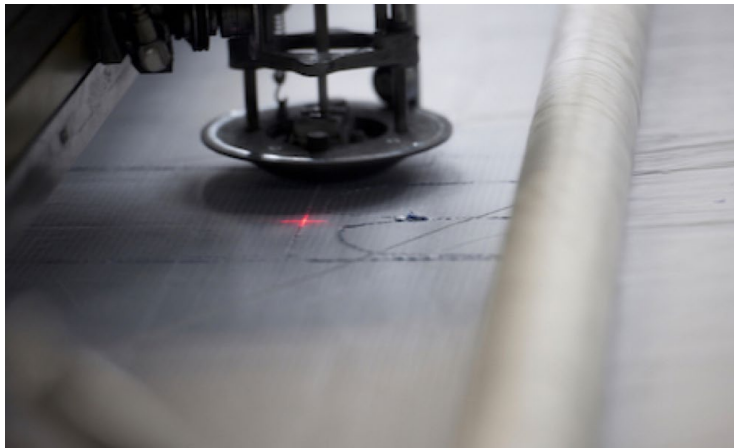
5.0 Top R&D Opportunities

term, we need more finance to keep researching the technology as there is now improved technology and, as a result, more market potential.

In the future, would you consider a fully digital service?

Marianna: At the moment, I believe customers enjoy the experience of being in a store or a mix of digital and physical shopping. From a future perspective, a digital-only service could be exciting – there would be less waste, and it would be cost-effective. I believe waste must be talked about from both sides: customers need to buy less, but businesses also need to produce less. We want more fashion businesses to adopt customisation technology. Therefore, we are in the process of experimenting and developing a B2B platform, which Flair Atelier can gain additional revenue from, as well as helping the fashion industry to become more sustainable.

flair-atelier.com



A customisable collection that reflects different styles and fits © Flair Atelier

Online and mobile shopping is perceived as an essential component in driving forward a circular and sustainable FTT ecosystem. Online shopping is an opportunity to cut back on physical resources and energy costs. Online business models are also perceived as more effective platforms for raising consciousness around sustainable apparel and diversity, as seen in the rise of second-hand re-selling platforms, and fashion and diversity awareness campaigns during the pandemic. Despite these advantages, the effect of the surge in online shopping during the pandemic has not been scientifically measured in terms of actual impacts. Factors such as the increasing number of deliveries and returns need to be compared to the previous norms of high-street retail in relation to contributions to greenhouse gas emissions, plastic waste, and whether these items are ending up in landfill after a couple of wears.

Stakeholders identify that local businesses and physical stores are also vital in sustaining local communities and engaging with customers face to face. Overall, a blended model of online and offline shopping is perceived as better than physical retail alone. This points to the need for R&D investment into supporting physical retailers in transitioning to digital

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systems and processes. With the rising cost of business rates, online shopping is seen as an opportunity for SMEs to lower costs and remain competitive. However, long-term competitiveness and share value of online SMEs will also depend on how businesses engage with other important factors such as sustainability and transparency. There is an opportunity for cross-sector collaboration and investment to support online FTT SMEs towards introducing net-zero targets.

Despite the adverse effects of the pandemic on overall sales for FTT retailers, Covid-19 has amplified the innovation potential and capabilities of the UK's FTT SMEs, and, most significantly, the resilience of local FTT SMEs. As discussed earlier, SMEs surveyed place higher levels of importance on supporting buying locally from independent stores. It remains to be determined how comprehensive and interrelated FTT sector growth and spending will evolve following Covid-19, as well as how SME innovation with feeder sectors will implement strategies in response to Covid-19.

BFTT interview with Abbie Morris, CEO and co-founder, Compare Ethics

What's your role and why did you start Compare Ethics?

Abbie: I'm the co-founder and CEO of Compare Ethics, a fashtech business based at East London Tech City. We developed Compare Ethics for customers to easily find independent sustainable brands aligned to their values in one place. We not only created a one-stop shop for people to buy sustainable brands, but also developed an algorithm that verifies every single product and its sustainability claims.



Using AI to verify brands' sustainable fashion claims
© Compare Ethics

How can technology like AI and algorithms support small businesses?

Algorithms can help prevent greenwashing. With a lot of the brands that I saw online, I wasn't sure if I trusted their claims. The algorithm verifies every single product. If a brand says to us, 'We're fair trade,' we like to see the certificate, or if they say that they're organic, we want to make sure we see

the certificate. We are not replicating or trying to duplicate any certificate markets, but we realised lots of small brands were investing heavily into sustainable supply chains and not getting a return on their investment because they weren't getting searched or noticed by customers. Once they're on the Compare Ethics platform and they've met our criteria, businesses get a trust sale mark, in the form of an easily integrated Impact Widget, to help consumers understand how a product has been verified. Algorithms can help brands increase sales conversion rates and help them to measure and communicate the impact of products on their e-commerce pages, and gain clear return on investment for being sustainable.

What are the opportunities for small fashion-technology businesses in the UK?

Abbie: There is a lot of scope for technology innovation that can help to address fashion's problems around clean growth, legislating for net-zero and sustainability. The added benefit is that there are grants available for technology, for example AI, clean-tech and machine learning, that's not always available to traditional fashion businesses. There is UK government funding support such as access to Innovate UK grants and industry mentoring. We were fortunate to receive mentoring from a strong industry advisory team as part of Google's first-ever Female Founders accelerator programme. Other opportunities include the buffer of being online, which means you can mitigate risks of UK sales going down due to any market uncertainties through diversifying sales outside of the UK. It's also great to work in multidisciplinary teams; it's nice to go from talking code in one hour to talking about creative content in the next.

compareethics.com

Profile: Prickly Thistle Scotland

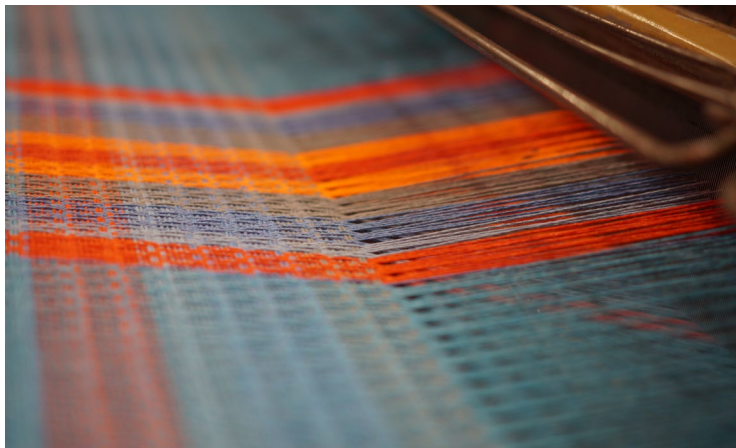
Prickly Thistle Scotland, an innovative tartan brand based in the Scottish Highlands, has raised support through a series of crowdfunding campaigns for limited-edition collections, including the Black House Mill collection that was launched in 2017. Prickly Thistle Scotland combines a digital business model with a physical heritage-based manufacturing model of weaving tartan in local mills. It uses restored 100-year-old looms and trains the next generation of tartan weavers through collaboration with the University of the Highlands and Islands, and Local Enterprise Partnerships.

'We don't have a retail store, at least not yet, because we're no more than two years into manufacturing and the investment in a stock collection from a working capital perspective would be significant. An online retail presence allows us to maintain the mystique of who we are, our exclusivity yet accessibility.'

5.0 Top R&D Opportunities

'The wholesale model is massively flawed in terms of retaining exclusivity with pressure to compete on cost. Everything becomes homogenised. It was a conscious decision to follow a business model on heritage and sustainability, not volume.' Clare Campbell, founder, Prickly Thistle Scotland

pricklythistlescotland.com



Highland tartans,
made in Scotland
© Prickly Thistle

6.0 Recommendations



A co-creation, crowdsourcing fashion platform, photo by Gleeson Paulino © AWAYTOMARS

6.0 Recommendations

BFTT considers the following recommendations critical for the future growth of the wider industry and in particular SMEs.

Main Barriers	
Trade Policy and Brexit	
Barriers	<p>A rise in business costs, sample delays and higher trade prices due to the uncertainty of tax and tariffs on imports and exports</p> <p>Risk of losing highly skilled technical EU workers</p> <p>Barriers to business planning due to the uncertainty of Brexit and Covid-19</p>
R&D Needs	<p>R&D funding support to help FTT SMEs transition to efficient business models</p> <p>R&D support with upskilling and training UK talent pipeline in technical and crafts skills</p> <p>Resilience and business planning guidance to support business growth post-Brexit and Covid-19</p>
Recommendations	<p>Relevant stakeholders should work with sector trade bodies and SMEs to lobby favourable tax and tariffs for SMEs post-Brexit</p> <p>Relevant stakeholders should work with sector and trade bodies to develop a range of secondary, post-18 and adult training and education programmes to support FTT SMEs at risk of skills shortage</p> <p>Deliver business support programmes to help SMEs transition to sell across Europe, non-European markets and local markets</p>
Tax and Business Rates	
Barriers	<p>Rising costs of rental property are pushing SMEs out of a competitive retail marketplace</p> <p>The current tax and business rates criteria do not align with a significant shift towards online retailing</p> <p>Affordable workspace and retail space is a critical concern across the UK, not only in London</p>
R&D Needs	<p>Business rates reform is required to better align tax and business rates with the shift towards online retailing</p>
Recommendations	<p>Local Enterprise Partnerships to support FTT SMEs with applying for R&D tax and business rates relief</p> <p>Provide government-supported nationwide business guidance workshops on what constitutes R&D, aligned with HMRC's scientific and technical criteria for obtaining funding</p> <p>Provide government-supported SME pathways to applying for R&D funding and tax relief</p>

6.0 Recommendations

FTT Skills Shortage	
Barriers	<p>A skills shortage in technology and making skills, including AI for retail, advanced manufacturing, crafts skills, including sewing and pattern cutting, soft skills in leadership, marketing and showcasing</p> <p>Limited access to diverse talent from under-represented backgrounds</p>
R&D Needs	<p>R&D investment into FTT skills programmes at different levels and stages of the skills pipeline is vital; most notably for technical education, followed by university, enterprise, apprenticeships, schools and colleges, and adult education</p> <p>R&D investment is required to support fashion, art and design universities to work with STEM universities and colleges across the UK's Innovation Districts</p> <p>Increase community engagement through outreach projects and inclusive skills programmes to attract diverse talent, including executive coaching and responsible leadership programmes</p>
Recommendations	<p>Integrate R&D skills insights with UK innovation and related policy. Collaborate with the AHRC CICP Policy & Evidence Centre^[127] on innovation policy evaluation, and seek to engage with partners across the FTT ecosystems, including UK Fashion & Textile Association, regional and local government, and research funders</p> <p>Increase public awareness of the cultural contribution of fashion and textiles, and the role of technology in manufacturing, retail, consumption and recycling hosted by HEI partners and industry partnerships</p> <p>Grant funding support for universities to play a larger role in supporting the future FTT skills pipeline with industry and community partners</p>
Consumer Spending and Disposable Income	
Barriers	<p>Risk of SMEs being priced out by established and larger businesses during an economic recession</p> <p>Increase in value consciousness among consumers due to a decrease in consumer spending and disposable income</p> <p>Increased competition from large and established online retailers</p>
R&D Needs	<p>R&D investment is essential for a step change in behavioural initiatives that support a continuous shift in consumer mindsets away from 'take-make-dispose' models</p> <p>Investment is required to support circular business models, where clothes are recycled, repaired and restored, contributing less to CO2 emissions and landfill</p>

[127] <https://pec.ac.uk/>

6.0 Recommendations

	R&D investment to support SME business leaders with developing new business models for value-added concepts, such as funding for new materials and textiles development; support with digital systems and processes to encourage less waste; and new fast-fashion models based on both value pricing and sustainability
Recommendations	<p>Business guidance support for SMEs to better understand scientific and technical language, and implications of UK Sustainable Development Goals and targets for business activities</p> <p>Business development support for mid- and long-term financial forecasting for R&D and step-change activities</p> <p>Business development support for mid- and long-term resilience planning for consumer and environmental regulation shifts</p>

Main Opportunities

Circular and Sustainable Business Models

Opportunities	<p>Sustainable and circular fashion models are perceived as the number-one innovation priority for UK FTT sector growth. High-growth areas for UK FTT innovation include multisector collaboration with smart, technical and medical textiles innovation. There are emergent opportunities for local, small-scale smart manufacturing of luxury and heritage fabrics such as wool and tartan</p> <p>Critical opportunities for waste reduction through digital systems, energy-efficient synthetics and fibre-to-fibre recycling plants</p> <p>Opportunity for emergent technology to support traceability and transparency from farm to fibre, using tools such as blockchain technology and technical certifications</p>
R&D Needs	<p>Large-scale SME R&D investment to support FTT SMEs with patenting technology, scaling of new systems and processing of fibre-to-fibre recycling</p> <p>Investment into improving manufacturing quality through high-quality technical equipment, automation facilities and robotics</p> <p>R&D funding support to help SMEs apply for sustainability quality checks, audits and certification</p>
Recommendations	<p>Develop nationwide circular and sustainability awareness programmes focused on alternative materials and the potential value of waste as a resource within FTT</p> <p>Increase SME awareness and engagement with FTT designers and researchers working with waste and circular design</p> <p>Provide SME business support guidance on environmental and sustainable development legislation</p>

6.0 Recommendations

Emerging Marketing and Experience Channels	
Opportunities	<p>Social media marketing is a critical opportunity for customer engagement and brand network growth, as long as the skills, resources and time are available to leverage it effectively</p> <p>SMEs perceive word-of-mouth marketing as the most effective when consistently integrated with social media and omnichannel marketing</p> <p>The rising number of third-party applications available through mainstream social media marketing platforms is perceived as a pivotal opportunity to develop new user-generated business models based on collaboration across regions, sectors and social influencing. There is a suite of tech-based possibilities, including video, music, AI, AR, VR, blockchain and crowd-sourcing capabilities</p> <p>Social media marketing is a vital tool for regional community engagement with circular fashion models, heritage branding, and raising awareness around diversity and representation within the sector</p>
R&D Needs	<p>R&D investment is required to support early-stage FTT SMEs with the cost of improving digital marketing capabilities, such as developing and purchasing software required for immersive experiences, capturing analytics and generating sales</p> <p>R&D investment into inclusive digital skills development is required for a step change in technology adoptions such as gamification; digital-only fashion; transparency; and capturing consumer data</p> <p>R&D funding support for FTT manufacturers and SMEs to develop digital culture and placemaking initiatives to attract local export and import markets</p>
Recommendations	<p>R&D investment in robust data infrastructures for the FTT sector, including customer data and privacy protection and legislation</p> <p>Continuous regional funding support for high-street retailers transitioning to online channels</p> <p>Digital marketing skills development programmes to help SMEs transition to mixed-reality capabilities</p>
Reimagining Internet and Mobile Shopping	

6.0 Recommendations

<p>Opportunities</p>	<p>Online and mobile shopping channels will be highly important for FTT SME business growth in the next three to five years</p> <p>Setting up pure play (online only) business models offsets the cost of tax and business rates for physical stores, and offers an opportunity for sustainable development</p> <p>Internet and mobile shopping are perceived as key drivers of growth for heritage-based brands seeking to reach out to niche target audiences across the UK and internationally</p>
<p>R&D Needs</p>	<p>R&D investment is vital to support SMEs developing sustainable, effective digital supply chain operations and logistics, from production to transportation</p> <p>R&D investment into business development planning is required to support physical retailers transitioning their systems and processes to hybrid online and offline business models</p> <p>R&D skill support investment to upskill FTT SME founders and employers with digital systems and processes such as immersive content, logistics and omnichannel marketing</p>
<p>Recommendations</p>	<p>R&D investment to support the UK-wide infrastructure of more circular models of online shopping, such as better measures and evaluation of the environmental impacts of online shopping and online consumer behaviour</p> <p>Online shopping security infrastructure, from customer payments to data capture</p> <p>R&D funding to support innovation and SME competitiveness in online retail models such as digital fashion, and AR and VR consumer experiences</p>
<p>Intermediaries and UK-Wide Multisector Collaboration</p>	
<p>Opportunities</p>	<p>Opportunities for job creation and sector growth in emerging FTT regions outside established centres in major cities: in the North East, North London, Belfast, Bath, Bristol, Cambridge, Cardiff, Dundee, Falmouth, Leicester, Leeds, Liverpool, Preston, Nottingham, Southampton and Swansea</p> <p>Multisector collaboration and innovation. The BFTT survey identifies over 648 SMEs classifying in the Companies House register under a variety of SIC categories and sub-categories, demonstrating the wider spread of the fashion industry and its feeder textiles, technology and media sectors. This has not been previously captured by data on the industry</p> <p>FTT university and industry collaborations, and knowledge exchange. There is increasing interest from wider-ranging intermediaries, including property developers, to support the creative industries</p>

6.0 Recommendations

R&D Needs	<p>R&D subsidies for intermediaries such as workspace providers to help support accessible workspace for FTT SMEs and multisector collaborations and networking</p> <p>R&D subsidies for intermediaries to support co-working spaces with technical equipment such as 3D printing technologies and small-scale manufacturing and prototyping labs</p> <p>R&D investment into university STEAM agenda – a collaboration between fashion design and arts and STEM universities</p>
Recommendations	<p>Government and Research Councils UK funding for FTT higher education institutions to collaborate with STEM-based Innovation District initiatives, for example in advanced manufacturing and development of new materials and textiles, and smart manufacturing for technical and medical textiles</p> <p>Review of broader SIC classifications for the FTT sector</p> <p>Consistent, long-term funding support for Local Enterprise Partnerships and business growth hubs to support regional sector growth</p>

7.0 Conclusions

Carmen Hijosa is the founder of Ananas Anam, the maker of Piñatex®, an innovative natural textile made from pineapple leaf fibre. (c) Ananas Anam



7.0 Conclusions

This report is an initial evaluation of the Fashion, Textiles and Technology (FTT) industry and the baseline research for further potential study into the wider industry and ecosystem. The Business of Fashion, Textiles and Technology (BFTT) survey reached over 2,400 small, medium and micro enterprises (SMEs), and received 814 responses, of which 621 from across England, Scotland, Northern Ireland and Wales were deemed useful for analysis. In addition, 65 FTT stakeholders (36 intermediaries, see example categories below, and 29 SMEs) were interviewed during the survey and consultation process, which covered approximately a year.

The consultation process determined that the UK FTT sector is expansive and currently operating across a wider range of SIC categories than earlier research suggests, demonstrating that emergent business models are moving away from traditional silos. Central to the collaborations within these networks are numerous intermediaries such as workspace providers, local government and enterprise partnerships; and wide-ranging support from universities across STEAM (Science, Technology, Engineering, Arts and Maths) disciplines, research and knowledge exchange activity. All are playing a pivotal role in this process of hybridisation, whereby the sector has become extremely sophisticated in terms of inter-sectoral collaboration. Existing classification is therefore no longer able to provide a suitable taxonomy to describe the SME activities within the sector. A revision of the application of existing SIC categories relating to the FTT sector would thus be desirable.

The survey reveals the main challenges for the UK FTT sector in the next three to five years as: changes in consumer spending; funding, tax and business rates; trade policies and Brexit; and a shortage of FTT skills. Micro businesses in the early stages of business growth (ie within two to three years of starting trading) are perceived as both vulnerable and resilient in equal measure – the latter in part due to their agility and manageable scale.

The survey, however, also identified significant R&D and investment opportunities in circular and sustainable business models; technological advances; wide-ranging digital tools and platforms; location-based social media and marketing; and reimagining online and mobile shopping.

The survey also highlights the significance of regional clusters across the UK and internationally, and identifies emergent UK Innovation Districts with FTT-related activity (Section 2.1).

Micro enterprises place higher importance on the opportunities facing the sector. Yet the extent of opportunity is the same across both early-stage and established SMEs. During the pandemic, the main challenges and opportunities have been amplified. This is seen in the form of a rapid response from the UK government in terms of increased funding support for SME taxes; cross-sector R&D collaboration grants; recognition of online and social shopping; digital skills programmes; and support for buying locally and from independent brands with sustainability at their core.

7.0 Conclusions

The circular economy, Brexit and Covid-19 in particular have called for a reset and step change for the wider FTT industry in the UK and globally. An increasing number of designers and brands are calling to action seasonless fashion, more ethical, transparent and sustainable approaches to the overall apparel ecosystem, and a desire for new FTT business models. This, in turn, reflects a new consciousness of environmental issues among consumers that presents a financial incentive as well as a moral imperative. Generation Z, for example, who are particularly eco-aware and also open to technological solutions across the board, are still youthful. This generation will become increasingly influential and affluent as more of its members become adult and enter the workplace, and will become increasingly significant in moving forward the conversation on circular fashion.

Importantly, all these issues were designed into the consultation process embedded into the BFTT survey before the pandemic and have retained their relevance during Covid-19. The findings from a further BFTT survey and consultation underway will therefore also be critical to understanding a UK-wide post-pandemic, post-Brexit position.

Our emphasis on UK-wide throughout this report is very deliberate. The significance of the regions, in particular the regional hubs we have specifically identified, cannot be overstated, and there is genuine potential here for a joint network of provision in which regional players are as important as those based in the capital. This closer integration of what is traditionally considered the 'core' and the 'periphery' refocuses on the importance of the links centred around the apparel sector that have been identified, established or enhanced by local UK-wide enterprise partnerships such as the BFTT (led by University of the Arts London), and Future Fashion Factory (led by the University of Leeds) as part of the Industry Strategy-funded, UK-wide Creative Industries Clusters Programme (CICP) and established UK organisations such as the UK Fashion & Textile Association and the British Fashion Council. These networks will be key to delivering the technological and financial support, and the improved access to R&D funding the UK FTT industry needs, if it is to play its full part not only domestically but also on the world stage, in terms of establishing excellence and continuing to contribute significantly to the UK economy.

Thank you for your interest in the Business of Fashion, Textiles and Technology. We would very much welcome your input. If you would like to contribute to this conversation, please contact: bftt@arts.ac.uk

Appendix

SME Participant list

	Name of Participant	Role	Organisation	Location	Type of Business
1	Tracey Suen	Founder	50M	South London	Medium
2	Paloma Bouteleux	Founder	The Mood Shaper	Global	Micro
3	Abbie Morris	CEO and co-founder	Compare Ethics	UK-wide/east London	Small
4	Fazane Fox	CEO and co-founder	Fazane Fox Productions	Nottingham	Medium
5	Clare Campbell	Founder	Prickly Thistle Scotland	Inverness, Scotland	Small
6	Jonny King	Creative director	Garthenor Organic	Ceredigion, Wales	Medium
7	Hamish Carruthers	CEO and founder	Scotcloth.com	Highlands, Scotland	Micro
8	Marianna Ferro	CEO and founder	Flair Atelier	North London	Medium
9	Annie Gurney	Production manager	Blackhorse Lane Ateliers	North London	Small
10	Michael Hawkins	CEO and founder	Faustine Steinmetz	Cambridge	Micro
11	Hervé Andrieu	CEO and founder	VetiGraph Fashion Digital Solutions	Brighton	Medium
12	Kresse Wesling	CEO and co-founder	Elvis & Kresse	Kent	Small
13	Karishma Kusrkar	Co-director; founder	Belfast Design Week; Karishma Studios	Belfast	Small
14	Bud Moore	Founder	Geneic	West London	Micro
15	Richard Jennions	Co-founder	Try & Lilly Ltd	Liverpool	Small
16	Sara Ladd	Product manager	Hiut Denim	Cardigan, Wales	Small
17	Lindsay Hanson	Founder	Immunotex	London	Micro
18	Rosie Broadhead	Designer	Skin II	London	Micro
19	Helen Tarratt	Founder	Fferal	Loughborough	Micro
20	Rob Webbon	CEO and founder	Presca Teamwear	Middlesbrough	Micro
21	Jonathan Chippindale	CEO	Holition Studios Ltd	London	Medium
22	Shaun Beaney	Manager, corporate finance Faculty	ICAEW	UK-wide	Micro
23	Helen O'Sullivan	Founder	SustFashWales	Swansea	Micro
24	Mark Jarvis	Managing director	World Textile Information Network	Leeds	Small
25	Kashef Ahmed	Founder	Project Work Force	Global	Small
26	Marie Stenton	Designer	Self-Employed	Leeds	Micro

Appendix

Roundtables list

	Name of Participant	Role	Organisation	Location	SME / Intermediary
1	Glenda Brindle	Board member	Creative Lancashire	Lancashire	Intermediary
2	Denise Pearson	Managing director	Deni-Deni	Rosendale	SME
3	Paige Earlam	CEO and founder	Plexus Cotton	Liverpool	SME
4	Suzanne Jennions	Co-director	Fabric District	Liverpool	Intermediary
5	Gemma Potter	PhD candidate	Manchester Metropolitan University, Transformation NW	Manchester	Intermediary
6	Sandra Dartnell	Partnership manager, North West	Creative & Cultural Skills	Wirral	Intermediary
7	Brant Richards	Founder	HebTroCo	Hebden Bridge	SME
8	Danielle Slinger	Course co-ordinator, Textiles & Fashion	Blackburn College	Blackburn	Intermediary
9	Rajan Soond	Programme leader, FdA & BA (Hons) Contemporary Fashion; Contemporary Textiles; and Design for Interiors	Blackburn College	Blackburn	Intermediary
10	Beverley Lamey	Principal lecturer, Fashion and Textiles	University of Central Lancashire	Preston	Intermediary
11	Sarah Lloyd	Head of Design	Panaz	Burnley	SME
12	Dr Lipi Begum	Postdoctoral research fellow	University of the Arts London	London	London
13	Adam Slade	Studio supervisor; director	Standfast & Barracks; Swarm Design	Lancaster	SME
14	Steve Kay	Managing director	North West Textiles Network	Manchester	Intermediary

Appendix

Intermediaries list

Key

Type of intermediary

1: Physical support

2: Business support

3: Policy and support

	Name of Interviewee	Role	Organisation	Type of Intermediary	Location
1	Adam Mansell	CEO	UKFT	3	UK-wide
2	Alba Cadenas	Business development director	Outset Waltham Forest	1&2	UK-wide
3	Blossom Young	Head of operations	Poplar HARCA	1&2	East London
4	Alex Jeremy	Head of partnerships	Poplar HARCA	1&2	East London
5	Alexander Chan	Co-director	The Mills Fabrica	1&2	Hong Kong / London
6	Director of social responsibility	Director of social responsibility	London College of Fashion, University of the Arts London	3	London
7	Cristina Carmona Aliaga	Senior inward investment manager	London & Partners	2&3	London
8	Dale Hicks	Founder and co-director	The Fashion Network	2&3	Manchester
9	David Crump	Head of business incubation	Cockpit Arts	1&2	London
10	Ed Matthews-Gentle	Senior project officer; creative industries officer	Lancashire County Council; Creative Lancashire	3	Lancashire
11	Fokrul Hoque	Founder	British Bangladesh Fashion Council	British Bangladesh Fashion Council	East London
12	Hajni Sensei	Director	Arbeit Studios	1	North London
13	Joseph Augustin	Co-founder	Heat Island	1	North London
14	Josie Warden	Associate director	RSA	3	UK-wide
15	Judith Tolley	Head	Centre for Fashion Enterprise	1&2	East London
16	Laura Gander-Howe	Director of public engagement and culture	London College of Fashion, University of the Arts London	3	London
17	Linda Roberts	Director of business and innovation	London College of Fashion, University of the Arts London	3	London
18	Lynne Murray	Director	Digital Anthropology Lab	2&3	London
19	Matthew Drinkwater	Head	Fashion Innovation Agency	Fashion Innovation Agency	London
20	Patrick Scally	Director of fashion	The Trampery	1&2	London
21	Peter Jeun Ho Tsang	Founder	Beyond Form	1&2	Paris
22	Richard Jennions	Co-founder	Try & Lilly Ltd	3	Liverpool
23	Sarah Henderson	Director of operations	Echo (economyofhours.com)	1&2	London
24	Sarah Thirtle	Director of business support programmes	Creative United	1&2	UK-wide
25	Sue Tilley	Economic strategy manager	Leicester and Leicestershire Local Enterprise Partnership	3	Leicestershire
26	Tamara Cincik	CEO and founder	Fashion Roundtable	3	UK-wide

27	Tom Campbell	Specialist, creative industries	Innovate UK	3	UK-wide
28	Robert Cragg	Chair	Hack Oldham	1	Oldham
29	Steve Kay	Managing director	North West Textiles Network	2&3	Bolton
30	Rhiannon Hunt	Former eco-innovation advisor	The Growth Company (Manchester)	2&3	Manchester
31	Robert Martin	Co-curatorial director; founder	R-Space Gallery; Linen Biennale Northern Ireland	3	Belfast

