Localization

In the Danish Fashion Industry

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Abstract

This thesis examines how Danish fashion SMEs can transition to local production by 2030 while maintaining economic sustainability, as outlined in the national roadmap vision for a more circular textile industry. Despite over a thousand firms registered under garment manufacturing codes, local production remains a niche, hindered by decades of offshoring, lack of skilled labour, limited access to specialized infrastructure, and dominant global supply chains. However, local production practices provide advantages, such as reduced lead times, lower emissions, and opportunities for collaboration. This research employs a mixed-methods approach to identify key barriers and opportunities, highlighting the necessity for coordinated efforts in infrastructure, education, policy, and collaboration. It adds to the existing literature by affirming that local production represents a significant structural shift that requires long-term commitment. It also highlights the ethical complexities associated with reshoring and underscores the need for socially inclusive strategies during the transition. Recommendations for stakeholders include a five-step framework to guide collaborative ecosystem building, policy support, skills development, and customer engagement, alongside a proposed digital platform to bridge information gaps and promote sustainable fashion practices in production and consumption in Denmark.

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Word Definitions

This list specifies the specific usage of terms in this thesis:

Localization - is the process of organizing a business or industry so that its core activities occur primarily in local regions instead of on a national or international scale (Cambridge Dictionary, n.d.).

Local - covers the physical location of facilities, processes, or activities performed within the national borders.

Manufacturing - is the process of creating finished products using manpower, machinery, and biological or chemical processes. The output is always a tangible product, ready for sale. Manufacturing falls under the category of production (Sage Software, n.d.).

Production - is the broad term for all tangible and intangible processes of making a final good or service. It is defined as the transformation of inputs into a functional output, which may involve machinery or not. Production can include several manufacturing processes (Sage Software, n.d.).

Local production - covers one or more manufacturing processes conducted within national borders. These processes must together form a significant part of the finished product, such as more than just sewing on a button or applying a small logo print.

The Global South - is the collective term for countries in Asia, Africa, and Latin America that are economically disadvantaged compared to Western nations (Concito, n.d.; Global South Countries 2025, n.d.).

The Global North - is a collective term for countries in Europe, North America, and Oceania, as well as Japan, South Korea, and Russia, among others (Global South Countries 2025, n.d.).

A Supply chain - is a link of suppliers, manufacturers, distributors, and retailers that source raw materials, produce goods, and sell them to consumers, focusing on the efficient exchange of products (Wallner, 2023).

The value chain - emphasizes the intersections with the supply chain and points where customer value is generated. A value chain goes beyond production processes and logistics, adding, e.g., sustainability measures, after-sales support, or customer experience (Wallner, 2023).

Sustainable Business Models (SBM) - involve rethinking an organization's purpose, core goals, and processes to create value from social and environmental matters (Baldassarre et al., 2020a).

Circular Business Models (CBMs) - enable the circulation of resources, increasing their use and keeping them at their highest possible value. CBMs decouple revenue streams from production and resource use by generating profit from the flow of resources over time instead of from single product sales (Baldassarre et al., 2020a; Ellen MacArthur Foundation, 2021).

1. Introduction

The global fashion industry has experienced rapid growth, producing over 62 million tons of clothing annually. The number is expected to rise significantly as the middle class expands in countries like India. This growth brings with it major environmental, economic, and social challenges, including the unsustainable consumption of resources, poor labour conditions, and high levels of waste production. (Bundgaard, 2023). The amount of textiles produced globally doubled between 2000 and 2015 (Innomission Partners, 2021), intensifying these pressures. In Europe, 76 percent of greenhouse gas (GHG) emissions linked to its textile consumption originate from production outside the EU, further highlighting the environmental costs of globalized supply chains. Furthermore, about one-third of new clothes are never sold, contributing to the 677 tons of textile waste generated in 2020 alone (Innomission Partners, 2021).

In light of these challenges, researchers stress the urgent need for change within the fashion industry, stating that "to have a future, the fashion industry needs to go beyond novelty and its growth obsession. We can no longer afford to accept unsustainable practices at scale as the norm" (Elf & Werner, 2024, p. 204). This call for change aligns with the increasing interest in circular economy (CE), regarded as an essential player in the achievement of several UN Sustainable Development Goals and European 2050 GHG emission targets. However, CE business models face multiple challenges (Innomission Partners, 2021).

In Denmark, resource consumption remains significantly above sustainable levels, with production often disconnected from the customer and use phase by complex and non-transparent supply chains. Low raw material costs compared to labour wages depress the incentive for recycling. Additionally, societal welfare and consumer happiness rely on constant economic growth and rapid product turnover, hindering circular transitions (Innomission Partners, 2021) and resulting in a national economy that is only 4% circular (Kvist & Jørgensen, 2025).

Acknowledging this, Denmark has launched strategic initiatives and allocated 10 million DKK each year for the next four years to support a national action plan for textiles (Dansk Erhverv, 2025). One of these initiatives is a roadmap vision presenting suggestions for actions and strategies to achieve a more circular textile and plastic industry (Innomission Partners, 2021). One of the key strategies is the 'localization' of textile production. This forms the foundation of this study and is detailed in the next section.

1.1 The Roadmap Vision

"Denmark is a green frontrunner" is a slogan used by many politicians to create and support a 'green' image of the nation. In 2021, the Innovations Fund Denmark established four mission-driven green research and innovation partnerships, which aim to support this image by bringing knowledge institutions, companies, and stakeholders across sectors together in new initiatives.

One of these Partnerships, called TRACE , focuses on plastics and textiles and exists to leave "a positive trace on people and the planet through a circular economy" by developing scalable solutions and sharing knowledge (About Trace, 2021).

TRACE has developed the roadmap A Circular Economy with a Focus on Plastics and Textiles: A 2030 & 2050 Roadmap (Innomission Partners, 2021), outlining Denmark's strategy for transitioning to a circular economy. The roadmap sets pathways to reduce resource consumption and environmental impact, increasing reuse and recycling, all by 2030 and 2050, contributing to national climate goals of reducing greenhouse gas emissions by 70% by 2030. The Innomission Partners see the textile sector as having "the potential to become a key player in the coming transition work" (2021, p. 5). It was co-created by Danish design schools, all eight universities, industrial clusters, and GTS institutes.

Their vision is to rebuild a resilient, sustainable textile sector grounded in Denmark's tradition of collaboration and an agile approach, stating that "with typical SME- or entrepreneur-based companies forming the sector, it is not possible to regain this knowhow without close collaboration and knowledge-sharing" (Innomission Partners, 2021). Along with investments in recycling technology, local job creation, and user-led design, they aims to position Denmark as a global 'hotspot' for a circular economy (Innomission Partners, 2021).

The roadmap defines four shared objectives for the plastics and textiles industries:

1) Reuse and recycling of all materials,
2) Recovery at the highest possible level,
3) Decoupling resource consumption from growth,
4) Eliminating surplus production.

Local textile production is among the initiatives supporting these goals. Producing closer to the market reduces resource use through shorter supply chains, better demand alignment, and fewer inefficiencies. As stated in the roadmap, there is a need for "user-led and flexible production that is close-to-market, agile and adaptive" (Innomission Partners, 2021, p. 15). The COVID-19 pandemic revealed vulnerabilities in the textile industry, including long lead times, inflexibility, and ineffective resource optimization for brands that do not have their own production facilities. Outsourced production often has 1-2 years of lead time, making it

difficult to adapt to changes. Additionally, high minimum orders exclude SMEs economically from competing or innovating. Local production addresses these issues by enabling faster, smaller-scale, user-focused manufacturing (Innomission Partners, 2021)
In continuation, the roadmap identifies outsourced production as a key challenge and sets milestones for 60% of SMEs to produce mainly in Denmark by 2023, and for most Danish textile companies to do so by 2050 (Innomission Partners, 2021, p. 23).

1.2 Motivation

My interest in this topic arises from a strong commitment to sustainable development in the fashion industry. This passion is influenced by my educational background in fashion design at Kolding School of Design and my current studies in Sustainable Design Engineering at Aalborg University. As a result, I have focused my attention on local clothing production in Denmark as a shift towards more sustainable practices. I acknowledge that my motivation may have influenced the way I framed my research and interpreted the results. I maintain a critical, research-based approach to address this potential bias, using diverse sources to ensure a comprehensive analysis.

The study contributes to sustainable design engineering by combining acknowledged theories from the field with real-life knowledge from stakeholders in the fashion industry, offering new insights into understanding the transition to a localized industry.

1.3 Research Question

The main objective of this thesis is to investigate how the vision that most Danish textile companies will produce their products in Denmark by 2050 at the latest, as stated in a roadmap report, can become a reality. The thesis seeks to study the opportunities for the future of localization within the Danish fashion industry while being economically sustainable for SMEs. The research will link theoretical knowledge and recent literature on the topic with empirically collected findings from interviews and surveys with relevant companies and experts. Starting with the intermediate target of the overall vision, the main research question guiding this thesis is:

How can 60% of Danish fashion SMEs transition to local production by 2030 while achieving economic sustainability?

The research will focus on clothing rather than textiles in general, as clothing accounts for the largest share of textile consumption, making up roughly 80% of all imported textiles in 2021 (Energistyrelsen, 2023). Producing clothes often has different and complex requirements, such as performance criteria for textile temperature regulation and body fit. Focusing on this segment addresses the most complex, resource-intensive part of the sector, thereby enhancing the impact of the roadmap.

To enhance the understanding of the potential for realizing the vision of local clothing production in Denmark, three sub-questions have been developed. These sub-questions will guide the study and highlight various essential aspects required for an exploration of the main research question.

Sub-question 1:
What are the current practices for local production of clothes in Denmark?

The first sub-question aims to establish a foundation about the existing structures and companies in the Danish fashion industry. Mapping the current local production practices will deepen the understanding needed to analyse the main barriers and opportunities to scale later.

Sub-question 2:
What are the main barriers to scaling up clothing production in Denmark?

The second sub-question focuses on the factors that hinder the scaling of the current production system. It supports the exploration of missing links or elements that may be vital to achieving the 2030 vision.

Sub-question 3:
How can local production generate new opportunities for the Danish fashion industry?

The third sub-question directs attention to the potential future of local production in Denmark. Based on insights from the first two research questions and the empirically gathered data, it focuses on the potential opportunities to drive the localization movement within the industry.

The remaining report is structured as follows: The next section provides background information on the historical and geographical context. Section 3 explores the state of the art within the recent literature in the field, while section 4 describes the research design and methods used to address the research questions. Section 5 situates the theoretical framework, which consists of three theoretical perspectives used for the analysis and interpretation of findings. In sections 6 and 7, I present the analysis and results of the findings. Then, in section 8, the findings are interpreted in relation to the research question and existing literature, including the implications and limitations of the study. Sections 9 and 10 present recommendations for stakeholders to take this study further and reflections on my research experience. Finally, in section 11, the conclusion summarizes the thesis and the key findings, along with their implications.

2. Historical & Geographical Context

This section outlines the historical and geographical evolution of the fashion and textile industry, with a focus on local clothing production. It touches the overall developments globally, within the EU, and in Denmark, showing how local production was undermined by globalization, yet is now regaining importance in light of sustainability and resilience concerns.

2.1 A Global Perspective

Globally, fashion has become one of the most economically influential industries. If ranked alongside national GDPs, it would be the world's seventh-largest economy (McKinsey & Company, 2016). This growth has been driven by global production networks and the rise of fast fashion, where large firms prioritize rapid, low-cost production and flexible supply chains to respond quickly to market trends (Brydges, 2018).

Historically, clothing production was local and embedded in national industries. Since the 1970s, however, firms have outsourced labour-intensive processes to the Global South to cut costs, retaining high-value activities like design and branding in the Global North. This restructuring weakened local supply chains and resulted in job losses (Puig et al., 2009).

A major catalyst for this shift was the Multi-Fibre Arrangement (MFA) of 1974, which enforced textile import quotas to protect industries in the Global North. Yet it also triggered "quota hopping", as companies sought production in low-cost countries that were not bound by

quotas yet (Bundgaard, 2023). This further accelerated the global relocation of manufacturing, which has taken off since.

2.2 Fashion in Europe

Europe followed similar patterns as described above. Today, most EU textile production is concentrated in Germany, France, Portugal, Spain, and especially Italy, which accounts for over 40% of EU clothing output (European Commission, 2023).

In response to growing sustainability and industrial control concerns, the EU has launched key policy frameworks. The EU Strategy for Sustainable and Circular Textiles (European Commission, 2022) targets overproduction, waste, and labour rights, stating that by 2030, textiles sold in the EU should be more durable, recyclable, and part of circular business models. The Transition Pathway for the Textile Ecosystem (European Commission, 2023) complements this, calling for stronger regional value chains that support local companies, digital innovation, and workforce upskilling.

The Commission notes that "the textiles ecosystem is characterised by many strengths but also faces several challenges" (European Commission, 2023, p. 8). Strengths include high production quality, sustainability leadership, specialization, and experience with circular business models. Challenges include competition from third countries, overproduction, low profit margins (especially for SMEs), skill gaps, and an ageing workforce (European Commission, 2023).

Researchers like Mikkelsen et al. (2024) highlight the strategic potential of Europe's local textile ecosystems. These systems focus on transparency, innovative materials, and low-impact production, offering a sustainable alternative to mass production. The Commission similarly notes that "innovative, sustainable, circular, and high-quality products remain the most promising segments" for EU competitiveness (2023, p. 8).

2.3 The Danish Fashion Industry

Denmark illustrates the broader transformation of Europe's fashion and textile sector. According to Turcan et al. (2020), the industry's evolution can be divided into historical "episodes." Of particular relevance is "Episode 2" (1950s–1970s), when Denmark had a thriving local production infrastructure, driven by economic growth leading to new consumer habits. Textile production was both economically and socially embedded, playing a key role in modern industrial relations and unions (Christensen, 2010). As demand rose, firms moved

production from cities to regions like Herning, Ikast, and Brande. Ikast alone hosted about 230 clothing factories at its peak, while Herning had around 300. However, by the late 1970s, Danish firms couldn't compete with cheaper global producers and began outsourcing to Eastern Europe and later to Asia (Bundgaard, 2023). This shift led to the collapse of local production infrastructure, as firms concentrated on design, branding, and retail (Christensen, 2010; Turcan et al., 2020). By the 1990s, large-scale local production had nearly disappeared. Yet in recent years, Denmark has seen a limited but notable revival of interest in localized, sustainable production. Until the 1970s, local production was the norm in Denmark, but over the past five decades, the industry's pride has shifted toward design and branding (Melchior, 2015). Now, a growing number of politicians, consumers, brands, and researchers are revisiting the idea of local production, as the TRACE roadmap is a proof of (Innomission Partners, 2021).

3. Literature Review

This section provides a descriptive review of existing literature to extend the understanding and knowledge of local clothing production. Little research has been made on "localization" within the field of clothing production in Denmark, or even just the Nordic countries. As Andersen and Pedersen state, "the literature on 'localization' within textile and fashion (…) is still in its infancy" (2024, p. 121).
Despite national stakeholders advocating for initiatives to improve local production, a knowledge gap persists in the literature on the localization of the fashion industry. Addressing this gap is essential for understanding and scaling local clothing production.

Taking a departure from the research question, the review was conducted following the steps suggested by Xiao and Watson (2019): first, Search the literature, Screen for inclusion, Assess quality, Extract data, and finally, Analyse and synthesize data.

Search Strategy

Literature was identified using Google Scholar and Scopus, along with backward searching of citations from selected articles. English keywords from the research question and their synonyms were used for a Boolean search strategy, using 'AND' for precision and 'OR' to broaden results (Xiao & Watson, 2019). The search string used was: (Fashion OR Clothing OR Apparel OR Garment OR Clothes) AND (Production OR Manufacturing OR Fabrication) AND (Local OR Regional OR National).

This generated 78 results on Google Scholar (including grey literature) and 31 on Scopus, with some overlap. Including keywords like "Denmark" or "Danish" returned no results.

Screening for Inclusion

Articles were first screened by title, and abstracts were reviewed if relevance was unclear. The following inclusion criteria were applied:

- Geographic focus - Only studies on Western countries (EU, UK, Canada, USA) to ensure cultural and economic comparability.
- Scope - Excluding works on second-hand clothing, non-clothing textiles, or recycling manufacturing.
- Timeframe - Only literature from 2005–2025 was included, reflecting the fashion industry's recent evolution.
- Peer-reviewed focus - Grey literature was excluded to ensure higher validity and reliability.

Some excluded articles were retained as background material for the historical context section.

Quality Assessment

Twelve articles passed the initial screen. These were evaluated by reading introductions and conclusions, then full texts. Relevant references were explored through backward searching. Due to limited results in English, Danish search terms were tested in Google Scholar and Scopus but returned no hits. A broader Google search identified one additional Danish article.

Data Extraction and Synthesis

Nine final articles were selected from this process. These were reviewed in depth, and relevant content was marked based on alignment with the study's three sub-questions. Extracted qualitative data were thematically grouped and synthesized in the following literature review.

3.1 Defining Fashion Localization

While 'local' production is increasingly seen as a sustainable and ethical alternative to global outsourcing and as something positive, its meaning is fluid and contested. There is a great variation in its geographical definition and the processes the term includes (K. R. Andersen & Pedersen, 2018). This ambiguity challenges businesses and policymakers in framing

consistent localization strategies.

To address this, scholars offer more precise frameworks. Andersen and Pedersen define local manufacturing as establishing "a supply chain in geographical proximity while consciously taking into account local conditions in the business decision" (2024, p. 107). Similarly, Brydges refers to Local Production Networks (LPNs) as "collaborative linkages between local firms and local factors of production" (2018, p. 240). These definitions emphasize not only spatial proximity but also intentionality. 'Local' is not simply where something is made, but how and why production is localized.

3.2 A Globalized Industry

The fashion industry is deeply embedded in global supply chains and is seen by many as an "exemplifier of globalization" (Brydges, 2018, p. 239), with most of the industry relying on transnational labour and capital. The Danish fashion industry was among the first in Europe to adapt to globalization. In 2005, the Danish government stated a clear ambition that Copenhagen should become the fifth global fashion centre, following Paris, New York, London, and Milan (Melchior, 2015). However, Melchior notes that Denmark failed to realize this dream due to a lack of understanding of the challenges faced. Nonetheless, she states that they achieved greater local attraction and industry mobilization (Melchior, 2015).

The globalization of the fashion industry is inevitable to ignore, even if one wants to produce locally, which is often defined as the opposite of globalization (K. R. Andersen & Pedersen, 2024). Cobb and Clarke-Sather argue that "local production (…) must be considered with the global context" (2018, p. 1206), and Andersen and Pedersen agree, stating that globalization creates "dependencies which local manufacturers cannot ignore" (2024, p. 119). Schmidt and Hansen add that clothing is based on local cultural values, but simultaneously on global business (2022). Therefore, localization of the Danish industry represents a complex structural and strategic shift. Puig et al. suggest firms view local production as a strategic repositioning within a broader context, rather than a full withdrawal from globalization. (2009, p. 711).

3.3 Spatial Belonging & Brand Identity

A strong sense of place is integral to many fashion brands, serving as both a value base and branding strategy. Andersen and Pedersen write that for some brands, "a strong 'sense of place', a feeling of identity with and attachment to a particular place permeates the purpose of the respondents' (the brand owner's) businesses" (2024, p. 114). Yet this spatial belonging

can constrain growth or scalability when place-based identity collides with market demands. Typically, local production aims for a holistic business approach, but often conflicts with the existing fashion industry (K. R. Andersen & Pedersen, 2024).

Globalization blurs the connection between design, production, and geographic origin. Schmidt and Hansen (Schmidt & Hansen, 2022, p. 105) observe that "the relation between places and design becomes more detached than ever," as brands with strong place-based identities, like "Made in Italy," outsource production. In this context, Melchior suggests countries like Denmark must regain their local fashion industry and place-branding as "a key mission for the nation in a globalized age" (2015, p. 182). Melchior emphasizes that the fashion industry is crucial for the national image and international standing.

3.4 The Niche Position of Local Production

Localization has become a niche within the last decades, and a signal of quality, history, and sustainability to many, and has gained independent value (K. R. Andersen & Pedersen, 2018). Puig et al. support this with evidence that firms have survived globalization by "competing in quality and strong design branding and becoming more capital-intensive" (2009, p. 708). Thus, Local production holds symbolic and market value but remains a niche in the Danish fashion industry. Local production is primarily done by small companies and independent designers, providing them more space for innovation and creativity than when part of the prevailing system (Brydges, 2018).

Both Andersen and Pedersen (2018) and Brydges (2018) point out that localization within the fashion industry will likely remain a niche market unless significant external changes in technology, regulation, and user behaviour make it more economically attractive.

3.5 Economy for Local Production & Circularity

A central challenge for local production is economic viability. Brydges (2018) notes that scaling local manufacturing is difficult, especially when overseas production significantly lowers costs. Andersen and Pedersen (2024) emphasize local manufacturers' struggles against conventional global supply chain players, where efficiency and low costs dominate. To address the tension between value-driven production and profitability, Andersen and Pedersen propose flexible business models based on diverse income streams, a "patchwork" business that aims to build long-term resilience and community, rather than short-term growth (2024).

These economic considerations are linked to discussions of sustainability and circularity. Brydges (2018) advocates for supporting local designers, strengthening their economic position, and leading to more sustainable careers in the industry. Local clothing production can drive a sustainable fashion industry by promoting higher-quality clothing, which reduces purchases and waste (Watson, 2018). Contrary to earlier claims that fashion localization faces economic challenges, integrating a circular economy offers a different perspective. Watson notes that circularity should not imply economic reduction or stagnation. He argues that a circular economy should be local, pointing to the challenges posed by the global trade of second-hand clothing. He notes that Africa has been flooded with used garments from Western nations, which harms local industries. In reaction to this issue, countries like Belgium have introduced regulations that require local textile recycling (Watson, 2018). This push aims to encourage local adaptation, innovation, and new infrastructure.

3.6 Skills, Infrastructure, & Knowledge

Transitioning to local production is not only about strategy. It depends on rebuilding industrial capabilities. As Andersen and Pedersen warn, "companies may find that the skills, knowledge, competences, and material resources necessary for rediscovering local manufacturing are either in short supply or long gone" (2024, p. 108). Mikkelsen et al. echo this concern, observing that outsourcing has led to the disappearance of embodied knowledge and firsthand experience, replaced by intangible expertise disconnected from practice. They add to this that many Danish fashion brands lack in-depth knowledge about materials and need skills development to meet EU regulations (Mikkelsen et al., 2024). Suppliers can act as informal knowledge carriers, possessing practical insights about fabrics and cuts, which benefit designers, as it indirectly affects the design (Schmidt & Hansen, 2022). Brydges and Hracs support the need for skilled workers, viewing the transfer of embodied knowledge as a "key driver" for regional production and innovation (2018, p. 518).

This shows the importance of considering the potential 'clash' between ambitions for reviving place-based production and available skills (K. R. Andersen & Pedersen, 2024). As Mikkelsen et al. stress, "a prerequisite for achieving radical changes of the supply chains for a global impact is knowledge-based dialogues and demands" (2024, p. 8), which calls for interaction along the value chain.

3.7 Local Production Networks

Many brands consider establishing strong relationships with suppliers essential to ensure that the final product meets all necessary quality standards (Schmidt & Hansen, 2022). Several authors referenced in this research highlight this as a key focus and a main advantage of localization. When stakeholders operate in closer geographic proximity, strengthening supply chain relationships becomes significantly easier. As Brydges highlights, "these types of accessible, face-to-face interactions are not easily replicable at geographic distances" (2018, p. 244). Mikkelsen et al. support this, saying that "a space of proximity that enables dialogues to emerge during the process" enhances both efficiency and innovation (2024, p. 5). If suppliers are involved in the design process, they can provide feedback on fabric choices and other technical details (Schmidt & Hansen, 2022).

According to Brydges, independent fashion designers can benefit from Local Production Networks (LPNs), which he describes as "the most strategic way forward" (2018, p. 247). He points out that LPNs offer greater flexibility and adaptability, allowing designers to stay attuned to customer preferences and modify their production by working closely with local manufacturers and retailers. This gives them greater control over their business compared to fast fashion and global supply chains (Brydges, 2018).

As stated earlier, localization in the Danish fashion industry is a niche segment with minimal general skills in clothing manufacturing. Andersen and Pedersen note that various actors can collaborate to address this issue (2024). Brydges reinforces this by arguing that "local social capital and personal relationships" are vital for LPNs to function (2018, p. 247).

3.8 Digitalization as a Strategic Complement

In the absence of well-established Local Production Networks (LPNs), literature points to digitalization as a useful complement but not a complete replacement (Brydges & Hracs, 2018). Digital tools enable designers to access inspiration, communicate, and showcase their work without being tied to major fashion hubs. As Schmidt and Hansen explain, designers today are "not as dependent on 'being there' compared to earlier" (2022, p. 105), due to online platforms enhancing visibility and market access. For brands outside urban centres, digital resources help bridge gaps; Schmidt and Hansen note that non-local sources often play a central role in the design process, reflecting a "digital information ecology" (2022, p. 106), where industry trends circulate through social media rather than physical proximity. However, digitalization has trade-offs. Brydges and Hracs warn that while virtual channels reduce geographic constraints and help designers build trust, they demand constant aesthetic performance, limiting time for actual creative development (Brydges & Hracs,

2018). Ultimately, digital platforms allow designers to work flexibly when local infrastructure is insufficient, but their success depends on maintaining balance in physical relationships and collaboration.

3.9 Social & Ethical Motivation for Local Production

Finally, localization is increasingly driven by social justice. The Rana Plaza disaster in Bangladesh in 2013, which killed over 1000 garment workers when the factory building collapsed, revealed the human cost of fast fashion. This tragedy pushed consumer demand for responsibly produced clothing and led to deeper industry self-reflection (S. P. Andersen, 2018).

Cobb and Clarke-Sather emphasize that relocating manufacturing operations has wide-ranging effects on people, communities, economies, and the environment. They further argue that sustainable development is not limited to distant locations, but is a shared global responsibility (2018).

Local production addresses these concerns by improving supervision, ensuring fair working conditions, and fostering public trust in fashion supply chains through transparency. As noted by Andersen and Pedersen, it reveals the origins and processes behind our clothing, in contrast to the often hidden nature of the global fashion industry. It highlights the raw materials used, the production methods, and the craftsmanship involved, bringing attention to their actual value (K. R. Andersen & Pedersen, 2018).

Mikkelsen et al. point out that frequent sample exchange in global supply chains is inefficient and often lacks sustainability and transparency (2024), highlighting the benefits of localized and traceable production systems.

4. Research Design

This research explores localization in the fashion industry. Due to the complexity of this phenomenon, a case study approach is chosen as the most suitable research method. Focusing on the fashion industry allows for a holistic, multi-method investigation, using qualitative and quantitative methods. This benefits the research design since it's impossible to determine which variables are relevant in advance (Sena, 2023), when studying a phenomenon like 'localization,' which has changed over time. As Sena states, "it is therefore necessary to study the case in its entirety and with any tool available to the researcher" (Sena, 2023, p. 48). A multi-method research approach offers a "more complete and profound picture of the phenomenon under investigation, as well as the possibility of increasing trust or validation of the research results" (Sena, 2023, p. 19).

The multi-method process of this study consists mainly of qualitative methods, including desk research, semi-structured interviews, and theme-based data coding for information gathering and analysis, supplemented by online surveys for quantitative insights regarding current localization practices in Denmark.

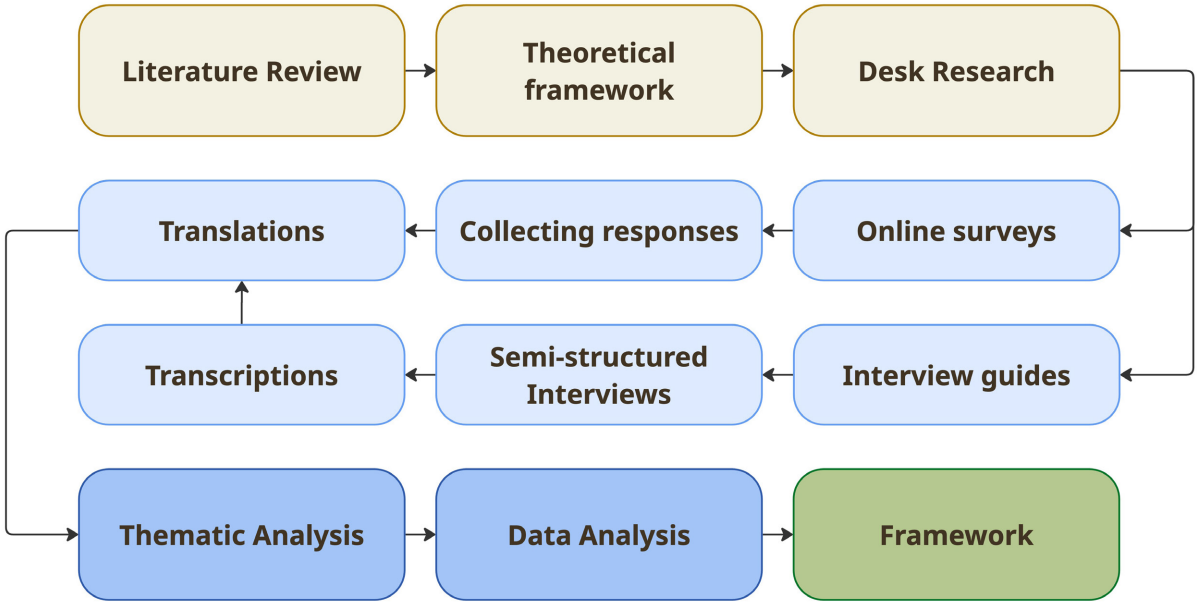

Figure 1 Multi-method research process

Figure 1 shows an overview of the research process used in this study. The initial step involved reviewing recent literature to understand the current state of local clothing production in a Western country. During this review, a knowledge gap was identified, which led to the choice of a theoretical framework to help guide the analysis and interpretation of the findings (Sena, 2023). The remaining methods are detailed in the following sections.

4.1 Methods

Desk Research

During the initial research phase, desk research was conducted to collect and analyse existing secondary data. This informed the development of interview guides by providing background information on chosen experts, which allowed me to come up with relevant questions. It also listed the size and year of establishment of Danish fashion brands and manufacturers I contacted for the online survey. It also contributed to the background section with insights into the fashion industry globally, in Europe, and in Denmark. Desk research identified Danish industry codes and registrations in the central business register (CVR) for analysis one, building on Hall et al. (2025). Guided by their methods, I selected codes for "Manufacture of outerwear", "- underwear", and "Knitted and crocheted apparel" to find Danish clothing manufacturers.

Interviews

To gather empirical data, I interviewed three researchers connected to the Danish fashion industry, referred to as 'knowledge experts.' I contacted six experts; two did not respond, while one referred me to her colleague, Cathryn Hall, the primary author of their article.

I contacted Kirsti Andersen for her role in founding Manufacture Copenhagen and her involvement in the Innomission project READY, part of TRACE. Both projects aim to support sustainable textile production in Denmark. READY includes an active micro-factory, while Copenhagen Manufacture was a proposed but unrealized shared space for production, offices, education, and more. I reached out to Julie Bundgaard for her extensive work on workers' rights and labour conditions for garment workers in the Global South, as she can provide insights into the social implications of onshoring or offshoring production. Cathryn Hall, co-author of an article from the initial literature search (Hall et al., 2025), has mapped textile manufacturing in Denmark. An interview with her will deepen the understanding of local production practices.

Knowledge experts	**Kirsti Reitan Andersen**	**Julie Bundgaard**	**Cathryn Anneka Hall**
Interviewee background	Professor at Royal Danish Academy Part of READY	Senior Consultant at NORION PhD in Global Sustainable Production	Postdoctoral Researcher at Kolding School of Design
Purpose of interview	Insights in Labs for local production in Denmark	Social aspects of onshoring/offshoring production	Insights in current textile manufacturing practices in Denmark
Place of interview	The Royal Academy	Online at Teams	Online at Teams
Length of interview	40 min	30 min	40 min
Language in interview	Danish	Danish	English

Table 1 Overview of interviews conducted; with whom, where, why, and how.

A key strength of interviews is their ability to collect rich, detailed information from participants' experiences. However, this flexibility can make interviews challenging to master due to the dynamics between the interviewer and interviewee and the interviewer's style (Sena, 2023). Therefore, before each interview, I developed a tailored guide based on the research questions and interview purpose (see Appendix 1 for guides) (Tanggaard, 2024). Each guide contained 5-10 questions and supported a semi-structured approach, helping steer conversations and providing a fallback if discussions stalled. As Sena notes, "it is not possible to plan in advance the type of information that will be collected or anticipate what will happen during the process itself" (2023, p. 82). This was considered in both the guide design and the interview process.

All interviews were recorded. Online interviews were transcribed using Microsoft Teams' feature, while the in-person interview was transcribed via 'Getting.words'. All transcriptions were then quality-checked against the original audio, especially important for the Danish interviews, which had some inaccuracies (See transcripts in Appendix 2). Finally, all elements used from the transcripts were translated into English using AI and re-checked for quality.

Online Surveys

This thesis aims to understand localization in the Danish fashion industry and explore scaling opportunities. The research focused on companies engaged in local clothing production in Denmark to gather valuable insights. Online surveys were selected as the data collection method, allowing for a larger number of businesses to be reached. While conducting interviews could have provided more in-depth insights, the use of surveys made it possible to include a broader range of participants and to obtain both qualitative and quantitative responses. Since the Danish fashion industry mainly consists of SMEs with limited resources, surveys offered a flexible and accessible option. To boost response rates, the surveys were kept brief

Two surveys were developed (see Appendix 3 for questions and answers), one for fashion brands with in-house production or external partners, and one for producers, reflecting their roles in the value chain. Clear inclusion criteria were set: participating fashion brands had to produce all or part of their garments in Denmark, and producers needed to be actively involved in core production processes. All companies had to be registered and operational in Denmark.

To identify local producers, I used the recent mapping by Hall et al. (2025), listing 115 textile manufacturers across Denmark. Their study includes various textile types like yarn, weaving, knitting, dyeing, printing, embroidery, non-woven, carpets, and ropes. This study considered

only manufacturers involved in knitting, weaving, and, to some extent, yarn production. Companies focusing on printing, dyeing, embroidery, and non-apparel textiles were excluded. Unfamiliar companies in selected categories were examined on their websites to confirm involvement in garment production.

Since Hasling and Hall's study did not include 'finished textile goods' like garments, producers offering sewing processes were identified through desk research, acknowledging the risk of incomplete coverage. The list of fashion brands was created from personal knowledge, desk research, and network recommendations. Suggested brands were checked online for relevance.

In total, 17 fashion brands and 9 producers were contacted via email, each receiving a project explanation and a survey link. Despite follow-up reminders, only 12 of the 26 companies completed the survey. The surveys were conducted in Danish and later translated into English, partly with the help of AI.

Fashion brands	**Contacted by email**	**17**
	No reply	5
	Replied they had no time	3
	Participated in the survey	9
Manufacturers	Contacted by email	**9**
	No reply	5
	Replied they had no time	1
	Participated in the survey	3

Table 2 Number of contacts and participants

Thematic analysis

I conducted a thematic analysis of the data from interviews and surveys, as the method offers a systematic approach to identify and report patterns across all data. Using an inductive approach, it revealed central themes representing the complexity of barriers and opportunities for scaling production (Tanggaard, 2024). The inductive thematic analysis allows for a flexible, data-driven approach, enabling themes to emerge naturally rather than fitting them into a theoretical framework or findings in the literature review (Braun & Clarke, 2006). I followed the five phases suggested by Braun and Clarke (2006); First, I familiarized myself with the data by reading the transcripts and translations of the interviews and surveys. Then I re-read them and marked all relevant elements related to the initial codes 'Opportunity' and 'barrier,' listing them under either category. With two lists of extracted elements, I searched for themes within each, slowly clustering the elements together. Each time I selected a new element, it was placed under one of the previous codes if appropriate, or tagged with a new temporary theme title. This process was completed for all extracted elements, and the themes were reviewed and adjusted until they could be clearly defined and named.

The last step is to produce the report, which is divided into analysis one and two in section six, corresponding to the two overall codes. All survey respondents have been anonymized and are represented with a B for brands and a P for producers. All interviewees agree to be

cited by name.
One exclusion criterion was applied during the thematic analysis. Content related to fibre recycling was intentionally excluded, as the points raised were assessed not to offer significant new insights beyond those already discussed by Hall et al. (2025).

The themes related to each code are shown in Figure 2 and described in detail in the analysis.

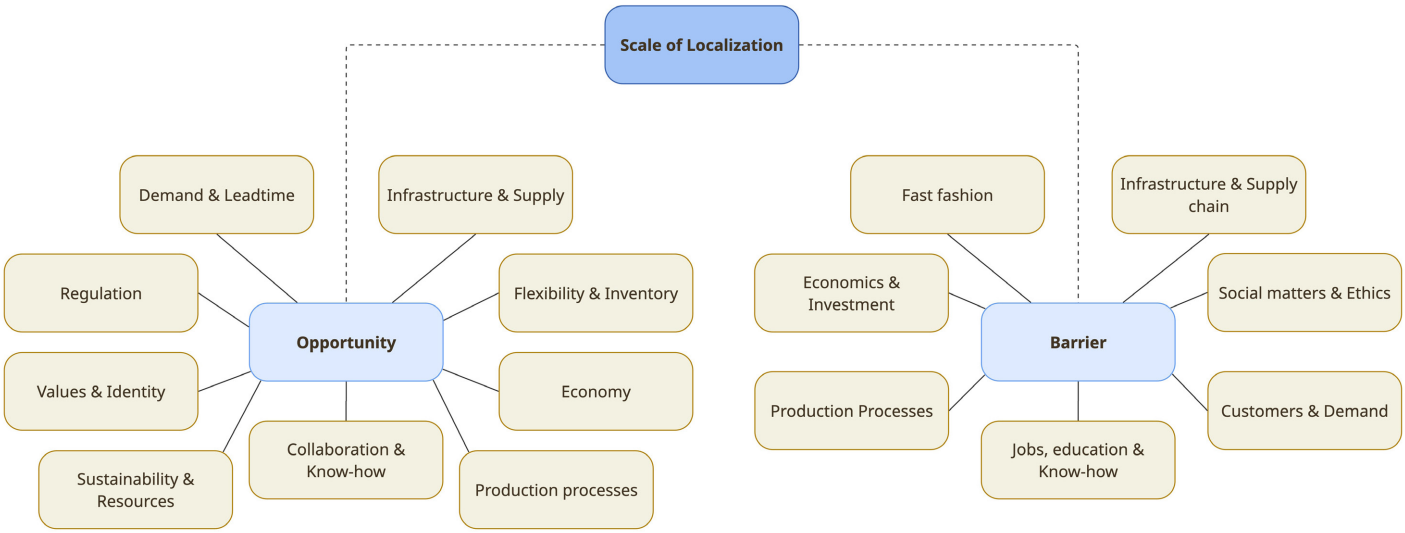

Figure 2 Themes from the Thematic analysis

5. Theoretical Framework

This thesis draws on three interrelated theoretical frameworks: circular economy, sustainable design theory, and the multi-level perspective (MLP) on socio-technical transitions to explore the phenomenon of 'localization' and how Danish fashion SMEs can transition to local production by 2030 and be economically sustainable. These frameworks allow for analysis across different levels within the industry, ranging from the design choices and innovations of individual firms to the broader systemic challenges and opportunities tied to industry transformation.

5.1 Circular Economy

The vision of more local clothing production stems from a desire to achieve international and national sustainability goals by using the circular economy (CE) as "a core instrument for reducing the pressure on natural resources, creating sustainable growth and generating jobs" (Innomission Partners, 2021).

CE offers a framework for how businesses can move from linear to regenerative systems. Bocken et al. (2016) outline three main strategies for improving resource loops: slowing, narrowing, and closing. *Slowing* refers to extending product life through design for durability, repair, reuse, etc. Such design strategies to slow loops can be argued to be easier to implement when production is local, the geographical distance is short, and communication between designers and manufacturers is easy.

When *Narrowing* loops, focus lies on improving resource efficiency related to product and production processes by using fewer materials and energy (Konietzko et al., 2020). Local production can enable faster feedback loops and reduced overproduction due to shorter lead times. This provides more flexibility for the brands and a potential for smaller batches in production. Narrowing supply chains with 'localization' will, in most cases, lead to reduced energy use in transport compared to global supply chains. However, one should be aware that narrowing does not entail circularity automatically, as it does not change the speed of production or concern services (Bocken et al., 2016).

The third strategy, *Closing*, involves retaining materials within the production cycle through recycling and reuse. Closing loops is a significant part of the Roadmap Vision (Innomission Partners, 2021) and a popular strategy when working with CE. It is acknowledged that textile recycling and industrial symbiosis can be critical future components of a local circular economy. However, as it is more related to other initiatives in the roadmap than local production and accounts for a small share of the production processes of a garment, closing strategies will not be discussed further in detail in this report.

Konietzko et al. have added two more strategies; *Regenerate* and *Inform* (2020). Regenerate is concerned with running a business that protects and enhances natural ecosystems, using renewable materials, and operating from renewable energy sources. Informing means utilising digital technologies to support CE practices. Both strategies can be integrated into local production practices with great environmental advantages. However, it is out of this project's scope to investigate specifics of how fashion and textile companies choose to perform their product development and operational strategies.

Konietzko et al. also emphasize that CBMs require new relationships among firms, moving beyond traditional supply chains to create ecosystems in which value is co-created and shared. This thinking aligns with Baldassarre et al.'s collaborative ecosystem design (2020a)

and the broader systemic changes needed in the fashion industry as proposed in the Transition Pathway for the Textiles ecosystem report by the European Commission (2023).

5.2 Sustainable Design Theory in Business Practice

The second level of this thesis's theoretical foundation is Sustainable Design Theory, particularly as conceptualized by Baldassarre et al. (2020a) in "Implementing sustainable design theory in business practice: A call to action". This framework links theoretical models of sustainability to practical business contexts, providing practical guidance for the integration of sustainable design principles that support the transition towards local clothing production. Baldassarre et al. state that the intentional design of products and services, and new business models are required to transition to new systems like CE (2020a). Therefore, it is important to integrate CE and Sustainable Design Theory as the foundation of this study.
The authors introduce four key literature streams: Ecodesign, Product-Service System design (PSS), Sustainable Business Model design (SBM), and Collaborative Ecosystem design.
The first, *Ecodesign* focuses on reducing environmental impact across the product life cycle, while maintaining economic viability (Baldassarre et al., 2020a). Local clothing production supports Ecodesign by promoting the use of local materials, shorter supply chains, and production adapted to the market, helping to narrow resource loops (Bocken et al., 2016).
The *Product-Service System (PSS) design* integrates products and services to deliver value and minimize environmental impact by extending product lifecycles through services. Baldassarre et al. (2020a) emphasize that achieving circularity requires working across multiple streams and levels simultaneously by combining product, service, and systemic innovations. While this thesis will not deeply explore PSS, its principles align with local production, enabling brands to integrate services that prolong product life and slow material flows more easily.
Sustainable Business Model Design (SBM) extends sustainability beyond products to the strategic level, where values, identity, and long-term viability meet (Baldassarre et al., 2020a). Many brands producing locally do so as part of their business DNA rather than for instant economic gain. Bocken et al.'s strategies for slowing, narrowing, and closing (Bocken et al., 2016) can all be integrated into SMBs.
Collaborative Ecosystem Design looks beyond individual firms and emphasizes collaboration across the value chain (Baldassarre et al., 2020a). This approach is particularly relevant for scaling local production, where systemic collaboration between, e.g., brands, manufacturers, and educational institutions is necessary to build capacity and shared infrastructure. This stream informs the macro-level considerations and speaks directly to the systemic changes required to achieve the roadmap vision for localization (Innomission Partners, 2021).

5.3 Multi-Level Perspective on Transitions

There is a need for non-linear change dynamics in the Danish fashion industry to transition to a circular economy. As stated in the Literature review, some scholars describe the current state of 'localization' as a niche. To understand how local production can shift from being a niche to a mainstream practice, as the roadmap envisions, this thesis draws on the Multi-Level Perspective (MLP) by Geels and Schot (2005; 2007).

MLP is a socio-technical theory that describes transitions as interactions between three levels: The landscape, which is the upper layer, consists of broader, slow-changing developments and external pressures such as climate policy, war, geopolitical events, or consumer shifts (Geels, 2019).

The regime represents the dominant structures and market dynamics, which are stable to a high degree (Geels, 2019). In the context of the fashion industry, this includes globalized supply chains and the 'fast fashion' model.

Niches are emerging innovations with the potential to become new systems. How radical a niche-innovation is depends on how much it differs from the existing system (Geels, 2019). Local production has always existed in Denmark and was a part of the prevailing system until the 1970s. Therefore, it can be argued that localization is not significantly radical. However, it is currently at a niche level, and as researchers argue, there is a need for new solutions, technology, and innovations for local production to take up a more significant part of the industry (European Commission, 2023).

MLP argues that transitions occur when niche innovations gain internal momentum, landscape pressures destabilize the regime, and 'windows of opportunities' open for niches to scale (Geels, 2019). In Denmark, niche localization is currently supported by frontrunning brands and pilot projects. At the same time, regime pressures are growing with incoming EU policies, global disruptions like COVID-19 and energy crises (Geels & Schot, 2007), and rising awareness of fashion's environmental cost. Geels emphasizes that transitions unfold over decades, moving through phases of experimentation, niche formation, market uptake, and regime change. In this context, initiatives like the TRACE project READY represent such an early-stage experiment, sharing infrastructure and accumulating knowledge to support niche growth.

This thesis theorises that Danish localization is currently in the niche formation stage. The goal is to explore its potential for growth and its influence on the regime. To support this discussion, the MLP framework is used to analyse the possible transition.

6. Analyses

The analysis in this thesis is structured in three parts, each addressing one of the sub-questions. This structure allows for examining different aspects of the topic, ultimately contributing to a comprehensive answer to the main research question found in section 7.

6.1 What are the current practices for local production of clothes in Denmark?

This section builds on Hall et al.'s mapping of textile manufacturers in Denmark, published in "Sustainability, the Circular Economy and Digitalisation in the European Textile and Clothing Industry" (Wynn & Wiegand, 2025). As their study focuses on textile processing and excludes companies producing finished garments, a selection was made to isolate those relevant for clothing production. The final list includes nine textile producers aligned with the focus of this study.

A supplementary mapping was conducted to gain a broader picture of local clothing production and include assembly processes. Using the Danish CVR registry and Hall et al.'s methods, industry codes related to clothing manufacturing were searched. As of May 2025, 735 companies are registered under "manufacture of outerwear," 49 under "- underwear," and 238 under "- knitted and crocheted apparel", which gives a total of 1022 companies (virk, 2025). Approx. 60% of these are sole proprietorships. Table 3 provides an overview of their size distribution, although registry data is incomplete, as not all companies appear when filtering by the number of employees. Furthermore, the CVR system does not indicate where production is located, making it unsuitable for identifying local producers.

Number of active companies in DK working with clothing manufacturing (as of May 2025)		
Outerwear	Enterprise type	Total
14.21.00 Manufacture of outerwear	Sole proprietorship	469
E.g. jackets, pants etc. and tailored clothes	Micro (1-9 employees)	78
	Small (10-49)	5
*Outerwear in this context means the outer layers of clothing, compared to inner, such as underwear	Medium-sized (50-249)	3
	Large (250+)	1
	0 employees	22
	*Only 109 companies are registered with number of employees	735*
Underwear	Enterprise type	Total
14.10.00 Manufacture of underwear	sole proprietorship	16
E.g. underwear, nightwear and swimwear	Micro (1-9 employees)	6
	Small (10-49)	2
	Medium-sized (50-249)	0
	Large (250+)	0
	0 employees	1
	*Only 9 companies are registered with number of employees	49*
Knit and crochet	Enterprise type	Total
14.10.00 Manufacture of knitted and crocheted apparel	sole proprietorship	121
E.g. tights and socks, as well as other garments	Micro (1-9 employees)	23
	Small (10-49)	6
	Medium-sized (50-249)	0
	Large (250+)	0
	0 employees	4
	*Only 33 companies are registered with number of employees	238*
Total		1022

Table 3 List of Manufacturing of Clothing companies in DK

Given this limitation, a qualitative approach was adopted. Drawing from a design background and professional network, a list of brands known to produce garments in Denmark was initiated. This list was supplemented through desk research. Brands without publicly available confirmation of local production were excluded. The final list used for survey contact consists of 17 fashion brands and the nine textile producers identified in Hall et al.'s research. Twelve companies ultimately participated in the survey, and their responses provide insight into how much of their production is carried out in Denmark and which processes are included when they label their clothes as "Made in Denmark". Table 4 presents an overview of the 12 responding companies and their production practices, share of local manufacturing, and types of production processes, which are operated in Denmark.

There is a slight majority of brands operating their own production facilities, while around a third collaborate with external partners nationally. Among those who produce only partially in Denmark, the outsourcing is distributed across both European and non-European countries.

Respondent	*Danish production of clothes*	*Processes done in DK*	*Location of DK production processes*	*Other countries used for production*
Brand#1	Partly	Knit, sewing	External partner	China, Egypt, other
Brand#2	Yes	Sewing	In-house	Italy (knit)
Brand#3	Yes	Everything, except production of materials	In-house	
Brand#4	Yes	Sewing, sometimes graduation of sizes	External partner	
Brand#5	Yes	Knit, Sewing	In-house	
Brand#6	Partly	Knit, construction, dyeing, trim (partially), Quality control (partially)	In-house (construction, quality check and dying) + External partner (Trim and knit)	Lithuania, Ukraine, Turkey and North Macedonia
Brand#7	Partly	Hand knitting, and a part of our ready-to-wear clothing	Hand-knit by retired Danish women.	Bulgaria
Brand#8	Partly	Construction, collection samples, tailored styles from collections	In-house	Estonia
Brand#9	Yes	Knit, sewing, print	In-house	
Respondent	**Producing for Danish or foreign brands**	**Production processes located in Denmark**		**Number of customers in Denmark**
Producer#1	Only Danish brands	Model development, graduation of sizes, cutting, sewing, packaging, and embroidery etc.		Between 40-50
Producer#2	Both – 80% are Danish	Print, cut, and sewing		15
Producer#3	Both – 10% are Danish	Knit		5

Table 4 Danish producers and fashion brands producing locally

Since the survey was conducted, six additional potentially relevant brands have been identified. However, the lack of accessible information on their websites prevented verification of the extent of their local production for inclusion in these results. This indicates that the

number of companies involved in local garment production might be higher than what this study captures, emphasizing the challenges of identifying such firms through public data or web searches alone.

Credibility

The study offers valuable insights, although it has notable limitations. It adapts data that was originally centred on textile production rather than garments, which necessitates a careful interpretation. CVR data provides an overview of registered companies but lacks details on production locations. The final sample of 17 brands is derived from personal networks and desk research, which may not fully represent the broader industry. Limited transparency and data access hinder the formation of a complete picture of local clothing production in Denmark within the scope of this study.

Sub-Conclusion

The study finds that local clothing production exists but remains a niche market. Although over 1000 companies are registered under relevant clothing manufacturing codes, only a small number appear to engage in local production, and detailed data proves to be challenging. Practices vary and are not always transparent, making comprehensive mapping challenging. Nonetheless, the identified brands illustrate a growing but still limited trend toward localized garment production in Denmark.

6.2 What are the main barriers to scaling up clothing production in Denmark?

This section explores the key challenges hindering the scaling of local clothing production in Denmark. The findings draw on surveys conducted with Danish fashion brands and manufacturers, alongside expert interviews. The analysis is structured around recurring themes identified through qualitative data coding in a thematic analysis. While the analysis is grounded in inductive reasoning, using theoretical concepts where relevant enriches the interpretive framework. Since local production is practical and experience-driven, this approach captures relevant aspects instead of constraining findings to existing theories. The theoretical framework helps understand the identified barriers.

The key themes are presented in Table 5 below, but first, each theme is described further on the following pages.

Jobs, Education & Know-how

One of the most cited barriers concerns Jobs, Education, and Know-How. As expert Hall highlights, "Do we have the skills to be doing lots of manufacturing? (…) We basically lost all of those skills because we stopped teaching people how to do them"(C. A. Hall, personal communication, 11 April 2025). Several brands support this point, highlighting a lack of education and skilled workers in specialized areas like digital knitwear. While there is interest among students, many lack the skills necessary for employment (B5). Producers echo this concern, describing difficulties finding employees trained to meet quality standards and work routines (P1, P2). Andersen also observes a general lack of public understanding about garment production and that fashion industry stakeholders hesitate to share knowledge with others, as it might negatively impact their positions, particularly in small companies (personal communication, 7 May 2025).

Moreover, Bundgaard highlights a common misconception among stakeholders who underestimate the complexity of clothing production, especially compared to countries like Bangladesh, which have decades of expertise and well-established infrastructure. She suggests that while smaller studios for 'slow fashion' are feasible in Denmark, scaling to meet larger brand demands is unrealistic (J. Bundgaard, personal communication, 25 April 2025). This skill gap restricts production capacity and hinders the adoption of ecodesign principles, which require expertise in circular design, material lifecycles, and low-impact manufacturing (Baldassarre et al., 2020a). Addressing this issue will require targeted education and upskilling to embed sustainability within Danish production.

Production Processes

A small national capacity of clothing production processes further reflects these challenges. Respondents note that much of the textile production capacity has left Denmark, with foreign manufacturers outperforming Danish ones in machinery, workforce, and assembly line efficiency, often supported by lower wages (B7, Hall). Hall questions the feasibility of competing directly with nearby countries with specialized infrastructure, suggesting a need to position Denmark's role in the value chain (C. A. Hall, personal communication, 11 April 2025).

Infrastructure, Supply Chain & Fast Fashion

Infrastructure, supply chains, and fast fashion are interlinked factors that influence clothing production methods and locations. Brands aiming to scale locally face supply limitations, particularly for specific trims or materials, as many suppliers have relocated abroad (B5). Hall highlights the convenience of sourcing textiles from Asia due to globalized logistics, but

stresses the environmental impact of long-distance transport. She suggests we rethink the geographic definition of 'local' and focus on a Nordic or European value chain, instead of aiming for 'hyperlocal', to balance sustainability and practicality (personal communication, 11 April 2025).

Fast Fashion represents a significant structural barrier, influencing infrastructure and consumer expectations. Brands highlight the dominance of fast fashion business models as incompatible with scaling local production (B3). Bundgaard supports this point, stating that new business models are crucial for sustainable fashion to thrive in Denmark and globally.

Economy & Investment

As seen in Table 5, the barriers most frequently cited by respondents relate to the economy and investments. Respondents note that "downside is economy" (B1), or mention the high cost of producing clothes in Denmark due to higher salaries compared to outsourced production. One even states that "our goal is to survive. It is hard in 2025" (B2). Another economic challenge for companies starting or scaling production is the difficulty in securing funding for machinery. Unsurprisingly, one producer notes, "More space needed, more machines and investment in equipment" (P1).

On another note, all respondent brands claim that they promote responsible or sustainable business practices on their websites. Hall captures the tension between environmental care and economic viability: "If you only design something or did your production based on the environment, perhaps you would make very different choices, but you could end up with a very expensive product, so there's always this balance (…) Cost is a massive pain in the **** because it often means that the environment suffers" (C. A. Hall, personal communication, 11 April 2025).

Customers & Demand

Customer behaviour and demand critically influence the scalability of local fashion production. One brand states; "the market is still very niche" (B2), which poses a struggle for brands aiming to scale production as they "don't have enough customers to scale up" (B2). Two others add to this, stating that they see the need to "reverse consumers' purchasing habits" (B3) and "educate our customers on why it is important" (B5). According to a respondent, many people wish to appear sustainable but prefer not to pay for it (B8). Another person notes the challenge of customers expecting 1-2 days delivery (B3), making it hard to meet demand with their current 12-day setup.

Andersen stresses that to increase local production, customers must be willing to pay, which necessitates building knowledge about clothing among the general population. Moreover,

it's not just customers who lack understanding. Andersen argues that most brands know very little about their customers. Understanding usage is essential for creating durable products (personal communication, 7 May 2025).

Adding to the discussion of which production processes Denmark should pursue, Hall suggests that we consider the demand for different kinds. For example, establishing a wool industry could make sense if there is real demand from Danish customers. However, if existing European industries, like those in Italy, cover the demand, competing with them is unwise (C. A. Hall, personal communication, 11 April 2025).

Use-Phase and Circularity

Understanding how a garment is used can improve its quality during development and support circularity (K. R. Andersen, personal communication, 7 May 2025). As Konietzko et al. note, enhancing product durability allows for longer use and slows resource consumption. Andersen states that fashion stakeholders must consider strategies like narrowing and Ecodesign to develop better products. She advocates for new business models that emphasize collaboration and shared value creation across companies (K. R. Andersen, personal communication, 7 May 2025), aligning with the concept of designing Collaborative Ecosystems and macro business models (Baldassarre et al., 2020a).

Social & Ethical Concerns

The final theme addressing barriers to scaling local production in Denmark involves social and ethical concerns associated with it. Denmark's outsourcing of garment production since the 1970s, shaped by policies like the Multi-Fibre Arrangement (MFA), involved protecting domestic jobs at the expense of garment workers in producing countries. Bundgaard cautions that reshoring production must consider these historical and global impacts to avoid crucial consequences, taking care of the workers who make our clothes now, as we did with our own. She suggests prioritizing improved wages and conditions for workers in the Global South rather than rapid reshoring (J. Bundgaard, personal communication, 25 April 2025). Notably, these social dimensions receive limited attention in current industry discussions, indicating a gap in awareness.

As Bundgaard notes, this barrier related to social and ethical concerns appears to be overlooked, as it is neither addressed in the literature reviewed nor by the other respondents in this study.

Table 5, on the following page, summarizes all eight themes with examples of responses and a brief overview of the respondents who referenced each theme.

Theme	***Best examples from Surveys and Interviews***	***Mentioned by***
Infrastructure & Supply chain	"We sometimes experience limited options on, for example, trim, because many companies have moved abroad" "you've got the kind of hyperlocal then you've got like the local, which maybe is more like Europe based. And this is where like we should [put our focus]"	B4, B5, Hall,
Economy & Investment	"It is expensive to produce in Denmark" "Salaries are also relatively expensive in Denmark" "It's really hard to get money for machinery. We're supposed to have machinery."	B1, B2, B7, B8, B9, P1, Andersen, Hall
Customers & Demand	"People (customers) want to appear sustainable, but they would rather not pay for it" "We don't have enough customers to scale up" "the market is still very niche"	B2, B3, B5, B8, Andersen, Hall
Jobs, education & Know-how	"Finding qualified employees and to train them in our quality requirements and work routines" "The other thing is, do we have the skills to be doing lots of manufacturing? (…) we basically lost all of those skills because we stopped teaching people how to do them"	B5, B6, P1, P2, Hall, Andersen, Bundgaard
Production Processes	"Foreign sewing rooms have more machines, more hands, and assembly lines — along with lower wages" "why bother trying to become competitors with a country that's not ultimately not that far away"	B7, B9, Hall
Social matters & Ethics	"I hope people will reflect on the idea that even small actions can have far-reaching consequences – like the butterfly effect – and that this awareness is built into the visions we create."	Bundgaard
Fast fashion	"The biggest challenge is fast fashion brands and is a challenge from all perspectives" "The fast fashion business model - It had to look different"	B3, Bundgaard
Use Phase & Circularity	"If you want it to be circular and sustainable, you have to think about the use phase" "You will need to talk about reducing quantities and creating better products"	Andersen

Table 5 Themes related to barriers to scaling

Sub-conclusion

The analysis identifies several key barriers to scaling clothing production in Denmark. They include a shortage of skilled labour, limited infrastructure, and a lack of sufficient investment. The loss of textile-related education and practical expertise presents a major challenge, especially regarding the integration of ecodesign and sustainable production practices (Baldassarre et al., 2020a). Globalized supply chains and reliance on foreign production systems further complicate local scaling. Customer expectations regarding price and delivery time also limit market potential, while fast fashion models continue to dominate. The demand for locally produced clothing remains marginal, and broader public understanding of production processes is limited. Finally, social and ethical considerations related to reshoring are generally absent from current industry discussions. As noted by Bundgaard (2023), these aspects must be addressed to ensure a just and responsible transition.

6.3 How can local production generate new opportunities for the Danish fashion industry?

Despite the barriers to localization in the Danish fashion industry outlined previously, brands and producers identify clear benefits in scaling that could help overcome these challenges. This is supported by the three expert interviews focusing on opportunities across the industry, rather than within individual firms. Thus, this section provides key insights from surveys and interviews presented in the prevailing themes. These are presented in Table 6 below, after a more detailed description of each theme.

Flexibility & Inventory

Producing locally increases flexibility and allows for more efficient inventory management. Half of the survey respondents indicated that producing clothes locally has the key benefit of flexibility. For example, they highlight its dynamic nature (B1), the ability to adapt to demand more quickly (B4), and the capacity to implement changes faster (B4) while easily adjusting processes and designs as needed, without incurring major costs (B5). This flexibility also applies to inventory, as one brand states they keep a minimum inventory, while another notes, "We don't have a stock or have to order 500 pieces of one garment" (B3).

Production Processes

Scaling local fashion requires optimized and integrated production systems. One brand notes that scaling would minimize errors, while others highlight that it would utilize "an optimized process constantly interacting between design, development, and production" (B5) and "control over what we produce and send to customers" (B6). Opportunities include increased capacity, quick turnaround, and small-batch or made-to-order production. One producer mentions they are exploring new ways to implement more technology to optimize production methods, e.g., with automated solutions (P1).

Hall points to overlooked manufacturing capacity in Denmark, noting the surprising number of embroidery companies that could expand into repairs and niche processes. She suggests opportunities to grow specialized local production beyond textiles into finished goods (personal communication, 11 April 2025; 2025).

Sustainability & Resources

Resource efficiency and waste reduction are key sustainability drivers in localization. Four brands highlight resource-related benefits. For example: "We reduce waste and can use the textiles for other products, if a specific design doesn't sell well" (B3). Another supports this, stating that 'Made-to-order' production helps them avoid waste (B2). Bundgaard also emphasizes the need to minimize production amounts (personal communication, 25 April 2025). To achieve this, the fashion industry must adopt Ecodesign strategies and

Product-service systems to extend garment lifetimes and reduce the demand for new clothing production (Baldassarre et al., 2020a). Fortunately, some brands see sustainability as a value-add when producing in Denmark, enabling them to avoid "overproduction" (B9) and use "fewer resources" (B9), thus emitting less CO2 (B5). One producer also states that they wish to "offer sustainable certified fibres" (P3) to their customers in the future.

Economy

While many respondents mention the economy as a significant barrier, some see the potential when scaling local production. Several fashion brands operate their own facilities, benefiting economically: "We have a higher financial profit on our products, since we produce them ourselves, as we are not challenged with high minimums, increasing prices or similar" (B5). One producer notes that increased production volume would allow for "optimization of workflows and achieve economies of scale" (P1), ultimately increasing revenue (P1).

Infrastructure & Supply

Localizing production narrows the value chain geographically, as processes occur in closer proximity. The extent of this narrowing and the environmental benefits, such as reduced energy use and transport emissions, depend on the level of localization. If a brand assembles products in Denmark but sources textiles from Asia, the positive impact is less significant than if all manufacturing takes place locally. Still, three brands cite this as a substantial benefit, even if only the final processes are local. They assert that "The value chain is short and easy to work with" (B6) and that "Advantages are easy supply" (B1).

As Hall describes, there is unexploited potential despite the decentralized nature of textile production. She emphasizes the need to be realistic about local capabilities, such as growing seaweed, nettles, and wool, but not cotton (personal communication, 11 April 2025). Andersen agrees that the Danish fashion industry must enhance its infrastructure, placing greater focus on local repair as the emphasis on sustainable resource loops expands. Fortunately, Andersen notes a growing interest in relocating production to Europe (personal communication, 7 May 2025).

Values & Identity

Integrating sustainability into a business isn't just about sourcing materials; it also includes how, why, where, and by whom they are produced. In today's fashion industry, local production often constitutes a key aspect of a company's identity and values. Participants in this study noted that "The idea of doing the process locally would be very satisfying" (B7) and that scaling supports "a stronger position as a flexible and quality-conscious partner within local

textile production" (P1). This image is already valued by their customers and is crucial to maintain (P1).

During the interview, Andersen highlighted a Danish brand that exemplifies the passion for "doing things right". This brand has maintained production facilities in Denmark for over a decade, striving to keep them operational. Now, their persistence has paid off, leading to growth and continuous product quality improvement, based on their philosophy of not producing unless done properly.

This commitment to local production is further demonstrated by two brands (B6, B9), which aim to "preserve Danish production as much as possible, unique and different with consideration for the environment."

Hall argues that Denmark must "think carefully about what we're specialising in." Some production processes are not feasible in Denmark, while others are better suited for competition with specialized European countries. Thus, as Hall states, the Danish fashion industry must figure out which niche it wants to provide (personal communication, 11 April 2025).

Collaboration & Know-how

The loss of local labour and expertise is a barrier, but scaling production offers a chance to rebuild skills. One brand notes, "We have a great deal of know-how on our products because we have it in our hands" (B6). Close, hands-on collaboration among technicians, designers, and knitters fosters deep understanding and innovation, which is difficult to achieve remotely. This integration strengthens product quality and organizational learning (K. R. Andersen, personal communication, 7 May 2025). Initiatives like READY provide "real-world experiments" that help pioneers test and develop local production niches (Geels, 2019). Andersen predicts that local production will naturally integrate into broader society as it is revitalized (personal communication, 7 May 2025).

Demand & Lead Time

Localized production can reduce the time from placing an order to its delivery, making it easier to adjust to customer demand. On-demand processes, like adding embroidery or prints post-order, eliminate long lead times brands often face. Hall sees this as a chance for companies to maintain blank stock, customizing only the necessary amount (personal communication, 11 April 2025). Localization reduces delivery times (B3), scaling production saves time (B8), and helps producers efficiently meet larger, varied customer orders (P1).

Regulation

Ongoing EU and national legislation can drive localization through stricter sustainability and transparency requirements. Andersen believes this, hoping that policy will encourage some to bring production home, although not all (personal communication, 7 May 2025). EU legislation regarding sustainability, transparency, and circularity supports localization by promoting shorter, more traceable value chains. Projects like READY, part of TRACE, illustrate how policy can facilitate social interactions, learning, and innovation, rather than impose top-down control (Geels, 2019).

All themes regarding opportunities to scale local production are summarized in Table 6.

Theme	BEST examples from Surveys and Interviews	Mentioned by
Flexibility & Inventory	"We can easily adjust our processes and design anytime, if needed, without major costs" "We don't have a stock or have to order 500 pieces of one garment" "High flexibility"	B1, B3, B4, B5, B9, P3
Production processes	"We produce in small quantities - made to order" "We have an optimized process that is constantly interacting between design, development, and production" "It would minimize errors"	B2, B5, B6, B8, B9, P1, Hall
Sustainability & Resources	"We reduce waste and can use the textiles for other products, if a specific design doesn't sell well" "We emit less CO2" "No overproduction"	B2, B3, B5, B9, P3, Bundgaard
Infrastructure & Supply	"The value chain is short and easy to work with" "Advantages are easy supply" "All different companies, they're not connected, but there's definitely opportunities that I can see"	B1, B5, B6, Hall, Andersen
Economy	"We have a higher financial profit on our products, since we produce them ourselves, as we are not challenged with high minimums, increasing prices or the like" "Increase our revenue"	B5, P1
Values & Identity	"a set of values in the company that is about creating the best possible products" "We need to think carefully about what we're specialising in and what do we want to be good in"	B7, P1, Andersen, Hall
Collaboration & Know-how	"We have a great deal of know-how on our products because we have it in our hands" "That thing about bringing the professionals together around the machines and developing together. Because that knowledge is just so far from Denmark today. It's possible that you have Zoom and things like that, but something else just happens when you have the textiles in your hands."	B5, B6, Andersen
Demand & Leadtime	"The biggest advantage will be to be able to reduce our delivery time. Right now, we have a 12-weekday delivery time, which is often a challenge" "It would save time"	B8, P1, P2, Hall
Regulation	"I think the legislation will do (...) It's not because everyone is going to take it home, and maybe they don't necessarily have to."	Andersen

Table 6 Themes related to the opportunities to scale

Sub-conclusion

This study finds that local production offers significant opportunities for the Danish fashion industry, including increased flexibility, faster lead times, and improved production control. Brands report sustainability benefits like waste reduction and lower emissions, aligning with circular economy principles (Bocken et al., 2016). Despite economic challenges, some firms find cost-saving opportunities through in-house production and economies of scale. Local production strengthens brand identity and customer trust through transparency and quality. It enables closer collaboration across the value chain and supports rebuilding industry know-how. To fully realize these opportunities, the industry must identify niche strengths, support infrastructure development, and foster collaborative innovation.

7. Results of Findings

The aim of this thesis has not been to define the ideal business model for economically sustainable local fashion production. Instead, the goal has been to understand the complexity of barriers that prevent scaling localization and to explore the opportunities for Danish SMEs to overcome these. The analysis identifies what needs to change, who needs to be involved, and how collaboration across the industry can support this transition. It is clear that no single company can achieve large-scale localization alone.

The findings show that while local clothing production exists in Denmark, it remains niche. More than 1000 businesses are registered under relevant codes, but only a few appear to produce locally. Practices vary, and transparency is low, making it difficult to map the full landscape. Still, a growing number of brands are beginning to work locally, showing that a shift is possible.

Several key barriers are slowing this shift. These include a lack of skilled labour, weak infrastructure, and a general loss of textile knowledge in Denmark. The globalized nature of supply chains and price-driven consumer expectations further complicate efforts to localize. Demand for Danish-made clothing is still limited, and conversations about reshoring rarely address social or ethical implications (Bundgaard, 2023).

Despite these barriers, the study also highlights several opportunities. Local production can increase flexibility, reduce overproduction and waste, and lower emissions. Brands also report stronger customer trust when producing locally. Some companies benefit financially from producing in-house by avoiding high minimum production quantities.

As Geels points out, a major challenge is the fragmentation of initiatives, which often remain isolated or temporary. This ultimately hinders their ability to create lasting and widespread change (Geels, 2019). The analysis has shown that the current practices of local production in Denmark fit this description, with a small share of local manufacturers and a decentralised and disconnected infrastructure in the industry. Lack of transparency contributes to the isolation of firms, keeping them unknown to the majority.
This adds to the findings pointing to collaboration as a key enabler. Working closely across the value chain helps rebuild lost know-how, improve processes, and support shared innovation. Localization of 60% of the Danish fashion SMEs would transition the niche of local production to become a part of the established market and regime (Geels, 2019). Seen from a multi-level perspective, and the findings in this study, it is clear that niches often face many challenges, which hinder their development (Geels, 2019). As several brands responded, it is more expensive to produce in Denmark than in most other countries. This may have to do with the fact that "they do not (yet) benefit from economies of scale and decades of incremental improvements" at industry level (Geels, 2019, p. 190). He also points to the challenge of uncertainties about users and their specific preferences (Geels, 2019). This issue of missing customer and use-phase knowledge has also come forward in the responses.

Several drivers are needed to enable 60% of Danish fashion SMEs to transition to local production by 2030, such as better infrastructure and education, policy support and funding, increased awareness and demand, and a collaborative industry effort. These focus areas are visualized in Figure 3, on the following page, and can support achieving economic sustainability for all SMEs involved, which is necessary to stabilize the innovations once they have entered the regime.

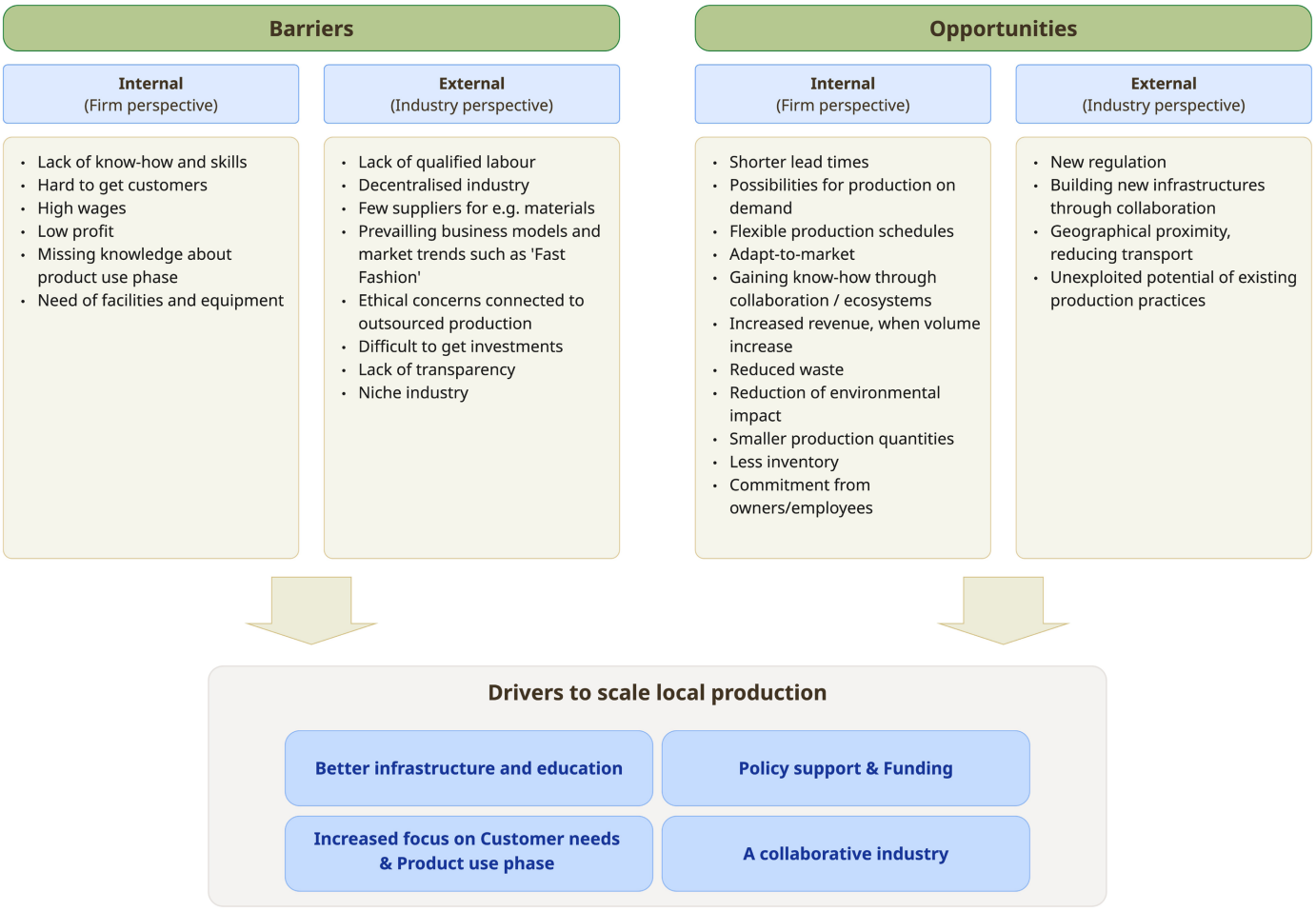

Figure 3 : Current barriers and opportunities, and Drivers needed to scale local clothing production

8. Discussion

Key findings

The findings confirm that local production remains a niche activity within the Danish fashion industry.

Key structural and market barriers, including skill and know-how shortages and global supply chain dynamics, continue to limit scaling efforts. Nonetheless, several promising opportunities have emerged. Localized production enables on-demand small batches, reducing lead times, waste, and transport emissions. Brands gain customer trust and higher margins by avoiding large overseas minimums. Collaborative ecosystems rebuild lost capabilities and enable collective innovation within protected niches. Achieving a 60% shift to local production by 2030 requires coordinated action with re-establishing textile skills, expanding factory hubs and financing, stimulating demand through customer engagement, and fostering industry-wide collaboration with shared data.

The realism of the Roadmap vision

The research question that frames this thesis is; "How can 60% of Danish fashion SMEs transition to local production by 2030 while achieving economic sustainability?" This question supports the roadmap vision for a more circular textile industry in Denmark (Innomission Partners, 2021). The study of this topic and analysis of the empirically collected data have provided great insight into the opportunities that lie ahead for the industry to overcome barriers in infrastructure, know-how, and market potential, among others.

However, this study has also shed light on crucial challenges, which may not be possible to solve within the current goal. First of all, the roadmap report does not clarify its definition of 'local', making it unclear which production processes must be implemented to achieve the goal. Is it only the assembly in sewing studios, or everything from fibre farming to textile manufacturing and zippers, etc.? Therefore, it is uncertain how to assess whether the target has been reached.

Secondly, this study clarifies that it is highly unlikely to achieve the transition goal by 2030. The responses from both brands, producers, and experts imply that the complexities of the barriers are too significant to overcome within just five years. For example, the findings indicate a critical need for skilled labour, which can be challenging to accomplish within this timeframe, as the demand for specific skills is not even addressed by the current national educational system.

Adding to this, the findings indicate a strong passion for localization from the brands and producers currently practicing it. Choosing a narrow value chain is often an integrated part of a brand's identity, values, and business model. As Baldassarre et al. have stated, "Integrating sustainability aspects in the business model of an organization requires the commitment of

the upper management and the CEO" (Baldassarre et al., 2020b, p. 10). It remains uncertain whether such a level of commitment is currently present across the approx. 600 Danish textile SMEs.

Even though test labs and collaborative ecosystems will help regain knowledge and skills, and potentially affect some business' mindset about local production, the globalisation of the fashion industry and the 'fast fashion' trend are so embedded in the way clothing is consumed in Denmark that the transition properly will take longer than by 2030. As Geels states, transitions are long-term, deep structural changes that take multiple years (Geels, 2019). The globalization and outsourcing of the Danish fashion industry have evolved over +50 years. It might take decades to build the essential infrastructure needed to scale innovations and demonstration projects like READY into actual industrial practices on a large scale (European Commission, 2023) and to encourage companies to form coalitions in ecosystems (Baldassarre et al., 2020a) to destabilise and replace part of the regime (Geels, 2019).

Extending previous research

This study confirms and builds on existing literature that positions local fashion production as a niche within a globalized industry. As Cobb and Clarke-Sather (2018) argue, local production must be understood within a global context. Respondents echoed this, drawing attention to Denmark's weak infrastructure, limitations in specific production processes, and the dominance of fast fashion.

Findings also align with literature linking local production to brand identity and holistic, value-driven business models. As Baldassarre et al. (2020a) suggest, such models depend on strong internal commitment, which may limit adaptability. Respondents confirmed this tension, as some brands struggle to grow without compromising their core values. The importance of being able to compete in quality and strong design, discussed by Puig et al. (2009), was also reflected by Hall, stating that specialization is needed to scale localization (personal communication, 11 April 2025).

The lack of skilled labour and the need for collaborative LPNs remain shared concerns across both literature and data, supporting Mikkelsen et al.'s view that outsourcing has affected hands-on industry knowledge and that the space of proximity can enable the dialogues needed to regain it (2024).

However, this study did not explore economic feasibility in detail, limiting any conclusions on business models at the single-firm level. To this, Andersen and Pedersen (2024) suggested a "patchwork" model for long-term growth, which could be a focus area in further research on this topic. Furthermore, using digital tools to overcome the lack of LPNs is emphasized in

the literature, but is mainly absent in interviews. Finally, the assumption that local production ensures better labour conditions is challenged by Bundgaard, highlighting a need for more nuanced perspectives (personal communication, 25 April 2025).

Implications

This study highlights the gap in social concerns in the roadmap vision (Innomission Partners, 2021), as the broader social and ethical impacts of onshoring are not addressed. As Bundgaard indicates, moving production away from countries like Bangladesh risks leaving many garment workers in vulnerable positions without jobs or alternative livelihoods. This issue is often overlooked in policy discussions, which prioritize environmental and economic goals.

The findings suggest that future policy must integrate a socially responsible "phase-out" plan, ensuring that localization does not undermine global labour rights and economic justice.

Limitations of the study

While the study has provided some interesting findings, there were limitations to it. The main limitation is the extent of the methods used to gather data as well as the amount ultimately obtained. Using online surveys to collect information creates a very strict structure, limiting the ability to gain valuable insights that do not fit into the questions asked. Even though comment boxes allowed for elaboration, participants controlled the length and details of the answer. Conducting semi-structured interviews with the producers and brands would allow for more in-depth qualitative data. However, this would have affected the total number of participants, as it would require more time from both the interviewer and interviewee. The final respondents were limited to a small group, which may not represent the full picture of current practices, challenges, and opportunities encountered by each firm working with local production. A larger number of participants than what was achieved could have shed light on aspects and perspectives that were not covered in this study. The localization of the Danish fashion industry is a complex research field, and this report provides an overall picture of the complexity in the scale of local production, conducting a case study of the fashion industry with limited attention to the individual firms. This restricts the findings related to, for example, specific business models and individual value chains. Further research is needed to overcome these shortcomings, which is discussed in the following.

Future research

Further research could explore how shifting global regulations, such as the new U.S. tariff measures and forthcoming EU sustainability legislation, shape incentives and barriers for localizing fashion production. Investigations based on knowledge-transfer theory could shed light on how Danish SMEs can address skill shortages and rebuild textile know-how through structured collaboration and trainee programs. Organizational studies might uncover how top management and CEOs can incorporate local production into corporate strategy and culture, ensuring long-term commitment even when it initially falls outside core business values. Additional research on market creation, economic viability, and sustainable business models could identify the conditions under which localization becomes financially attractive at scale. Finally, empirical research into practical circular business models would show how companies can close resource loops, align economic sustainability with environmental goals, and move from small innovations to systemic change.

9. Recommendations for Stakeholders

This section provides suggestions for next steps that can translate the key findings from this study into the real world and contribute to achieving the roadmap vision for local production of clothing and textiles in Denmark.

As stated in section 7, the findings showed that there is a need to focus on better infrastructure and education, policy support and funding, increased focus on customer needs and the product use phase, and a collaborative industry. Building on this and taking the implications from the discussion into account, Figure 4 provides a guide with recommendations for stakeholders working in the field of this study. However, it should be clear that the following have not been tested or reviewed and should only be regarded as a guiding framework in its first iteration. The framework consists of five steps assessed as necessary to push the transition while shaping the foundation for a long-term action plan, which relies on a thorough understanding of the complexities of barriers and needs within the current setup. The five steps may occur simultaneously and depend on funding and policy.

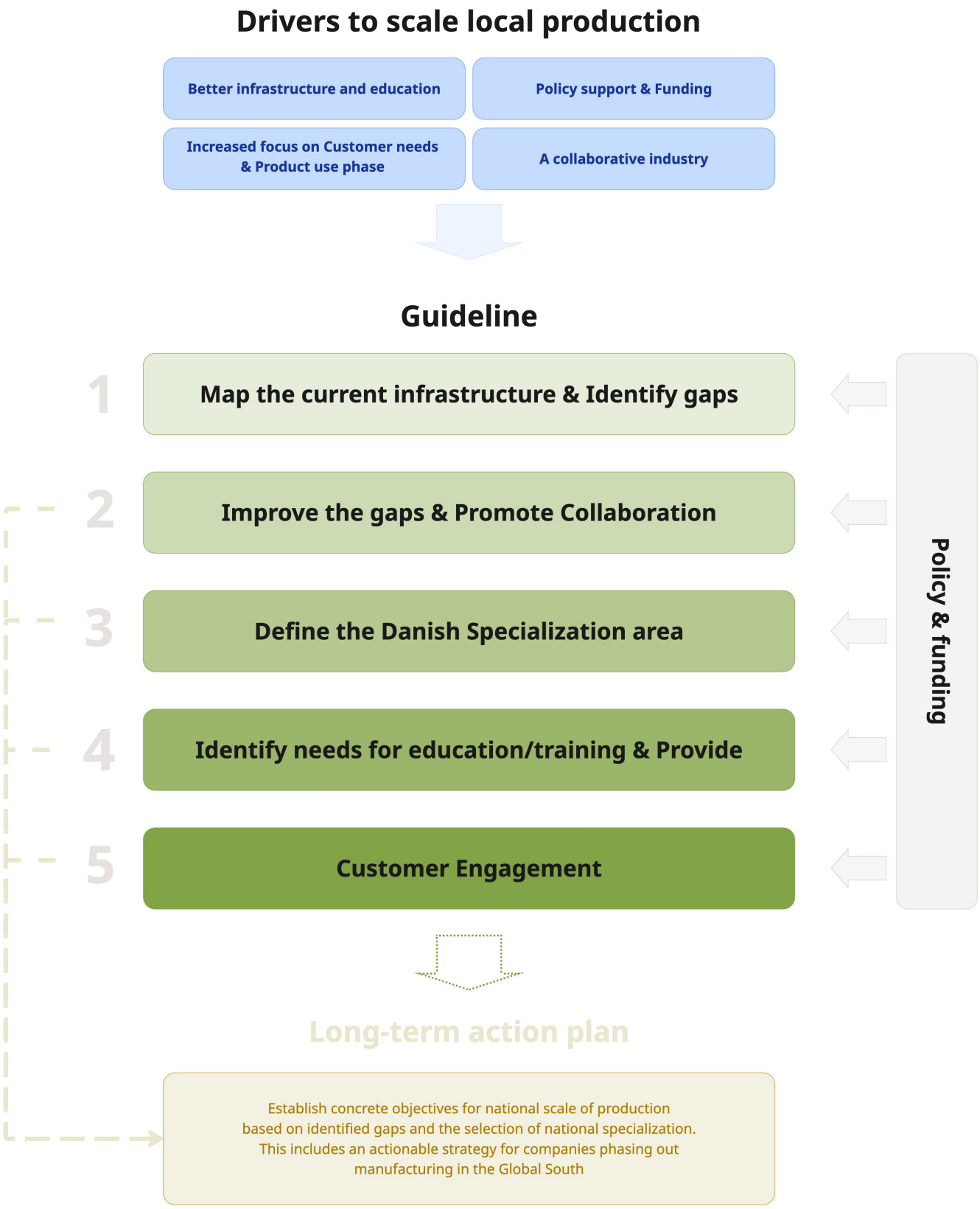

Figure 4 Recommendations to stakeholders

9.1 Guideline

Step one

The current infrastructure in the Danish fashion industry is highly disconnected. Meanwhile, it is hard to find publicly available information about the existing manufacturers. Therefore, the first step is to map the full picture of the current practices, extending the work done by Hall et al. (2025) and in this study, and then identify crucial gaps, such as a lack of manufacturers within specific processes.

Step Two

Based on the identified infrastructural gaps, initiatives that can close these and promote the establishment of collaborative ecosystems need to be implemented. See a proposal for a solution covering some of these issues in the coming section "The platform" and Figure 5.

Step three

This study has highlighted that Denmark and its "manufacturers will have to achieve world-class specialisation to be globally competitive" (Puig et al., 2009). Based on the findings from steps one and two, stakeholders need to choose a pathway for the industry, considering what already exists, the national consumption and demand for textiles and clothing, and what nearby countries can offer.

Step four

The first three steps will help identify skills, labour, and know-how in short supply. In this step, a plan for solving this issue must be made and enacted in practice. This could include financial support for companies training new hires or for job seekers taking specific courses, or adjustments in education.

Step five

It is crucial to involve the public in the transition to ensure that customer demand aligns accordingly. Meanwhile, customers hold valuable insights regarding the quality of products when in use and their long-term performance, which brands and manufacturers need to enhance in their products. Bridging this gap is easier said than done. Figure 6 suggests a simple solution, which can serve as a small starting point, addressing the customers who are already engaged and wish to support Danish-made clothes but lack knowledge about present brands. This will help the brands that contribute to localization attract more customers and become more economically sustainable.

Long-term action plan

After completing the five steps, there should be a finalized national long-term plan for local production scale and a strategy that includes ethical guidelines for companies relocating production from other countries, particularly low-wage countries.

9.2 The Platform

One potential design solution to address essential aspects of steps 1, 2, and 5 could be to consolidate everything onto a digital platform. Figures 5 and 6 illustrate visualizations of a dual-sided mapping and search function. One focuses on B2B collaboration, allowing brands to search among all existing manufacturers of textiles and clothing to view specifications and contact details.

SMEs may face challenges scaling their innovations and bringing them to market without access to crucial local infrastructure (European Commission, 2023). The industry's lack of transparency makes it hard for new brands to locate production facilities and establish new collaborations. The platform could help facilitate this process. The other side aims to guide customers toward Danish brands selling products labelled with "Made-in-Denmark" and the processes that label includes. Additionally, there should be established criteria for the brands permitted to appear on this platform, avoiding greenwashing.

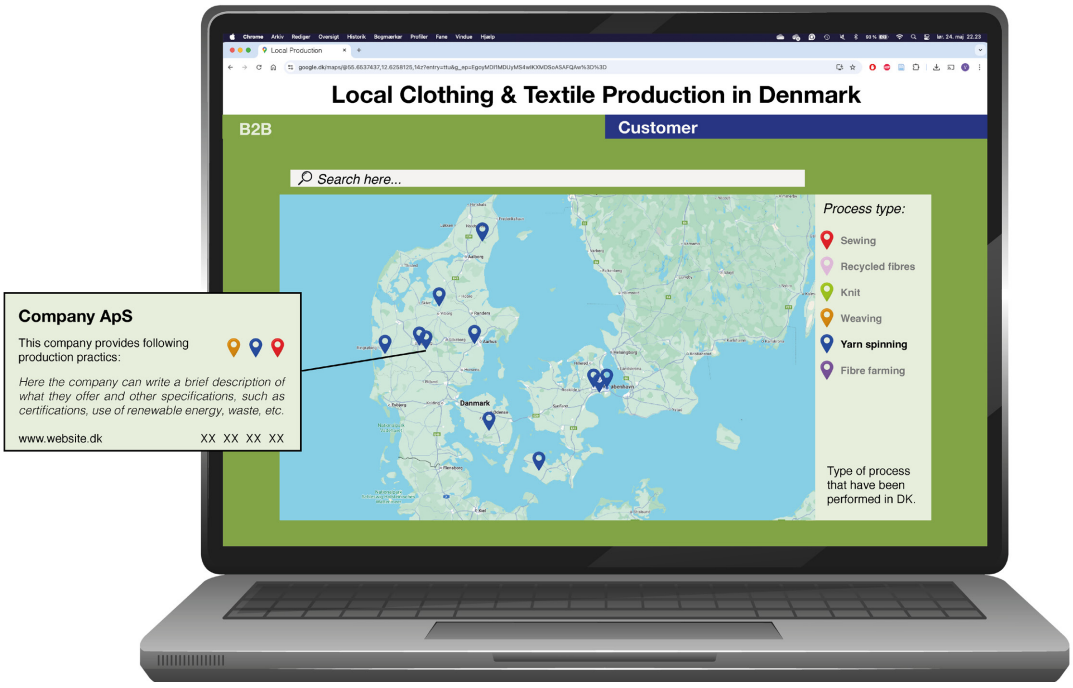

Figure 5 Platform for designers

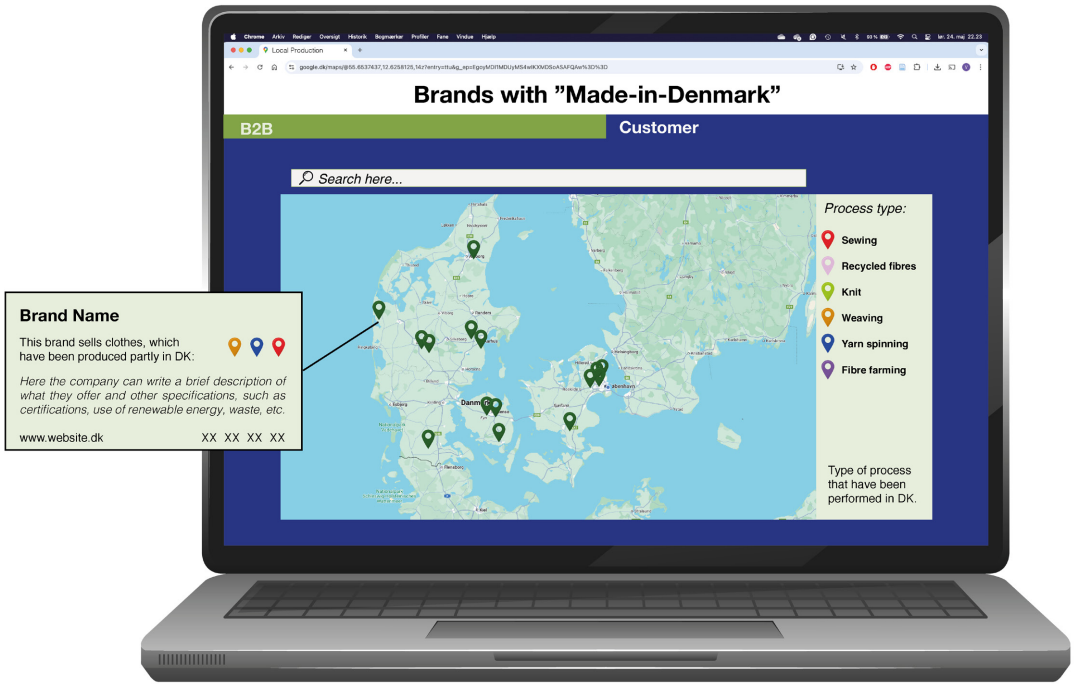

Figure 6 Platform for customers

Integrating the platform into an organization's website, like Danish Fashion & Textile, enhances accessibility to industry information. The main criterion is public access without a paywall. Various organizations assist brands in locating producers, mainly outside Denmark, and their role should not be overlooked. However, to scale local production in Denmark, it's vital to understand existing local solutions and have an overview of available infrastructure, without requiring paid subscriptions.

10. Reflection

Through this study, I have learned that an analysis of the entire industry is needed for the Danish fashion industry to transition to a more localized system. This thesis has provided a valuable share of that analysis and given an understanding of which barriers are essential to overcome in Denmark, as well as the main opportunities for the future of the industry regarding localization.

Moreover, I gained insight into the importance of stakeholder collaboration, recognizing that successful, sustainable transformation requires effective communication and coordinated efforts among designers, manufacturers, policymakers, and customers. Although many aspects of the entire industry still require further analysis, this study builds a foundation

from which I have identified focus areas. These areas can support and navigate stakeholders in their future work of solving the identified barriers and exploiting the opportunities to develop more sustainable, localized production systems in Denmark.

11. Conclusion

This research set out to explore how 60% of Danish fashion SMEs could transition to local production by 2030 while achieving economic sustainability. The findings reveal that although local production offers substantial environmental and strategic advantages, its current position within the Danish fashion industry is fragile and fragmented. Significant systemic barriers, such as the loss of textile know-how, insufficient infrastructure, and limited transparency, continue to inhibit progress. Moreover, global market dynamics and fast fashion consumption habits present additional challenges that will unlikely be overcome within the next five years.
Nonetheless, the study also uncovers clear opportunities. Existing localization efforts, on-demand production models, and growing customer interest in Danish-made clothing suggest that momentum is building. However, for this transition to scale meaningfully, it must be supported by a shared long-term vision, integrated policy frameworks, and ethical commitments considering both national goals and international labour conditions.

A five-step framework is proposed to guide stakeholders in building the necessary foundation for this transition, starting with mapping current capabilities and leading toward a national strategy supported by education, infrastructure, and customer engagement. A digital platform is also proposed as a practical tool to enhance industry transparency and facilitate collaboration.

In conclusion, while the 2030 target appears ambitious under current conditions, this study provides a realistic and actionable pathway for scaling local production in a way that is economically viable, socially just, and environmentally sustainable. Achieving this vision will require long-term commitment, interdisciplinary collaboration, and a fundamental reimagining of what sustainable fashion production looks like in a globalized world.

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