



JÖNKÖPING UNIVERSITY
School of Engineering

Exploring the challenges and opportunities of direct-to-consumer e- commerce.

From the perspective of SME manufacturing firms

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Abstract

This thesis investigates the challenges and opportunities of Direct-to-Consumer (D2C) e-commerce integration for Small and Medium Enterprises (SMEs). Through qualitative data derived from interviews with various companies, the research examines the complexities of D2C implementation and its impact on business strategy, customer relationships, and operational efficiency.

Key findings reveal that channel conflict and brand control are significant challenges when transitioning to D2C sales, as companies must balance the benefits of direct customer engagement with the potential for strained relationships with existing retail partners. Regulatory compliance, particularly concerning consumer protection laws and data privacy, emerges as a critical consideration. Financial factors, including investment costs and return on investment (ROI), are pivotal, alongside the necessity for operational efficiency and effective logistics and supply chain integration.

Despite these challenges, D2C integration offers opportunities for SMEs, including access to new markets, valuable customer insights, brand differentiation, and increased flexibility in product development and marketing strategies. The research highlights the importance of leveraging data analytics, developing distinct brand identities, and engaging with customers through personalised experiences and social media platforms.

Strategic recommendations for SMEs include fostering clear communication with retail partners to mitigate channel conflict, investing in compliance infrastructure, optimising logistics and supply chain processes, and conducting thorough financial analyses to ensure sustainable growth.

Keywords

Direct-to-consumer, e-commerce, SME, logistics, Resource-based view, Supply chain integration, Consumer behaviour

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1 Introduction

As technology continues to evolve, more aspects of daily life are becoming digitalised. One of the most significant shifts resulting from this digitalisation is the change in how consumers purchase goods. With the rise of new digital channels, consumers are increasingly shopping online, and one such model that has gained prominence is the Direct-to-Consumer (D2C) business model. D2C refers to a business approach in which manufacturers or producers sell their products or services directly to customers, bypassing intermediaries like retailers or wholesalers (see Figure 1). D2C businesses can use online platforms, such as websites, social media, or mobile apps, to reach and engage both their existing and potential customers. These platforms can help D2C businesses display their products or services and build trust and loyalty with their customers (Palko, 2022).

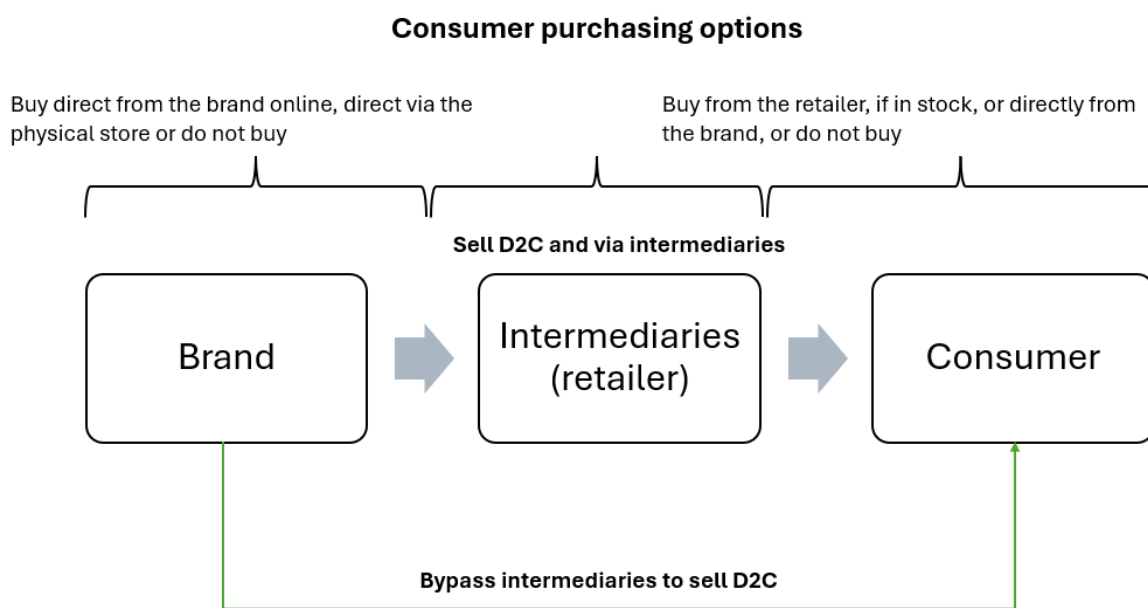


Figure 1 – D2C retail model and consumer purchasing options (adapted from McKee. et al., 2023)

The D2C model has gained popularity in recent years, especially after the impacts of the COVID-19 pandemic, which transformed the philosophy of retailing. The pandemic forced many traditional retailers and manufacturers to rethink their business models and revenue streams and to invest in digitisation and digital adoption. It also changed consumer buying patterns, as more customers shifted to online shopping and started to increase their interest in aspects such as convenience and personalisation (KPMG, 2022).

1.1 Background

Sustainability and resilience have become central in logistics management, particularly in response to environmental concerns and global disruptions like the COVID-19 pandemic. Organisations are adopting eco-friendly practices such as route optimisation, electric or hybrid vehicles, and renewable energy to reduce emissions and meet climate goals (Christopher, 2016). The pandemic also exposed vulnerabilities in supply chains, highlighting the need for flexibility, redundancy, and agility—achieved through diversified sourcing,

critical stockpiling, and strong supplier communication. Technology and data analytics further support these aims by identifying risks and improvement areas. These principles are embodied in the European Commission's "Logistics 5.0" framework, which integrates sustainability and resilience into future logistics development (Mecalux, 2023).

For SMEs in manufacturing, adopting direct-to-consumer (D2C) e-commerce poses unique challenges. Many face constraints in digital capabilities, regulatory knowledge, and financial resources (Jamwal et al., 2023). Although digital tools have become more accessible (Semerádová & Weinlich, 2022), establishing a competitive online presence remains difficult. This study explores how such SMEs approach D2C models, focusing on the barriers they encounter and the opportunities available. It also considers how economic and social sustainability can be embedded into D2C strategies to build more resilient and responsible business models.

Understanding consumer behaviour is essential to navigating the D2C landscape. Theories in this field help firms analyse consumer motivations, preferences, and decisions—especially regarding product evaluation, purchases, and post-purchase behaviour such as satisfaction and loyalty (Zhang & Chang, 2021). As consumer research has evolved, themes like information processing, consumption communities, sustainable consumption, and brand relationships have gained prominence (Lim et al., 2023). In digital contexts, such insights help firms personalise offerings and communications based on real-time feedback and consumer data.

These theories also highlight how SMEs can engage consumer communities to foster loyalty and advocacy through shared values and experiences. As ethical and sustainable consumption becomes more influential, firms must align their strategies accordingly to meet growing consumer expectations. Organisational interactions with consumers—shaped by digital marketing and ongoing engagement—are critical in maintaining satisfaction and loyalty. By integrating behavioural insights into strategy, firms can optimise consumer experiences and adapt to evolving preferences. Ultimately, D2C models demand a deep understanding of the shifting factors that influence consumer decisions, as brand perception and experience increasingly shape long-term loyalty (Zhang & Chang, 2021).

1.2 Research problem

There is a significant gap in the understanding of how this shift impacts SME manufacturing firms in theoretical regards. Theoretically, there is a lack of comprehensive frameworks that integrate Supply Chain Integration, Inventory Management, and Consumer Behaviour theories to explain the changes brought about by D2C e-commerce (McKee et al., 2023).

In the systematic review by McKee et al. (2023), several more specific gaps within the existing literature and research were identified. The identified gaps that are of interest for this research is firstly that there is a lack of literature that covers the D2C retail model context from a producer or manufacturer's perspective. Secondly, prior reviews have focused on the digitalisation of brands' business models, predominantly from the perspective of larger brands. Thirdly, consumers' perceived value motivations for online shopping have been addressed but not specifically in relation to the D2C retail model.

This thesis contributes to the literature by addressing a critical gap in the understanding of D2C e-commerce for SMEs, specifically focusing on integrating supply chain theories and consumer behaviour frameworks. Unlike previous studies that emphasize larger enterprises, this research centres on SMEs, thereby advancing both theoretical frameworks and practical applications in this underexplored domain.

1.3 Purpose and Research questions

The purpose of this thesis is to investigate how SME manufacturing firms understand e-commerce in order to identify the key factors influencing their adoption and success in D2C e-commerce from a RBV perspective.

Based on the formulated purpose of this thesis the research questions are as follows:

- RQ1: What challenges do SME manufacturing firms identify when adopting D2C e-commerce?
- RQ2: What opportunities do SME manufacturing firms identify when adopting D2C e-commerce?

1.4 Theoretical and Practical Significance

This research is both scientifically and practically relevant. Theoretically, it will contribute to the development of a framework that integrates various supply chain and consumer behaviour theories, which can be applied to the context of D2C e-commerce. Practically, the findings will provide SMEs with applicable insights on how to overcome barriers to digital transformation and capitalize on the benefits of direct-to-consumer models. The study's insights will also contribute to the ongoing discourse on sustainable and resilient logistics practices in the context of digital commerce.

1.5 Disposition

The first chapter covers the background of the subject of study, followed by a problem description, project purpose, the research questions, and delimitations. The second chapter will introduce the literature supporting the study. The third chapter will present the theories used for the research. The fourth chapter presents the methods of the study and how they are used. The fifth chapter includes the results from the data collection. Chapter six uses the results from chapter 5 to presents the findings. The seventh chapter analyse the findings. Chapter eight discuss the findings in relation to existing research and literature. Lastly, chapter nine conclude the report followed by suggestions for future research.

1.6 Delimitations

This thesis will explore specific challenges and opportunities that the integration of D2C e-commerce brings. The focus of this thesis will be on SME manufacturing firms in Jönköping and its surrounding region.

2 Frame of reference

This section presents the main categories utilised to approach the purpose of this thesis and through which the research questions is examined and analysed. The following categories were identified as the main categories affected by the integration of D2C e-commerce, based on the systematic review by McKee et al. (2023).

2.1 Logistics

Logistics, as a key element within supply chain management, functions as the operational core responsible for the efficient movement, storage, and coordination of goods, services, and information. Christopher (2016) emphasises its vital role in ensuring products move seamlessly from origin to end customer, supporting timely delivery and optimal resource utilisation. It encompasses interconnected components such as transportation, warehousing, inventory management, and information systems. Transportation involves the physical transfer of goods across the supply chain via road, rail, air, or sea. Warehousing ensures products are stored and managed effectively, while inventory management focuses on balancing stock levels to meet demand without incurring excess holding costs. Meanwhile, information systems provide visibility and synchronisation across operations, enabling accurate and timely decision-making (Christopher, 2016).

Effective logistics management hinges on integrating these components to streamline operations and reduce inefficiencies. Synchronising transportation networks with warehousing, inventory systems, and real-time data enhances responsiveness, minimises lead times, reduces operational costs, and improves customer satisfaction (Michigan State University, 2023). This integration also promotes stronger collaboration among stakeholders—suppliers, manufacturers, distributors, and retailers—allowing firms to adapt swiftly to market changes and shifting consumer expectations (Christopher, 2016). The direct-to-consumer (D2C) e-commerce model further amplifies the need for seamless logistics, as businesses bypass traditional intermediaries to deliver directly to individual customers. In this context, a robust and well-integrated logistics infrastructure becomes critical for handling order fulfilment efficiently while maintaining a positive customer experience (Christopher, 2016).

Cost-efficiency remains a core objective in logistics, and strategies such as route optimisation and shipment consolidation are pivotal to achieving this. These techniques reduce fuel usage, streamline transport operations, and enhance productivity (Michigan State University, 2023). Technological advancements have further revolutionised logistics, offering tools like GPS tracking, RFID, and predictive analytics. These innovations provide real-time visibility into supply chain performance and enable businesses to anticipate demand fluctuations, better allocate resources, and respond proactively to disruptions (Christopher, 2016). The implementation of such technologies not only drives cost savings and inventory efficiency but also contributes to timely delivery and overall customer satisfaction, reinforcing competitive advantage and supporting long-term business growth.

A particularly critical area within logistics is last mile delivery—the final stage in the supply chain where goods move from distribution centres to customers' doorsteps. As Demir et al. (2022) describe, last mile logistics represents the direct interface between businesses and consumers and has gained prominence for its influence on satisfaction, operational performance, and brand competitiveness. The complexity of this stage arises from diverse delivery environments, growing expectations for speed and convenience, and the expansion of e-commerce and omni-channel retail models. Addressing these challenges requires innovative

approaches, including the use of route planning tools and real-time tracking to optimise delivery schedules and ensure transparency throughout the process.

Sustainability has also become a pressing concern in last mile logistics, as companies face growing pressure to reduce environmental impacts. In response, many are turning to green practices such as deploying electric vehicles, exploring alternative fuels, and offering carbon-neutral delivery options. As Demir et al. (2022) note, embedding sustainability into last mile operations not only reduces emissions but also bolsters brand image and meets the values of environmentally conscious consumers. By aligning efficiency and environmental responsibility, firms can enhance their logistics strategies while supporting broader corporate sustainability objectives.

2.2 Supply Chain Integration

Supply Chain Integration (SCI) entails both intra- and inter-organisational collaboration to optimise production, distribution, and product support. Particularly relevant to D2C e-commerce, SCI transcends traditional upstream and downstream roles by leveraging digital platforms for real-time communication and integration, enabling firms to respond swiftly to market demands (Kim et al., 2020). In this context, supply chains are restructured to support direct consumer engagement, requiring seamless coordination across all operational levels. SCI aims to align internal processes with external partners—suppliers and customers alike—to facilitate continuous information flow, cost efficiency, and enhanced responsiveness. This integration not only streamlines operations but also strengthens competitive positioning through improved production and customer satisfaction (Kim et al., 2020).

The rising interest in SCI is driven by the need for cost competitiveness, accelerated product life cycles, faster development times, globalised operations, greater customisation, and higher quality standards. However, the pursuit of high integration comes with significant challenges. Establishing and managing interconnected supply chains demands considerable investment in technology, time, and coordination, alongside bearing risks such as production halts and opportunity losses (National Academies Press, 2000). Overdependence on sole-source suppliers or tightly coupled processes increases susceptibility to disruption—automotive firms operating with lean inventories are a clear example, where any supply chain interruption can result in substantial operational setbacks. As such, firms must weigh potential efficiencies against risk tolerance and ensure effective communication and contingency planning.

Despite these complexities, SCI offers substantial benefits. These include cost reductions from lower inventory levels, decreased transaction and product costs, and improved decision-making through shared information and functional alignment. The move towards strategic partnerships and long-term cooperative agreements has further necessitated the integration of logistics beyond organisational boundaries, effectively broadening the competitive unit to the entire supply chain (Chen & Paulraj, 2004). Achieving this requires the elimination of organisational slack, such as surplus inventory, and the implementation of robust, real-time data exchange mechanisms. Higher levels of logistics integration foster closer coordination between firms and their supply chain partners, blurring organisational lines in logistics operations and enabling seamless flow across external and internal networks. Prior research underscores the importance of cross-enterprise collaboration, highlighting how linking suppliers, carriers, and customers through integrated logistics is key to building a responsive, resilient, and efficient supply chain (Chen & Paulraj, 2004).

2.3 Marketing

Marketing serves as the backbone of business success, acting as a bridge between products or services and consumers. It encompasses a variety of strategies, tactics, and activities aimed at understanding consumer needs, creating value, and promoting offerings. The following section presents the essential marketing concepts and their significance in driving consumer behaviour and organisational outcomes (Kotler & Armstrong, 2018).

2.3.1 Understanding Customer Needs and Creating Value

At the heart of effective marketing lies a deep understanding of customer needs and preferences. As Kotler & Armstrong (2018) assert, successful marketing begins with identifying and anticipating these needs through market research and analysis. This enables organisations to gain insights into evolving consumer behaviour, allowing them to tailor their offerings and communication strategies accordingly. Central to this process is the creation of value—delivering solutions that not only address customer pain points but also offer distinct benefits that differentiate the brand from competitors. By consistently providing superior value propositions, businesses can foster customer satisfaction, loyalty, and sustained profitability (Kotler & Armstrong, 2018).

A core component of marketing strategy is the segmentation, targeting, and positioning (STP) model. Segmentation involves dividing the market into distinct groups based on shared characteristics or behaviours. Targeting focuses on selecting the most appropriate segments that align with the organisation's capabilities and objectives. Positioning then seeks to craft a compelling brand image and value proposition that resonates with the chosen target audience. Through this strategic STP approach, businesses can more effectively allocate resources, communicate relevant messages, and strengthen their competitive advantage in the marketplace (Kotler & Armstrong, 2018).

Complementing the STP model is the marketing mix, or the 4Ps—product, price, place, and promotion—which provides a practical framework for implementing marketing strategies. Figure 2 presents the four Ps and their relations. The product element encompasses not just the physical item or service but also its features, benefits, and alignment with consumer expectations. Price, meanwhile, reflects the perceived value and market positioning, influenced by factors such as costs, competitor pricing, and demand. Place refers to distribution channels and accessibility, requiring businesses to ensure their offerings are available to customers through the most effective platforms—be it physical retail, e-commerce, or direct channels. Promotion covers all communication activities designed to build awareness, convey value, and drive sales, including advertising, public relations, and sales promotions (Kotler & Armstrong, 2018).

When strategically integrated, the elements of the marketing mix allow organisations to position their offerings effectively, differentiate themselves from competitors, and enhance customer engagement. A well-executed marketing strategy not only communicates value clearly but also supports long-term brand loyalty and business success. By continuously refining each component of the marketing mix in response to market feedback and consumer insights, businesses can stay competitive and responsive in an ever-evolving marketplace (Kotler & Armstrong, 2018).

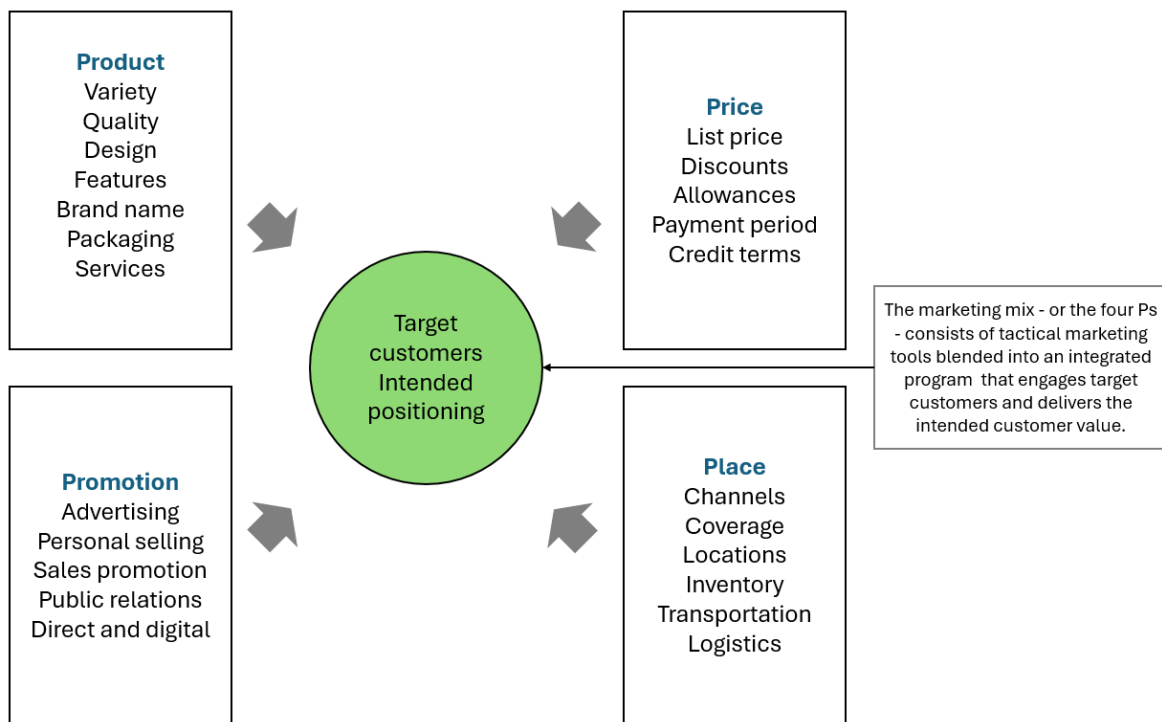


Figure 2 - Correlation between 4Ps (adapted from Kotler & Armstrong, 2018)

2.4 Customer Relationship Management

In today's competitive business landscape, nurturing strong and lasting relationships with customers is imperative for sustainable success. Customer Relationship Management (CRM) emerges as a strategic approach aimed at optimising interactions between businesses and their clientele. Drawing insights from Buttle's (2008) seminal work on CRM concepts and technologies, this section explores the intricacies of CRM and its profound significance in fostering customer satisfaction, loyalty, and profitability.

Customer Relationship Management encompasses a comprehensive strategy for managing and nurturing relationships with current and potential customers. Buttle (2008) emphasises that CRM involves the systematic collection, analysis, and utilisation of customer data to drive personalised interactions and enhance overall customer experience. By leveraging advanced technologies and data-driven insights, organisations can tailor their offerings, communications, and service delivery to meet the unique needs and preferences of individual customers.

Effective CRM implementation hinges upon several key components delineated by Buttle (2008), including customer data management, customer interaction channels, and organisational alignment. Robust data management systems are essential for centralising customer information, enabling organisations to gain a comprehensive understanding of customer profiles, preferences, and purchase histories. Furthermore, organisations must leverage a variety of interaction channels, such as email, social media, and in-person interactions, to engage with customers across multiple touchpoints and foster meaningful connections.

Moreover, fostering a customer-centric culture is paramount for CRM success. Buttle (2008) underscores the importance of aligning organisational processes, policies, and employee behaviours with the goal of delivering superior customer experiences. By instilling a customer-focused mindset throughout the organisation, businesses can prioritise customer satisfaction and loyalty, ultimately driving long-term relationships and sustainable growth.

2.4.1 Benefits of CRM

The adoption of CRM offers several benefits for businesses, as stated by Buttle (2008), including enhanced customer satisfaction, increased customer retention, and improved profitability. Organisations that prioritise customer relationships through CRM initiatives typically experience higher levels of customer loyalty and advocacy. By delivering personalised experiences and addressing customer needs proactively, businesses can differentiate themselves in the marketplace and create a sustainable competitive advantage.

Info Entrepreneurs (2023) continues on the same benefits that were stated by Buttle (2008). The major benefits presented by Info Entrepreneurs (2023) are increased sales, efficient identification of customer needs, cross-sales of products through relevant product recommendations, and identification of what customers are profitable, and which are not. Furthermore, Info Entrepreneurs (2023) continue by presenting what these benefits ultimately can lead to; increased customer satisfaction and retention, maximising value from existing customers, and reduce support and service costs, and improved profitability by directing the focus to the most profitable customers and managing the unprofitable ones more cost-effectively (Info Entrepreneurs, 2023).

2.5 Customer Experience

In today's dynamic business landscape, where competition is fierce and consumer expectations are constantly evolving, delivering exceptional customer experiences has become a strategic imperative for organisations across industries. This section explores the significance of customer experience (CX) and its pivotal role in shaping customer perceptions, fostering loyalty, and driving business success, drawing insights from the work of Pine & Gilmore (2013) on the experience economy.

Customer experience encompasses every interaction and touchpoint a customer has with a brand throughout their journey—from initial awareness and consideration to purchase and post-sale support. Pine & Gilmore (2013) assert that customer experience transcends mere transactions, representing the totality of sensations, emotions, and perceptions evoked by the brand interaction. It encompasses elements such as product quality, service delivery, brand communication, and overall engagement, all of which contribute to shaping the customer's perception of the brand. This aligns with the conceptualisation of customer experience as a multidimensional construct, which includes not only functional aspects of service but also emotional, cognitive, and sensory dimensions that influence how customers feel, think, and behave during their interactions (Pine & Gilmore, 2013).

As Gahler et al. (2023) highlight, understanding CX in today's omnichannel environments requires addressing its complexity across various touchpoints, experience partners (such as brands, employees, or even other customers), and stages of the customer journey. This omnichannel experience spans multiple mediums—both offline and online—and reflects the evolving nature of customer interactions in a digital-first world. Therefore, managing and

measuring customer experience in such an environment necessitates a comprehensive approach that considers all possible dimensions of the customer interaction (Gahler et al., 2023).

Effective management of customer experience entails focusing on several key components elucidated by Pine & Gilmore (2013), including personalisation, consistency, and emotional engagement. Personalisation involves tailoring interactions to meet the unique needs and preferences of individual customers, leveraging data and insights to create bespoke experiences that resonate on a deeper level. This is particularly relevant in omnichannel contexts, where customers interact with a brand across various platforms and expect cohesive, personalised engagement regardless of the medium (Pine & Gilmore, 2013).

Consistency is another critical aspect highlighted by Pine & Gilmore (2013). Customers expect seamless and consistent experiences across all touchpoints, whether online, in-store, or through customer service channels. Organisations must strive to maintain consistency in brand messaging, service delivery, and overall experience to build trust and loyalty among customers. This ties closely with the conceptualisation of CX as a "traveling" construct, as articulated by Gahler et al. (2023). A robust CX scale needs to be adaptable to different interaction contexts (e.g., online vs. offline, employee vs. brand), ensuring consistency in how customer experiences are evaluated and understood across these various settings (Gahler et al., 2023).

Emotional engagement, as emphasised by Pine & Gilmore (2013), is a powerful driver of customer loyalty and advocacy. Memorable experiences are often characterised by the emotions they evoke in customers. Organisations that can evoke positive emotions such as joy, surprise, or delight are more likely to create lasting impressions and foster strong emotional connections with their customers. Gahler et al. (2023) also underlines the importance of the emotional dimension in CX, positing that a complete customer experience encompasses a spectrum of emotional responses that are critical in shaping customer perceptions and influencing their future behaviours (Gahler et al., 2023).

Into The Minds (2021) describes customer experience through several dimensions that influence the customer journey. These include:

- **Cognitive Dimension:** How the consumer thinks and reasons about the brand and its products.
- **Emotional Dimension:** The brand's messages evoke emotions that, in turn, influence consumer perceptions and behaviour.
- **Behavioural Dimension:** How the consumer responds to stimuli from the brand through various touchpoints.
- **Sensory Dimension:** The brand engages the consumer's senses (visual, olfactory, tactile, gustatory, auditory), provoking varied reactions.
- **Social Dimension:** The consumer's perception of the brand is shaped by its external environment, both online and offline. Opinions and comments exchanged about the brand can alter this perception.

These dimensions reflect the evolving nature of CX, where emotional, sensory, and social factors play an increasingly critical role. The focus is no longer solely on the economic cost and benefits but also on how customers emotionally connect with a brand, which is central to the broader experience (Into The Minds, 2021).

2.5.1 Benefits of Customer Experience Excellence

Investing in customer experience excellence yields numerous benefits for organisations. Companies that prioritize delivering exceptional customer experiences have the opportunity to outperform their competitors in terms of revenue growth and profitability. Furthermore, satisfied customers are more likely to become loyal brand advocates, driving positive word-of-mouth and attracting new customers through referrals. By focusing on personalisation, consistency, and emotional engagement, organisations can create memorable experiences that resonate with customers and drive long-term loyalty and profitability (Pine & Gilmore, 2013).

As emphasised by Gahler et al. (2023), adopting a comprehensive approach to measuring CX across multiple touchpoints and journey stages enables organisations to gain valuable insights into pain points, which can inform improvements in service design and customer interaction strategies. By using an omnichannel-capable CX scale, businesses can ensure they are not only managing each customer interaction effectively but also creating cohesive, emotionally resonant experiences that drive both customer satisfaction and business success (Gahler et al., 2023).

2.6 Identified challenges and opportunities in previous trends

The following identified challenges and opportunities from the digitalisation transformation will be used as a foundation for the data collection process for this project. Studying previous major changes in the industry gives an indication for the challenges and opportunities presents for the D2C e-commerce trend. This indication will be a foundation for the data collection process for both primary and secondary data. The found challenges and opportunities from the trend of digitalisation is presented in a matrix in Figure 3 down below.

2.6.1 Identified challenges for SMEs digitalisation

Telukdarie et al. (2022) shed light on the intricate challenges faced by SMEs in their journey towards digital transformation. One prominent issue is the technological knowledge gap within SMEs, where many lack the expertise to leverage digital transformation technologies effectively. This deficiency often translates into a limited understanding of available solutions and their potential benefits (Telukdarie et al., 2022).

Financial constraints further increase these challenges, as SMEs often have limited access to external consultants who could bridge the knowledge gap. This shortage of specialised IT professionals capable of extracting value from complex digital tools like machine learning and big data compounds the problem (Telukdarie et al., 2022). Despite efforts to embrace digitalisation, SMEs have lagged in this arena, hampering their ability to develop expertise in the field (Telukdarie et al., 2022). The challenges posed by digitalisation are multifaceted, including a lack of critical digital infrastructure such as fast internet connections, deficient digital skills, and financial constraints (Telukdarie et al., 2022)

Moreover, there exists a significant gap in awareness and knowledge regarding the availability and integration of digital technologies with business models and processes (Telukdarie et al., 2022). SME managers often harbour uncertainties about the benefits and risks associated with digital technologies, including dependency on online platforms and the potential for unforeseen operational disruptions. Additionally, SMEs face challenges related to online platform fees, which can erode profitability and competitiveness compared to larger businesses with greater bargaining power (Telukdarie et al., 2022). As SMEs embark on digitalisation efforts, they become increasingly susceptible to online attacks, leading to disproportionate costs that can

permeate deeply into their supply chains (Telukdarie et al., 2022). While digital marketing holds promise for SMEs, there exists a gap between demand and supply in utilising digital marketing platforms and e-commerce (Telukdarie et al., 2022). Addressing this gap requires raising awareness of the importance of technology adoption for marketing purposes and recognising the opportunities it presents (Telukdarie et al., 2022).

However, SMEs face additional hurdles in attracting and retaining skilled employees, partly due to limited networks and resources for accessing talent, as well as comparatively lower pay and working conditions (Telukdarie et al., 2022). Moreover, the cost of tailored training is often prohibitive for SMEs, further hindering their ability to embrace digital technologies (Telukdarie et al., 2022). Consequently, many small businesses miss the benefits of advanced digital tools due to perceived high upfront expenses (Telukdarie et al., 2022).

2.6.2 Identified benefits for SMEs digitalisation

The pivotal role of SME digital transformation and restructuring in supporting economic development and navigating the landscape of rapid globalisation has been underscored by researchers (Telukdarie et al., 2022). By embracing digitalisation, SMEs not only promote innovation but also ensure their long-term commercial viability. The benefits of digitalisation for SMEs are many. They include lower transactional costs, reduced investment in ICT (Infocom Technology) equipment, and more efficient delivery and procurement of goods and services (Telukdarie et al., 2022). Additionally, digitalisation facilitates increased integration into global markets, fostering interactivity and sustainable growth (Telukdarie et al., 2022).

As noted by Telukdarie et al. (2022), digitalisation has the potential to streamline operations, cutting costs and saving time and resources—particularly for smaller businesses lacking market and bargaining strength. Emerging technologies such as Artificial Intelligence (AI) and Internet of Things (IoT) solutions hold promise for fundamentally reshaping the business models and practices of SMEs, leading to a multitude of beneficial impacts across various company operations (Telukdarie et al., 2022).

Furthermore, digitalisation opens avenues for SMEs to access essential resources such as financial services, training, and employment opportunities provided by governmental bodies at federal and state levels (Telukdarie et al., 2022). Firms can leverage data analytics to optimise their operations, enhance performance, and gain access to innovative assets, thereby further propelling their growth and competitiveness in the digital era (Telukdarie et al., 2022).

Figure 3 below presents the challenges and opportunities found from the digitalisation of industries. The challenges and opportunities are categorised after the major areas they are connected to. These challenges and opportunities will serve as a guide for the data collection for this thesis in the form of inspiration for the interview guide.

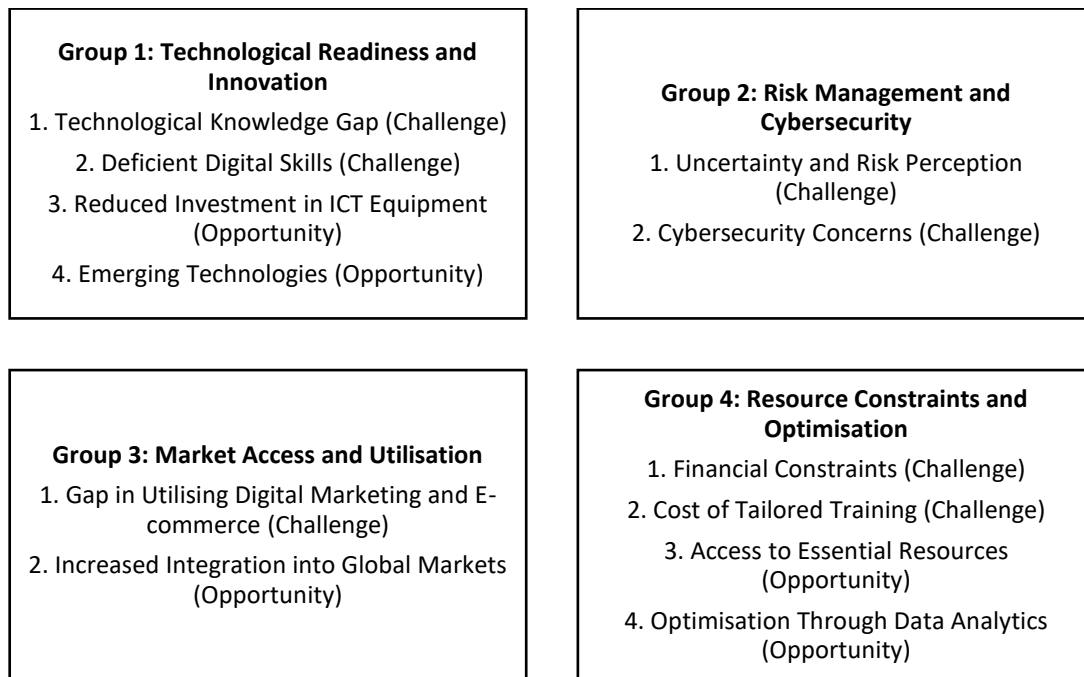


Figure 3 - Identified challenges and opportunities from previous trend

2.7 Analytical Framework

This chapter presents a theory which will be utilised in the analysis and discussion of the results and findings. It also presents a framework for identified challenges and opportunities found in previous revolutionary manufacturing trends, these identified challenges and opportunities will act as a guide for the data collection for this thesis.

The Resource-Based View (RBV), developed by (Barney, 1991), explains how firms achieve sustained competitive advantage through the strategic management of internal resources and capabilities. Resources, defined as tangible and intangible assets such as physical assets, human capital, organisational knowledge, and brand reputation, determine a firm's competitive position and long-term performance. By strategically combining these resources to develop capabilities, firms can create value, differentiate themselves, and achieve superior performance (Barney, 1991).

Central to RBV is the VRIN criteria: for a resource to confer sustained competitive advantage, it must be valuable, rare, inimitable, and non-substitutable. Valuable resources exploit opportunities or mitigate threats, rarity ensures their scarcity relative to competitors, inimitability prevents replication, and non-substitutability ensures no viable alternatives exist. Firms with VRIN resources can establish unique competencies and market positions, creating barriers to imitation. By managing VRIN resources effectively, firms can develop sustainable competitive advantages, differentiate themselves from competitors, and maintain superior performance in dynamic environments (Barney, 1991).

The VRIN criteria are also relevant in the context of e-commerce, where technological advancements and web-based innovations create new opportunities for firms to develop competitive advantages. According to the RBV framework not all resources lead to competitive

advantage, only those that are valuable, rare, inimitable, and non-substitutable qualify as strategic assets. These resources can include tangible elements, such as IT infrastructure, and intangible ones, like expertise, alignment with strategy, and social embeddedness. In e-commerce, the interaction of these resources with web-based technologies plays a pivotal role in creating distinct competitive capabilities (Yang et al., 2015).

E-commerce technologies, characterised by connectivity, interactivity, and open-standard integration, enable firms to improve efficiency and relationships across the value chain. However, merely owning physical e-commerce systems is not sufficient. These technologies must be integrated with complementary organisational capabilities, such as human expertise and strategic alignment, to create value. This underscores the critical role of resource complementarity, where the integration of technology with other firm-specific assets enhances performance. Firms that successfully leverage e-commerce resources alongside VRIN attributes are better positioned to sustain a competitive edge in dynamic digital environments (Yang et al., 2015).

Furthermore, the RBV has evolved since its inception in 1991, as outlined in the article *Renewing the resource-based view: New contexts, new concepts, and new methods* by Helfat et al. (2023). Below follows the major changes and developments.

Initially, the RBV focused on analysing firms at a micro-level. Over time, the framework has expanded to include industries, ecosystems, and macro-level environments, offering a more holistic view of how resources contribute to competitive advantage. New concepts, such as dynamic capabilities, knowledge-based resources, and strategic flexibility, have been introduced, providing a nuanced perspective on leveraging resources in dynamic environments (Helfat et al., 2023).

Advancements in research methods, including econometric modelling and data analytics, have strengthened the framework by enabling more rigorous analyses of resource-based advantages and their impact on firm performance. The RBV now emphasises dynamic capabilities, which allow firms to adapt and reconfigure resources to navigate rapidly changing markets (Helfat et al., 2023).

Additionally, the RBV acknowledges resource heterogeneity and the path-dependent nature of resource development, highlighting the role of historical processes and firm-specific contexts. Scholars have also focused on resource governance and appropriation, exploring how firms can manage and protect resources from imitation and substitution to sustain competitive advantage (Helfat et al., 2023).

3 Methodology & Implementation

This section of the thesis introduces the methodological framework employed, which aligns with the qualitative research approach chosen. Drawing upon the categories presented in literature review, this framework provides a structured approach to explore the experiences, perceptions, and challenges encountered by stakeholders within SME manufacturing firms.

3.1 Research methods

3.1.1 Qualitative research methods

Qualitative research methodology is particularly suitable for exploring new fields of study or for understanding and theorising significant issues. This methodology employs various qualitative methods designed to provide an in-depth and comprehensive understanding of issues through textual interpretation, with interviewing being the most common technique (Jamshed, 2014). Furthermore, qualitative research is advantageous when the researcher seeks to investigate new areas of study or aims to identify and theorize issues. Employing qualitative methods allows researchers to gain a detailed and extensive understanding of the subjects under investigation (Cypress, 2018).

For this study, qualitative research methods, particularly interviewing, were chosen due to its ability to provide detailed insights into the participants' lived experiences. Interviews are particularly suited to this goal because they allow for engaging in direct contact with participants, encouraging them to articulate their personal perspectives, thoughts, and feelings in response to open-ended questions. Furthermore, this approach enables the researcher to capture the complexity of participants' experiences in their own words, which is essential for the inductive and interpretive nature of qualitative research (Cypress, 2018).

3.1.1.1 Interviews

Interviewing is a format for data collection in qualitative research. Interviews in qualitative research can be either structured, unstructured, or semi-structured, with unstructured interviews allowing for the most flexibility and depth. Unstructured interviews are typically the method of choice in naturalistic inquiries, where the researcher does not have predetermined knowledge of the respondents' experiences and relies on their responses to guide the data collection process. This open-ended nature allows for a deeper exploration of the phenomenon from the participants' perspectives, offering insights into the nuances of their lived experiences (Cypress, 2018).

In contrast, semi-structured interviews involve respondents answering preset open-ended questions. Semi-structured interviews follow an interview guide, which is a schematic presentation of questions or topics to be explored. This guide helps in systematically exploring respondents' views and maintaining the focus of the interview. Recording interviews allows for accurate data capture and enables the transcriptionist to create a verbatim transcript of the interview (Jamshed, 2014).

For this study, semi-structured interviews were chosen since they provide a balance between guiding the conversation and allowing flexibility for the participant to express themselves fully. This format is suitable for phenomenological research, where complex phenomena are explored where the researcher needs to probe deeper into specific areas while still being responsive to the nuances of participants' responses (Cypress, 2018).

Furthermore, in phenomenological research, interviewing specifically seeks to gather comprehensive descriptions of a lived experience related to a particular phenomenon. These interviews are characterised by their openness, where the interviewee is encouraged to describe their experiences in their own terms, without the researcher imposing interpretations or explanations. This approach minimises preconceived responses and ensures that the data reflects the participants' own experiences (Cypress, 2018).

3.1.2 Cross-case analysis

This study employs a qualitative cross-case analysis approach to systematically examine patterns, similarities, and differences across multiple SME cases. By analysing data from several firms, the study aims to develop a deeper understanding of the challenges and opportunities encountered by manufacturing SMEs when adopting D2C e-commerce strategies. This method facilitates the identification of common barriers as well as industry-specific variations, thereby offering a nuanced perspective on the dynamics of D2C integration.

The data analysis followed a structured coding process designed to extract meaningful insights from interview transcripts and secondary sources. As outlined by Williams and Moser (2019), the process involved two key stages of qualitative coding: open coding and axial coding. Open coding is the initial phase, where raw data is broken down into discrete segments, each assigned a label or code to highlight emerging themes, concepts, and patterns. This step is critical for organising unstructured data and establishing broad thematic categories.

The first phase of analysis—open coding—involved a thorough review of the interview transcripts and relevant secondary data. Key terms related to D2C e-commerce, such as channel conflict, regulatory compliance, and customer engagement, were identified and coded accordingly. Each meaningful segment of text was assigned a code reflecting the underlying concept or theme.

In the subsequent axial coding phase, these codes were examined for interrelationships and grouped into higher-order categories. For example, codes such as financial constraints and investment in digital infrastructure were consolidated under the broader category of cost-benefit considerations. Similarly, logistics challenges were linked to themes such as delivery efficiency and customer satisfaction. This phase provided clarity on how different factors interact, enabling a more structured and in-depth interpretation of the data (Williams & Moser, 2019).

Thematic synthesis followed, whereby the findings were integrated with established theoretical frameworks, notably the RBV and Consumer Behaviour Theories. This step ensured that empirical observations were interpreted within the context of broader academic discourse, reinforcing the study's contribution to understanding competitive advantage, consumer preferences, and supply chain management within the context of D2C e-commerce.

Finally, a cross-case comparison was conducted to identify overarching patterns and variations across the SME cases. While the individual case analyses provided granular insights into each firm's experiences, the comparative perspective enabled the differentiation between industry-wide trends and context-specific challenges. This stage revealed how factors such as company size, industry sector, resource availability, and digital maturity shaped the strategies and outcomes associated with D2C implementation.

3.1.2.1 Validation and quality assurance through Cross-case analysis

Cross-case analysis, as a methodological approach, by nature also contributes to the assurance of quality and validity of the research. This method enables the systematic comparison of data across multiple cases, facilitating the identification of recurring themes, patterns, and relationships. Its structured application provides a foundation for enhancing the credibility, dependability, and transferability of the study.

The process began with data collection from diverse SMEs engaged in D2C e-commerce, utilising both primary and secondary sources. Each case was examined individually, with data organised into meaningful categories aligned with the research questions. This step-by-step approach ensured a systematic analysis that allowed for subsequent comparison across cases to identify similarities, differences, and unique perspectives.

Cross-case analysis contributed to the quality of the research in the following ways:

- **Credibility:** The systematic comparison of data across cases ensures that findings were not isolated or anecdotal. The process of identifying common themes and examining variations enhances the robustness of the conclusions. This attention to recurring patterns and exceptions provides a well-rounded perspective.
- **Dependability:** By following a consistent and replicable process, cross-case analysis minimises the risk of bias and subjectivity. A clear methodology for data coding and categorisation reinforces the reliability of the approach. The transparent documentation of analytical steps further supports the dependability of the research.
- **Transferability:** The synthesis of insights from multiple cases facilitates the development of conclusions that could be relevant to other contexts. Cross-case analysis allows for broader applicability by exploring how challenges and strategies in D2C e-commerce could inform similar scenarios in SME manufacturing.
- **Validation through Triangulation:** The integration of data from varied sources, including primary interviews and secondary datasets, ensures triangulation. This approach enhances the validity of the findings by cross-referencing information and reducing reliance on any single data source.

3.1.3 Utilisation of Secondary Data

Secondary data in research refers to the use of information previously collected through primary research. As it is often readily accessible, secondary data significantly reduces the time, cost, and logistical effort required for data collection. Researchers, businesses, and decision-makers frequently rely on such data to generate insights and inform actions without needing to initiate new fieldwork. When drawn from methodologically robust sources, secondary data can provide both breadth and depth, making it a valuable component of empirical research.

This study draws on secondary data derived from earlier interviews conducted within the same investigative framework. These interviews were originally designed to explore themes closely related to this study's objectives and offer a rich source of relevant qualitative information. Their reuse was driven by both practical and analytical considerations. Given their alignment with the research focus and the depth of insight they provided, the interviews formed a solid foundation for further exploration. Additionally, with a significant portion of the research timeline already elapsed, incorporating this existing dataset allowed the project to proceed efficiently without compromising academic rigor.

Crucially, the use of secondary data in this context does not diminish the study’s analytical integrity. The interviews were subjected to the same systematic coding and interpretive methods applied to new data, ensuring that the analysis remained rigorous and meaningful. Rather than a mere convenience, this data acted as a complementary evidence base that enhanced the analytical framework, deepened contextual understanding, and enabled more refined interpretations of key themes and relationships.

There are notable advantages to using secondary data. Chief among them is cost and time efficiency. Primary data collection can be resource-intensive, involving design, coordination, and data processing. In contrast, secondary data—often free or low-cost—bypasses much of this process, accelerating research timelines (Indeed, 2024). Additionally, secondary datasets often include large and diverse samples, covering various locations, time periods, and demographic groups. This breadth facilitates a more comprehensive view of the research topic, and historical datasets, in particular, can reveal longitudinal trends that are otherwise difficult to capture (Indeed, 2024).

However, there are limitations to be mindful of. The most significant is the lack of control over how the data was initially collected, meaning researchers must trust the quality and intent of the original study. Inaccurate or biased data can weaken the validity of findings. Furthermore, relevance can be an issue—data collected for different research aims may not fully align with the current study’s questions, requiring careful contextualisation. Timeliness also matters; older data may not reflect present-day conditions or market realities. Moreover, bias in the original collection process—whether due to researcher agendas or sampling limitations—can affect the neutrality of findings (Indeed, 2024).

In this case, secondary data was not just a fallback but a practical and methodologically justified decision. The relevance, quality, and depth of the earlier interviews made them highly suitable for this research, while the efficiency gains they offered were essential given the constraints of the project timeline. As such, secondary data played a central role in enabling a focused and thorough investigation that met the study’s objectives.

3.2 Data collection

3.2.1 Primary data

The primary data for this study was gathered through a structured interview with a key individual occupying the Chief Financial Officer (CFO) position at a prominent Swedish furniture company. The company specialises in supplying furniture for diverse settings, including private residences and public venues. Situated in Småland, Sweden, the company hosts both production and developmental facilities on-site. To preserve anonymity, the interviewee chose not to disclose their identity, and the company's name was withheld for confidentiality purposes. This company will be referred to as Company 0 in the following parts of this thesis (see Table 1).

Table 1 - List over respondents in primary data

Number	Industry/business
0	Furniture company

3.2.1.1 Interview

When collecting the primary data, the method of interviewing will be conducted. More specifically semi-structured interviews. Semi-structured interviews, in particular, allow respondents to not only answer questions but also engage in discussions, while the interviewer ensures the conversation remains within the topic of discussion (Säfsten & Gustavsson, 2020).

The interview questions were formulated to delve into various aspects of D2C e-commerce integration within SME manufacturing companies, as perceived by a CFO intimately involved in such operations. Beginning with an inquiry into the interviewee's role and responsibilities within the company, the questions progress to explore the company's current stance on D2C e-commerce and the challenges it faces. Financial considerations, technical hurdles, regulatory compliance, and the potential benefits of D2C e-commerce are thoroughly examined.

Furthermore, strategies, tactics, and implementation guidelines are discussed, shedding light on internal capabilities, resource allocation, and best practices. The interview concludes with a discussion of additional insights and recommendations aimed at supporting SMEs in their D2C e-commerce endeavours, emphasising the importance of customer experience and suggesting potential research areas for policymakers and researchers.

In the case of the interviewee preferring to participate in an interview in Swedish, the questions and answers will be translated to English by the researcher. This is done for the purpose of keeping this report understandable for English-speaking readers.

3.2.2 Secondary data

The secondary data for this research project contains information extracted from a dataset derived from interviews conducted during an earlier stage of the larger research project that this thesis is connected to. For list over respondents in secondary data set see Table 2. These interviews, conducted with individuals occupying key roles within small and medium-sized manufacturing companies, provided insights into the challenges and opportunities associated with D2C e-commerce integration. The dataset includes a range of perspectives and experiences, offering supplementary information to complement the primary data collected in subsequent interviews. By drawing upon this previously collected data, the research aims to enrich its analysis and broaden its scope, contributing to a more comprehensive understanding of the intricacies surrounding D2C e-commerce within the manufacturing sector.

Table 2 - List over respondents in secondary data

Number	Industry/business
1	Clog Manufacturer
2	Furniture Manufacturer
3	Clothes Retailer
4	Bathroom fixture manufacturer
5	Clothing and decorations retailer
6	E-cigarette manufacturer
7	Outdoor power equipment manufacturer
8	Textile manufacturer

3.3 Data Analysis

This study employs a qualitative cross-case analysis to systematically examine patterns, similarities, and differences across multiple SME cases. The objective is to develop a comprehensive understanding of the challenges and opportunities encountered by SME manufacturing firms in their transition to D2C e-commerce. By comparing multiple cases, this study identifies common barriers and industry-specific variations, offering a nuanced perspective on D2C adoption.

To ensure analytical rigour and replicability, a structured coding process was employed. This process facilitated the extraction of key themes, ensuring that the findings presented in subsequent chapters are grounded in empirical data and theoretical frameworks.

3.3.1 Coding Process and Thematic Development

This study employs a qualitative cross-case analysis approach to systematically examine patterns, similarities, and differences across multiple SME cases. By analysing data from several firms, the study aims to develop a deeper understanding of the challenges and opportunities encountered by manufacturing SMEs when adopting D2C e-commerce strategies. This method facilitates the identification of common barriers as well as industry-specific variations, thereby offering a nuanced perspective on the dynamics of D2C integration.

The data analysis followed a structured coding process designed to extract meaningful insights from interview transcripts and secondary sources. As outlined by Williams & Moser (2019), the process involved two key stages of qualitative coding: open coding and axial coding. Open coding is the initial phase, where raw data is broken down into discrete segments, each assigned a label or code to highlight emerging themes, concepts, and patterns. This step is critical for organising unstructured data and establishing broad thematic categories.

The first phase of analysis—open coding—involved a thorough review of the interview transcripts and relevant secondary data. Key terms related to D2C e-commerce, such as channel conflict, regulatory compliance, and customer engagement, were identified and coded accordingly. Each meaningful segment of text was assigned a code reflecting the underlying concept or theme.

In the subsequent axial coding phase, these codes were examined for interrelationships and grouped into higher-order categories. For example, codes such as financial constraints and investment in digital infrastructure were consolidated under the broader category of cost-benefit considerations. Similarly, logistics challenges were linked to themes such as delivery efficiency and customer satisfaction. This phase provided clarity on how different factors interact, enabling a more structured and in-depth interpretation of the data (Williams & Moser, 2019).

Thematic synthesis followed, whereby the findings were integrated with established theoretical frameworks, notably the RBV and Consumer Behaviour Theories. This step ensured that empirical observations were interpreted within the context of broader academic discourse, reinforcing the study's contribution to understanding competitive advantage, consumer preferences, and supply chain management within the context of D2C e-commerce.

Finally, a cross-case comparison was conducted to identify overarching patterns and variations across the SME cases. While the individual case analyses provided granular insights into each firm's experiences, the comparative perspective enabled the differentiation between industry-wide trends and context-specific challenges. This stage revealed how factors such as company size, industry sector, resource availability, and digital maturity shaped the strategies and outcomes associated with D2C implementation.

3.3.2 Integration of Analysis with Findings, Discussion, and Conclusions

The analysis presented in Chapter 4 is grounded in a rigorous qualitative methodology that shaped the study's findings, informed the critical discussion in Chapter 5, and supported the conclusions in Chapter 8. Drawing on a structured coding process—comprising open and axial coding—thematic insights were developed from semi-structured interviews with SME manufacturing firms adopting D2C e-commerce. This method, aligned with a phenomenological approach, enabled a nuanced understanding of participants' lived experiences, capturing both commonalities and firm-specific perspectives through cross-case comparison.

The six thematic categories guiding the analysis were derived from the systematic review by (McKee et al., 2023) and reflect key areas of interest such as sustainability, logistics, and digital transformation. The flexible yet consistent interview format allowed participants to articulate challenges and opportunities in their own terms, ensuring the authenticity of insights and grounding the analysis in empirical data.

These themes not only structured the findings but also informed the critical discussion in Chapter 5, particularly around sustainability practices, competitive advantages, and resource-based capabilities. The analysis revealed how SMEs are responding to environmental concerns through logistics innovation and how their agility and niche expertise can offset digital limitations. These insights were linked to the RBV framework, enriching the interpretation of results and expanding their theoretical significance.

The conclusions in Chapter 6 were directly shaped by this analytical process. By synthesising patterns across cases, the study identified key enablers—such as strategic technology

adoption—and barriers—including financial and logistical constraints—affecting D2C e-commerce success. The integration of secondary data further broadened the applicability of findings, reinforcing the validity of the conclusions and extending their relevance to a wider range of SMEs. Ultimately, the transparency and rigour of the data analysis enhanced the coherence between findings, discussion, and conclusions, ensuring that each stage of the research process was deeply interconnected and empirically substantiated.

3.4 Ethical considerations

Conducting research involving interviews and necessitates careful attention to ethical considerations to ensure the integrity and well-being of participants and the validity of the research findings. The following ethical principles will guide the research process:

- **Informed Consent:** Before the interviews begin, participants will be given clear and complete information about the study. This will include the purpose of the research, what will be expected of them, and any possible risks or benefits. Participants will have the chance to ask questions and must give their voluntary agreement to take part.
- **Confidentiality:** All information shared by participants will be kept strictly confidential. Any details that could identify them, such as names or addresses, will be removed or coded. Only the interviewer will have access to the data, which will be stored securely with passwords. The results will be reported in a way that does not reveal anyone's identity. Participants will be informed about these confidentiality measures.
- **Privacy:** The privacy of participants will be respected throughout the study. Interviews will be conducted in private settings to ensure participants feel comfortable and are not overheard. Responses will be collected without linking them to the participants' identities to protect their privacy.
- **Data Security:** Measures will be taken to protect the research data. This includes using secure storage with passwords and regular backups. Only the author of this thesis will have access to the data.
- **Transparency:** The research will be conducted with openness and clear communication. Participants will be kept informed about the purpose of the study, the methods used, and the findings. Any conflicts of interest or biases from the researchers will be disclosed.

Cross-case analysis was employed as a core methodological approach to ensure the quality and validity of this research. This method facilitated the systematic comparison of data across multiple cases, enabling the identification of recurring themes, patterns, and relationships. Its structured application ensured the credibility, dependability, and transferability of the findings.

The process began with data collection from diverse SMEs engaged in D2C e-commerce, drawing on both primary and secondary sources. Each case was analysed individually, with data organised into meaningful categories based on the key themes relevant to the research questions. Subsequently, a comparative analysis was conducted to identify consistencies, divergences, and unique insights across cases.

The use of cross-case analysis contributed to research quality in the following ways:

- **Credibility:** By identifying commonalities and differences across cases, cross-case analysis provided a robust basis for the findings. Recurring patterns, such as the challenges of channel conflict or ERP integration, demonstrated the validity of the

results by highlighting issues prevalent across multiple contexts. Simultaneously, attention to outliers added depth and richness to the analysis.

- **Dependability:** The structured approach of cross-case analysis ensured a systematic and replicable process. Data coding and categorisation were carried out consistently across cases, minimising the influence of researcher bias. This dependability is further reinforced by the transparent documentation of the analytical steps taken.
- **Transferability:** Insights derived from the cross-case analysis were synthesised to draw conclusions relevant to SMEs in similar industrial contexts. For example, findings related to customer engagement strategies or regulatory challenges are applicable to other manufacturing firms seeking to implement D2C e-commerce.
- **Validation through Triangulation:** The inclusion of data from multiple sources, such as primary interviews and secondary datasets, ensured data triangulation. This approach reduced the reliance on any single data source and enhanced the reliability of the findings by cross-verifying information across different cases.

4 Results & Analysis

This chapter presents the findings, and the analysis of said findings, based on the results of the data collection in the previous chapter. The findings are presented in the same categories that are found in the frame of reference but with subheadings for presenting the challenges and opportunities and the RBV perspective.

Section 4.7 consists of Table 15 - Compilation of found Challenges and Opportunities, which compiles and presents all the challenges and opportunities found within each of the six categories.

In the final section of this chapter, RBV is incorporated into the analysis of D2C e-commerce integration for SMEs expands the understanding by examining how firms can leverage internal resources and capabilities to address the challenges and seize the opportunities associated with this transition.

4.1 Logistics

The logistics of integrating D2C e-commerce presents a multifaceted set of challenges and opportunities, as illustrated by the cases studied. Effective logistics management is critical for optimising the customer experience and ensuring the smooth operation of D2C channels.

For instance, Company 1 encountered significant logistical challenges related to managing the supply chain for D2C sales. Initially, their D2C operations were minor, but as they expanded, especially with increased sales to the US, the complexity of logistics grew. They needed to manage warehousing and returns efficiently, which led to the establishment of an American warehouse and the adaptation of their payment systems. However, the increasing costs associated with these logistics, such as higher fees from American payment services, prompted the company to re-evaluate their agreements and strategies.

In contrast, Company 4 faced logistical difficulties stemming from inventory and warehousing challenges with numerous SKUs and custom-designed products. Accurate forecasting and tailored marketing strategies were required to manage relationships with retailers and wholesalers effectively. This complexity highlights the need for sophisticated logistics solutions to balance retailer demands with direct customer needs.

Company 7 experienced complications in inventory and order fulfilment as a result of D2C sales. The shift created tension with existing dealers and necessitated adaptations in inventory management to cater to both dealer and direct customer orders. This adjustment required significant logistical reconfiguration to ensure efficiency across different sales channels.

4.1.1 Challenges in logistics

A key challenge was the complexity of international logistics and warehousing. Company 1 experienced this as its D2C operations in the U.S. grew. Initially a minor market, the U.S. soon necessitated the establishment of a dedicated warehouse and payment infrastructure, which significantly increased operational complexity and costs. In parallel, Company 4 faced warehousing difficulties due to a high number of SKUs and custom-designed products, which demanded accurate forecasting and more sophisticated inventory planning.

Returns management was another critical issue. The differences between D2C and traditional retail returns processes became apparent for Company 1, and Company 6 in particular struggled with the logistical demands of last-mile delivery. The coordination of many small shipments

not only increased operational burden but also impacted customer satisfaction—highlighting the need for customer-centric delivery solutions.

Balancing dealer and D2C fulfilment added further strain. Company 7 had to reconfigure its inventory and order fulfilment systems to serve both direct customers and existing retail partners. This dual-channel complexity led to internal friction and required significant logistical restructuring.

Financial and technical barriers were also evident. Company 3, for example, faced considerable limitations due to the high upfront costs of warehousing and digital marketing required to support D2C growth. Company 0 expressed concern about potential cannibalisation of existing channels, highlighting the risk that D2C might redirect rather than expand the customer base. Both Company 0 and Company 1 approached D2C with caution, conducting strict profitability evaluations before making strategic investments.

On the technical side, integrating D2C platforms with existing ERP systems proved difficult. This challenge was particularly emphasized by Company 0, whose existing infrastructure was not fully compatible with new digital workflows. Additionally, regulatory compliance emerged as a distinct challenge, particularly for consumer-facing models. Company 0 noted that GDPR compliance introduced new layers of complexity not typically encountered in B2B operations.

Table 3 - Challenges within logistics

Logistics - Challenges		
1	Channel conflict	Risk of cannibalizing existing sales channels and stagnating total sales.
2	Financial constraints	High costs associated with warehousing, shipping, and digital marketing.
3	Technical Challenges	Difficulty integrating e-commerce with existing ERP systems.
4	Regulatory Issues	Compliance with consumer protection laws
5	Inventory Management	Balancing retailer and D2C inventory demand.

4.1.2 Opportunities in logistics

While the logistical transition to D2C posed significant challenges, companies also uncovered meaningful opportunities to enhance efficiency, customer engagement, and profitability.

One of the most consistent advantages reported was improved operational control. Company 6 found that D2C allowed for greater coordination between customer orders and the supply chain, cutting down on intermediaries and increasing stock visibility. This translated to more efficient inventory management and reduced delays.

For some companies, logistical challenges became a catalyst for process improvement. Company 7, despite its early difficulties managing parallel dealer and D2C orders, ultimately

used this situation to refine its inventory systems, achieving greater agility and responsiveness. Similarly, Company 1 leveraged its U.S. expansion to streamline global logistics, resulting in reduced overhead costs and improved fulfilment times.

D2C logistics also created opportunities to protect brand identity and maintain pricing control. Company 2 benefited from being able to uphold brand values without third-party influence. This direct relationship with customers also enabled faster feedback and continuous product improvement.

Customer data and direct engagement played a strategic role as well. Company 6 used insights from D2C transactions to personalize offerings and optimize marketing, while Company 5 capitalized on social media to strengthen customer loyalty and foster brand advocacy. These direct channels not only supported relationship-building but also represented cost-effective ways to drive growth.

Lastly, companies noted that over time, investments in D2C logistics contributed to long-term profitability. Once systems were optimized, benefits such as faster product availability, better alignment with demand, and reduced inefficiencies positioned D2C as a sustainable and scalable business model.

Table 4 - Opportunities within logistics

Logistics - Opportunities		
1	Brand Control	Direct pricing and identity management.
2	Customer Engagement	Direct feedback loop with customers.
3	Cost Savings	Higher profit margins without intermediaries.
4	Scalability	Ability to expand market presence efficiently.

4.2 Marketing

Company 5 exemplifies the power of social media in D2C marketing. By actively engaging with customers through platforms like Instagram and Facebook, the company has built a compelling brand story and fostered a strong sense of community. This strategy involves interactive elements such as high-quality visual content, user-generated content, and responsive customer interactions. These efforts not only maintain customer interest but also drive brand loyalty and advocacy.

Company 2 utilised direct customer engagement to strengthen its market position. Their initiative, Repair, focuses on sustainability and customer retention by offering repair services and a guarantee for their products. This program not only reinforces brand values but also enhances customer satisfaction through exceptional post-purchase support. The direct feedback from this initiative helps the company adapt and improve its offerings, demonstrating the value of personalised customer interactions in a D2C model.

Company 0 also highlighted the importance of developing a robust marketing strategy to support e-commerce. This includes leveraging social media campaigns and other digital marketing tools to drive traffic to their D2C channels. Effective marketing is crucial for maximising the visibility of the company's products and engaging with potential customers in a crowded online marketplace.

4.2.1 Challenges in marketing

Many companies reported that transitioning to D2C required substantial changes in their marketing capabilities, often highlighting gaps in digital expertise and resource allocation.

A primary challenge concerned internal capabilities and expertise. Company 3, for instance, lacked in-house knowledge of digital marketing and e-commerce management. As a result, it became reliant on external agencies, which strained financial resources and limited internal capacity-building. This external dependence illustrates a broader challenge for SMEs attempting to build D2C channels while managing costs.

Strategic alignment also proved complex. Company 0 struggled to balance its traditional retail operations with its emerging D2C efforts. Concerns over channel cannibalisation—where D2C sales might undermine existing retail relationships—led to hesitancy in marketing investments and required careful coordination to prevent conflicting business goals.

Companies also faced difficulties in customer engagement and perception without intermediaries. Company 8, for example, found it challenging to accurately assess customer value perception when interacting directly with consumers. This necessitated new feedback mechanisms and a shift in how marketing strategies were developed and adjusted.

In addition, resource constraints and channel complexity further complicated marketing execution. Company 4 had to adapt its packaging and promotional strategies to meet retailer-specific requirements, which added logistical and branding inconsistencies across channels. Meanwhile, Company 1 initially struggled with limited online visibility due to prior reliance on physical retail partners for brand exposure.

The cost of digital marketing was another significant hurdle, especially for smaller firms. Company 3 and Company 0 both noted that building digital presence through paid campaigns, search engine optimization, and content production demanded high investments with uncertain returns. This made it difficult to scale D2C marketing effectively without robust financial backing.

Table 5 - Challenges within Marketing

Marketing – Challenges		
1	High Costs	Digital marketing and online visibility are expensive.
2	Customer Perception	Direct sales require new ways to manage customer expectations.
3	Retail Conflicts	Adapting marketing to meet retailer-specific needs.

4.2.2 Opportunities in marketing

Despite the challenges, the shift to D2C marketing also created substantial opportunities for brand building, customer engagement, and data-driven personalization. These advantages can be categorized into two themes: brand positioning and identity and promotional tactics and campaigns.

Under the first theme, brand control emerged as a major benefit. Company 2 utilized D2C to directly manage its brand messaging and pricing strategy. By aligning its communication with core values such as sustainability, the company preserved a premium brand image and strengthened consumer trust. The Repair initiative—offering product repair services and extended warranties—demonstrated how marketing could be intertwined with value-driven storytelling, effectively appealing to eco-conscious consumers.

Similarly, Company 6 capitalized on its ability to gather first-party customer data, which enabled tailored marketing campaigns and adaptive brand messaging based on real-time feedback. This close loop between data collection and marketing response allowed the company to stay agile and aligned with evolving customer preferences.

Company 7 and Company 1, though initially challenged by limited brand awareness in digital channels, gradually developed stronger online brand identities. Through increased D2C engagement and customer feedback integration, they gained greater visibility and refined their branding strategies in ways that were not possible through retail intermediaries.

Under the second theme—promotional innovation—several firms successfully leveraged social media and direct engagement to drive customer interaction and loyalty. Company 5 exemplified this approach through high-quality visual content, interactive social media campaigns, and user-generated content. These efforts not only increased reach but also built a sense of community and brand advocacy.

Company 0 emphasized the importance of product presentation in the D2C space, focusing on high-resolution imagery and comprehensive descriptions to improve conversion rates. This focus on presentation highlights the importance of creating a seamless and engaging online experience to drive sales.

Overall, D2C marketing provided a more cost-effective and personalized alternative to traditional approaches. Company 6, for example, used customer insights to adjust both products and promotional efforts, leading to stronger loyalty and repeat engagement. In doing so, these

companies demonstrated how direct access to consumers could lead to more efficient marketing and deeper relationships—when executed with strategic clarity.

Table 6 - Opportunities within Marketing

Marketing – Opportunities		
1	Brand Positioning	Direct control over messaging and pricing.
2	Social Media Leverage	Interactive content fosters engagement.
3	Innovative Campaigns	Sustainability initiatives enhance brand loyalty.

4.3 Customer Relationship Management

Effective customer engagement is a cornerstone of successful D2C CRM. Companies employ various strategies to build and maintain strong connections with their customers.

Company 5 leveraged social media to foster engagement with its customer base. By actively interacting with customers through comments, direct messages, and user-generated content, Company 5 cultivates a sense of community and personal connection. This approach not only enhances customer satisfaction but also drives brand loyalty by creating a space where customers feel valued and heard.

Company 2 demonstrated a proactive approach to customer engagement through its Repair initiative. This program provides repair services for old furniture, aligning with sustainability goals and reinforcing customer loyalty. By offering a six-year guarantee and direct feedback channels, Company 2 maintains ongoing relationships with its customers, ensuring they feel supported and valued throughout their ownership experience.

Company 0 highlighted the importance of developing internal capabilities to effectively manage CRM. Understanding social media dynamics and integrating CRM tools with ERP systems were seen as crucial for enhancing customer interactions and streamlining communication channels.

4.3.1 Challenges in Customer Relationship Management

CRM in a D2C context introduces several operational and strategic hurdles, particularly for companies accustomed to retail intermediaries handling end-customer interactions.

One key challenge was the strain on internal resources and service delivery. Company 3, known for its personalised service, struggled to maintain this high-touch approach as it scaled its D2C operations. Without the buffer of retail partners, sustaining close customer relationships placed significant pressure on staffing and financial resources, especially in the absence of mature CRM tools.

Expectation management and customer support infrastructure were additional concerns. As companies like Company 1 and Company 7 transitioned into D2C, customers began expecting faster, more responsive service directly from the brand. Meeting these expectations required

rethinking customer service delivery and ensuring seamless handling of inquiries, complaints, and post-sale engagement.

Channel conflict and coordination also emerged as a challenge. Company 7 experienced tension between its dealer network and its new D2C initiatives, complicating how customer relationships were managed across channels. Similarly, Company 4 faced logistical hurdles—such as SKU complexity and inconsistent forecasting—that interfered with timely fulfilment and service, undermining CRM efforts.

Capability and system limitations further constrained CRM performance. Company 0 and Company 3 both highlighted challenges in building in-house CRM capabilities and integrating these with broader enterprise systems like ERP. Without a unified infrastructure, it was difficult to manage customer data effectively, respond to feedback in real time, or personalise communication at scale.

Finally, Company 8 noted the difficulty of gauging customer perceptions without intermediaries, which had traditionally served as a filter for customer feedback. This absence demanded new tools and approaches for capturing and interpreting direct feedback in order to maintain customer satisfaction.

Table 7 - Challenges within CRM

Customer Relationship Management – Challenges		
1	Dealer (channel?) Conflicts	Shifting to D2C strains traditional retail partnerships.
2	Logistical Complexities	Balancing inventory and forecasting challenges.
3	Limited Resources	Financial constraints hinder CRM investment.

4.3.2 Opportunities Customer Relationship Management

Despite these challenges, D2C models present significant opportunities for enhancing CRM. These benefits can be grouped into two core areas: loyalty and retention strategies, and feedback and adaptability.

Company 2 exemplifies a strategic approach to CRM through its Repair initiative, which reinforces the brand’s sustainability values while simultaneously extending the customer relationship beyond the point of purchase. Offering long-term guarantees and repair services helps build trust and increase customer retention.

Company 1 also prioritized customer loyalty through operational reliability—keeping products in stock and ensuring fast delivery. Even amid global supply chain disruptions and rising costs, the company maintained high service standards, which played a key role in strengthening its D2C relationships.

Personalisation also served as a loyalty driver. Company 3, despite resource limitations, continued to focus on creating tailored experiences, using exceptional service as a point of

differentiation against lower-priced competitors. This emphasis on human connection helped justify premium pricing and fostered customer loyalty in a competitive market.

Several companies used D2C channels to collect direct customer feedback, creating an ongoing loop of learning and improvement. Company 6 utilized this data to tailor its products and marketing, ensuring a closer alignment with evolving customer preferences. This responsiveness contributed to greater satisfaction and long-term engagement.

Company 0 recognized the strategic value of customer feedback in refining its CRM practices. By improving its feedback mechanisms and integrating them with CRM systems, the company aimed to create a more agile and informed approach to managing customer relationships.

In contrast, Company 8 faced initial difficulties with direct feedback collection but acknowledged its critical role in adapting marketing and communication strategies. This highlights the broader opportunity D2C provides for real-time customer insight—an asset less accessible in traditional retail models.

Additionally, social media proved to be a powerful CRM tool for several companies. Company 5, for instance, used interactive social media engagement—such as responding to messages and promoting user-generated content—to build community and foster deeper relationships with its customers. This level of engagement enhanced customer satisfaction and reinforced brand loyalty.

Table 8 - Opportunities within CRM

Customer Relationship Management – Opportunities		
1	Loyalty Programs	Initiatives like repair guarantees enhance retention.
2	Personalised Support	Direct engagement strengthens customer relationships.
3	Customer Insights	Data-driven decision-making improves service.

4.4 Customer Experience

Creating a seamless and engaging user experience is critical for the success of D2C e-commerce. Companies employ various strategies to ensure that customers have a positive and efficient online shopping experience.

Company 2 emphasised the importance of optimising product presentation to enhance the online shopping experience. The company invests in high-quality images and detailed product descriptions to provide a comprehensive view of its offerings. Additionally, ensuring a smooth navigation process and efficient transaction workflow helps to reduce abandoned purchases and improve overall customer satisfaction.

Company 5 effectively utilised social media platforms to enhance user experience. The company integrates interactive features such as polls, quizzes, and high-quality visual content to engage customers. This dynamic approach keeps users invested and interested, contributing to a more enjoyable and immersive shopping experience.

Company 0 highlighted the necessity of developing internal capabilities to support an optimal user experience. Effective management of social media and integration with e-commerce platforms are crucial for creating a seamless customer journey from initial engagement to final purchase.

4.4.1 Challenges in Enhancing Customer Experience

The shift to D2C requires companies to take full ownership of the customer journey—something many were unprepared for, especially those with backgrounds in traditional retail or wholesale models.

One of the most prominent challenges was the technical and design quality of digital platforms. Company 0, for instance, faced difficulties optimising its website for better product presentation, navigation, and checkout flow. Suboptimal user experiences, such as confusing layouts or slow-loading pages, directly contributed to cart abandonment and customer dissatisfaction.

Personalisation at scale emerged as another pain point. Company 3 struggled to strike a balance between providing a tailored customer journey and managing limited resources. High-quality, personalised service—previously delivered in-person or through retail partners—now had to be recreated online, often with less budget and staffing.

Beyond digital infrastructure, logistical and operational challenges also affected CX. Company 4, for example, experienced forecasting and inventory issues that disrupted order fulfilment, negatively impacting the customer experience. Additionally, Company 7's D2C efforts introduced channel conflicts with established dealers, creating tension that complicated efforts to provide consistent service and messaging across all touchpoints.

Financial constraints further hindered smaller firms like Company 3, limiting investment in sophisticated CX tools or post-sale support services. This financial barrier is a recurring challenge for SMEs attempting to elevate digital experiences to the standards set by larger competitors.

Table 9 - Challenges within Customer Experience

Customer Experience – Challenges		
1	Inventory Issues	Difficulties in forecasting market demand.
2	Budget Constraints	Limited funds for enhancing CX technologies.
3	Retailer Resistance	Managing conflicts with existing dealers.

4.4.2 Opportunities for Enhancing Customer Experience

Despite these challenges, the D2C model opens the door to significantly enhance the customer experience through both personalisation and post-sale engagement.

Many companies successfully leveraged D2C channels to deliver a more personalised experience. Company 2, for instance, used its Repair initiative not only to extend product life but also to directly address customers' individual needs, reinforcing its commitment to service and sustainability. Similarly, Company 3 maintained a high level of one-on-one interaction to differentiate itself from discount-focused competitors, turning personalised service into a competitive advantage.

Company 1 prioritised responsiveness through inventory management and quick fulfilment, allowing it to cater to varying customer demands and reduce friction in the buying process. These efforts contributed to a more responsive and customer-centric experience.

Company 5 added another dimension to personalisation by using social media as an interactive platform. Through polls, quizzes, and engaging visual content, the brand transformed shopping into a two-way experience that kept customers engaged and invested beyond the point of purchase.

Customer experience extends well beyond checkout in the D2C model. Company 2 stood out by offering a six-year repair guarantee, enhancing not just service quality but also long-term brand trust. This form of after-sales support is particularly important in building a reputation for care and reliability.

Company 6 leveraged real-time customer data to improve its support services, using direct feedback to inform adjustments in both service and product design. Similarly, Company 0 highlighted the importance of integrating feedback loops into CRM systems to maintain alignment with customer expectations over time.

Company 7 improved the customer journey through thoughtful packaging design that addressed both logistics and presentation. Enhanced packaging contributed to a smoother delivery process and a better unboxing experience—subtle yet powerful aspects of the overall customer journey.

Company 8, while still developing its D2C maturity, recognised the importance of capturing and acting on customer sentiment in the absence of intermediaries. Implementing structured feedback mechanisms allowed the company to better understand customer expectations and fine-tune its service delivery accordingly.

Table 10 - Opportunities within Customer Experience

Customer Experience – Opportunities		
1	Personalisation	Tailored experiences improve engagement.
2	Enhanced Support	Strong after-sales care builds trust.
3	Feedback Utilization	Customer insights guide product/service improvements.

4.5 Supply Chain Integration

Integrating D2C e-commerce with existing supply chain systems is crucial for achieving operational efficiency and coherence across business functions.

Company 6 highlighted the importance of efficient logistics for managing numerous small shipments and ensuring timely delivery. The company’s focus on integrating D2C operations with its supply chain allows for better coordination and responsiveness. Efficient integration helps to maintain customer satisfaction by ensuring that products are delivered promptly and accurately.

Company 2 emphasised the need for seamless integration between e-commerce platforms and existing ERP systems. Company 0 also stressed that integrating D2C operations with ERP systems is vital to avoid additional workload and ensure smooth operations across various business functions. This integration supports accurate inventory management, order processing, and overall supply chain efficiency.

Company 7 faced challenges in managing inventory and order fulfilment due to varying order quantities from dealers and direct customers. The company had to adapt its supply chain systems to accommodate both channels effectively. This adaptation involved refining logistics processes and enhancing coordination between different supply chain components.

4.5.1 Challenges for Supply Chain Integration

D2C e-commerce places substantial demands on supply chain systems, particularly for companies used to selling through dealers or retail partners. A recurring issue was the integration of D2C platforms with enterprise resource planning (ERP) systems. Companies such as Company 1 and Company 2 struggled to synchronise inventory data, order processing, and fulfilment workflows between their e-commerce channels and internal systems. Company 2 specifically emphasised that a lack of seamless ERP integration increased operational workload and inefficiencies.

For Company 1, logistics became especially complex due to international operations, requiring the establishment of a local warehouse and banking infrastructure in the U.S. to streamline shipments and manage returns. This additional layer of complexity added pressure to both systems and staffing.

Balancing dual-channel operations presented another significant challenge. Company 7 had to simultaneously manage dealer relationships and direct consumer orders, which required a

flexible supply chain capable of serving both segments without compromising service levels. This dual requirement led to internal tensions and the need for system upgrades to ensure full stock visibility across all channels.

Forecasting and inventory management were further areas of concern. Company 4, for instance, grappled with a high number of SKUs and customised products, making accurate sales forecasting difficult. The added involvement of wholesalers introduced further complications in marketing, packaging, and order handling. Company 8 similarly struggled with forecasting due to the unpredictable nature of its D2C sales, impacting its ability to optimise supply chain planning.

Financial constraints also played a significant role, especially for smaller firms. Company 3 found itself limited in its ability to expand warehousing and logistics infrastructure, reducing its capacity to respond to rising D2C demand.

Table 11 - Challenges within Supply Chain Integration

Supply Chain Integration – Challenges		
1	Logistical Complexity	Managing shipments and returns globally
2	Inventory Management	Difficulty balancing D2C and retail needs.
3	System Integration	ERP incompatibility slows operations.
4	Channel Conflicts	Dealer may resist supply chain shifts.

4.5.2 Opportunities for Supply Chain Integration

Despite the complexity, D2C offers clear opportunities for streamlining supply chain processes, enhancing responsiveness, and aligning logistics with customer needs.

Company 6 provided a strong example of logistics integration tailored for D2C. By aligning order fulfilment with real-time customer data, it reduced excess inventory and shortened delivery times. This responsiveness not only enhanced customer satisfaction but also improved cost efficiency through leaner operations.

Company 2 demonstrated how ERP integration can enhance accuracy and efficiency. By aligning inventory tracking and order management between its D2C platform and internal systems, the company minimised errors and delays, supporting a more seamless experience for both customers and staff.

Other companies, such as Company 4 and Company 8, identified the opportunity to enhance forecasting capabilities. In both cases, the move to D2C necessitated the development of more sophisticated forecasting models to manage the variability of direct sales. Improved forecasts allowed for more effective production and inventory planning, reducing the risk of overstocking or under-delivery.

The need to serve both retail and consumer segments also encouraged greater flexibility in supply chain design. Company 7 adapted its processes to meet the needs of both channels, balancing order sizes, packaging types, and fulfilment strategies. This adaptability not only preserved key dealer relationships but also supported the company’s growth in the D2C space.

Sustainability was another emerging theme in supply chain strategy. Company 7 incorporated eco-friendly packaging as part of its broader D2C supply chain integration, aligning logistics decisions with evolving consumer preferences and environmental expectations.

Finally, Company 5’s use of social media to engage customers created unique supply chain opportunities. While it introduced variability in demand patterns, it also encouraged the development of agile systems capable of quickly responding to real-time market signals—an important capability in today’s fast-paced e-commerce environment.

Table 12 - Opportunities within Supply Chain Integration

Supply Chain Integration – Opportunities		
1	Data-Driven Forecasting	Advanced analytics improve demand predictions.
2	Efficiency Gains	Streamlined logistics enhance responsiveness.
3	Scalability	Seamless integration supports expansion.

4.6 Consumer Behaviour

Understanding how consumers interact with D2C platforms is crucial for tailoring strategies to meet their needs and preferences.

Company 5 effectively used social media to engage with consumers. By crafting a compelling brand story and maintaining active interactions through comments, direct messages, and user-generated content, Company 5 builds strong relationships with customers. This approach not only fosters brand loyalty but also provides valuable insights into consumer preferences and behaviours.

Company 2 demonstrated the significance of direct customer feedback. Through its D2C channel, Company 2 receives real-time feedback on product quality and customer satisfaction. This direct line to consumers allows the company to adapt quickly to changing preferences and address any issues promptly.

Company 1 experienced a notable increase in D2C sales due to the direct connection with consumers. The ability to gather customer feedback and make data-driven decisions contributed to the development of new products and the identification of niche markets, such as Swedish expatriates abroad.

4.6.1 Challenges of Consumer Behaviour

Many companies encountered challenges in making sense of customer behaviour within the D2C context. One key difficulty was the loss of intermediary insights, traditionally provided

by third-party retailers. For instance, Company 8 found it difficult to assess customer value perception directly, having to develop new strategies and tools for gathering and analysing consumer sentiment.

Similarly, Company 4 highlighted the challenge of forecasting market size in the absence of aggregated sales data from retail partners. This uncertainty complicated inventory planning and marketing strategy development.

Another common issue was managing rising consumer expectations. Company 7 observed that customers in the D2C environment demanded faster service, greater convenience, and personalised experiences. Meeting these expectations required significant operational adaptation. Company 6 faced additional complexity in managing pricing transparency between online and physical retail environments, which influenced consumer trust and purchasing decisions.

Financial constraints further limited some companies’ ability to engage in sophisticated behavioural analysis. Company 3, for instance, was constrained in its capacity to invest in consumer research tools, relying instead on personal interactions and service excellence to gauge and influence behaviour.

Table 13 - Challenges within Consumer Behaviour

Consumer Behaviour – Challenges		
1	Customer Expectations	Lack of intermediaries complicates engagement.
2	Limited Market Insights	Direct sales require advanced behavioural analysis.
3	Price Sensitivity	Balancing online and retail pricing.

4.6.2 Opportunities of Customer Behaviour

Despite the challenges, the D2C model also unlocked valuable opportunities for collecting and leveraging consumer data. These opportunities fell into two main categories: purchasing patterns and preferences, and factors influencing decision-making.

Direct access to customers gave companies an unprecedented opportunity to understand purchasing behaviours. Company 6 utilised data gathered through its D2C platform to tailor product offerings and marketing strategies, adapting more effectively to evolving consumer tastes. This responsiveness allowed the company to remain competitive in a dynamic e-commerce landscape.

Company 1 successfully used customer feedback to inform product development, launching new models that aligned more closely with specific needs, including those of niche segments like Swedish expatriates. Similarly, Company 7 identified that order patterns differed significantly between dealers and D2C customers. This insight enabled a more strategic approach to inventory management and order fulfilment across both channels.

Company 8 also recognised the value of direct interaction with consumers in uncovering expectations and preferences, though it faced challenges in building effective tools to manage this data. Nonetheless, the effort to understand customer value directly signalled a positive step toward greater customer-centricity.

Several case companies identified key factors that influence purchasing decisions in a D2C context, such as product presentation, brand perception, and the overall customer experience.

Company 2 highlighted the importance of high-quality product images and detailed descriptions in reducing uncertainty and improving the online shopping experience. The emphasis on smooth navigation and efficient checkout processes contributed to lower cart abandonment rates and improved satisfaction.

Company 5 provided a standout example of leveraging social media to enhance consumer engagement. Through the use of interactive content, direct communication, and community-building strategies, the company fostered brand loyalty and created immersive, enjoyable shopping experiences.

Company 3 adopted a high-touch approach, focusing on personal relationships with customers to justify premium pricing. This strategy not only supported customer retention but also differentiated the company from competitors in lower-cost segments by offering an elevated service experience.

Table 14 - Opportunities within Consumer Behaviour

Consumer Behaviour – Opportunities		
1	Consumer Insights	Direct data collection refines strategies.
2	Enhanced Brand Loyalty	Personalised experiences increase retention.
3	Optimized Marketing	Data-driven promotions boost engagement.

4.7 Summary of Challenges and Opportunities

The investigation into the adoption of D2C e-commerce by SME manufacturing firms revealed a complex landscape marked by both significant challenges and promising opportunities. This section synthesizes the key findings from Research Questions 1 and 2 and introduces a table that organizes the insights systematically across relevant categories.

Regarding RQ1, the challenges SMEs face in adopting D2C e-commerce largely stem from the substantial transformation required across internal operations, customer management, and digital infrastructure. Logistics emerged as a primary difficulty, encompassing warehousing, inventory forecasting, and last-mile delivery. Scaling operations internationally introduced additional logistical complications, echoing prior concerns about SMEs' limited capacity to manage complex, cross-border logistics networks (Christopher, 2016; McKee et al., 2023).

Technological integration also proved to be a major hurdle. Many firms struggled to connect existing enterprise resource planning (ERP) systems with new D2C platforms, often due to limited expertise and financial resources. This reflects broader issues of digital maturity common among SMEs (Jamwal et al., 2023).

On the marketing side, firms faced challenges related to digital marketing skills, high advertising costs, and the demands of direct customer relationship management—areas traditionally buffered by intermediaries. Additionally, internal resistance to organizational change and fears of digital disruption surfaced as significant barriers, highlighting a lack of critical intangible assets such as adaptive culture and change management capacity, as suggested by the RBV framework.

Regarding RQ2, the findings also illuminated substantial opportunities arising from D2C e-commerce adoption. Chief among these was the ability to exercise greater control over branding, pricing, and customer engagement. Bypassing intermediaries allowed SMEs to cultivate direct consumer relationships, fostering loyalty and differentiation in increasingly competitive markets (Lim et al., 2023; Zhang & Chang, 2021).

D2C strategies also enhanced operational agility, enabling firms to optimize inventory management, improve logistics responsiveness, and better align with market demands—key characteristics of resilient supply chains (Christopher, 2016; McKee et al., 2023).

Moreover, direct access to consumer data opened avenues for deeper personalization and strategic product development. Finally, sustainability initiatives such as offering repair services, extended warranties, and eco-friendly packaging not only fulfilled environmental objectives but also strengthened brand positioning among ethically conscious consumers, consistent with emerging trends in consumer behaviour (Lim et al., 2023).

To clearly organize these insights, the following table presents the key challenges and opportunities identified across all categories:

Table 15 - Compilation of found Challenges and Opportunities

Category	Identified challenges within category	Identified opportunities within category
Logistics	<ul style="list-style-type: none"> • Financial Constraints • Retailer & Dealer Conflicts • Inventory & Order Management • ERP & System Integration Challenges • Regulatory & Compliance Issues 	<ul style="list-style-type: none"> • Profitability & Cost Savings • Scalability & Expansion Potential
Marketing	<ul style="list-style-type: none"> • Financial Constraints • Consumer Expectation Management • Retailer & Dealer Conflicts 	<ul style="list-style-type: none"> • Brand Positioning & Control • Direct Customer Engagement & Feedback • Data-Driven Decision Making • Personalisation & Customer Loyalty
Customer Relationship Management	<ul style="list-style-type: none"> • Financial Constraints • Retailer & Dealer Conflicts • ERP & System Integration Challenges 	<ul style="list-style-type: none"> • Direct Customer Engagement & Feedback • Brand Positioning & Control • Data-Driven Decision Making • Personalisation & Customer Loyalty
Customer Experience	<ul style="list-style-type: none"> • Consumer Expectation Management • Inventory & Order Management • Retailer & Dealer Conflicts 	<ul style="list-style-type: none"> • Personalisation & Customer Loyalty • Enhanced Support & After-Sales Care • Direct Customer Engagement & Feedback
Supply Chain Integration	<ul style="list-style-type: none"> • ERP & System Integration Challenges • Inventory & Order Management • Financial Constraints • Retailer & Dealer Conflicts 	<ul style="list-style-type: none"> • Profitability & Cost Savings • Scalability & Expansion Potential • Data-Driven Decision Making
Consumer Behaviour	<ul style="list-style-type: none"> • Consumer Expectation Management • Price Sensitivity & Competition 	<ul style="list-style-type: none"> • Direct Customer Engagement & Feedback • Data-Driven Decision Making • Personalisation & Customer Loyalty

4.8 RBV Analysis

The RBV offers a valuable lens through which to assess the internal resources and capabilities that enable firms to achieve and sustain competitive advantage (Barney, 1991). Applying this perspective to the findings of the study provides insight into how organisations manage, deploy, and leverage their assets in the course of digital transformation, particularly with regard to the implementation and use of enterprise systems.

4.8.1 Challenges

One of the foremost challenges identified from an RBV perspective is the limited availability of VRIN resources—those that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Many of the organisations examined lacked distinct resources that could support digital transformation efforts in a strategically meaningful way. For example, while technological investments were made, the corresponding capabilities—such as specialised IT talent, strategic leadership, and innovative organisational cultures—were often underdeveloped or misaligned with broader business objectives (Yang et al., 2015).

Integration capabilities also emerged as a significant weakness. The ability to assimilate new enterprise systems into existing organisational routines and structures is a critical resource in itself (Yang et al., 2015). However, the study revealed inconsistencies in this area, suggesting a gap in the internal know-how and coordination mechanisms required for successful system integration. This lack of internal cohesion limited the potential for value creation from these digital tools.

Cultural resistance presented another substantial challenge. While culture is an intangible resource, it plays a vital role in enabling or constraining strategic change (Barney, 1991). The fear of job displacement, coupled with a general scepticism toward change, created a climate of resistance within several organisations. This resistance impeded the uptake and effective use of enterprise systems, thereby weakening the potential benefits that might have been realised through digital transformation.

Additionally, the underdevelopment of analytical capabilities further hindered organisational progress. Although vast quantities of data were generated through the implementation of enterprise systems, most organisations lacked the requisite skills and infrastructure to transform this data into actionable insights. From an RBV perspective, this deficiency points to a failure to develop data-related competencies that could otherwise serve as a source of sustained competitive advantage (Helfat et al., 2023; Yang et al., 2015).

4.8.2 Opportunities

Despite these challenges, the study also revealed several opportunities for leveraging internal resources more strategically. One such opportunity lies in the development of human capital. Investing in employee training and capacity building can enhance the strategic value of the workforce (Barney, 1991; Helfat et al., 2023). When employees become proficient in digital tools and are empowered to adapt to technological change, they transform into valuable organisational assets capable of driving sustained performance improvements.

System customisation and flexibility also present areas of opportunity. Organisations that cultivate the internal capacity to tailor enterprise systems to their specific needs can develop a form of technological differentiation (Yang et al., 2015). When combined with strong vendor relationships and in-house expertise, this adaptability becomes a resource that is not easily replicated by competitors (Barney, 1991).

Furthermore, strategic data utilisation holds considerable promise. Organisations that invest in robust data governance and develop advanced analytical capabilities can extract significant value from the data produced by enterprise systems. When such data is contextualised through proprietary frameworks or unique business intelligence processes, it becomes a strategic resource that enhances decision-making and operational efficiency (Helfat et al., 2023).

Learning and knowledge-sharing cultures represent another form of intangible resource that can be harnessed for long-term benefit. Firms that institutionalise processes for continuous learning and encourage the dissemination of insights across departments are better positioned to adapt to changing environments. These dynamic capabilities enable organisations to reconfigure their existing resource base in innovative ways, thereby sustaining their competitive edge (Helfat et al., 2023).

Finally, leadership and strategic vision were identified as critical enablers of value realisation. Where strong, forward-looking leadership was present, digital transformation initiatives were more likely to align with organisational goals. Leaders who are able to clearly articulate a vision and mobilise internal resources around that vision provide the strategic coherence necessary for meaningful and sustained value creation (Helfat et al., 2023).

5 Discussion

This chapter presents a discussion of the empirical findings in relation to the thesis' research aims and theoretical foundation. It connects the analysis to the broader context introduced in Chapter 1, with particular emphasis on the challenges and opportunities faced by manufacturing SMEs in adopting D2C e-commerce. The discussion also explores how the findings align with or diverge from existing research, thereby addressing the identified knowledge gap. Sustainability and resilience are central themes throughout the chapter, as is the contribution this research makes to supporting sustainable development. Finally, the chapter reflects on aspects related to the execution of the study itself, including time disposition, the research perspective, its integration within a larger research project, and the use of secondary data.

5.1 Results Discussion

The findings of this study show that the adoption of D2C e-commerce by SME manufacturing firms involves a complex and often demanding transformation of internal operations, customer management, and digital infrastructure. In addressing the first research question, it is clear that while D2C channels offer SMEs new opportunities to reach customers directly, they also expose significant internal challenges. Logistics was a major area of difficulty, with firms reporting problems in warehousing, inventory planning, and last-mile delivery. Expanding into international markets made these challenges even greater. These results support earlier concerns raised in the background literature about SMEs' limited ability to manage complex logistics networks, especially when operating globally (Christopher, 2016; McKee et al., 2023). The shift to D2C demands logistics capabilities that many SMEs do not yet have, highlighting the operational barriers involved in adopting this model.

In addition to logistics, the integration of technology, particularly with ERP systems, proved to be another major hurdle. Many firms lacked the expertise or financial resources needed to connect their current systems with new D2C platforms, reflecting the broader issue of digital maturity in SMEs noted in the literature (Jamwal et al., 2023). Although e-commerce tools are widely available today, the ability of SMEs to successfully use them depends heavily on internal skills and resources. Marketing and customer relationship management also presented major challenges. Many firms struggled with limited digital marketing skills, high advertising costs, and managing customer expectations without relying on retail partners. These challenges highlight the digital divide that continues to affect smaller firms (Semerádová & Weinlich, 2022), despite the growing accessibility of digital technologies.

Cultural barriers within firms also played an important role. Resistance to change and fears about digital disruption were common and made the transition to D2C more difficult. From a RBV perspective, these organisational barriers point to a lack of key intangible assets—such as an adaptable culture and strong change management—that are needed for successful transformation. The challenges SMEs face when adopting D2C models are therefore not just technical or operational, but also deeply rooted in internal resource limitations.

Turning to the second research question, despite these challenges, the study also uncovered many opportunities linked to D2C adoption. A key advantage reported by firms was the increased control over branding, pricing, and customer relationships. By cutting out intermediaries, firms were able to engage directly with customers, offering more personalised experiences that strengthened loyalty and differentiation. These findings echo the value of strong consumer-brand relationships discussed in recent research (Lim et al., 2023; Zhang &

Chang, 2021). For many SMEs, D2C was not just a way to survive in a digital market but a proactive strategy to create stronger, lasting connections with customers.

Operational flexibility also improved for firms that adopted D2C. By managing their own sales channels, firms could streamline logistics, optimise inventory, and react more quickly to changes in customer demand. This flexibility reflects the ideas of resilient supply chains discussed in earlier chapters (Christopher, 2016; Mecalux, 2023). Furthermore, having direct access to customer data allowed firms to personalise their products and marketing, and to make faster, better-informed decisions about product development. This use of real-time consumer insight gave firms a valuable competitive advantage.

Sustainability also emerged as an important theme. Many firms embedded eco-friendly practices into their D2C strategies, such as offering repair services, using sustainable packaging, and promoting extended warranties. These initiatives served both environmental goals and brand positioning, helping SMEs appeal to increasingly ethical and environmentally aware consumers. This confirms the growing importance of sustainability as a strategic business tool, as discussed in the background chapter and consumer behaviour research (Lim et al., 2023).

Reflecting on the purpose of this thesis—to investigate how SME manufacturing firms understand e-commerce and identify key factors influencing their adoption and success in D2C from a RBV perspective—the findings provide strong insights. It becomes clear that internal resources and capabilities, rather than simply external market factors or available technologies, are central to a firm's success in adopting D2C. Firms with strong digital skills, flexible cultures, and customer-focused capabilities were much better positioned to overcome the challenges and take advantage of the opportunities presented by D2C e-commerce. On the other hand, firms lacking these capabilities faced greater risks and obstacles.

The RBV lens is therefore very relevant for understanding these outcomes. This study shows that it is not D2C adoption itself that creates a competitive advantage, but rather the firm's ability to develop and use valuable, rare, hard-to-imitate, and well-organised resources—such as technological know-how, branding expertise, strong customer relationships, and sustainability practices. In this way, adopting D2C acts both as an opportunity and a test of an SME's internal strengths.

Overall, the challenges and opportunities revealed in this study are closely connected. Firms that recognised D2C adoption as a strategic change—not just a new sales channel—were more likely to reconfigure their operations, invest in new capabilities, and strengthen their resilience. The findings show that D2C e-commerce demands SMEs to rethink not only how they sell products but also how they operate internally and how they build value for customers. This confirms the broader themes introduced in the early chapters: that digital transformation, sustainability, and resilience are becoming critical for SME competitiveness.

5.2 Implications for Sustainability

As outlined in the introduction, sustainability and resilience have become defining imperatives for modern commerce, particularly as businesses shift toward more digitalised and consumer-driven models. Within the D2C landscape, sustainability is not a peripheral consideration but a central component of strategic and operational decision-making for SMEs.

Ecological sustainability is especially relevant due to the intensified logistics requirements of D2C, notably in the area of last-mile delivery. Without the efficiencies of consolidated retail distribution, SMEs face heightened environmental impact from fragmented shipments and

increased packaging use. As noted by Christopher (2016), sustainable logistics practices—such as route optimisation and the adoption of low-emission vehicles—are critical to reducing greenhouse gas emissions. Some case firms began implementing such measures, recognising that environmental responsibility also enhances brand appeal among ethically conscious consumers. These efforts resonate with the European Commission’s “Logistics 5.0” vision, described by (Mecalux, 2023), which advocates for logistics systems that are not only technologically advanced but also sustainable and human-centric.

Economic sustainability was another key theme in both the background and empirical findings. While D2C opens opportunities for greater margin control and reduced reliance on intermediaries, the initial investment required for digital platforms, marketing, and fulfilment infrastructure can strain SME resources. However, as shown in several case studies, firms that successfully aligned their D2C strategies with leaner operations and improved inventory visibility were better able to stabilise cash flow and improve long-term viability. This supports the view presented by Semerádová & Weinlich (2022), who suggest that digitisation has levelled the playing field, enabling even smaller firms to reach and serve customers more directly and efficiently.

Social sustainability—particularly in relation to customer relationships and ethical practices—was also enhanced through D2C adoption. By removing intermediaries, firms gained direct access to consumer sentiment and were able to build more transparent, value-driven interactions. Initiatives such as Company 2’s repair and extended warranty programme not only contributed to circular product use but also reinforced the brand’s long-term commitment to customer satisfaction. As highlighted by Lim et al. (2023), modern consumers increasingly favour brands that reflect their values, including environmental responsibility and ethical engagement. D2C, therefore, offers a platform for SMEs to cultivate deeper loyalty by aligning business practices with evolving societal expectations.

Crucially, these three dimensions—ecological, economic, and social—do not operate in isolation. The firms most successful in integrating D2C into their business models were those that approached sustainability holistically. For example, improvements in logistics efficiency contributed simultaneously to environmental goals and cost savings. Likewise, customer feedback mechanisms supported both personalisation and more ethical, responsive product development.

5.3 Discussion of execution of research

5.3.1 Time Management

Time management is a critical factor in the execution of research, impacting both the depth and breadth of the study. Efficient time management enables researchers to thoroughly investigate their topics, ensuring comprehensive data collection and analysis. In this study, the challenge of managing time effectively was particularly pronounced due to the complexity of the data collection process and the need for detailed analysis.

Working alone provided a degree of autonomy but also posed challenges in terms of balancing various research activities. For instance, coordinating data collection, analysing results, and synthesising findings within a limited timeframe required careful planning and prioritisation. A more structured approach to time management could have included setting intermediate milestones and deadlines for different stages of the research process. This would have facilitated a more organised exploration of research questions and potentially enhanced the overall quality

of the study. Future research could benefit from employing time management techniques such as Gantt charts or project management software to better track progress and ensure that all aspects of the research are addressed thoroughly.

5.3.2 Perspective and Scope

The study's perspective—while broad in scope—may have led to a dilution of focus, affecting the depth of analysis. The attempt to cover various aspects of the topic, including logistics, marketing, CRM, customer experience, supply chain integration, and consumer behaviour, resulted in a comprehensive overview but potentially sacrificed detailed exploration of each individual area.

A more focused approach with clearly defined research objectives could have yielded more actionable insights. By narrowing the scope and concentrating on fewer variables or case studies, the research could have provided a deeper understanding of specific aspects of D2C e-commerce. Future research could benefit from a more targeted approach, focusing on particular dimensions or case studies to produce more in-depth and nuanced findings. Clear delineation of research boundaries and objectives is essential for balancing breadth and depth in research.

5.3.3 Involvement in a Larger Research Project

Participation in a larger research project offers several advantages, such as access to additional resources, expertise, and diverse perspectives. Collaborating within a team can enhance the robustness of the research design, facilitate data collection, and enrich the analysis process. The exchange of ideas and feedback from team members can lead to more refined research questions and methodologies.

However, involvement in a larger project also requires effective communication and coordination among team members. The potential for differing opinions and approaches necessitates a structured framework for collaboration to ensure that the research objectives are met cohesively. Networking opportunities and the sharing of knowledge within a larger research context can significantly contribute to professional development and scholarly growth. Future projects could further leverage these collaborative benefits by establishing clear roles and responsibilities, regular meetings, and integrated workflows to optimize the research process.

5.3.4 Reliance on Secondary Data

The use of secondary data presents both opportunities and challenges. Secondary data provides valuable context and insights, but it may lack specificity and relevance for addressing specific research questions. The quality and reliability of secondary sources vary, and the translation of interview responses can introduce potential biases and inaccuracies.

In this study, the reliance on secondary data necessitated careful evaluation of source credibility and relevance. Cross-referencing secondary data with primary sources, when possible, could enhance the reliability of findings. Additionally, transparency in acknowledging the limitations and potential biases associated with secondary data strengthens the study's credibility. Future research could benefit from a mixed-methods approach, incorporating both secondary and primary data to provide a more comprehensive and balanced perspective. Rigorous validation of secondary data sources and a critical assessment of their applicability to the research questions are essential for ensuring the integrity of the study's conclusions.

5.3.5 Reflexivity and Transparency

Reflexivity involves critically reflecting on the research process, acknowledging potential biases, and being transparent about methodological limitations. In this study, recognising the limitations such as sample size constraints, data quality issues, and methodological challenges is crucial for enhancing the study's credibility.

Reflections on the gap between expected and actual outcomes offer valuable insights into areas for improvement and further investigation. This process of continuous reflection and transparency helps in refining research methodologies and ensuring that findings are presented with an awareness of their limitations. Future research should adopt a reflective approach, documenting challenges encountered, and lessons learned to contribute to methodological advancements and to provide clearer guidance for subsequent studies.

5.4 Final Reflections, Limitations, and Future Research Directions

This thesis provides a contribution to the evolving understanding of D2C e-commerce adoption among SME manufacturing firms. While the findings offer valuable insights, certain limitations must be acknowledged. The study was based on a qualitative, cross-sectional approach with a regional focus on firms located around Jönköping, which may limit the generalisability of the results to other geographic or industry contexts. In addition, the maturity level of D2C adoption varied across the case companies, influencing the depth and comparability of some insights. Nevertheless, the use of semi-structured interviews and cross-case thematic analysis ensured a robust and nuanced understanding of how SMEs perceive and integrate D2C models.

Building on these findings, several avenues for future research are proposed. One important direction is the investigation of the long-term impact of D2C strategies. While this study offers a snapshot in time, longitudinal research could provide deeper insights into how SMEs sustain, adapt, and scale their D2C operations over longer periods. Such research would be particularly valuable in exploring how firms respond to changing consumer expectations, technological developments, and competitive pressures.

Future studies could also adopt mixed-method approaches, combining qualitative depth with quantitative rigour. Integrating case studies or interviews with metrics such as financial performance, customer retention, or operational efficiency could generate a more holistic understanding of the effectiveness of D2C initiatives, helping to bridge the gap between strategic intentions and measurable outcomes.

Another promising area for future research involves the adoption of emerging technologies in D2C operations. Technologies such as AI for personalised marketing, blockchain for supply chain transparency, and automation in fulfilment and customer service represent significant opportunities, particularly for SMEs with limited resources. Investigating how smaller firms engage with and benefit from these innovations could provide valuable insights into the dynamics of digital transformation and competitive advantage in the SME sector.

Comparative studies across different industries, regions, or countries would also enhance the generalisability of findings. Factors such as regulatory environments, market maturity, digital infrastructure, and cultural attitudes towards online purchasing may significantly influence how D2C models are implemented and received. Understanding these contextual factors would allow for more tailored and effective D2C strategies.

Finally, future research should place greater emphasis on the consumer perspective, especially in areas such as brand trust, data privacy, sustainability, and ethical consumption. As consumers increasingly make purchasing decisions based on values and experiences, gaining a deeper understanding of their expectations and responses to D2C models will be vital for SMEs seeking to build strong, socially responsible, and customer-centric strategies.

6 Conclusions

This thesis set out to investigate how SME manufacturing firms understand and navigate the adoption of D2C e-commerce, with the goal of identifying the key factors that influence their success. Framed through the RBV, the study explored how internal capabilities—such as digital infrastructure, organisational culture, and customer insight—impact the ability of SMEs to implement D2C strategies effectively.

The findings demonstrate that the transition to D2C e-commerce presents a mix of significant challenges and valuable opportunities. On the one hand, firms face complex obstacles such as managing channel conflict with existing retail partners, ensuring regulatory compliance (particularly with data protection laws like GDPR), and addressing resource constraints related to funding, logistics, and digital maturity. These issues reflect the broader difficulties SMEs encounter when undertaking digital transformation without the scale or resources of larger firms.

On the other hand, D2C adoption offers meaningful advantages, especially in terms of strategic control and customer engagement. SMEs that successfully implement D2C gain more influence over branding, pricing, and communication while building closer, data-driven relationships with their customers. This direct access to market feedback enables more agile decision-making in product development, marketing, and service delivery.

An important conclusion of this study is that sustainability and resilience are not peripheral concerns, but central components of effective D2C strategies. Case firms that embedded environmentally friendly logistics, circular practices (e.g., repair services), and socially conscious messaging into their D2C approach reported enhanced customer loyalty and improved operational efficiency. These findings align with broader trends in the digital economy and reinforce the relevance of frameworks such as Logistics 5.0 and consumer-driven sustainability (Christopher, 2016; Mecalux, 2023).

The study further concludes that SMEs with a clear strategic vision and investment in intangible assets—such as employee competencies, adaptive culture, and integrated digital systems—are better positioned to overcome D2C-related barriers and create long-term value. In this way, the RBV proved to be a valuable theoretical lens for understanding how internal resources shape the outcomes of D2C transformation.

6.1 Managerial Implications

The findings of this study offer several practical recommendations for SME manufacturing firms either considering or currently undertaking a D2C e-commerce transformation. The shift to D2C presents both challenges and opportunities, and success depends on a strategic and proactive approach to implementation. SMEs must prioritise strengthening their operational foundations to support the unique demands of this model.

A critical area of focus is investment in logistics and operational infrastructure. Efficient, sustainable last-mile delivery solutions and integrated inventory management systems are essential for ensuring timely fulfilment while minimising environmental impact—an increasingly influential factor in consumer purchasing decisions. At the same time, SMEs must enhance their digital infrastructure. Seamless integration between ERP systems and e-commerce platforms is key to facilitating a smooth information flow throughout the organisation. Equally important are intuitive, customer-centric websites, real-time order

tracking, and interactive customer support tools, all of which enhance the consumer experience and foster brand trust.

Data security and regulatory compliance must also be treated as strategic imperatives. As D2C models involve direct handling of consumer data, SMEs must adopt strong cybersecurity measures and ensure alignment with regulations such as the GDPR. Any breaches in data protection could severely harm brand reputation and expose firms to legal and financial risks. Similarly, customer engagement strategies need to be refined and digitally enabled. By leveraging social media, personalised marketing, and feedback loops, SMEs can cultivate stronger customer relationships and adapt more effectively to market demands. Actively incorporating consumer feedback into product and service development also enhances responsiveness and competitiveness.

Channel management becomes increasingly complex in the context of D2C. As firms expand direct-to-consumer efforts, tensions with existing B2B partners may arise. It is essential for SMEs to maintain open communication with their traditional partners and explore hybrid strategies that allow D2C operations to coexist with existing channels. This approach reduces the risk of cannibalisation while maximising cross-channel synergies. Embedding sustainability into the D2C strategy is equally important. From eco-friendly packaging and low-emission delivery to repair services and sustainability-driven branding, responsible practices can bolster brand image and ensure alignment with evolving consumer expectations and regulatory frameworks.

Strategically, SMEs should begin their D2C journey with a thorough digital readiness assessment. This includes evaluating existing infrastructure, staff capabilities, and organisational culture to determine readiness for digital transformation. Such an assessment helps identify capability gaps and allows for more informed, targeted investments. Equally important is the development of competencies in customer data analytics. The ability to collect, interpret, and act on real-time consumer insights enables firms to tailor offerings with greater accuracy and agility—an essential advantage in a rapidly evolving market landscape.

Finally, SMEs must be prepared to manage the complexity of operating across multiple sales channels. A clear, integrated strategy that unifies D2C and B2B operations is essential. This requires investment in systems that support cross-channel visibility and performance monitoring, helping firms maintain consistency, resolve potential conflicts, and unlock long-term value across their entire sales ecosystem.

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Appendix

Interview with CFO of Company o

Bellow follows the questions asked during the interview with the CFO. The questions are categorised under background, challenges, opportunities, implementation and strategy, and other.

Background:

1. Could you briefly describe your role and responsibilities within the company?
2. Can you describe the company's current commitment or plans for D2C e-commerce integration?

Challenges:

3. What specific challenges do you see small and medium-sized manufacturing companies facing when considering integrating D2C e-commerce?
4. How do financial considerations, such as investment costs and ROI expectations, affect the decision-making process around the integration of D2C e-commerce?
5. From your perspective, what are the key technical hurdles that small and medium-sized manufacturing companies encounter when using D2C e-commerce platforms?
6. Are there any regulatory or compliance challenges that small and medium-sized manufacturing companies need to address when venturing into D2C e-commerce?

Opportunities:

7. What are the potential benefits or opportunities that D2C e-commerce integration can offer small and medium-sized manufacturing businesses?
8. How do you envision D2C e-commerce helping to improve customer relationships and brand visibility for small and medium-sized manufacturing companies?
9. Can you discuss any strategies or tactics that small and medium-sized manufacturing companies can leverage to take advantage of the opportunities offered by D2C e-commerce?
10. From a financial perspective, how do you expect D2C e-commerce integration to impact the company's revenue streams and overall profitability?

Implementation and strategy:

11. What internal capabilities or resources do small and medium-sized manufacturing companies need to develop or improve in order to successfully integrate D2C e-commerce into their business?
12. How do you suggest that small and medium-sized manufacturing companies prioritise their efforts and resources when implementing D2C e-commerce initiatives?

13. Are there any best practices or learnings from your experiences or observations regarding D2C e-commerce integration that you think would be beneficial to other small and medium-sized manufacturing companies?

14. What products are sold through D2C? Why? Why not? Criteria for price, weight, size?

Other:

15. Is there any additional information or insights you'd like to share regarding the challenges and opportunities associated with integrating D2C e-commerce for small and medium-sized manufacturing businesses?

16. Finally, do you have any recommendations or advice for researchers or policymakers aimed at supporting SMEs in their D2C e-commerce endeavours?

Secondary data

Incomplete data, only the most relevant are presented, and not all the companies.

Company 1: Clog manufacturer

“Direct-to-consumer (D2C) sales began through e-commerce channels already in 2008. For a long time, these made up a small portion of sales. Following the relocation of manufacturing to Bosnia in 2012, D2C sales began to grow, before experiencing a sharp increase between 2014 and 2016. The connection with consumers offered by D2C practices allowed for customer feedback that inspired Company 1 to develop a new boot model for sale. Company 1 had found a lucrative niche, with Swedish expatriates abroad accounting for the majority of their online sales.”

“One exception to this rule would be the Japanese market. When first entering the market, Company 1 collaborated with a reputable local retailer. Later, D2C orders from Japan soared from the exposure the local retailer had given them. This is an example of showrooming, where prospective customers visit brick and mortar stores to inspect a product, only to order that same product from a different source.”

“These changes bring some changes in supply chain. The manufactured shoes must be shipped to Skövde, Sweden, afterwards being both dispatched and sent to retailers, but also sorted in the warehouse for the D2C sales. The company’s owner mentioned that around 85% of D2C sales go to the US, the rest 15% accounting for other countries like Germany, Australia, Japan etc. Due to the fact that most of D2C sales go to US, Company 1 had to arrange a warehouse and an American bank account. The warehouse is used for the returns, afterwards being shipped in bulk back to Sweden. Another challenge connected with sales in US is that PayPal has raised their fees, which forced Company 1 to stop the agreement with them.”

“Company 1 has historically fostered close relationships with its customers. The owner notes that approximately 100 loyal customers regularly place orders and provide valuable feedback, which has directly influenced the design of some shoe models. However, to maintain a high level of customer satisfaction, Company 1 must maintain a sizable inventory to ensure prompt delivery, often within the same or next day. The rising costs of services like Google Ads have increased acquisition expenses, underscoring the importance of customer retention for company 8. Furthermore, the global economy's downturn has impacted sales, evident in lower figures for 2023 compared to previous years.”

Company 2: Furniture manufacturer

“One advantage with only selling directly to customers is the total control of the prices. Company 2 can in theory set whatever prices they want but in reality, that can impair their credibility towards their retailers. Furthermore, a benefit with D2C is the close connection with customers and their direct feedback. Company 2 appreciates having a personal contact with our customers. One part of our business that builds strong relations with our customers is Company 2 Repair. Company 2 repair is an

investment that Company 2 has developed in the recent years that helps our company to work with both sustainability and customer retention. The repair unit of the company fixes and repairs old Company 2 furniture, bought on their website, directly in the workshop and offers a guarantee for six years. This enables a deeper level of customer feedback all the way back to the carpenters.”

“A consequence of selling by too many retailers that does not align with Company 2’s image, is that the brand risk to lose its uniqueness and gets too mainstream. When it comes to D2C, Company 2 have control over their brand identity and how they are perceived by the market, and therefore the brand gets strengthened.”

“For the moment, our website is not equipped with a configurator that shows the customer all the possible customisations. It is only possible to choose between six different standard models which are picked by us depending on popularity. A live configurator on our website would enable a much broader assortment and therefore a greater customer customisation but right now it is too big of an investment for us.”

Company 3: Clothes retailer

“Small retailers like Company 3 owns their business without investors which make it more difficult for them to only use D2C. If D2C grows they need a bigger warehouse and need to expand their store which comes with costs they can’t afford since they don’t use any big investors.”

“[...] lacking in special expertise required to provide D2C in its entirety. As a result, it is necessary to hire external partners suggested by Kalayaci, Becker and Barrot (2024), or hire more staff who are specialised in digital marketing, e-commerce platform management to supply chain optimisation and customer relationship management. Hence, it may be difficult to hire all these necessary workers considering that the company don’t use any investors who can contribute economically.”

“Majority of customers who shop in Company 3, shop for the experience and service that comes with shopping in an actual store.”

“There is also increased competition in the luxury fashion market from the high discount closing sectors. This is also a challenge that Company 3 faces as their suppliers provide cheaper price for the high discount closing sectors since they buy their items in bulk. For that reason, Company 3 places more emphasis on creating a personal relationship with their customer for exclusive customer service, in the hope that customers understand that the higher price is a contributing factor for the personal customer service. This is consistent with the research by Durham et al. (2004), which suggests that personal customer service can justify higher prices and promotes loyalty among customers.”

Company 4: Bathroom fixture manufacturer

“One disadvantage with the use of retailers is the complications with warehousing and inventory management at the retailers. Sales must be forecasted at every single retailer and wholesaler and Company 4 has a huge amount of stock keeping units (SKU) with custom designed article for the customers need.”

“[...] retailers have showrooms of the bathrooms to make the consumer inspired to order one for themselves. Once it is time to order a bathroom, customer have the possibility to make their own decision for customisations”

“AhlSELL is a Swedish trading company that mainly purchase technical product, installation products, tools, and machines (Sandberg E, 2015). AhlSELL revenue is around 21 billion SEK and has 4800 employees. They act both as a wholesaler and a retailer and has the majority of their customers in the north. The connection with Company 4 is mostly through their 80 000 square meters central warehouse in Hallsberg. Company 4 has developed a brochure just for AhlSELL with a minor assortment of Company 4 bathroom furniture (Andersson & Lundell, personal communication, February 23, 2024). The assortment is specially constructed and packed on a pallet to fit AhlSELLs warehouse. They have a maximum height of 120 cm per pallet and the brochure has fixed quantities to fit those requirements. This is to encourage AhlSELLs fill rate in their warehouse which is their business model for profitability and most importantly for them, growth. This will result in a partnering relationship between AhlSELL and Company 4 (Andersson & Lundell, personal communication, February 23, 2024).”

“According to Andersson, (personal communication, February 23, 2024) one of the reasons they use retailers is that the number of returns is fewer when products are bought in a showroom. the customer takes a larger responsibility for the products when ordering them from a physical store rather than ordering online, said Andreas Lundell (personal communication, February 23, 2024).”

Company 5: Clothing and decorations retailer

“The company relies on social media platforms, particularly Instagram, to curate a captivating brand story that deeply resonates with its target audience.”

“By actively interacting with users through comments, direct messages, and user-generated content, Company 5 cultivates genuine conversations and dialogue, thereby building trust, loyalty, and brand advocacy.”

“Despite experiencing problems in developing its omnichannel network due to its physical small size and lack of a dedicated mobile application which will be offering the store multiple advantages, Company 5 shows exceptional adaptability by directly engaging with customers via social platforms such as Instagram and its website in which the store relays mostly on them. With physical small occupation, Company 5's smart use of accessible online channels exemplifies the adaptability of D2C e-commerce. By leveraging social media platforms, Company 5 can promote its products, connect with customers in real time, and respond quickly to market developments and consumer preferences. This agility keeps Company 5 relevant and competitive in the shifting retail world, demonstrating its ability to handle the difficulties of D2C e-commerce while retaining strong client relationships, which are their core strategy and strength of the company.”

“The significant contribution of e-commerce channels to Company 5's revenue demonstrates the critical relevance of direct-to-consumer tactics in driving sales growth and building strong customer connections. E-commerce has a major impact on Company 5 since it's besides growing their revenue and profit margins it also helps the store to develop their relationships with customers on a continuous way. which enables the store to get multi-beneficial framework. Company 5 uses platforms like Instagram to cultivate direct and individualised interactions with its customers, capitalising on D2C principles to increase sales and brand engagement. Company 5 provides dynamic online experiences that resonate with its target audience by combining compelling visual content, interactive features, and responsive customer care, resulting in sales conversions and brand loyalty. This strategic alignment with D2C principles enables Company 5 to not only meet, but exceed, consumer expectations in the digital domain, thereby strengthening its position as a dynamic and customer-centric retailer in the competitive e-commerce industry”

Company 6: E-cigarette manufacturer

“Using D2C is very beneficial since the reach to customers becomes greater and making it possible to sell to other countries. The margin of D2C is better than when selling through other retailers. That is because Company 6 gain more of the money earned when selling directly because the retailers gain a percentage of the earnings. Most of the revenue generated is from selling through other retailers but the company gains more for each sale when using D2C, according to A. Chau (personal communication, February 19, 2024).”

“Setting prices can be a challenge, especially when being an omnichannel company that partly sell the products direct to customers while also selling to other retailers. According to Chau, Company 6 sets a recommended price for the retailers to use; however, Company 6 cannot enforce a price for the retailers. Company 6 has had cases where a retailer sets a much lower price than the recommended. Establishing a price lower than the recommended isn't good for the company since it makes customer want to purchase Company 6 products at that retailer instead of ordering online. In some cases, retailers set a much higher price than the recommended but in those specific cases it has worked out due to the lack of competition, according to A. Chau (personal communication, February 19, 2024).”

“Implementing the D2C reveals logistics complications. It puts demands on the company, with necessity for efficient coordination to fulfil orders directly. The logistics operation needs adaptation to individual customer shipments. A critical element in D2C is the last mile delivery. The challenge with this is to ensure accurate deliveries to customers. The balance between keeping up the last-mile deliveries for individual orders while meeting the overall demand involves complex logistics. D2C allows Company 6 to have a direct and more personalised connection with the customers. They can gather valuable

customer data through online platforms, which can help them adapt their products and platform for a greater number of customers, since they get insights into buying behaviour, market trends, and preferences. The direct communication would also foster trust and brand loyalty towards the company.”

Company 7: Outdoor power equipment manufacturer

“S. Waldies (Interviewer, 22 February 2024) mentioned that their biggest issue about D2C is the channel conflict between the dealers and the company. For example, a lot of small dealers in Jönköping sell Company 7 products feel like the company is a competitor. He says that it is important to get a trust of them and make them understand it is not a race. He explains that the main reason the company is willing to work D2C is they would like to contact with end customer directly to see which products they prefer mostly and there is any need to optimise the items according to requests.”

“The other difference between the dealers and individuals are the quantities in orders, which also effected the operations in the warehouse. For big quantities, they use big pallets after D2C selling, this amount dropped into one or two items per-order. The order dates are also varying between the dealers and individual purchasers, the dealers order around December – January while the individuals purchase around March and April, when the weather gets nicer. Company 7 tries to create the necessary components in the warehouse to fulfil the needs but it sometimes it causes to hiccups for several years. The company plans the forecasts and supply operations with existing logistics.”

“After D2C implementations, Company 7 didn’t change the technology they use in the warehouse. They made some changes to adapt the warehouse management software, which is the core to manage inventory and locations in the warehouses.”

“Company 7 has low return rates, around %5. The company didn’t have to deal with the return 5 or 6 years ago (before implementing D2C) since the retailers/dealers used to take care all. The estimated product returns are varying between %20-%35 in some sectors (Bernon, M., et al. (2016)),”

“Before D2C, packaging was not their priority and they didn’t put much effort on that but after D2C implementations and the trends that time brings, they focused more on the packaging to make it more aesthetic and sustainable. Apart from the trends, every transportation company has different regulations about the packing like the weight and height, to optimise the carrying process”

“According to the interviewer, the best part about D2C is direct and fast access to the end customer. Before D2C implementation only way to see end customer reflection was the comments section in social media.”

“D2C makes the connection stronger between customers and the company and provides transparency. The detailed information about the product like the manufacturing process or the materials used makes end customers more knowledgeable about the product they would like to purchase. The other positive side of the D2C from both the customer and the company is the direct communication that leads to customisation. Since the customer, the end user, can explain what are the good features and what needs to be changed/updated about the product the company to tailor their products according to rising trends in the market.”

Company 8: Textile manufacturer

“two external threats were found from the qualitative data analysed. By introducing D2C Company 8 will skip many intermediates, this will cause channel conflicts that must be handled correctly. The second threat is that as it is now, the company cannot weight the value the customer perceives since the product usually comes as part of a bigger project. This can imply complications to forecast the target market size and add variability to the possible success of this operation.”