JÖNKÖPING UNIVERSITY
School of Engineering

Doctoral Thesis

Strategic Consumer Steering in Omni-Channel Last-Mile Distribution

Capability Configurations for Competitive Advantage

Andreas Risberg

Jönköping University
School of Engineering
Dissertation Series No. 107 • 2026

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To my parents, Johan and Catarina, and to my wife, Magdalena:

I am deeply grateful for your unwavering support,
encouragement, and belief in me.

Thank you for always being there for me throughout this journey.

Andreas

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Andreas Risberg
Jönköping, September 2026

Abstract

The rapid expansion of e-commerce and the contraction of brick-and-mortar store networks have elevated last-mile distribution from an operational concern to a strategic priority in omni-channel retailing. Omni-channel retailers face a fundamental tension: consumers increasingly expect a wide range of delivery alternatives and free delivery options, while last-mile distribution costs constitute a substantial proportion of retail revenues. Retailers can create last-mile distribution competitive advantages by strategically influencing consumers' delivery choices. This thesis seeks to advance understanding of strategic consumer steering in omni-channel last-mile distribution and its role in creating competitive advantage. *The purpose was to develop an understanding of strategic consumer steering in omni-channel last-mile distribution and its role in creating competitive advantage.*

The research presented in this thesis establishes consumer steering as a distinct research area within last-mile distribution in omni-channel retailing and demonstrates its strategic importance. The findings show that last mile is highly configurable, and a last-mile configuration framework was developed. Last-mile distribution cost minimisation and free last-mile distribution service performance are conceptualised as potential sources of last-mile distribution competitive advantage. Free last-mile distribution service performance may be achieved through either selective or widespread free last-mile delivery coverage. Last-mile consumer steering is conceptualised as comprising single, dual, and simultaneous consumer steering capabilities that orchestrate last-mile distribution resources and support last-mile distribution competitive advantages and superior financial performance. The findings further identify potential sources of last-mile distribution competitive advantage arising from consumer steering capability configurations associated with superior performance that orchestrate last-mile distribution resources across four distinct retailer groups. These findings are consistent with recent research suggesting that lower last-mile distribution costs can generate competitive advantages, for example by enabling the development of new and profitable consumer offerings. Furthermore, the findings suggest that simultaneous steering, conditionally free remote deliveries, and delivery partner steering formed part of configurations associated with superior financial performance

across four distinct retailer groups characterised by different firm sizes and sales channel mixes.

The research contributes to the resource-based view by conceptualising last-mile consumer steering capabilities as capabilities that orchestrate last-mile distribution resources; by identifying last-mile distribution and consumer steering capabilities that may constitute sources of competitive advantage; by demonstrating that consumer steering is highly configurable; by identifying potential strategic fits between consumer steering capability configurations associated with superior financial performance and different retailer groups; and by showing which last-mile distribution capabilities these configurations may support. The research contributes to transaction cost economics in the last-mile context by providing insights into delivery partner governance and the minimisation of transaction costs associated with last-mile distribution. Finally, it contributes to configuration theory by demonstrating that last mile is highly configurable, by developing a last-mile configuration framework, and by identifying last-mile configurations associated with superior performance.

From a practical perspective, the research presented in this thesis offers actionable insights for managers responsible for last-mile decisions in increasingly competitive retail environments.

It should be acknowledged that the causal relationships between consumer steering capabilities, strategically aligned configurations, last-mile distribution competitive advantages, and superior financial performance have not been conclusively established. Nevertheless, the findings provide a valuable foundation for further research on strategic consumer steering and last-mile distribution in non-grocery omni-channel retailing.

Keywords: strategic last-mile consumer steering, competitive advantage, omni-channel, retailing, configuration theory, transaction cost economics, resource-based view

Sammanfattning

E-handelns snabba expansion och neddragningarna i de fysiska butiksnäten har gjort last mile-distribution till en strategisk prioritering inom omnikanalhandeln, snarare än enbart en operativ fråga. Detaljhandelsföretag som bedriver omnikanalhandel står inför en grundläggande målkonflikt: konsumenterna förväntar sig i allt större utsträckning ett brett utbud av leveransalternativ och möjligheter till avgiftsfri leverans, samtidigt som kostnaderna för last mile-distribution utgör en betydande andel av företagens intäkter. Genom att strategiskt påverka konsumenternas leveransval kan detaljhandelsföretag skapa konkurrensfördelar inom last mile-distribution. *Syftet med denna avhandling är att fördjupa förståelsen för strategisk konsumentstyrning inom last mile-distribution i omnikanalhandeln och dess roll i skapandet av konkurrensfördelar.*

Forskningen som presenteras i avhandlingen etablerar konsumentstyrning som ett särskilt forskningsområde inom last mile-distribution i omnikanalhandeln och visar dess strategiska betydelse. Resultaten visar att last mile kan konfigureras på många olika sätt, och ett konfigurationsramverk för last mile har utvecklats. Kostnadsminimering inom last mile-distribution och serviceprestation avseende avgiftsfri last mile-distribution konceptualiseras som potentiella källor till konkurrensfördelar inom last mile-distribution. Denna serviceprestation kan uppnås genom att avgiftsfria last mile-leveranser erbjuds selektivt eller med bred täckning.

Konsumentstyrning inom last mile konceptualiseras som bestående av förmågor till enkel, dubbel och simultan konsumentstyrning. Dessa förmågor orkestrerar resurser inom last mile-distribution och understödjer konkurrensfördelar inom denna distribution samt bättre finansiella resultat. Resultaten identifierar vidare potentiella källor till konkurrensfördelar inom last mile-distribution som härrör från konfigurationer av konsumentstyrningsförmågor förknippade med bättre resultat. Dessa konfigurationer orkestrerar resurser inom last mile-distribution i fyra distinkta grupper av detaljhandelsföretag.

Resultaten är förenliga med senare forskning som tyder på att lägre kostnader för last mile-distribution kan skapa konkurrensfördelar, exempelvis

genom att möjliggöra utvecklingen av nya och lönsamma kunderbjudanden. Vidare tyder resultaten på att simultan konsumentstyrning, villkorat avgiftsfria leveranser till platser utanför det egna butiksnätet och styrning av konsumenternas val av leveranspartner ingick i konfigurationer förknippade med bättre finansiella resultat i fyra distinkta grupper av detaljhandelsföretag. Grupperna skiljer sig åt i fråga om företagsstorlek och försäljningens fördelning mellan olika kanaler.

Forskningen bidrar till det resursbaserade perspektivet (*resource-based view*, RBV) genom att konceptualisera konsumentstyrningsförmågor inom last mile som förmågor som orkestrerar resurser inom last mile-distribution. Den identifierar också förmågor inom last mile distribution och konsumentstyrning som kan utgöra källor till konkurrensfördelar samt visar att konsumentstyrning kan konfigureras på många olika sätt. Vidare identifieras möjliga strategiska överensstämmelser mellan konfigurationer av konsumentstyrningsförmågor som är förknippade med bättre finansiella resultat och olika grupper av detaljhandelsföretag. Forskningen visar även vilka förmågor inom last mile-distribution som dessa konfigurationer kan stödja.

Forskningen bidrar också till transaktionskostnadsteorin (*transaction cost economics*, TCE) i en last mile-kontext genom att ge insikter om styrningen av relationer med leveranspartner och om hur transaktionskostnader förknippade med last mile-distribution kan minimeras. Slutligen bidrar forskningen till konfigurationsteorin genom att visa att last mile kan konfigureras på många olika sätt, utveckla ett konfigurationsramverk för last mile och identifiera last mile-konfigurationer som är förknippade med bättre resultat.

Ur ett praktiskt perspektiv erbjuder avhandlingens forskning användbara insikter för chefer med ansvar för beslut om last mile i en alltmer konkurrensutsatt detaljhandel.

Det bör samtidigt framhållas att de kausala sambanden mellan konsumentstyrningsförmågor, strategiskt anpassade konfigurationer, konkurrensfördelar inom last mile-distribution och bättre finansiella resultat inte har fastställts entydigt. Trots detta utgör resultaten en värdefull grund för fortsatt forskning om strategisk konsumentstyrning och last mile-distribution inom omnikanalhandel utanför dagligvarusektorn.

Nyckelord: strategisk konsumentstyrning inom last mile, konkurrensfördelar, omnikanalhandel, detaljhandel, konfigurationsteori, transaktionskostnadsteori, resursbaserat perspektiv

Appended papers

The following papers are enclosed as appendices.

Paper I

A Systematic Literature Review on e-Commerce Logistics: Towards an e-Commerce and Omni-channel Decision Framework, *The International Review of Retail, Distribution and Consumer Research* 33(1):67-91

Andreas Risberg (2023)

Contribution of first author: Conceptual paper idea and design. Data acquisition, analysis, and interpretation of the data. Writing manuscript and responding to reviewers' comments. Accountable for all aspects of the work. Two research assistants supported abstract and full-paper screening.

Paper II

Last mile practices in e-commerce: framework development and empirical analysis of Swedish firms, *International Journal of Retail & Distribution Management* 50 (8-9):942-961

Andreas Risberg & Hamid Jafari (2022)

Contribution of first author: Conceptual idea of the paper and designing the paper together with the second author. Acquisition of the data related to the 200 retailers, analysis, and interpretation of the data. Performing the ten retail last-mile decision-maker interviews. Drafting the work. Critically revising the manuscript and improving the intellectual content. Final approval of the version to be published. Agreement to be accountable for all aspects of the work.

Paper III

A configurational approach to last mile logistics practices and omni-channel firm characteristics for competitive advantage: a fuzzy-set qualitative comparative analysis, *International Journal of Physical Distribution and Logistics Management* 53 (11):53-70

Andreas Risberg, Hamid Jafari & Erik Sandberg (2023)

Contribution of first author: Conceptual idea of the paper and designing the paper together with the second author. Acquisition of the data related to the 72 omni-channel retailers, analysis, and interpretation of the data. Drafting Chapter 3 (Methods), Chapter 4 (Results), Chapter 5 (Discussion and implications), and Chapter 6 (Concluding remarks). Critically revising the manuscript and improving the intellectual content. Final approval of the version to be published. Agreement to be accountable for all aspects of the work.

Paper IV

Last mile consumer steering in omni-channel retailing: an integrated delivery channel, mode, and partner steering study performed in Sweden, *International Review of Retail, Distribution and Consumer Research*

Andreas Risberg (2026)

Contribution of first author: Conceptual idea of the paper and designing the paper. Acquisition of the data, analysis, and interpretation of the data. Authoring the article and responding to reviewer comments. Accountable for all aspects of the work. Origo Group supported data collection.

Paper V

Configuring last-mile consumer steering capabilities for higher profitability and competitive advantage in omni-channel retailing, *Journal of Competitiveness*

Andreas Risberg and Pejvak Oghazi (Under review)

Contribution of first author: Conceptual paper idea and paper design. Data acquisition related to 80 retailers, data analysis, and data interpretation. Drafting the first version of the article. Revising the manuscript critically, improving intellectual content, and approving version to be printed in cooperation with second author. Agreed to be accountable for all aspects of the work.

Additional publications

Risberg, A. and Jafari, H. (2021). *Last Mile Distribution Practices in E-Commerce: A Framework Development and Empirical Analysis.* Colloquium on European Research in Retailing in Sophia Antipolis, France. ISBN 978-2-493066-00-8.

Risberg, A. and Oghazi, P. (2026). *Profit by design configurations of last mile consumer steering*, 26th Academy of Innovation, Entrepreneurship, and Knowledge Conference in Malaga, Spain.

Definitions

The definitions are divided into six categories: 1) Retailer, retail sector, and firm characteristics, 2) Last-mile distribution, 3) Last-mile consumer steering, 4) Last-mile system and configuration theory, 5) Resource-based view, and 6) Transaction cost economics.

Retailer, retail sector, and firm characteristics

Omni-channel retailer: An omni-channel retailer operates both physical stores and one online channel and integrates processes to provide consumers with a seamless shopping experience.

E-tailer: An e-tailer is a retailer that operates exclusively online without physical stores.

Retail sector: A retail sector is a category grouping of retailers based on their primary product offering, such as apparel, home electronics, furniture and home décor, construction and hardware, sport and leisure, or pharmacy.

Non-grocery: Non-grocery retailing encompasses the sale of non-food products such as apparel, home electronics, furniture and home décor, sport and leisure goods, and pharmacy products.

Grocery: Grocery retailing refers to the sale of food and everyday consumables.

Mass merchandise: A non-grocery retail sector covering retailers with a wide assortment covering multiple retail sectors. Many of the mass merchandise retailers are discounters.

Firm size: Firm size denotes the scale of a retailer's operations, commonly measured by annual turnover. In this thesis, firm size is categorised according to European Commission Small and medium-sized enterprises (SME) criteria into SME and large retailers.

Sales channel mix: Sales channel mix describes the distribution of a retailer's total sales across physical store and online channels.

Non-store-dominant retailer: A non-store-dominant retailer is an omni-channel retailer with more than 10% of total sales online.

Store-dominant retailer: A store-dominant retailer is an omni-channel retailer whose sales are primarily generated through physical stores, with the online channel representing less than 10% of total sales.

Last-mile distribution

Last-mile distribution: Last-mile distribution starts with fulfilling online orders at the retailer's final fulfilment location (e.g., store, warehouse, or vendor facility) and ends at the consumer's chosen delivery destination. It encompasses both last-mile back-end fulfilment and last-mile delivery.

Last-mile back-end fulfilment: Last-mile back-end fulfilment comprises the operational processes conducted at the final fulfilment location before dispatch, including order picking, packing, consolidation, and preparation for last-mile delivery. These activities may be performed in stores, warehouses, or vendor facilities and are triggered by the receipt of an online order.

Last-mile delivery: Last-mile delivery denotes the physical transportation and handover of an order from the retailer's final fulfilment node (such as a store, warehouse, or vendor facility) to the consumer's selected delivery location (e.g., home, store, parcel terminal, or service point). It represents the primary point of physical contact between the retailer and the consumer.

Integrated store and warehouse fulfilment: Integrated store and warehouse fulfilment is a last-mile back-end fulfilment approach in which online orders are fulfilled simultaneously from warehouses and stores.

Delivery channel: A delivery channel is the route through which the consumer receives the order. In this thesis, store delivery and online delivery channels are used. Consumers pick up orders in-store through the store delivery channel, while remote deliveries (e.g., home, store, parcel terminal,

or service point) deliver parcels to consumers through the online delivery channel.

Delivery mode: Delivery mode refers to the specific type of remote delivery within the online delivery channel, such as click-and-collect (C&C) or home deliveries.

Delivery partner: A delivery partner is an external logistics service provider that performs last-mile delivery activities. Delivery partners operate networks of depots, sorting terminals, collection points (e.g., parcel terminals and courier offices), and delivery fleets.

Remote delivery: Any type of delivery mode that is not an in-store delivery (e.g., in-store C&C and attached C&C).

Last-mile consumer steering

Last-mile consumer steering: The deliberate practice of influencing consumers' choices of delivery channel, delivery mode, and delivery partner using logistics consumer steering levers.

Logistic consumer steering lever: Retailers use various logistics levers to influence consumer delivery choices, with delivery fees being the most significant lever. Other logistics levers are pre-selected delivery alternatives, quicker delivery times, delivery recommendations, and product availability displayed online.

Delivery channel steering: Delivery channel steering is the practice of influencing consumers to select a particular delivery channel, typically steering orders toward in-store C&C or remote delivery options.

Delivery mode steering: Delivery mode steering denotes retailer efforts to guide consumers toward specific delivery modes, such as solitary C&C or letter delivery instead of more expensive home delivery.

Delivery partner steering: Delivery partner steering refers to the practice of influencing consumers to choose deliveries conducted by a preferred delivery partner.

Last-mile system and configuration theory

Last-mile distribution system: The last-mile distribution system consists of subsystems like delivery nodes (e.g., warehouses, stores, sorting terminals, and collection points) and transportation links managed by a delivery fleet. A last-mile distribution system provides distribution coverage within the distribution territory. Retailers outsource, in most cases last-mile deliveries to delivery partners that are sub-systems in the last-mile distribution system.

Strategic last-mile distribution management: Refers to the ability to strategically design last-mile distribution systems. This thesis focuses on the configuration of last-mile distribution system resources.

Strategic last-mile consumer steering management: Refers to the ability to strategically configure last-mile consumer steering systems. Strategic consumer steering influences the design of last-mile distribution system. This thesis focuses on the configuration of last-mile consumer steering capabilities.

Last-mile configuration: Last-mile decision-makers think, implicitly or explicitly, in configurational terms. They believe that systems can be configured for competitive advantage and economic rents.

Distribution territory: The distribution territory represents the geographical delivery area of retailer sales. The retailer can cover the delivery area using stores, remote deliveries, or a combination of both stores and remote deliveries. Delivery area examples are a local area, a county, a region covering multiple countries, a continent, or worldwide coverage.

Configuration of last-mile systems: Scholars argue that last-mile systems are truly configurable. Conjunction and equifinality are core to configurable systems. The desired outcome rarely has a single cause it is a result of interdependence of multiple conditions, so-called conjunction. Equifinality means multiple pathways can lead to the desired outcome.

Resource-based view

Competitive last-mile advantage: A competitive last-mile advantage exists when a retailer's last-mile configuration creates greater consumer value, lower total last-mile distribution costs, or both, relative to relevant competitors in the targeted market.

Economic rents: Economic rents refer to returns above the normal competitive level that a retailer is able to appropriate from its resources and capabilities. Superior return on assets and profitability are treated as empirical indicators consistent with potential economic rents, rather than as direct measures of economic rents.

Last-mile distribution resources: In this research last-mile distribution resources are any tangible or intangible asset that a retailer controls and can deploy in last-mile distribution such as such as warehouses, brick-and-mortar stores, collection points, and delivery fleets.

Last-mile distribution resource orchestration: The strategic structuring, bundling, and deployment of last-mile distribution resources to minimise last-mile distribution costs, enable profitable consumer service offerings, and support competitive advantage.

Last-mile consumer steering capability: In the research presented in this thesis, last-mile consumer steering is conceptualised as capabilities that orchestrate last-mile distribution resources. Consumer steering capabilities minimise last-mile distribution costs and enable new profitable last-mile consumer service offerings, both sources of competitive advantage.

Single consumer steering capability: A single consumer steering capability is a capability that orchestrates last-mile distribution resources by steering consumers in the same way no matter of order value towards delivery channel, delivery mode, or delivery partner, and implicitly back-end fulfilment location.

Dual consumer steering capability: A dual steering capability is capability that steer consumers in different ways towards delivery channels, delivery modes, and delivery partners depending on order value.

Simultaneous consumer steering capability: In this research part of this thesis, a simultaneous consumer steering capability is a higher-level capability that steers consumers simultaneously by combining single consumer steering capabilities such as delivery channels steering capability, delivery modes steering capability, and delivery partner steering capability.

Dynamic consumer steering capability: A dynamic steering capability enables dynamic steering and dynamic order fulfilment routings based on real-time retailers, competition, and consumer information.

Geographical consumer steering capability: Geographical consumer steering capabilities may constitute a source of competitive advantage, particularly in large geographical territories where distribution costs vary significantly. Such capabilities may also be valuable when retailers operate a selective store network with uneven geographical coverage. In these situations, retailers may benefit from applying different steering strategies across geographical areas.

Total last-mile distribution costs minimisation capability: The capability associated with minimising total last-mile distribution costs, which may, under certain conditions, contribute to competitive advantage.

Widespread free last-mile delivery coverage capability: The capability associated with the provision of widespread free last-mile delivery coverage, which may, under certain conditions, contribute to competitive advantage. This may include free in-store C&C deliveries enabled by an extensive store network or widespread free remote deliveries.

Selective free last-mile delivery coverage capability: The capability associated with the provision of selective free last-mile delivery coverage, which may, under certain conditions, contribute to competitive advantage. This may include free in-store C&C deliveries or free remote deliveries in selected geographical areas

Transaction cost economics

Governance: Transaction cost economics provides a complementary transactional perspective on how last-mile distribution activities, such as last-mile deliveries, are governed to minimise total last-mile distribution costs.

Last-mile distribution transaction cost: Last-mile distribution transaction cost refers to the distribution cost associated with distributing a single consumer order, where each consumer order is considered one transaction.

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1. Introduction

This chapter introduces the research, outlines a key strategic tension faced by omni-channel retailers, and proposes last-mile consumer steering as a potential solution to this challenge.

1.1. Background

The rapid expansion of online retail channels constitutes one of the most profound disruptions in the retail industry, fundamentally challenging established retail models and reshaping the future of retailing (Karlsson et al., 2023, Ratchford et al., 2022, Huebner et al., 2022). Omni-channel retailers have responded by integrating online and physical channels to serve consumers with increasingly heterogeneous preferences and overcome geographical constraints of traditional brick-and-mortar stores (Ratchford et al., 2022). As online sales continue to grow, the number of brick-and-mortar stores is declining, and the share of sales generated online is expected to increase further (Rai, 2021).

The online marketplace has become increasingly competitive due to the growth of dedicated e-tailers, digital marketplaces, and direct-to-consumer manufacturers (Rodríguez-García et al., 2024, Reza-Gharehbagh et al., 2025). At the same time, consumers expect a broad range of delivery options and prefer free delivery services (Rai et al., 2019, Nguyen et al., 2019, Murfield et al., 2017). Meeting these expectations is challenging, as last-mile distribution costs constitute a substantial and growing share of omni-channel retailers' revenue (Bijmolt et al., 2021, Ishfaq and Bajwa, 2019, Lu and Li, 2025). Given the strategic importance of last-mile distribution for retail competitiveness and the limited ability of retailers to transfer these costs to consumers in highly competitive markets, retailers must actively influence consumers' delivery choices (Roggeveen and Sethuraman, 2020, Jones et al., 2022, Kong et al., 2020b, Persson, 1991). The research presented in this thesis conceptualises such efforts as strategic last-mile consumer steering, defined as a deliberate

practice of influencing consumers' choices of delivery channel, delivery mode, and delivery partner.

1.2. Problem statement

Omni-channel retailers face a fundamental tension: consumers increasingly expect a broad range of delivery options and free delivery services, while last-mile distribution costs account for a substantial share of retailer revenues (Rai, 2021, Lu and Li, 2025). Consequently, last-mile distribution has evolved from an operational concern into a strategic issue that is closely linked to competitive advantage (Roggeveen and Sethuraman, 2020, Sandberg, 2025, Persson, 1991). To address this tension, scholars have recently proposed strategic last-mile consumer steering as a promising but underexplored research area (Brockhaus et al., 2025, Galiullina et al., 2024).

Minimising total last-mile distribution costs is essential for achieving omni-channel profitability and long-term success (Mansurali et al., 2024). Previous research has primarily focused on how omni-channel retailers can reduce back-end fulfilment costs while supporting growth and profitability. In contrast, considerably less attention has been devoted to reducing last-mile delivery costs and understanding how consumers can be guided towards delivery choices that improve retailer profitability (Brockhaus et al., 2025, Galiullina et al., 2024, Kembro and Norrman, 2025).

Despite evidence that retailers can steer consumers' last-mile choices to increase sales, reduce fulfilment and delivery costs, enhance profitability, lower environmental impacts, and manage fulfilment-capacity constraints, the factors that drive non-grocery omni-channel retailers to engage in such steering remain poorly understood (Wollenburg et al., 2018a, Ratchford et al., 2022, Brockhaus et al., 2025, Huebner et al., 2022, Milligan et al., 2025, Mrutzek-Hartmann et al., 2022, Viet et al., 2023, Gruchmann et al., 2025).

Recent research has identified last-mile consumer steering capabilities, including delivery-channel steering, delivery-mode steering, and the simultaneous steering of both channel and mode choices (Wollenburg et al., 2018a, Brockhaus et al., 2025, Galiullina et al., 2024). These capabilities have been suggested as potential sources of competitive advantage when effectively

combined. However, although conditional free delivery is widespread in practice, it remains yet to explore if it contributes to superior financial performance (Brockhaus et al., 2025). Moreover, it remains uncertain whether the steering capabilities identified in the literature represent an exhaustive set or whether additional capabilities exist that retailers can deploy and combine strategically.

A limited number of recent analytical and mathematical modelling studies have examined how consumer steering can optimise omni-channel retailer profitability. However, these studies rely on several simplifying assumptions, such as the exclusion of competitive dynamics (Lu and Li, 2025, Chenavaz et al., 2022), the assumption of single-product orders or homogeneous consumer segments (Pichka et al., 2022, Zhou et al., 2021), and the omission of conditional free remote delivery strategies (Brockhaus et al., 2025, Lu and Li, 2025). Consequently, it remains unclear how retailers should configure and combine last-mile consumer steering capabilities to create competitive advantage and achieve superior financial performance under realistic market conditions.

Small and medium-sized enterprises (SME's), which account for approximately 99% of all retail firms, are largely neglected within the emerging last-mile literature (Aslam, 2025, Mansurali et al., 2024). At the same time, Sharma and Dutta (2023) call for research focusing on retailers with comparatively higher proportions of online revenue. As a result, it remains unclear whether findings derived primarily from studies of larger retailers with a substantial share of brick-and-mortar revenue are transferable to other retail groups.

Although scholarly interest in last-mile consumer steering has increased in recent years, limited attention has been devoted to understanding how retailers strategically influence consumer delivery choices. Existing research remains fragmented, and several fundamental questions remain unanswered. Specifically, it is unclear what motivates retailers to engage in consumer steering, which steering capabilities can generate competitive advantage, and how such capabilities should be configured to improve financial performance. Furthermore, existing studies predominantly focus on large retailers and

provide limited insight into SME's and retailers with relatively high shares of online sales. These knowledge gaps motivate the present thesis.

1.3. Purpose and research questions

The overall purpose of this thesis is *to develop an understanding of strategic consumer steering in omni-channel last-mile distribution and its role in creating competitive advantage.* The purpose is addressed through four research questions:

> RQ_1: How can last-mile distribution and consumer steering be configured within omni-channel retailing?
>
> RQ_2: What drives non-grocery omni-channel retailers to steer consumers in the last mile?
>
> RQ_3: What consumer steering capabilities in last-mile distribution can be bundled for competitive advantage?
>
> RQ_4: Which configurations of last-mile consumer steering capabilities are associated with superior financial performance among non-grocery omni-channel retailers?

1.4. Scope of the research

The research presented in this thesis focuses on last-mile consumer steering in non-grocery omni-channel retailing. Although some appended papers also address broader logistics activities and grocery contexts, the synthesis and discussion concentrate on last mile in non-grocery omni-channel retailers. The studies focus on retailers serving the Swedish market and on the physical distribution of products.

1.5. Thesis outline

The thesis consists of seven chapters. Chapter 1 introduces the research problem, purpose, research questions, and scope. Chapter 2 presents the theoretical framework. Chapter 3 describes the research context. Chapter 4

outlines the research methodology. Chapter 5 summarises the appended papers. Chapter 6 discusses the findings and methodology. Chapter 7 presents the conclusions, implications, limitations, and directions for future research.

2. Frame of reference

This chapter introduces the theoretical foundations of the thesis. It presents key concepts related to last-mile distribution and last-mile consumer steering, discusses competitive advantage and transaction cost economics in the last-mile context, and concludes with the theoretical framework underpinning the research.

2.1. Consumer-centric logistics

The previously integrated logistics and marketing disciplines need to reconnect after diverging (Esper et al., 2020, Radomska et al., 2024, Olsson et al., 2023, Mostaghel et al., 2019). Esper et al. (2020) and Olsson et al. (2023) recommend that logistics scholars adopt a consumer-centric logistics approach rooted in logistics marketing by designing order fulfilment and delivery service capabilities to increase consumer satisfaction. Consumer-centric logistics has a strategic orientation towards creating consumer value. This does not mean abandoning an efficiency focus, but rather ensuring firms do not lose sight of the consumer (Esper et al., 2020). Evidence from online retailing also indicates that perceived return-policy leniency is linked to purchase intentions through consumer trust (Oghazi et al., 2018). Although this evidence concerns returns rather than delivery, it illustrates how logistics-related policies can contribute to consumer value beyond price alone.

Consumers are key participants in last-mile distribution because they contribute to its execution and influence distribution network design (Baldi et al., 2024). Retailers should therefore influence consumers' delivery choices strategically while considering both consumer preferences and distribution efficiency, which is central to omni-channel retailing (Rooderkerk et al., 2023, Mansurali et al., 2024). In this thesis, influencing consumers' delivery choices is conceptualised as last-mile consumer steering. Ultimately, an omni-channel retailer's success depends on consumers accepting the delivery service provided and its associated price, including delivery fees (Olsson et al., 2023). Strategic last-mile consumer steering influences the design of last-mile distribution and should therefore be considered when formulating last-mile

distribution strategy, as illustrated in Figure 1. An integrated marketing and logistics strategy, with last-mile consumer steering as a bridge, may support competitive advantage and help address logistics challenges (Huebner et al., 2022, Mrutzek-Hartmann et al., 2022, Manss et al., 2020, Radomska et al., 2024, Mansurali et al., 2024). At the operational and tactical levels, last-mile distribution capacity may influence how retailers steer consumers over short- and medium-term horizons (Huebner et al., 2022, Milligan et al., 2025).

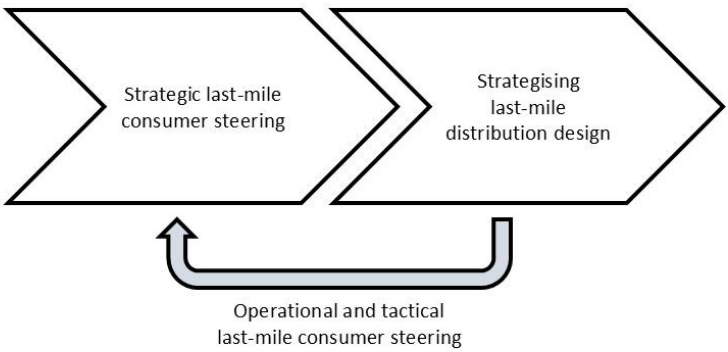

Figure 1. Swedish retail sector online sales development as a fraction of total retail sectors sales (Handelsrådet, 2026)

2.2. Last-mile distribution

Traditionally, store-based retailers provided consumers with the logistics service of selecting products directly from store shelves from the assortment available in the physical store. In this model, consumers performed most last-mile distribution activities themselves, including product picking, packing, and transportation to their homes. The emergence of specialised online retailers transformed this arrangement by allowing consumers to purchase products at any time and from any location with internet access. Online retailers assumed responsibility for last-mile distribution activities by picking, packing, and delivering orders to consumers' chosen locations, either free of charge or for a delivery fee. Online orders were typically fulfilled from retailer

or supplier warehouses and delivered through third-party logistics providers or delivery partners.

Last-mile distribution in omni-channel retailing is more complex than in store-based or online-only retailing because flows from store and online channels must be integrated, often across multiple fulfilment nodes and delivery alternatives (Kembro et al., 2022, Lim and Srai, 2018). Omni-channel retailing enables retailers to fulfil online orders from both stores and warehouses while offering consumers a broader range of delivery options (Davis-Sramek et al., 2020, Millstein et al., 2021, Mrutzek-Hartmann et al., 2022). A key strategic decision in designing last-mile distribution systems is whether online orders should be fulfilled exclusively from warehouses, exclusively from stores, or through an integrated store-and-warehouse fulfilment approach (Ishfaq and Bajwa, 2019). Davis-Sramek et al. (2020) argue that leveraging stores as fulfilment and delivery nodes can create a competitive advantage over pure online retailers in increasingly competitive retail markets.

Retailers may adopt manual, semi-automated, or fully automated fulfilment processes to minimise fulfilment costs with desired levels of logistics service (Grewal et al., 2017, Wollenburg et al., 2018b, Eriksson et al., 2019, Jaghbeer et al., 2020, Kembro and Norrman, 2021). According to Wollenburg et al. (2018b), online order volume is a key driver of omni-channel fulfilment capabilities, particularly the implementation of automation technologies (Eriksson et al., 2019, Kembro and Norrman, 2021).

Last-mile delivery in omni-channel retailing can be categorised into three primary delivery modes: in-store click-and-collect (C&C), solitary C&C, and home delivery (Hübner et al., 2016a, Marchet et al., 2018). Previous research demonstrates that offering a wide range of delivery options enhances consumer satisfaction and loyalty (Murfield et al., 2017). Common forms of solitary C&C include collection from delivery partner-operated collection points and parcel lockers. Product size and weight frequently influence the availability of delivery alternatives and the associated costs incurred by retailers. However, letter delivery to consumers' homes remains underexamined in the literature addressing the relationship between delivery

modes and financial performance. In this thesis, letter delivery to the home is conceptualised as letter deliveries.

Consumers play an increasingly active role in last-mile distribution by selecting delivery modes and delivery locations and, in some cases, participating directly in the fulfilment process (Wang et al., 2022b, Rai et al., 2019). Delivery mode selection involves choices among alternatives such as in-store C&C, solitary C&C, and home delivery, whereas delivery-location selection concerns decisions regarding which store, collection point, or parcel locker to use. Wang et al. (2022b) emphasise the growing importance of consumers' logistics-related activities within omni-channel retail systems.

2.3. Last-mile consumer steering

Choice architecture is used in various contexts in which individuals make decisions, including public policy, marketing, and retailing (Johnson et al., 2012). Policy instruments may take the form of mandates and bans, economic incentives and disincentives, or nudges (Sunstein, 2014). Financial incentives influence decisions because individuals seek to maximise the perceived value of an expected outcome, consistent with the economic concept of expected utility (Brockhaus et al., 2025). Nudging refers to a gentle prompt or subtle encouragement that does not force a choice or restrict available options. Such instruments may generate financial and environmental benefits for society and consumers (Johnson et al., 2012). In the last-mile context, a ban means that an omni-channel retailer does not offer a particular delivery channel, mode, or partner. Xu and Jackson (2019) argue that retailers can use delivery fees to steer consumers strategically towards a particular delivery channel. A channel pricing advantage, meaning a lower total consumer price including delivery fees in one channel than in another, may influence channel choice because consumers are generally price sensitive. The same logic applies to delivery modes and partners. Delivery fees function as disincentives because they affect delivery choices and purchase decisions as part of the total consumer price (Baldi et al., 2024, Lu and Li, 2025). Retailers may also use nudges to promote delivery alternatives (Lee and Donohue, 2026). Brockhaus et al. (2025) identify the intersection of omni-channel consumer behaviour and fulfilment as an important but poorly understood research area. Rizzitello et

al. (2026) similarly argue that the role of consumer behaviour has been overlooked, while Woimant et al. (2026) identify the delivery stage as pivotal for most consumers during the customer journey.

Wollenburg et al. (2018a) were the first to emphasise the importance of last-mile consumer steering in omni-channel retailing. They argue that retailers can improve financial performance by increasing sales, reducing operating costs, and enhancing profitability, while also strengthening logistics service quality. This requires integrating the consumer-facing front end with the operational back end and steering consumers toward the delivery channels retailers seek to promote, a practice termed delivery channel steering (Wollenburg et al., 2018a). They further argue that retailers must maintain an extensive brick-and-mortar store network for consumers to benefit from steering towards the physical store channel.

Recent studies by Brockhaus et al. (2025) and Galiullina et al. (2024) show that retailers can also steer consumers towards solitary C&C rather than home delivery, referred to as delivery mode steering, by using financial incentives that reduce last-mile fulfilment and delivery costs. Galiullina et al. (2024) identify delivery mode steering as an emerging research area. Prior studies have focused on steering consumers towards solitary C&C instead of more expensive home delivery, while largely neglecting letter delivery, which may represent the lowest-cost delivery mode for retailers.

Research indicates that consumers are reluctant to pay more for a delivery partner that provides higher service quality (Barker and Brau, 2020, Tokar et al., 2020). At the same time, retailers may incur different costs for equivalent services offered by different delivery partners. Retailers with fewer annual deliveries generally pay higher prices, whereas those with greater delivery volumes may obtain lower prices (Sallnäs and Björklund, 2020). Concentrating volume with a single delivery partner may therefore reduce delivery prices compared with spreading volume across several partners (Mukherjee and Sarin, 2018). However, this approach may reduce revenue if consumers prefer another delivery partner. Retailers consequently face a trade-off between charging higher delivery fees for higher-cost partners and accepting lower profit per online order (Tokar et al., 2020). Potential responses include offering only one delivery partner or using differentiated

fees to discourage selection of higher-cost partners (Sunstein, 2014). This thesis conceptualises these practices as delivery partner steering. The relationship between delivery partner steering and retailer financial performance in a competitive online market has not been examined in the literature reviewed.

Contemporary literature has extensively examined why consumers select particular delivery alternatives and how these choices affect purchase intentions from marketing and logistics perspectives (Masorgo et al., 2024). Multiple studies identify delivery fees as the most influential logistics steering lever, with consumers strongly preferring free delivery (Rai et al., 2019, Nguyen et al., 2019). Consumers are also reluctant to pay delivery fees for partners that offer higher service quality (Barker and Brau, 2020, Tokar et al., 2020, Garver et al., 2012). Rai et al. (2019) show that consumers are willing to perform parts of the last-mile process themselves, such as collecting orders from a store or collection point, provided delivery is free. Deliveries do not necessarily need to be free to influence choice; differentiated fees may be sufficient to steer consumers towards preferred modes or partners. Delivery fees for individual alternatives should therefore not be assessed in isolation, and scholars call for a holistic perspective on retailers' overall delivery-fee structure (Zhou et al., 2021, Chenavaz et al., 2022). This indicates that delivery fees can be configured to steer consumers across delivery channels, modes, and partners in the last mile.

Scholars identify several objectives for steering consumers in last-mile distribution. A retailer's strategic orientation shapes how consumer steering is used to create competitive advantage and address logistics challenges (Huebner et al., 2022, Mrutzek-Hartmann et al., 2022, Manss et al., 2020, Radomska et al., 2024). Retailers may steer consumers to manage operational or tactical fulfilment-capacity constraints (Huebner et al., 2022, Milligan et al., 2025). Steering may also enhance financial performance by increasing store revenue (Cao and Li, 2015, Mrutzek-Hartmann et al., 2022, Wang et al., 2022a) and reducing last-mile back-end fulfilment and delivery costs (Zhou et al., 2021, Galiullina et al., 2024), thereby improving profitability (Chenavaz et al., 2022, Lu and Li, 2025, Wollenburg et al., 2018a). It is proposed that additional motives can include environmental and social objectives (Viet et al., 2023, Rai et al., 2019, Gruchmann et al., 2025). The literature provides

limited insight into the factors that motivate retailers to steer consumers across delivery channels, delivery modes, and logistics partners.

2.4. Competitive advantage in last mile

The resource-based view conceptualises firms as bundles of resources and capabilities (Wernerfelt, 1984), some of which may underpin competitive or sustained competitive advantage (Barney, 1991). A competitive advantage arises when a firm implements a value-creating strategy that competitors do not simultaneously implement. A sustained competitive advantage arises when competitors cannot duplicate the benefits of that strategy (Barney, 1991). Sustained advantage does not necessarily persist indefinitely; rather, its benefits are not easily replicated or eliminated (Olavarrieta and Ellinger, 1997). Esper et al. (2007) note that periods of sustained competitive advantage have generally shortened, making the effective use of logistics capabilities increasingly important. Competitive advantage may generate Ricardian rents through resource scarcity or monopoly rents through deliberate supply restrictions (Peteraf, 1993). Economic rents are rents above average profitability (Olavarrieta and Ellinger, 1997, Sandberg, 2025).

Scholars have extensively examined firms' distribution capabilities (e.g., Stalk et al., 1992). Defee and Fugate (2010) define distribution service performance as a firm's ability to provide a higher level of service than its competitors. Researchers also emphasise the capability to minimise total distribution costs (Defee and Fugate, 2010, Morash et al., 1996), often conceptualised through a transactional lens (Closs and Xu, 2000). A further set of distribution capabilities concerns the scope of distribution coverage, commonly distinguished as widespread or selective. Morash et al. (1996) describe widespread distribution coverage describes the capability to achieve extensive market reach effectively. By contrast, selective distribution coverage refers to the ability to target specific geographical areas or market segments strategically (Defee and Fugate, 2010, Morash et al., 1996). Although distribution capabilities have been extensively examined in other contexts, their role and application in last-mile distribution within omni-channel retailing remain insufficiently understood.

Persson (1991) argues that the strategic importance of logistics is determined by the magnitude of logistics costs as a share of revenue and the extent to which logistics constitutes a distinctive competitive driver. Last-mile distribution costs represent a significant share of revenue in omni-channel retailing (Bijmolt et al., 2021, Chenavaz et al., 2022, Ishfaq and Bajwa, 2019). At the same time, consumers prefer free delivery, making it difficult for retailers to transfer these costs to consumers in highly competitive online markets (Kong et al., 2020a). Scholars also identify last-mile distribution as a potential source of competitive advantage in omni-channel retailing (Roggeveen and Sethuraman, 2020, Sandberg, 2025). The combination of economically high costs and competitive relevance makes last-mile distribution strategically important in omni-channel retailing.

Additional trends, including rising consumer delivery expectations and technological development, further increase the strategic relevance of logistics in omni-channel retailing (Sandberg, 2025). Retailers often compete with comparable products, which heightens the importance of meeting consumers' last-mile expectations. Modern technologies strengthen fulfilment and delivery capabilities and may support competitive advantage (Sandberg, 2025, Kembro and Norrman, 2025). For example, research has examined how automation and robotics can improve the efficiency and accuracy of online order fulfilment (e.g., Eriksson et al., 2019). Kembro and Norrman (2025) argue that warehouses are increasingly regarded as strategic resources and that omni-channel retailers are becoming more willing to invest in automation.

In the last-mile context, selective distribution is commonly achieved through brick-and-mortar stores (Boysen et al., 2021, Huebner et al., 2022, Viet et al., 2023). Using stores for online fulfilment expands their logistics role from serving only store consumers to also serving online consumers (Mrutzek-Hartmann et al., 2022, Huebner et al., 2022). Huebner et al. (2022) caution that online orders should not exceed 10% of store sales because higher volumes may disrupt the experience of in-store consumers. Micro-fulfilment centres provide an alternative way to enable selective distribution (Aslam, 2025). Widespread distribution coverage may be achieved through a dense store network or through remote deliveries covering a broad territory. Prior research shows that retailers with extensive store networks can use these stores as logistics nodes in last-mile distribution systems (Ishfaq et al., 2016, Hübner

et al., 2016b). Scholars also show that higher volumes of warehouse-fulfilled online orders may support fulfilment capabilities such as automation (Eriksson et al., 2019, Milligan et al., 2025, Kembro and Norrman, 2021). This thesis conceptualises competitive last-mile distribution advantage within a defined territory: retailers may achieve selective coverage in strategically important locations or widespread coverage across an entire country. Accordingly, an extensive store network may not always be necessary, as retailers may create advantage in selected areas. In a highly competitive online context, either selective or widespread coverage may include free or paid delivery alternatives.

Offering a wide range of delivery options may enhance consumer satisfaction and loyalty in omni-channel retailing and contribute to retailer growth (Lim and Winkenbach, 2019, Murfield et al., 2017). However, a broader range of delivery options may also increase distribution costs (Lim et al., 2016). Prior literature has mainly examined how online order back-end fulfilment costs can be reduced to support profitable growth (Kembro and Norrman, 2025). Research on how retailers create competitive advantage specifically through last-mile delivery remains limited. It is unclear how last-mile delivery alternatives and consumer steering should be configured to create competitive advantage.

Table 1 summarises last-mile distribution and consumer steering capabilities discussed that may be bundled for competitive advantage.

Table 1. Last-mile distribution and consumer steering capabilities that may be bundled for competitive advantage

Last-mile distribution capabilities	**Articles**
Minimize total distribution cost	(Mansurali et al., 2024, Defee and Fugate, 2010, Morash et al., 1996, Persson, 1991)
Distribution service performance	(Defee and Fugate, 2010, Murfield et al., 2017)
Widespread distribution coverage	(Morash et al., 1996)
Selective distribution coverage	(Morash et al., 1996, Defee and Fugate, 2010, Boysen et al., 2021, Huebner et al., 2022, Viet et al., 2023)
Last-mile back-end fulfilment	(Kembro and Norrman, 2021, Eriksson et al., 2022, Kembro and Norrman, 2025)
Last-mile delivery	(Murfield et al., 2017, Lim and Winkenbach, 2019, Sandberg, 2025)

Last-mile consumer steering	**Articles**
Delivery channel steering	(Huebner et al., 2022, Boysen et al., 2021, Wollenburg et al., 2018a, Wang et al., 2022a, Cao and Li, 2015)
Delivery mode steering	(Brockhaus et al., 2025, Galiullina et al., 2024)

2.5. Transaction cost economics in last mile

Transaction cost economics provides a lens for examining several retailer decisions in omni-channel last-mile distribution. It is particularly appropriate for analysing governance choices, including whether logistics activities should be performed in-house or outsourced (Mentzer et al., 2004, Malmström et al., 2013). Cost reduction and revenue enhancement are central motives for

outsourcing, which is beneficial when the transaction costs of procuring an activity are lower than the costs of performing it in-house (Mentzer et al., 2004). Delivery partners offering delivery services such as solitary C&C and home delivery are important participants in retailer value creation (Mostaghel et al., 2022). In recent years, delivery partners have expanded their service offerings and achieved economies of scale as delivery volumes have increased, while competitive pressure has encouraged simultaneous attention to service quality and cost effectiveness. Retailers therefore commonly outsource last-mile delivery to specialised delivery partners (Milligan et al., 2025). Outsourcing also creates a need for relationship integration. Research on manufacturer–supplier relationships identifies goal incongruence, limited commitment and insufficient trust as barriers to integration (Oghazi et al., 2016). These findings suggest examining whether analogous coordination problems arise when retailers concentrate delivery volumes with selected logistics partners.

Last-mile distribution costs represent a substantial share of retailer revenue, they cannot be neglected (Bijmolt et al., 2021, Ishfaq and Bajwa, 2019, Lu and Li, 2025). Different delivery channels, modes, and partners involve different transaction costs per online order (Rodríguez-García et al., 2024). Cost minimisation is central to transaction cost economics (Malmström et al., 2013). Transaction cost economics therefore supports analysis of which channels, modes, and partners retailers promote to minimise total distribution cost. Delivery costs are generally lower for store collection than for remote delivery because consumers collect orders themselves (e.g., Chenavaz et al., 2022). Conversely, back-end fulfilment costs may be higher in stores than in warehouses (Huebner et al., 2022, Difrancesco et al., 2021). Increases in the volume of online orders fulfilled in the same fulfilment location drive the development of last-mile back-end fulfilment capabilities, such as automation, which reduce fulfilment transaction costs and may support profitable growth (Eriksson et al., 2019, Milligan et al., 2025, Kembro and Norrman, 2021, Kembro and Norrman, 2025). In addition, higher online order volumes may reduce delivery costs through greater negotiation power (Sallnäs and Björklund, 2020). However, the role of last-mile consumer steering in minimising total distribution costs remains insufficiently understood.

Omni-channel retailers must cover transactional last-mile distribution costs through delivery fees, by accepting lower profit per online order, or through a combination of both if they are to grow profitably. Lim et al. (2018) argue that retailers will struggle to survive without sustainable delivery economics. Retailers typically use three delivery-fee structures: unconditional free delivery, flat-fee delivery, and conditional free delivery above an order-value threshold (Lu and Li, 2025). Delivery price remains the most important delivery attribute for consumers, who may be willing to perform part of the last-mile process themselves, such as collecting a parcel, when delivery is free (Rai et al., 2019). Delivery fees influence not only consumers' choices among the alternatives offered by a retailer but also whether they purchase from that retailer or from a competitor (Manss et al., 2020, Lu and Li, 2025). An attractive total consumer price, including delivery fees, may support online-channel revenue, and free shipping can increase sales (Rodríguez-García et al., 2024, Xu and Jackson, 2019, Ratchford et al., 2022). It is therefore difficult for retailers to transfer last-mile costs to consumers in highly competitive online markets in which prices are easily compared and free delivery is increasingly expected (Kong et al., 2020b, Rodríguez-García et al., 2024). Wollenburg et al. (2018a) Consequently, they argue that highly efficient distribution systems are required to compensate for foregone delivery-fee revenue.

Contemporary literature emphasises the need to understand how delivery fees affect both sales and profitability because last-mile distribution costs are substantial (Ma et al., 2024, Chenavaz et al., 2022). Several recent mathematical modelling studies seek to optimise profitability or absolute profit (Chenavaz et al., 2022, Lu and Li, 2025, Pichka et al., 2022, Zhou et al., 2021). However, these studies rely on simplifying assumptions, including the exclusion of competition (Lu and Li, 2025, Chenavaz et al., 2022), single-product orders or homogeneous consumer types (Pichka et al., 2022, Zhou et al., 2021), and the omission of conditional free delivery (Manss et al., 2020, Brockhaus et al., 2025).

2.6. Theoretical framework

The purpose of this thesis is to develop an understanding of strategic consumer steering in omni-channel last-mile distribution and its role in creating competitive advantage. To address this purpose, the thesis integrates configuration theory, the resource-based view, and transaction cost economics in a structured and complementary manner, as no single theoretical lens is sufficient to explain the phenomenon (McIvor, 2009). Complementary theoretical perspectives are particularly valuable in last-mile research, where most prior studies apply no more than one theoretical lens (Olsson et al., 2019).

Configuration theory and systems theory structure the phenomenon at the last-mile system level. Configuration theory explains how last-mile resources and capabilities can be combined into alternative, equifinal configurations (Kumar et al., 2022, Ketchen et al., 2022). Retail research shows that superior performance may be achieved through multiple alternative configurations, reflecting the principle of equifinality ;(Jantunen et al., 2018, Johansson and Kask, 2017). Configuration theory further provides a basis for examining how strategic fit may vary across retailer groups characterised by different firm sizes and sales channel mixes (Aslam, 2025, Sharma and Dutta, 2023). Configuration theory, supported by systems theory, therefore provides the overarching analytical lens for this thesis.

The resource-based view explains how configurations of last-mile resources and capabilities may contribute to cost-based or service-based competitive advantages. Transaction cost economics, in turn, explains governance choices, transaction costs, and cost minimisation (Williamson, 1979, Williamson, 1991). When firms can appropriate the value created through such advantages, these outcomes may be reflected in higher profitability or return on assets and may potentially give rise to economic rents (Olavarrieta and Ellinger, 1997).

3. Research context

This chapter provides the contextual background for the studies conducted in Sweden. It outlines key characteristics of the Swedish retail market and developments in online retailing and last-mile delivery. Although the literature reviewed in this thesis is international, the empirical studies focus on the Swedish retail context.

3.1. Geography, population density, and urbanisation rate

Sweden is the fifth-largest country in Europe by land area and extends more than 1,500 kilometres from south to north. Despite its size, Sweden has a relatively low population density of 26 inhabitants per square kilometre, compared with 112 in the European Union, 279 in the United Kingdom, and 37 in the United States. This combination of a large geographical area and low population density shapes the conditions for last-mile distribution.

Substantial regional differences also exist within Sweden. More than half of the population (54%) and approximately half of all stores (52%) are located in the three counties containing Sweden's largest cities. Population density varies considerably; Stockholm County has 381 inhabitants per square kilometre, compared with the national average of 26. These differences are relevant to the analysis of last-mile distribution strategies. Further county-level information is provided in Appendix I.

3.2. Online sales channel growth

The online share of total Swedish retail sales reached 15.3% in 2025 (Handelsrådet, 2026). As shown in Figure 2, online sales grew at an average annual rate of 12.5% between 2006 and 2025. Growth accelerated during the COVID-19 pandemic, and the online share of retail sales has remained above its pre-pandemic level.

For international comparison, the online share of retail sales reached 16.4% in the United States, 31.1% in China, and 27.5% in Great Britain in

2025 (Statista, 2026). In France and Germany, e-commerce accounted for approximately 17% of total retail sales in 2024 (Statista, 2026).

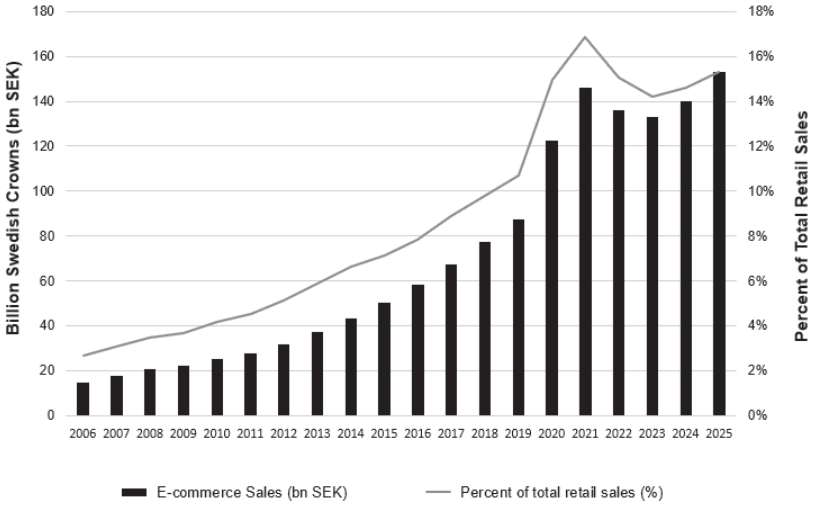

Figure 2. Swedish online sales development in absolute value and as a fraction of total retail sales (Handelsrådet, 2026)

The online share differs substantially across retail sectors, as shown in Table 2. Although grocery retailing remains predominantly store-based, several non-grocery sectors, including home electronics, apparel, and pharmacy, have considerably higher online sales shares. These differences create variation in retailers' sales channel mixes, which is particularly relevant given calls for research examining how sales channel mix influences last-mile strategies.

Table 2 presents each retail sector's share of total retail sales and the online share within that sector. It includes all sectors accounting for more than 2% of total retail sales in Sweden. The mass merchandise sector comprises retailers offering broad assortments across multiple retail categories. A substantial proportion of these retailers are discounters, a format that has gained market share in Sweden in recent years.

Table 2. Retail sector overview, 2025 (Handelsrådet, 2026)

Retail sector	Online sales share of retail sector sales (%)	Retail sector share of total retail sales (%)
Home electronics	51%	7,2%
Apparel	32%	6,8%
Pharmacy	26%	7,3%
Sport and leisure	20%	3,1%
Furniture and home décor	15%	6,5%
Construction and hardware	13%	5,3%
Grocery	4%	42,4%
Mass Merchandisers	Not available	8,6%
Other sectors	Not available	12,9%
Total retailing	15%	100,0%

Figure 3 complements Table 2 by showing changes in the online share of sales within Swedish retail sectors before, during, and after the COVID-19 pandemic. The online share increased across all sectors, representing more than 2% of Swedish retail sales.

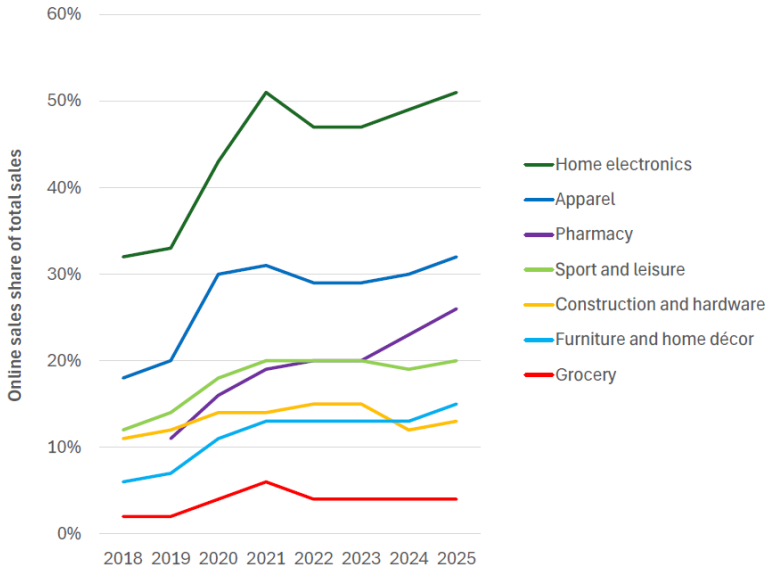

Figure 3. Swedish retail sector online sales development as a fraction of total retail sectors sales (Handelsrådet, 2026)

3.3. Brick-and-mortar store decline

While online sales have increased, the number of brick-and-mortar stores in Sweden declined by approximately 11% between 2017 and 2024 (Handelsrådet, 2024). The decline was particularly pronounced in sectors with high online penetration, such as home electronics and apparel. Continued reductions in store networks could affect retailers' ability to use stores as logistics nodes and provide selective distribution coverage.

Projections indicate that the number of stores in Sweden will decline by a further 20–33% by 2030 (Handelsrådet, 2024).

3.4. Last-mile delivery market

Sweden was one of the first countries to liberalise the last-mile delivery market (Falkenhall and Kolmodin, 2005). Increased competition and efficiency followed as new providers entered the market. Several competing delivery partners now offer extensive national coverage through home delivery, collection points, parcel lockers, and letter delivery. The three largest delivery partners have approximately 2,500, 3,000, and 4,000 collection points, respectively, providing broad national coverage. This setting gives retailers opportunities to influence consumers' choices among delivery modes and delivery partners.

4. Research methodology

This chapter explains the research approach used to address the thesis purpose and its four research questions. It first presents the researcher's methodological position and the overall research process before it explains the research design. The chapter concludes with ethical considerations and a declaration of the use of generative artificial intelligence.

4.1. Research approach

Researchers inevitably draw on prior experience and on implicit and explicit assumptions when formulating problems, selecting methods, and interpreting evidence. The doctoral student had an educational background in industrial engineering and management and business administration, together with extensive professional experience in business-to-consumer logistics. Before commencing doctoral studies, the doctoral student held managerial positions responsible for distribution systems, omni-channel operations, and strategic logistics decisions in international retail environments. This background supported access to senior decision-makers and identification of practically relevant research problems. Subsection 6.5.4 critically discusses its implications for interpretation and potential researcher bias.

The research adopted a configurational systems perspective. Strategic logistics management concerns the design and management of systems, and systems thinking is embedded in the logistics discipline even when it is not explicitly articulated (Sandberg, 2025). A system comprises interdependent subsystems whose combined outcomes may differ from the aggregated outcomes of the individual components. In omni-channel last-mile distribution, relevant subsystems include stores, warehouses, delivery partners, delivery alternatives, and consumer-steering mechanisms. Their performance cannot be adequately understood by examining each element in isolation. The research therefore combined detailed examination of individual practices and capabilities with analysis of how these elements were configured and related to firm outcomes in the form of financial performance (Sandberg, 2025).

4.2. Research process

The doctoral studies comprised two sequential phases: an initial three-year licentiate phase followed by a two-year doctoral phase. The licentiate phase included Studies A, B, and C and resulted in three papers, two of which were published before the licentiate defence. The doctoral phase added Studies D and E and resulted in two additional papers. Four papers had been published in peer-reviewed journals when this doctoral thesis was printed, while the fifth manuscript was under review. Earlier versions of Papers 2 and 5 were presented at international conferences and were subsequently revised before journal submission.

Findings from earlier studies informed the questions, constructs, sampling decisions, and analytical choices of later studies. Figure 4 summarises the relationships between the studies and papers. Section 4.3 describes each study, while Chapter 5 summarises the corresponding papers and their findings.

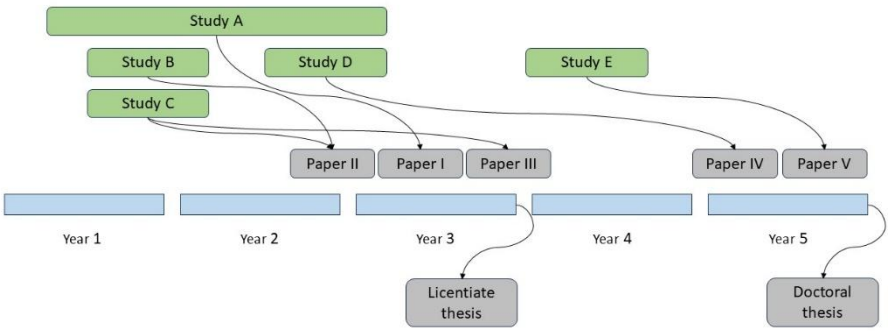

Figure 4. Research process

4.3. Research design

Because strategic last-mile consumer steering remains an emerging research area, several complementary research methods were employed to facilitate both theory exploration and theory assessment. Existing literature informed the design of the individual studies and the development of theoretical expectations, while empirical findings repeatedly refined the conceptual

understanding of consumer steering in last-mile distribution. Rather than proceeding exclusively from theory to data or from data to theory, the research moved iteratively among literature, decision-maker accounts, structured interview data, observations of retailer practices, financial data, and configurational analyses. This iterative movement supported progressive discovery, description, assessment, and refinement of theoretical explanations. Consequently, theoretical understanding developed progressively through repeated interaction between literature and empirical findings. The overall research process was characterised as abductive (Patel and Davidson, 2019). Abduction is understood in this thesis as an iterative movement between theory and empirical observations, through which theoretical explanations were progressively developed, reconsidered, and refined.

The five studies presented in Table 3 were deliberately designed as a cumulative research plan. Study A established a broad theoretical base through a systematic literature review and developed an initial e-commerce logistics configuration framework in omni-channel retailing. Study B confronted this framework with decision-makers' experience and identified firm size, sales-channel mix, and consumer-steering practices that required further examination. Study C described last-mile logistics practices across retailer groups and identified configurations associated with return on assets. Study D examined the prevalence, objectives, levers, and perceived last-mile distributional implications of consumer steering. Study E integrated findings from the preceding studies and contemporary literature in a configurational analysis of consumer steering capability bundles associated with profitability. The research therefore moved from broad exploration and conceptualisation towards empirical description, configurational assessment, and theory refinement. The abductive character of the thesis therefore lies not in assigning a single logic to each study, but in the repeated movement between existing theory, empirical observations, and progressively revised explanations across the research.

Table 3. Research design overview

Dimension	Study A	Study B	Study C	Study D	Study E
Phenomenon	E-commerce logistics	Last-mile logistics	Last-mile logistics practices and configurations	Consumer steering in last-mile distribution	Consumer-steering capabilities and configurations
Context	E-commerce and omni-channel retailing	E-commerce and omni-channel retailing	E-commerce and omni-channel retailing	Omni-channel retailing	Non-grocery omni-channel retailing
Unit of analysis	Retailing firm	Retailing firm	Retailing firm	Retailing firm	Retailing firm
Design	Systematic literature review	Semi-structured decision-maker interviews	Cross-sectional structured interviews and configurational analysis	Cross-sectional structured interviews	Cross-sectional structured observation and configurational analysis
External databases	Scopus and Web of Science	Professional network and Amadeus-Bureau van Dijk	Amadeus-Bureau van Dijk	Retriever Business	Retriever Business
Data collection and technique	All e-commerce and omni-channel logistics articles published in AJR-ranked journals until 2021	Semi-structured interviews with open-ended questions (Appendix II), continued until saturation	Structured interviews based on interview guide (Appendix III); stratified random sampling	Structured interviews with participating retailers using an interview guide (Appendix IV)	Structured website observations of all eligible retailers using a predefined protocol (Appendix V)
Study size	3,817 records retrieved; 373 articles synthesised	10 decision-makers	200 retailers; omni-channel subset used in configurational analysis	70 omni-channel retailers	Entire eligible population of 80 retailers
Data type	Qualitative literature and coded configuration parameters	Qualitative interview data and coded frequencies	Structured data and secondary financial data	Primarily quantitative Likert-type data with limited free text	Qualitative observational data and secondary financial data
Analysis	Thematic synthesis and framework development	Qualitative interpretation and content-frequency analysis	Descriptive statistics and fsQCA	Descriptive statistics and distributional comparisons	fsQCAs
Primary research contribution (RQ) contribution	RQ1 and foundation for subsequent questions	RQ1, RQ2, RQ3, and interpretation of RQ4	RQ4	RQ2 and RQ4	RQ3 and RQ4

The research design was also informed by the theory-development logic described by Säfsten and Gustavsson (2024). The studies contributed in different ways to discovering, describing, assessing, and refining theoretical

explanations. No individual study was expected to address the full purpose of the thesis. Instead, the contribution arose from the cumulative relationship among the five studies and from the complementary forms of findings they produced.

4.3.1. Study A: Systematic literature review

In Study A, e-commerce and omni-channel retailing logistics were examined from the retailing firm's perspective. The review pursued three objectives: to synthesise the extant literature, to develop an e-commerce logistics configuration framework for omni-channel retailing, and to identify avenues for further research. A systematic literature review was selected because it provides a transparent, rigorous, and reproducible approach to identifying, evaluating, and synthesising existing knowledge (Cronin et al., 2008, Booth et al., 2012, Durach et al., 2017). Compared with traditional narrative reviews, systematic literature reviews follow predefined procedures that enhance transparency, reduce researcher bias, and improve methodological rigour (Durach et al., 2017, Booth et al., 2012). They are particularly valuable in emerging research areas because they support the synthesis of fragmented knowledge, the identification of configuration elements and research gaps, and the positioning of new research within an evolving body of literature (Denyer and Tranfield, 2009, Watson, 2015).

The review followed four predefined steps: defining the scope, searching the literature, assessing the literature, and synthesising the literature (Booth et al., 2012). Searches were conducted in Scopus and Web of Science for peer-reviewed journal articles. Without time restrictions, the search retrieved 3,817 records published up to the end of 2021. The search string was

> *Search string: ("omni-channel" OR omnichannel OR "e-commerce" OR ecommerce OR "internet retail*" OR "online marketplace" OR "multi-channel" OR multichannel OR "online retail*" OR e-tail* OR etail* OR "electronic commerce" OR "cross-channel" OR "cross channel") AND (logistics OR "supply chain" OR "last mile")*

Duplicate records were removed before eligibility assessment. Articles not published in journals included in the Academic Journal Guide were excluded. Two research assistants supported abstract and full-text screening

using detailed screening instructions. Records were retained for the next stage whenever at least one assistant considered the article relevant, thereby reducing the risk of premature exclusion. Random checks supported screening consistency. Figure 5 presents the literature-assessment process, with further details provided in Paper I (Risberg, 2023).

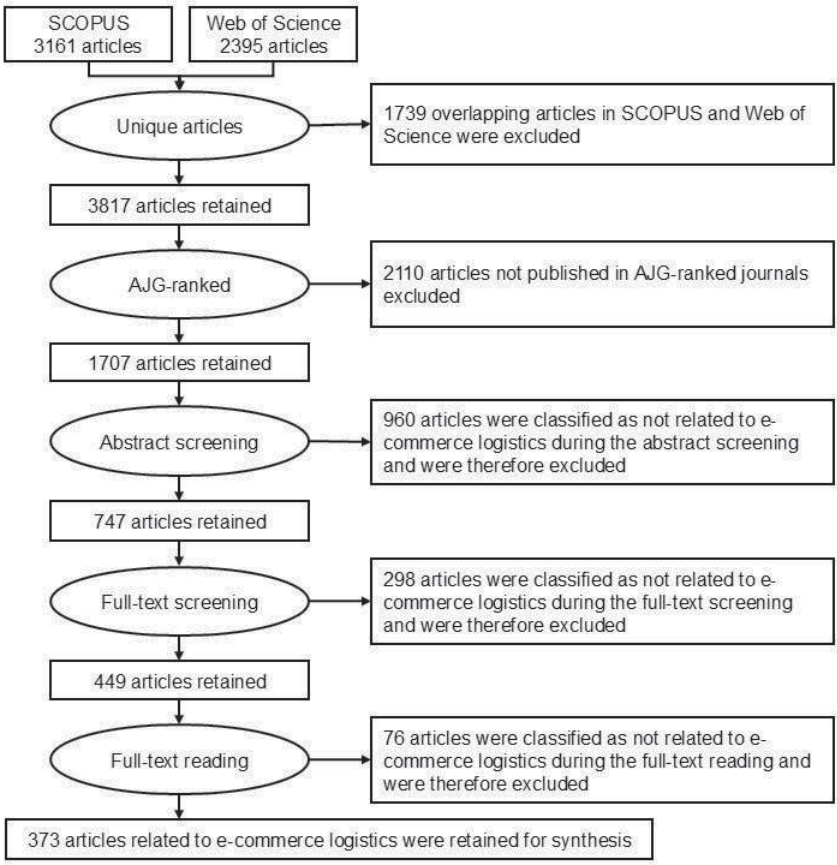

Figure 5. Assessing the literature (Risberg, 2023)

The included articles were organised into five thematic areas, and an article could be assigned to more than one theme. During full-text analysis, configuration parameters and their alternatives were recorded in a Microsoft Excel matrix in which articles formed rows and parameters formed columns.

Concurrent analytical notes were maintained in Microsoft Word. The synthesis informed the e-commerce logistics configuration framework and the identification of subsequent research avenues. Systematic literature reviews are widely used to identify, synthesize, and structure existing knowledge into conceptual and configurational frameworks (Sabri et al., 2017, Torraco, 2005). Because the coding and synthesis required interpretation, the systematic procedure reduced but did not eliminate researcher judgement. The research in this thesis focuses on consumer steering in last-mile distribution, corresponding to themes 2, 3, and 4 highlighted in green in Figure 6.

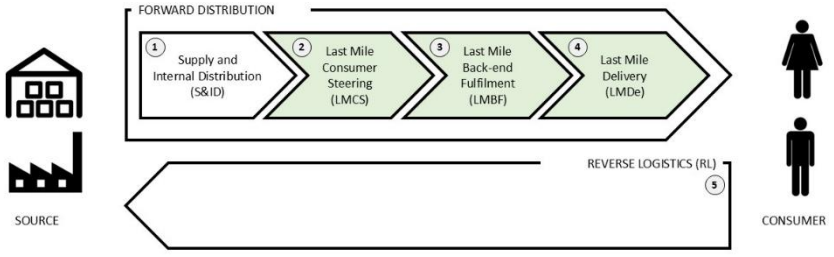

Figure 6. Systematic literature review themes (Risberg, 2023)

The results from Study E contributed to the research questions in several ways. First, it developed an omni-channel e-commerce logistics configuration framework by synthesising existing research. The e-commerce logistics configuration framework served as a base for the last-mile configuration framework that was used to answer Research Question 1. Second, it identified promising directions for future research, which subsequently served as the basis for formulating Research Questions 2, 3, and 4. Third, it identified retailers' last-mile consumer steering objectives that were used in the structured interview guide used to answer Research Question 2. Fourth, it identified the consumer steering capabilities that may be bundled for competitive advantage, thereby contributing to Research Question 3. Finally, it provided explanations of last-mile consumer steering configurations associated with superior financial performance, thereby contributing to Research Question 4.

4.3.2. Study B: Last-mile decision maker interview study

In Study B, the focus was on how last-mile decision-makers understood and configured last-mile logistics from a retailing firm perspective. A semi-structured interview design was used because Study B required access to experience-based knowledge and managerial reasoning (Patel and Davidson, 2019, Säfsten and Gustavsson, 2024). Semi-structured interviews using open-ended questions enabled participating executives to share their knowledge, experiences, and perspectives freely while allowing the interviewer to probe emerging themes and obtain deeper explanations (Marchet et al., 2018, Plowright, 2011). Study B sought to assess the completeness of the literature-derived e-commerce logistics configuration framework, identify influential firm characteristics and last-mile parameters, discover consumer-steering practices not adequately addressed in the literature, and understand why firms configured last mile in particular ways. The interview guide using open-ended questions to access respondents' experience-based knowledge and reasoning is presented in Appendix II.

Participants were senior decision-makers with extensive experience of last-mile logistics in firms serving the Swedish market. Potential participants were identified through the doctoral student's professional network and the Amadeus-Bureau van Dijk database. The professional network, comprising approximately 1,600 LinkedIn contacts, was screened by country, industry, and seniority; seven of the ten participants were recruited through this route. Additional firms were identified through Amadeus-Bureau van Dijk to broaden variation in retail sector, firm size, and sales channel mix. Approximately one in three contacted decision-makers agreed to participate. The final group comprised ten decision-makers representing eight omni-channel retailers and two e-tailers. Including e-tailers enabled Study B to consider competitive dynamics associated with firms operating without physical stores.

Participants were also invited to draw on experience gained in previous positions and firms. Table 4 summarises respondents' positions at the time of interview and the participating firms' retail sectors, sizes (according to the European Commission definition;(European Commission, 2026), and retailer type.

Table 4. Retail firm descriptives and respondent position (Risberg and Jafari, 2022)

Firm	Retail Sector	Size	Retailer Type	Position
A	Furniture and home décor	Large	Omni-channel	Logistics responsible
B	Home electronics	Large	Omni-channel	Logistics responsible
C	Sport and leisure	Large	Omni-channel	CEO
D	Home electronics	Large	Omni-channel	Logistics responsible
E	Car spare parts	Large	e-Tailer	Logistics responsible
F	Furniture and home décor	Medium	Omni-channel	Logistics responsible
G	Apparel	Medium	Omni-channel	Logistics responsible
H	Beauty	Medium	Omni-channel	COO & CTO
I	Grocery	Large	e-Tailer	Logistics responsible
J	Apparel	Small	Omni-channel	CEO

All interviews were conducted through Microsoft Teams, lasted between 45 and 60 minutes, and were video-recorded with participants' permission. Video recording supported accurate data capture, enhanced transparency, and reduced the risk of recall bias during analysis (Plowright, 2011, Wollenburg et al., 2018b). Recruitment and interviewing continued until no substantively new insights emerged after ten interviews, a process known as saturation (Hennink et al., 2017). The recordings were selectively transcribed and analysed qualitatively to assess the e-commerce logistics configuration framework, identify consumer steering capabilities, and interpret managerial explanations. A quantitative content-frequency analysis summarised how often participants identified particular firm characteristics and last-mile parameters as influential (Potter and Levine-Donnerstein, 1999). The material was revisited during the research process to assess conceptual developments and support interpretation of later configurational findings.

The results from Study E contributed to the research in multiple ways. First, it assessed the completeness of the literature-derived e-commerce logistics configuration framework, thereby contributing to Research Question 1. Second, it identified the most influential firm characteristics that were subsequently incorporated into the fuzzy-set Qualitative Comparative Analysis (fsQCA) conducted in Studies C and E, contributing to Research Question 4. Third, it identified consumer steering capabilities not covered in the literature, thereby addressing Research Question 3. Finally, Study B provided insights into why firms configure their last-mile operations in particular ways, contributing to Research Question 4.

4.3.3. Study C: Last-mile logistics interview study

In Study C, last-mile logistics practices in e-commerce and omni-channel retailing were examined. It pursued two objectives: to describe last-mile logistics practices among omni-channel retailers and e-tailers, and to identify configurations of last-mile logistics associated with higher return on assets among omni-channel retailers. A cross-sectional structured-interview design was applied, with the retailing firm as the unit of analysis. The standardised design enabled comparable information to be collected from a large number of firms and supported both descriptive analysis and configurational analysis (Scherer and Geber, 2017). It also enabled expectations developed largely from research on large, store-dominant retailers to be assessed across groups differing in firm size and sales-channel mix.

The sampling frame was constructed from the 10,000 Swedish retail firms with the highest annual revenues in the Amadeus-Bureau van Dijk database. Firms without e-commerce operations were excluded, reducing the frame by approximately half. Approximately 600 retailers were contacted and 200 completed interviews, corresponding to a response rate of 33%. Because Swedish retailing was dominated by SMEs and store-oriented retailers, large and online-oriented retailers were deliberately oversampled to secure sufficient observations for comparison. Data collection in the SME and store-dominant strata ceased when 120 observations had been obtained in each category to reduce the risk of sample concentration (Patel and Davidson, 2019). The design therefore prioritised analytically useful variation rather than proportional representation of the Swedish retail population. The resulting sample reflected the overall structure of the Swedish retail sector (PostNord, 2020).

Data were collected through structured interviews using the standardised guide presented in Appendix III. Trained research assistants conducted some interviews in accordance with a predefined protocol. The guide was derived from the e-commerce logistics configuration framework and was used because several variables, particularly those concerning SME and omni-channel practices, were unavailable from public secondary sources (Säfsten and Gustavsson, 2024). The primary data were mainly categorical descriptions of

last-mile practices. Return on assets obtained from Amadeus-Bureau van Dijk served as the financial outcome in the configurational analysis.

For Paper II, descriptive statistics were calculated using Microsoft Excel to describe and compare practices across retailer groups. Relative frequency analysis was used to identify differences among categories (Patel and Davidson, 2019). For Paper III, fsQCA was conducted using fs/QCA software version 3.0 (Ragin and Davey, 2016). The analysis identified combinations of last-mile logistics conditions associated with higher and lower return on assets, and the solutions were presented using configurational charts following Fiss (2011). FsQCA was appropriate because the theoretical interest concerned conjunction, equifinality, and asymmetric pathways rather than isolated net effects ;(Ketchen et al., 2022, Kumar et al., 2022).

Study C identified configurations associated with superior financial performance. This finding informed the firm-selection and filtering process used to address Research Question 4.

4.3.4. Study D: Last-mile consumer steering interview study

In Study D, consumer steering in last-mile distribution within omni-channel retailing was examined. A cross-sectional structured-interview design was used to examine the extent to which retailers steered consumers and their objectives for doing so. The study also identified the logistics levers used most frequently and explored the perceived influence of consumer steering on last-mile distribution. Interviews were appropriate because the study focused on respondents' perceptions, experiences, and reported organisational practices (Säfsten and Gustavsson, 2024). Study D primarily addressed Research Question 2 but also provided contextual understanding that informed the interpretation of findings related to Research Question 4. The unit of analysis was the retailing firm.

Study D population was derived from Retriever Business. Pure e-tailers and pure brick-and-mortar retailers were excluded so the sampling frame contained only omni-channel retailers. Origo Group contacted firms in descending order of annual revenue. The final sample comprised 70 omni-channel retailers: 9 large firms and 61 SMEs, including 37 store-dominant and

33 non-store-dominant retailers. Firm size followed the European Commission (2026) definition, and sales channel mix followed Risberg and Jafari (2022). Large firms were overrepresented relative to the Swedish retail population, while the distribution of sales channel mix and retail sectors reflected national patterns (Svensk Handels, 2021, Retriever, 2025).

Origo Group (a professional data-collection firm) conducted structured interviews using the guide presented in Appendix IV. The instrument was developed from contemporary literature, reviewed by a senior retail-logistics researcher, and piloted with ten omni-channel retailers. Three open-ended pilot questions were used to identify potentially missing response alternatives. As the pilot did not generate additional alternatives, the guide was retained without substantive modification. Most constructs were measured using seven-point Likert-type scales, supplemented by limited free-text responses.

The data were analysed descriptively using means, medians, proportions of agreement and disagreement, and stacked bar charts showing the full response distributions (Abell et al., 2009). Agreement was defined as a response of 6 or 7, whereas disagreement was defined as a response of 1 or 2 on the seven-point scale. Combining these measures enabled the analysis to capture both central tendencies and polarised response patterns. Where items showed polarisation, additional analyses assessed whether the variation corresponded to retail sector, firm size, or sales-channel mix.

The results from Study E contributed to the research presented in this thesis in several ways. First, it demonstrated that consumer steering is a frequently adopted practice among omni-channel retailers. Second, it identified and described retailers' consumer-steering objectives, thereby contributing to Research Question 2. Third, it provided empirical insights into the influence of consumer steering on last-mile distribution, contributing to the understanding of the outcome examined in Research Question 4. Finally, Study D informed the selection and operationalisation of the outcome variable used in the configurational analysis addressing Research Question 4.

4.3.5. Study E: Last-mile consumer steering observation study

In Study E, consumer steering in last-mile distribution within non-grocery omni-channel retailing was examined from the retailer's perspective. Using a combination of cross-sectional structured observation and configurational analysis, Study E identified configurations of last-mile consumer steering capabilities associated with both higher and lower levels of profitability.

The configurational component examined six consumer steering conditions together with firm size and sales-channel mix, using profitability as the outcome. The conditions were informed by the systematic review in Study A, the decision-maker interviews in Study B, and contemporary consumer-steering literature. The purpose was to analyse how conditions operated jointly rather than estimate the independent net effect of any single practice (Kumar et al., 2022, Ketchen et al., 2022).

The analytical population was constructed from Retriever Business and comprised non-grocery omni-channel retailers operating in Sweden with annual revenues exceeding EUR 2 million. Firms were screened in descending order of revenue. E-tailers, pure brick-and-mortar retailers, firms that primarily sold non-physical products, and retailers that did not offer the delivery alternatives required were excluded for Study E. Eligible retailers had to offer in-store C&C, solitary C&C, and home delivery. The resulting dataset included the entire eligible analytical population of 80 retailers, evenly divided between large firms and SMEs and comprising one-quarter store-dominant and three-quarters non-store-dominant retailers. Because Study E included all eligible firms, it was a census study rather than a sample study. The population contained sufficient retailers in each group to assess whether theory developed primarily from studies of large retailers with a high share of store sales could be transferred to other retailer groups and to refine theory by developing propositions where the expected relationships did not hold.

Primary data were collected through non-participant structured observations of retailer websites using the protocol presented in Appendix V. Observation avoided dependence on respondent participation and enabled data collection from the full analytical population (Patel and Davidson, 2019).

The observations were conducted over two consecutive working days. For each retailer, delivery fees were recorded in Swedish Crowns by delivery channel, delivery mode, and delivery partner in Microsoft Excel. Profitability, which served as the outcome variable, was obtained from Retriever Business. Online sales shares and supplementary information used to trace and interpret cases were obtained from public webpages and annual reports or through direct contact with retailers. The observations captured consumer steering practices at a specific point in time; they did not directly reveal managerial motives.

The observational data were used to calibrate the presence or absence of six conditions: store delivery channel below a specified order value; steering towards the remote delivery mode with the lowest retailer cost; conditionally free solitary C&C delivery; conditionally free home delivery; delivery partner steering when multiple partners were offered within a mode; and only one delivery partner per delivery mode. These conditions were analysed together with firm size and sales-channel mix using fs/QCA version 4.1. The analysis identified configurations associated with higher and lower profitability. Results were used deductively to assess literature-based expectations and inductively to refine theory through propositions when the expectations were not supported (Di Paola et al., 2025, Drogendijk et al., 2025). The results established configurational associations, not causal effects.

The results from Study E contributed to Research Question 4 by identifying configurations of consumer steering capabilities associated with higher and lower levels of profitability. Furthermore, Study E validates that all consumer steering capabilities identified in addressing Research Question 3 are present within the superior-performing configurations identified through the configurational analysis. Finally, Study E assesses theoretical expectations concerning consumer steering and contributes to theory refinement by developing propositions where the expected associations were not supported.

4.4. Research trustworthiness

Having outlined the overall design and individual studies, the following section evaluates the research's trustworthiness. Research trustworthiness

depends on the appropriateness and transparency of the research design, data collection, and analysis (Plowright, 2011). The relevant objective was therefore procedural dependability: documenting how evidence was identified, collected, transformed, and analysed. Validity and reliability were the principal quality criteria used to assess the quality of the research in this thesis (Patel and Davidson, 2019, Säfsten and Gustavsson, 2024).

4.4.1. Internal validity

Internal validity concerns the degree to which the findings provide a credible representation of the phenomena under investigation and whether the operationalisations, data collection procedures, and analyses support the conclusions drawn from the data (Säfsten and Gustavsson, 2024, Patel and Davidson, 2019). Because strategic last-mile consumer steering is an emerging research area, particular attention was devoted to ensuring alignment between the research questions, theoretical concepts, performance indicators, and interpretations developed throughout the research process.

At the thesis level, internal validity was strengthened through a cumulative and iterative research design. Findings from earlier studies informed later studies, allowing concepts, constructs, and explanations to be progressively refined. The systematic literature review in Study A established the conceptual foundation, which was subsequently assessed, extended, and refined through the interviews, structured data collection, observations, and configurational analyses conducted in Studies B, C, D, and E. This cumulative development reduced the risk that findings were dependent on a single study, source, or operationalisation.

Methodological triangulation further strengthened internal validity. The thesis combined multiple sources of evidence, including literature, decision-maker interviews, structured interviews, structured website observations, and secondary financial data. These sources contributed complementary perspectives on strategic consumer steering and enabled comparisons across independently collected evidence. For example, delivery partner steering first emerged in the qualitative decision-maker interviews in Study B, was subsequently examined through the structured retailer interviews in Study D, and was later operationalised and assessed in the configurational analysis in

Study E. Observing a similar phenomenon across different methods, data sources, and study designs increased confidence that the findings reflected substantive patterns rather than method-specific artefacts.

Several procedures strengthened the validity of the individual studies. Study A applied a predefined review protocol and systematic screening procedures. Two research assistants conducted all screening stages independently, and articles were excluded only when both reviewers agreed. Random checks were performed by the doctoral student to assess screening consistency. In Study B, internal validity was strengthened through pilot testing of the interview guide, purposeful selection of experienced last-mile decision-makers, the use of open-ended questions and follow-up probing, respondent validation during and after interviews, and audio recording of all interviews. The instruments used in Studies C, D, and E were developed from prior literature and findings from preceding studies. Senior researchers reviewed the interview guides, and the instruments used in Studies C and D were pilot tested before full-scale data collection. In Study E, the robustness of the fsQCA results was assessed through a sensitivity analysis using a higher consistency threshold (0.85), with the main solution pathways remaining stable. In addition, research assistants' data and external data-collection organisations' data were reviewed and checked against secondary sources, including retailer websites and publicly available information.

4.4.2. External validity

External validity refers to the degree to which the study's findings may be applicable beyond the specific research context (Bell et al., 2019). It concerns the transferability and broader relevance of the results across different populations and contexts (Säfsten and Gustavsson, 2024). The research did not claim statistical generalisation to all retailers or countries. Instead, the empirical design supported analytical generalisation and assessment of transferability by providing detailed information about the studied retailers, sampling frames, inclusion criteria, and Swedish research context.

Study B, C, D, and E deliberately included retailers from multiple retail sectors, firm-size categories, and sales channel mixes. Study C used stratified random sampling combined with deliberate oversampling to ensure sufficient

variation for comparison across retailer groups (Säfsten and Gustavsson, 2024). Study D included both large retailers and SMEs as well as store-dominant and non-store-dominant firms. Study E included the entire eligible population of 80 non-grocery omni-channel retailers meeting the study criteria and divided the cases across firm size and sales channel mix. This heterogeneity enabled theory developed mainly from large store-dominant retailers to be assessed and refined across four retailer groups.

Transferability beyond Sweden depends on contextual similarity. Chapter 3 describes the Swedish setting in terms of geography, population density, e-commerce development, store-network development, consumer willingness to collect parcels, and a liberalised market with several nationwide delivery partners. These characteristics enable readers to assess applicability to other contexts. The findings may be most transferable to mature omni-channel markets with comparable delivery infrastructures and consumer expectations. The attractiveness and cost of in-store C&C, solitary C&C, letter delivery, and home delivery may differ under other labour costs, urban structures, regulations, and levels of network maturity.

4.4.3. Reliability

Reliability concerns the consistency and transparency of research procedures and the extent to which another researcher could understand and, where conditions permit, repeat them (Bell et al., 2019, Booth et al., 2012). Exact replication of organisational research cannot be expected to produce identical findings because retail practices, financial outcomes, and market conditions evolve over time. Consequently, the objective in this study was to enhance procedural dependability by documenting how evidence was identified, collected, transformed, and analysed.

Study A followed four predefined stage and reported the databases, search string, screening logic, thematic coding, and numbers of retrieved and included studies (Booth et al., 2012). Research assistants received screening instructions and random checks supported consistency. Study B used a common interview guide and recorded the interviews. Studies C and D used standardised instruments, predefined response alternatives, and defined administration procedures. Trained research assistants conducted part of

Study C, and Origo Group conducted Study D. Study E used a predefined observation protocol, a restricted collection window, and systematic recording by delivery channel, delivery mode, and delivery partner.

Analytical transparency was supported by reporting the measures used in the descriptive analyses and by identifying the fsQCA software versions, conditions, outcomes, and configurational logic. Detailed calibration and truth-table procedures were reported in the appended papers. Four studies were published in peer-reviewed journals, and the fifth underwent conference and journal review. This external scrutiny supported critical evaluation but was not treated as proof of reliability.

4.5. Ethical considerations

The research followed the principles of doing good, avoiding harm, respecting autonomy, and upholding justice (Swedish Research Council, 2024). For research involving individuals, autonomy was addressed through information, voluntary participation, consent, confidentiality, and appropriate use of data (Patel and Davidson, 2019).

The research presented in this thesis did well by generating knowledge that is beneficial for consumers, researchers, decision-makers, individuals, and firms. The research presented in this thesis was published in open-access journals, ensuring fair distribution of the research.

Decision-makers were initially contacted through LinkedIn or other professional channels and were informed about the research purpose before agreeing to participate. Participation was voluntary. Permission to record the interviews was obtained prior to the commencement of recording. Participants were informed that neither their names nor their firms' names would be disclosed. Participants and firms were therefore represented through anonymised identifiers, role descriptions, aggregated results, or anonymised quotations. This was important because combinations of sector, firm size, and sales channel mix could otherwise increase the risk of deductive disclosure. Respondents were contacted to validate quotations and approve their publication.

Interview recordings and research data were stored on secure university servers and were not shared beyond the research purposes for which they were collected. Reporting was limited to the contextual detail required for methodological transparency and interpretation. The observational study used consumer steering information available on retailer websites and combined it with firm information from databases and public sources. Even where information was publicly accessible, reporting was designed to avoid unnecessary identification of individual firms.

Consumer steering also raises broader ethical considerations. While steering may encourage financially efficient delivery choices, it can simultaneously influence environmental outcomes. Whitbeck (2011) argues that researchers bear responsibility for the environmental consequences of their research. In the context of retail distribution, the environmental performance of in-store shopping and e-commerce depends on multiple factors, including delivery mode, consumer travel behaviour, shipment consolidation, return rates, population density, and logistics network design (Pålsson et al., 2017). Furthermore, emerging technologies are expected to mitigate some of the environmental impacts associated with last-mile distribution, while changes in the proportion of online and in-store retail sales may alter the environmental implications of alternative retail channels. Accordingly, retailers and researchers share a responsibility to consider and balance financial and environmental consequences when assessing consumer steering initiatives. Ultimately, however, consumers retain the autonomy to decide both from which retailer to purchase and how their goods will be delivered.

The dissemination of research related to e-commerce and last-mile distribution may also involve broader ethical considerations. Research that contributes to more efficient and competitive e-commerce operations may simultaneously support continued growth in online retailing, which can create both positive and negative societal and environmental consequences. Consequently, logistics researchers may face ethical tensions between promoting efficiency, economic development, and consumer value on the one hand, and considering potential environmental impacts on the other. This reflects the broader ethical dilemma of whether research findings that may generate societal benefits can also contribute to unintended negative

consequences when applied in practice (Selgelid, 2007). The purpose of the present research is not to advocate increased consumption or e-commerce growth but to improve understanding of strategic consumer steering and last-mile distribution. The potential environmental and societal implications of applying the findings should therefore be considered alongside their economic benefits.

4.6. Use of generative artificial intelligence declaration

All research activities, including the formulation of research questions, development of theoretical frameworks, data collection, data analysis, interpretation of findings, and preparation of the journal manuscripts, were conducted without the assistance of artificial intelligence. Microsoft 365 Copilot was used exclusively to proofread the summary chapters of the thesis and did not contribute to the intellectual content, analyses, or interpretation of the research. The published journal articles included in the thesis were proofread by a professional proofreader. Responsibility for all conceptual decisions, substantive revisions, and final formulations remained with the doctoral student.

5. Summary of papers

The five appended papers are summarised in the following sections.

5.1. Appended papers contribution to research questions

The cumulative research presented in this thesis is reported in five appended papers. The papers were built sequentially from framework development and exploration in Papers I and II, through configurational assessment in Paper III, to consumer steering explanation in Paper IV, and consumer steering capabilities configuration analysis in Paper V. The main contribution of each paper to the four research questions is summarised in the following sections and illustrated in Figure 7. Figure 7 is not entirely comprehensive, as it does not fully represent the cumulative development of the research. For instance, Paper 1 served as the foundation for the subsequent papers, highlighting interdependencies that are not fully illustrated in the figure. No single paper answers the thesis purpose independently. Collectively, the papers provide the evidence base used to address the thesis purpose and four research questions.

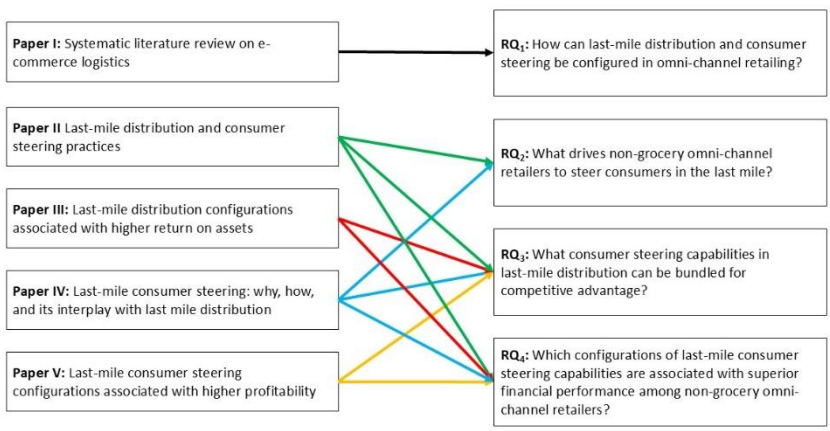

Figure 7. Appended papers main contribution to research questions.

5.2. Paper I

Title: Systematic Literature Review on e-Commerce Logistics: Towards an e-Commerce and Omni-channel Decision Framework

Authors: Andreas Risberg

Type of paper: Peer-reviewed journal paper (Risberg, 2023)

Journal: The International Review of Retail, Distribution and Consumer Research

Status: Published 2023

Purpose: To synthesise contemporary e-commerce logistics literature and develop an e-commerce logistics configuration framework for omni-channel retailing.

Study presented in Paper I: Study A

Research methodology: A systematic literature review of e-commerce logistics assessed 3,817 records and synthesised 373 articles retrieved from Scopus and Web of Science.

Main findings: Paper I synthesised the e-commerce logistics literature and showed how the field had evolved towards omni-channel logistics. Drawing on 373 articles, it developed an e-commerce logistics configuration framework and identified avenues for further research. This framework is distinct from the thesis-level last-mile configuration framework presented later in the thesis.

Paper I extended prior frameworks by developing an e-commerce logistics configuration framework comprising 43 decision elements (Hübner et al., 2016a, Marchet et al., 2018). The complete framework, presented in Appendix VI, demonstrated the range of possible e-commerce logistics configurations in omni-channel retailing.

The reviewed research had predominantly examined large retailers with extensive store networks, whereas SMEs and retailers with narrower store networks had received limited attention. Most studies focused on individual topics, and few adopted a configurational approach (Kuhn et al., 2021, Moons

et al., 2019, Taylor et al., 2019). The review therefore identified a need for configurational studies of last-mile systems and their strategic fit, consistent with the subsequent call by Ketchen et al. (2022).

Strategic last-mile consumer steering was identified as an emerging area requiring further attention in omni-channel last-mile strategy. Up to the end of 2021, the reviewed consumer steering research had focused exclusively on delivery channel steering.

Original contribution: In Paper I, consumer steering was identified as a missing link in e-commerce logistics strategy and an e-commerce logistics configuration framework for omni-channel retailing was developed. This framework extended prior research that had focused predominantly on last-mile back-end fulfilment and last-mile delivery.

5.3. Paper II

Title: Last mile practices in e-commerce: framework development and empirical analysis of Swedish firms

Authors: Andreas Risberg and Hamid Jafari

Type of paper: Peer-reviewed journal paper (Risberg and Jafari, 2022)

Journal: International Journal of Retail & Distribution Management

Status: Published 2022

Purpose: To explore last-mile distribution and consumer steering practices

Studies presented in Paper II: Studies B and C

Research methodology: Study C was a cross-sectional study of 200 e-commerce and omni-channel retailers. Data were collected through structured interviews and analysed using descriptive statistics. Study B comprised semi-structured interviews with ten last-mile decision-makers, and the data were analysed using content-frequency analysis.

Main findings: Paper II explored last-mile distribution and consumer steering practices among omni-channel retailers. Firm size and sales channel mix were identified as the most influential firm characteristics, and last-mile practices

varied substantially across these characteristics. The large-scale Study C thereby addressed the limited understanding of how omni-channel retailers configured the last mile.

The findings indicated that firm strategy and last-mile distribution strategy should be aligned, with last-mile consumer steering serving as a bridge between them. They further suggested that strategic consumer steering should be considered when formulating last-mile distribution strategy. One decision-maker explained this relationship as follows:

> *"The omni-channel business and logistics strategy need to go hand-in-hand when steering consumers through different channels and building the appropriate logistics structure. Sales turnover in each channel, environmental aspects and cost levels should be considered."*
>
> *- Logistics responsible, omni-channel retailer F, Study B*

The decision-maker interviews revealed that omni-channel retailers steered consumers not only towards particular delivery channels but also towards delivery modes and delivery partners. The findings also provided initial evidence of simultaneous steering across delivery channel, mode, and partner. One decision-maker emphasised steering consumers towards financially beneficial delivery modes and partners:

> *"We steer consumers towards financially beneficial delivery options and logistics service providers without jeopardising service and sustainability aspects."*
>
> - *Logistics responsible, e-tailer I, Study B*

Store-focused retailers steered consumers towards brick-and-mortar stores, whereas online-focused retailers promoted remote delivery to a greater extent by offering unconditionally or conditionally free delivery. Firm size did not appear to influence general last-mile consumer steering practices.

Original contribution: Paper II showed that omni-channel retailers considered strategic consumer steering when formulating last-mile

distribution strategies. It identified delivery mode steering, delivery partner steering, and simultaneous steering across delivery channel, mode, and partner as capabilities that had received limited attention in literature focused predominantly on delivery channel steering. Paper II also described broader last-mile distribution and consumer steering practices using the e-commerce logistics configuration framework developed in Paper I.

5.4. Paper III

Title: A configurational approach to last mile logistics practices and omni-channel firm characteristics for competitive advantage: a Fuzzy-Set Qualitative Comparative Analysis

Authors: Andreas Risberg, Hamid Jafari and Erik Sandberg

Type of paper: Peer-reviewed journal paper (Risberg et al., 2023)

Journal: International Journal of Physical Distribution and Logistics Management

Status: Published 2023

Purpose: The purpose was to explore how configurations resulting from the interplay of last-mile logistics practices and firm characteristics are associated with firm performance in an omni-channel context.

Study presented in Paper III: Study C

Research methodology: A cross-sectional study of 72 omni-channel retailers. Data were collected through structured interviews and analysed using fsQCA, with return on assets as the outcome.

Main findings: Paper III identified last-mile logistics configurations associated with superior financial performance. The configurations differed across four retailer groups: large store-oriented retailers, large online-oriented retailers, store-oriented SMEs, and online-oriented SMEs. The findings therefore showed how strategic fit varied with firm size and sales channel mix.

A wide range of delivery alternatives was necessary but not sufficient for higher return on assets; return and fulfilment practices also needed consideration. Higher-performing large omni-channel retailers integrated

store and warehouse fulfilment. By contrast, higher-performing SMEs adopted simpler fulfilment arrangements: store-oriented SMEs leveraged stores, whereas online-oriented SMEs leveraged warehouses.

Higher-performing large retailers combined integrated store and warehouse fulfilment with partially or fully automated warehouse fulfilment, whereas higher-performing SMEs relied on simpler fulfilment arrangements.

Original contribution: Paper III applied fsQCA, a novel methodology in this research area, to explore pathways to competitive advantage. The configurations identified for higher-performing SMEs and online-oriented omni-channel retailers extended prior research focused predominantly on large omni-channel retailers with high shares of brick-and-mortar sales.

5.5. Paper IV

Title: Last mile consumer steering in omni-channel retailing: an integrated delivery channel, mode, and partner steering study in Sweden

Authors: Andreas Risberg

Type of paper: Peer-reviewed journal paper (Risberg, 2026)

Journal: The International Review of Retail, Distribution and Consumer Research

Status: Published 2026

Purpose: To examine and explain last-mile consumer steering in omni-channel retailing from an omni-channel retailer perspective.

Study presented in Paper IV: Study D

Research methodology: A cross-sectional study of 70 omni-channel retailers. Data were collected through structured interviews and analysed using descriptive statistics and distributional comparisons.

Main findings: Paper IV examined last-mile consumer steering from an omni-channel retailer perspective. Most non-grocery omni-channel retailers (96%) engaged in last-mile consumer steering. More than two-thirds (70%) steered consumers toward a preferred delivery channel, 45% toward a

particular delivery mode, and 36% toward a specific delivery partner. Store-dominant retailers steered consumers towards delivery channels more frequently than non-store-dominant retailers. By contrast, non-store-dominant retailers more frequently steered consumers towards remote delivery modes and preferred delivery partners.

Overall, retailers preferred in-store delivery (mean 5.0 on a seven-point Likert-type scale) to solitary C&C (4.2) or home delivery (3.3). The mean preference gap between in-store C&C and home delivery was 1.7, with solitary C&C positioned between these alternatives. A notable difference was identified between retailer groups: the gap was 3.3 among store-dominant retailers but only 0.8 among non-store-dominant retailers. Further research was recommended to explain this difference.

The overarching motive for steering consumers across delivery channels, modes, and partners was to enhance financial performance while maintaining high levels of logistics service. Delivery channel steering was aligned with firm strategy. When steering towards a delivery channel, non-store-dominant retailers focused on both increasing in-store revenue and reducing fulfilment costs, whereas store-dominant retailers primarily sought to increase in-store sales. Non-store-dominant retailers placed substantially greater emphasis on reducing fulfilment costs when steering towards delivery modes and partners than store-dominant retailers (6.1 versus 4.0). This difference was particularly relevant because non-store-dominant retailers also engaged more frequently in steering delivery modes and delivery partners.

Delivery fees were the most frequently used logistics lever for steering consumers towards delivery channels, modes, and partners.

Retailers that reported steering consumers to improve financial performance had average profitability 5.9 percentage points higher than retailers that did not. The difference was particularly pronounced among non-store-dominant retailers (7.4 percentage points), which had higher online sales shares and more online orders.

The findings indicated that delivery channel steering influenced omni-channel last-mile distribution resources. Its strongest perceived influences concerned warehouse size and the logistics role of stores. Large and non-store-

dominant retailers, which had more online orders, reported a greater influence of delivery channel steering on warehouse automation than their counterparts. Delivery partner steering was also associated with the number of delivery partners.

Original contribution: Paper IV provided an integrated retailer-perspective examination of delivery channel, mode, and partner steering. It contributed evidence on the prevalence, objectives, levers, and perceived influence of consumer steering on last-mile distribution. Paper IV further examined delivery partner steering and simultaneous steering across delivery channel, mode, and partner, which emerged in Paper II.

5.6. Paper V

Title: Configuring last-mile consumer steering capabilities for higher profitability and competitive advantage in omni-channel retailing

Authors: Andreas Risberg and Pejvak Oghazi

Type of paper: Peer-reviewed journal paper

Journal: Journal of Competitiveness

Status: Under review, **s**ubmitted June 22, 2026

Purpose: To identify configurations of last-mile consumer steering capabilities associated with higher profitability and competitive advantage.

Study presented in Paper V: Study E

Research methodology: A cross-sectional study of 80 non-grocery omni-channel retailers. Data were collected through structured observations and analysed using fsQCA, with profitability as the outcome.

Main findings: Whereas Paper IV examined why retailers steered consumers and how steering was practised, Paper V focused on how steering capabilities were combined in configurations associated with superior profitability. Paper V operationalised six last-mile consumer steering capabilities as conditions in the configurational analysis: delivery channel steering, delivery mode steering, delivery partner steering, simultaneous consumer steering,

conditionally free solitary C&C delivery, and conditionally free home delivery.

Paper V assessed whether expectations developed primarily from studies of large retailers with high shares of store sales were transferable across four groups: large store-dominant retailers, large non-store-dominant retailers, store-dominant SMEs, and non-store-dominant SMEs. Each of the six capabilities appeared in at least one configuration associated with higher profitability, indicating its potential relevance to competitive advantage. The literature-based expectation was that higher-performing omni-channel retailers would simultaneously steer online orders towards the store channel, the delivery mode with the lowest retailer cost, and a single delivery partner. This expectation was transferable to store-dominant SMEs, thereby extending findings from large store-dominant retailers to this group.

The expectations were not fully transferable to large non-store-dominant retailers because two of the three higher-performing configurations included conditionally free remote delivery. Nevertheless, these retailers simultaneously steered all orders, or orders below the free-delivery threshold, towards the store channel, the delivery mode with the lowest retailer cost, and a single delivery partner. These expectations did not transfer to non-store-dominant SMEs, which offered unconditional free remote delivery.

Paper V extended the resource-based view to last-mile consumer steering in omni-channel retailing by showing that six consumer steering capabilities that may be bundled for competitive advantage appeared in configurations associated with higher profitability. It extended transaction cost economics to consumer steering in the last-mile context by explaining delivery partner governance and showing how higher-profitability configurations were consistent with minimising last-mile distribution transaction costs.

Study E, part of Paper V, made four key findings regarding selective free delivery coverage and widespread free delivery distribution coverage association with higher performance. First, all retailers belonging to configurations associated with higher profitability offered free in-store click-and-collect (C&C). Second, a large store network with extensive distribution coverage was not, in itself, associated with higher profitability. Third, large and store-dominant retailers associated with higher performance, and

possessing broad store-network coverage, consistently steered all orders, or orders below the free-delivery threshold, simultaneously toward the store channel, the lowest-cost delivery mode for retailers, and consolidated deliveries to a single delivery partner. The only exception was SME non-store-dominant retailers. Fourth, the only retailer group associated with higher profitability that offered unconditional free remote delivery was SME non-store-dominant retailers with limited store-network coverage. These retailers effectively achieved broad free delivery distribution coverage through unconditional free remote delivery options. Taken together, these findings suggest that large and store-dominant retailers associated with higher profitability pursue a strategy of selective free delivery distribution coverage through free in-store C&C deliveries while simultaneously steering consumers toward preferred delivery channels, delivery modes, and delivery partners. In contrast, SME non-store-dominant retailers associated with higher profitability compensate for their limited store distribution coverage by offering unconditional free remote deliveries, thereby extending their market reach. Overall, the findings indicate that retailers belonging to configurations associated with higher performance provide consumers with broad access to free delivery distribution coverage, albeit through different mechanisms. Large and store-dominant retailers achieve this through selective free in-store C&C coverage through a large wide-spread store network in targeted areas in combination with simultaneous steering, whereas SME non-store-dominant retailers with limited distribution coverage rely on unconditional free remote deliveries to provide comparable geographic accessibility across the broader market territory.

Original contribution: Paper V operationalised six last-mile consumer steering capabilities as conditions in a configurational analysis of profitability. Expectations developed predominantly from research on large retailers with high shares of store sales were assessed and refined across four retailer groups. Retailers part of configurations associated with higher profitability provide consumers with broad access to free deliveries and free in-store C&C deliveries; large and store-dominant retailers combine this with simultaneous consumer steering. Paper V extended transaction cost economics to the last-mile context by examining delivery partner governance and minimisation of last-mile distribution transaction costs. It also advanced the resource-based

view by identifying bundles and configurations of consumer steering capabilities that may contribute to competitive advantage in omni-channel retailing.

Taken together, the five papers provide the empirical and theoretical foundation for the cross-paper synthesis and discussion presented in Chapter 6.

6. Discussion

The four research questions are discussed in four sections: the last-mile configuration framework, consumer steering drivers, consumer steering capabilities, and consumer steering capability configurations.

6.1. Last-mile configuration framework

This section addresses Research Question 1, which seeks to understand how last-mile distribution and consumer steering can be configured within omni-channel retailing.

Three of the five themes in the e-commerce logistics configuration framework developed in Study A and presented in Paper I provided the basis for the last-mile configuration framework. The framework presented in Table 5 covers possible configurations of last-mile back-end fulfilment, last-mile delivery, and last-mile consumer steering. Until the end of 2021, the literature on last-mile consumer steering focused predominantly on delivery channel steering. The consumer steering theme was therefore updated based on the last-mile decision-maker interviews in Study B and contemporary literature reviewed throughout the research process.

The last-mile configuration parameters highlighted in grey originated from prior last-mile frameworks (Hübner et al., 2016a, Marchet et al., 2018). The parameters highlighted in green formed part of the e-commerce logistics configuration framework developed in Paper I. Finally, the parameters highlighted in yellow were added based on the last-mile decision-maker interviews in Study B and contemporary literature searches.

Table 5. Last-mile configuration framework

	Parameters	Alternatives				
1 Last-mile delivery	1.1 Delivery alternatives	Home or other destination		Click & Collect		
		Attended	Unattended	In-store	Attached	Solitary
	1.2 Delivery velocity	Same day	1 – 3 days	4 – 5 days	> 5 days	
	1.3 Eco-friendly deliveries	Yes		No		
	1.4 Time slot	Specific		Flexible		Undefined
	1.5 Courier selection	Alternatives		No choice		
	1.6 Delivery area	Local	Regional	National	International	
	1.7 Integrated transport system	Separated		Integrated		
	1.8 Transport service	Milk run		Courier		Linehaul with local distribution
	1.9 Transportation fleet	Fossil-fuelled		Fossil-free		
	1.10 Vehicles	Manned vehicles		Autonomous delivery vehicles		Unmanned aerial vehicles
	1.11 Delivery operation	In-house	Hybrid solution	Outsource	Collaborate	
	1.12 Number of delivery partners	One single delivery partner		Multiple delivery partners		
2 Last-mile back-end fulfilment	2.1 Fulfilment location (node)	In-store	e-Fulfilment centre	Central warehouse	Vendor	
	2.2 Ship online orders from store	Ship online orders from stores		Ship no online orders from stores		
	2.3 Assortment strategy	Symmetric		Asymmetric		
	2.4 Order allocation	Dynamic		Static		
	2.5 Automation level	Manual		Partially automated		Fully automated
	2.6 Integration	Separated		Integrated		Capacity-optimized
	2.7 Single order consolidation	Order consolidation		Several deliveries		
	2.8 Order batching	Order batching		No sorting		
	2.9 Fulfilment operation	In-house		Hybrid solution		Outsource
	2.10 No. outsourcing partners	One fulfilment partner		Multiple fulfilment partners		
3 Last-mile consumer steering – Delivery fee as lever	3.1 Different delivery channel fees	Promote store channel		Promote online channel (remote deliveries)		
	3.2 Different delivery mode fees	Promote solitary C&C		Promote home delivery		
	3.3 Different delivery partner fees	Steer towards delivery partner		No delivery partner steering		
	3.4 Flat-fee delivery	Flat fees		Conditional fees		
	3.5 Unconditional free delivery	In-store C&C		Solitary C&C		Home delivery
	3.6 Conditional free delivery	In-store C&C		Solitary C&C		Home delivery
	3.7 Different time slot fees	Steer towards time slot		No time slot steering		
	3.8 Dynamic or static delivery fees	Static conditions (e.g. delivery fee and time)		Dynamic conditions (e.g. delivery fee and time)		
	3.9 Geographical differentiation	Different conditions (e.g. delivery fee and time)		Same conditions (e.g. delivery fee and time)		
Other steering levers	3.10 Online availability visibility	Web store		Physical stores		
	3.11 Delivery time differentiation	Time differentiation		Same delivery time		
	3.12 Promote delivery alternative	Online information		Pre-selected check-out option		

= Prior decision frameworks by Hübner, Kuhn, et al. (2016) and Marchet et al. (2018)

= Additions to prior frameworks (Risberg, 2023)

= Additions to prior frameworks (Risberg, 2026)

6.2. Consumer steering drivers

This section addresses Research Question 2 by examining the key drivers of omni-channel retailers' use of last-mile consumer steering. Retailer objectives for steering consumers in last-mile distribution were synthesised in Study A and confirmed and discussed in Study B. Study D, presented in Paper IV, used

a standardised design to examine these drivers across 70 omni-channel retailers.

Findings in Study B, presented in Paper II, indicated that delivery channel steering should be aligned with overall firm strategy and last-mile distribution strategy, as described by one last-mile decision-maker. This finding reinforced previous studies showing that firm strategy and last-mile distribution strategy should be aligned and that consumer steering may serve as a bridge between them (Cao, 2014, Jeanpert and Paché, 2016, Jocevski et al., 2019, Lim and Winkenbach, 2019). The decision-maker also emphasised that retailers' sales channel mix, cost levels, and environmental considerations should inform consumer steering.

> *"The omni-channel business and logistics strategy need to go hand-in-hand when steering consumers through different channels and building the appropriate logistics structure. Sales turnover in each channel, environmental aspects and cost levels should be considered."*
>
> *- Logistics responsible, omni-channel retailer F, Study B*

Results in Study B, presented in Paper II, also indicated that omni-channel retailers steer consumers towards financially beneficial delivery modes and partners, as described by another last-mile decision-maker.

> *"We steer consumers towards financially beneficial delivery options and logistics service providers without jeopardizing service and sustainability aspects."*
>
> *- Logistics responsible, e-tailer I, Study*

Findings in Study D, presented in Paper IV, showed that retailers' overarching motive for steering consumers across delivery channels, modes, and partners was to enhance financial performance while maintaining high levels of logistics service and considering firm strategy. Contemporary literature has focused on how superior financial performance may be

supported through delivery channel and delivery mode steering (e.g., Chenavaz et al., 2022, Lu and Li, 2025).

Study D, presented in Paper IV, found that omni-channel retailers that actively steered consumers reported average profitability levels 5.9 percentage points higher than those of retailers that did not engage in steering practices. This profitability differential was particularly pronounced among non-store-dominant retailers, for which the difference reached 7.4 percentage points.

6.3. Consumer steering capabilities

This section addresses Research Question 3 by examining which consumer steering capabilities in last-mile distribution can be bundled for competitive advantage.

First, the role of consumer steering in strategising is discussed. Second, consumer steering is conceptualised as a potential source of competitive advantage through the orchestration of last-mile distribution resources. Third, single, simultaneous, and dual steering capabilities are presented. Finally, this thesis discusses additional consumer steering capabilities whose roles in competitive advantage and superior financial performance were not assessed.

It should be acknowledged that the causal relationships between consumer steering capabilities in Section 6.3, strategically aligned configurations, last-mile distribution competitive advantages, and superior financial performance have not been conclusively established.

6.3.1. Consumer steering as a strategy bridge

Previous research emphasised the importance of integrating firm and logistics strategies in omni-channel retailing (Huebner et al., 2022, Mrutzek-Hartmann et al., 2022, Radomska et al., 2024). Study B, presented in Paper II, indicated that omni-channel retailers may use consumer steering as a bridge when aligning firm strategy with last-mile distribution strategy, as described by a last-mile decision-maker:

"The omni-channel business and logistics strategy need to go hand-in-hand when steering consumers through different channels and building the appropriate logistics structure."

- Logistics responsible, omni-channel retailer F, Study B

Findings in Study D, presented in Paper IV, also showed that firm strategy was one of the key drivers of consumer steering in last-mile distribution.

6.3.2. Consumer steering a source of competitive advantage

Previous logistics research showed that the strategic importance of logistics is driven by the magnitude of logistics costs as a share of total revenue and the degree to which logistics constitutes a distinctive competitive driver (Persson, 1991). Last-mile distribution costs represent a high cost that cannot be neglected (Bijmolt et al., 2021, Chenavaz et al., 2022, Ishfaq and Bajwa, 2019), while last-mile delivery may constitute a source of competitive advantage in omni-channel retailing (Roggeveen and Sethuraman, 2020, Sandberg, 2025). Taken together, these arguments demonstrate the strategic importance of last-mile distribution.

Distribution capabilities have been extensively examined in contexts other than omni-channel retailing (e.g., Stalk et al., 1992). Distribution may contribute to competitive advantage through total distribution cost minimisation, distribution service performance, or a combination of both (Defee and Fugate, 2010, Morash et al., 1996, Persson, 1991). Distribution service performance may be achieved through selective or widespread distribution coverage.

Prior research indicates that retailers find it difficult to transfer last-mile distribution costs to consumers in highly competitive online markets because consumers prefer free delivery and evaluate the total purchase price, including delivery fees (Rodríguez-García et al., 2024, Xu and Jackson, 2019, Ratchford et al., 2022, Kong et al., 2020a, Rai et al., 2019).

Taken together, these findings support the conceptualisation of last-mile distribution cost minimisation and free last-mile distribution service performance, separately or in combination, as potential sources of competitive advantage in last-mile distribution. Free last-mile distribution service performance may be achieved through selective free last-mile delivery coverage, widespread free last-mile delivery coverage, or a combination of both. Section 6.4 discusses the strategic fit between these potential sources of competitive advantage and retailer groups and illustrates it in Figure 9.

Resource orchestration is an established concept (e.g, Sirmon et al., 2011) that has recently been applied to retail supply chains (e.g, Sandberg, 2023). In this thesis, last-mile consumer steering is conceptualised as single, dual, and simultaneous consumer steering capabilities that orchestrate last-mile distribution resources, including warehouses, brick-and-mortar stores, collection points, and delivery fleets. By steering consumer orders towards particular delivery channels, modes, and partners, and implicitly towards back-end fulfilment locations, these capabilities may minimise last-mile distribution costs and enable new profitable consumer service offerings. Both outcomes may contribute to competitive advantage.

For example, last-mile consumer steering may influence where online orders are fulfilled. Concentrating order volumes at one location may enable investments in automated warehouse systems, reduce total back-end fulfilment costs, and support new profitable consumer offerings (Kembro and Norrman, 2025). These outcomes may contribute to competitive advantage.

Consumer steering may also consolidate order volumes towards preferred delivery modes and partners. Retailers with greater delivery volumes may obtain lower delivery prices (Sallnäs and Björklund, 2020), and concentrating volume may reduce delivery prices compared with spreading it across several partners (Mukherjee and Sarin, 2018). Lower delivery costs may both minimise total distribution costs and support new profitable consumer offerings; both outcomes may contribute to competitive advantage.

Taken together, these arguments indicate that consumer steering may orchestrate last-mile distribution resources and should be considered when developing last-mile distribution strategy. They also suggest that consumer steering capabilities may constitute sources of competitive advantage. Section

6.4 discusses the strategic fit between consumer steering capabilities and retailer groups and illustrates it in Figure 8.

6.3.3. Single consumer steering capabilities

This subsection describes a single steering capability, which always behaves the same regardless of order value.

Delivery channel steering

Delivery channel steering was the first form of last-mile consumer steering discussed in the literature (Huebner et al., 2022, Boysen et al., 2021, Wollenburg et al., 2018a, Wang et al., 2022a, Cao and Li, 2015). The findings suggest that delivery channel steering may constitute a source of competitive advantage and may be associated with superior financial performance.

Findings in Study D, presented in Paper IV, showed that delivery channel steering influenced last-mile distribution design, supporting its role in orchestrating last-mile distribution resources. The three most important retailer objectives for steering consumers towards a preferred delivery channel were firm strategy, logistics service, and improved financial performance. Study E results, presented in Paper V, further showed that delivery channel steering formed part of configurations associated with superior financial performance. Together, these findings indicate its potential strategic role.

Delivery mode steering

Delivery mode steering in last-mile distribution is an emerging research area (e.g., Galiullina et al., 2024). The research findings presented in this thesis suggest that delivery mode steering may constitute a source of competitive advantage and may be associated with superior financial performance.

Study B, presented in Paper II, revealed that omni-channel retailers steer consumers towards financially beneficial delivery modes. Study D, presented in Paper IV, subsequently showed that such steering influenced last-mile distribution resources, supporting its resource-orchestration role. In Study E, delivery mode steering appeared in configurations associated with superior financial performance, indicating its potential strategic relevance.

Study E, presented in Paper V, extended prior modelling research on steering consumers towards solitary C&C rather than more expensive home delivery (e.g., Galiullina et al., 2024). Study E findings indicated that retailers may benefit from steering consumers towards the delivery mode with the lowest retailer cost.

Delivery partner steering

Delivery partner steering emerged as a consumer steering capability from the decision-maker interviews in Study B, presented in Paper II. Study D, presented in Paper IV, showed that it influenced last-mile distribution resources, supporting its strategic role in resource orchestration. In Study E, delivery partner steering appeared in all configurations associated with superior financial performance. This recurring presence indicates its potential importance but does not establish that it is independently necessary for competitive advantage.

The link between delivery partner management, competitive advantage, and financial performance is supported by literature unrelated to omni-channel retailing. Consumers are hesitant to pay higher fees for better service (Barker and Brau, 2020; Tokar et al., 2020; Garver et al., 2012). Retailers face varying costs for the same delivery mode across different partners, but larger volumes can lead to lower prices (Sallnäs and Björklund, 2020). Focusing volume on a single partner may reduce delivery costs compared to spreading it across multiple partners (Mukherjee and Sarin, 2018). This is crucial in competitive markets where delivery costs cannot easily be passed to consumers, who tend to avoid paying extra for standard delivery quality (Barker and Brau, 2020; Tokar et al., 2020; Garver et al., 2012; Kong et al., 2020a). Lower last-mile costs can also enable retailers to offer new, profitable delivery services, gaining a competitive edge (Kembro and Norrman, 2025).

6.3.4. Simultaneous consumer steering capability

Simultaneous delivery channel, delivery mode, and delivery partner steering has not previously been discussed in the literature as a potential source of competitive advantage. Simultaneous steering emerged in Paper II and was operationalised in Study E, presented in Paper V. It appeared in all, but one

configuration associated with superior financial performance, indicating its potential strategic relevance and demonstrating the configurability of last-mile consumer steering. Simultaneous steering may be viewed as a higher-level capability because it combines the three single steering capabilities discussed in subsection 6.3.3. However, the findings do not establish that the individual capabilities are ineffective in isolation; rather, they show that they were commonly combined in the configurations associated with superior performance.

6.3.5. Dual consumer steering capabilities

This subsection presents dual steering capabilities. A dual steering capability enables consumers to be steered differently depending on order value. Previous research has noted that the dual steering effect of conditionally free delivery remains underexplored (Lu and Li, 2025, Brockhaus et al., 2025). The last-mile configuration framework presented in Table 5 includes three forms of conditionally free delivery: in-store C&C, solitary C&C, and home delivery.

Conditionally free delivery enables omni-channel retailers to steer orders below the free-delivery threshold differently from orders above it. Orders below the threshold generally have a lower order value and, in many cases, a lower absolute profit. This distinction is important because omni-channel retailers must cover substantial last-mile distribution costs through delivery fees, order profit, or a combination of both to remain profitable (Bijmolt et al., 2021, Chenavaz et al., 2022, Ishfaq and Bajwa, 2019). Lim et al. (2018) argue that retailers will struggle to survive without sustainable delivery economics. At the same time, retailers seek to attract higher-value orders by offering a competitive total consumer price, including delivery fees. This may be especially relevant for consumers who prefer remote delivery, seek rare products, or lack convenient access to the retailer's store network (Ratchford et al., 2022). Free delivery is an important delivery attribute, is difficult to finance through charges to consumers, and may increase sales (Rai et al., 2019, Kong et al., 2020a).

Conditional free delivery encourages orders just below the free threshold to choose cheaper options, reducing last-mile costs or increasing delivery

income. Free delivery above the threshold attracts higher-value orders, boosting profit. This approach offers a competitive edge by combining consumer appeal with cost savings.

Study E, presented in Paper V, operationalised conditionally free solitary C&C delivery and conditionally free home delivery as two conditions in the fsQCA, with profitability as the outcome. Conditionally free remote delivery appeared in two configurations associated with higher profitability, indicating the circumstances under which it may contribute to competitive advantage.

6.3.6. Additional consumer steering capabilities

The research additionally identified three consumer steering capabilities that could not be assessed because of the available cases and research design: dynamic steering, geographical steering, and time-slot steering (Zhou et al., 2021, Chenavaz et al., 2022, Marchet et al., 2018, Hübner et al., 2016a). They are included in the last-mile configuration framework because they may contribute to competitive advantage.

Rapid developments in artificial intelligence may enable dynamic steering and order fulfilment based on real-time retailer, competitor, and consumer information. Such capabilities may become a source of competitive advantage among early adopters. Recent modelling studies based on simplifying assumptions indicate that dynamic delivery fees may improve profitability (Zhou et al., 2021, Chenavaz et al., 2022). The cross-sectional Study E, presented in Paper V, could not determine whether any retailers used dynamic delivery fees. It was therefore not possible to assess whether dynamic consumer steering was associated with competitive advantage.

Geographical consumer steering capabilities may constitute a source of competitive advantage, particularly in large territories where distribution costs vary significantly. They may also be valuable when retailers operate selective store networks with uneven geographical coverage. Retailers could then apply different steering strategies across areas, for example by encouraging store-based delivery where stores are present and promoting alternative delivery solutions elsewhere. Only one of the 80 omni-channel retailers in the Study E population used geographically differentiated delivery fees. This retailer was

an SME omni-channel retailer in northern Sweden with one home-electronics store and did not belong to a configuration associated with either higher or lower profitability. With only one case, geographical consumer steering could not be assessed as a potential source of competitive advantage.

Prior time-slot studies have focused on grocery retailing, where time-slot pricing is more common because home delivery is the predominant remote delivery mode. Few non-grocery omni-channel retailers part of Study, presented in Paper V, offered time-slot pricing; it was therefore not possible to assess whether time-slot steering may constitute a source of competitive advantage.

6.4. Consumer steering capability configurations

This section addresses Research Question 4 by investigating which configurations of last-mile consumer steering capabilities are associated with superior financial performance among non-grocery omni-channel retailers.

The configurations associated with superior financial performance in Study E, presented in Paper V, orchestrated last-mile distribution resources in different ways and exhibited potential strategic fit with distinct retailer groups. Figure 8 illustrates the consumer steering capabilities used by these groups, which are discussed in the following subsections.

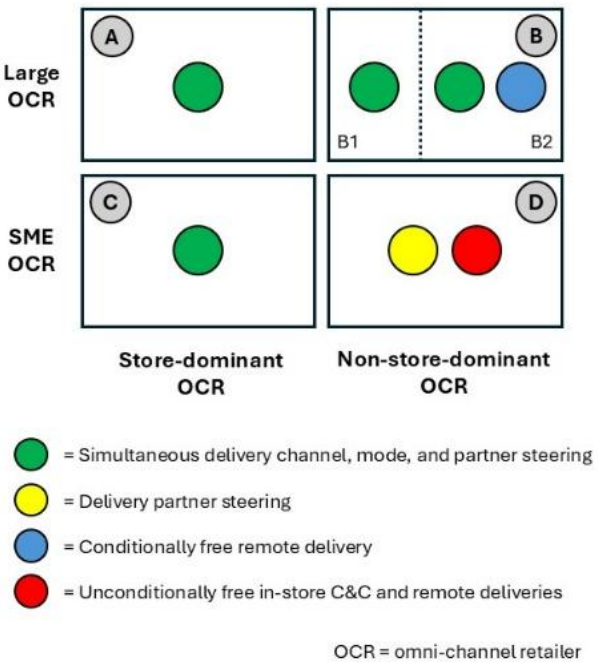

Figure 8. Consumer steering capabilities strategic fit by retailer group

Across all retailer groups, configurations associated with superior financial performance combined last-mile distribution cost minimisation and last-mile

distribution service performance, both conceptualised as potential sources of competitive advantage. Figure 9 illustrates these patterns, which are discussed in the following subsections.

Last-mile distribution service performance can be achieved through selective free last-mile distribution coverage, widespread free last-mile distribution coverage, or a combination of both as discussed in Section 6.3.2.

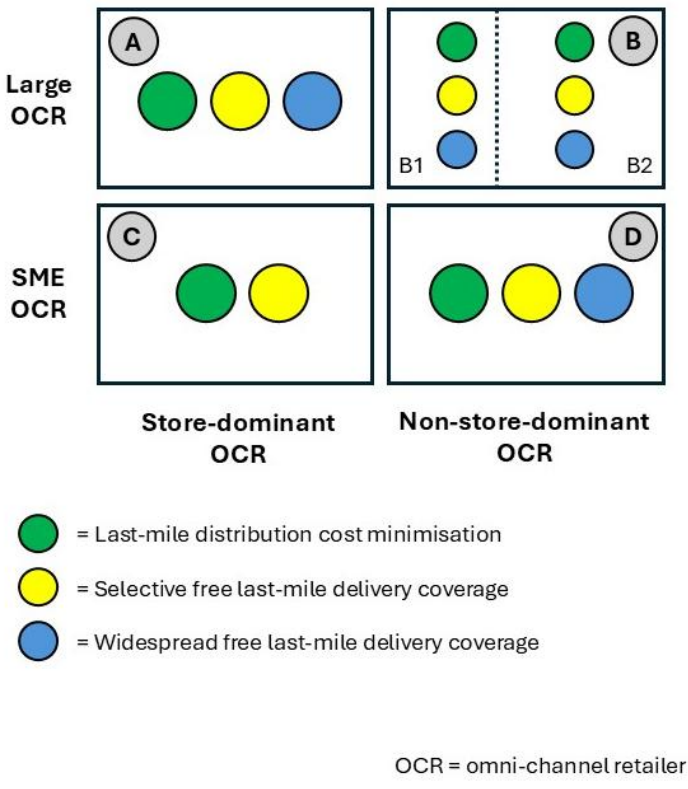

Figure 9. Sources of competitive advantages in last-mile distribution by retailer group

It should be acknowledged that the causal relationships between consumer steering capabilities, strategically aligned configurations, last-mile

distribution competitive advantages, and superior financial performance have not been conclusively established.

6.4.1. Large retailers with fewer online orders

Consumer steering association with superior financial performance

Large retailers with extensive store networks and fewer online orders (retailer groups A and B1 in Figures 8 and 9) that belonged to configurations associated with superior financial performance steered all orders simultaneously towards the store delivery channel, the delivery mode with the lowest retailer cost, and a preferred delivery partner. This combination may minimise last-mile distribution costs. An extensive store network was not, in itself, associated with superior financial performance as shown in Study E presented in Paper V.

Potential sources of last-mile distribution competitive advantages

For large retailers with fewer online orders, three competitive advantages were identified: reducing last-mile distribution costs, offering free in-store C&C, and providing widespread free delivery through an extensive store network. This attracts customers who prefer store delivery, have easy access to stores, or seek rare products.

6.4.2. Large retailers with many online orders

Consumer steering association with superior financial performance

Large retailers with extensive store networks and many online orders (retailer group B2 in Figures 8 and 9) that belonged to configurations associated with superior financial performance simultaneously steered orders below the free-delivery threshold towards the store channel, the delivery mode with the lowest retailer cost, and a preferred delivery partner. Orders below the threshold generally have lower order values and absolute profits. Above the threshold, these retailers offered conditionally free delivery through one delivery partner and, in some cases, one delivery mode. An extensive store network was not, in itself, associated with superior financial performance.

Potential sources of last-mile distribution competitive advantages

For large retailers with many online orders, three potential sources of competitive advantage were identified. Steering can reduce last-mile costs for orders below the free-delivery threshold and, through partner and mode adjustments, for larger orders. Unconditional free in-store C&C offers targeted free delivery. Combined, extensive store networks and free remote delivery above the threshold ensure broad coverage, attracting customers with store or remote delivery preferences, limited store access, or seeking rare products.

Large omni-channel retailers with many online orders were the only retailers in configurations associated with superior financial performance that offered conditionally free delivery. As discussed in Section 6.3.2, lower last-mile distribution costs resulting from the consolidation of online orders across fulfilment locations, delivery modes, and partners may support new profitable consumer offerings (Kembro and Norrman, 2025). The findings of this thesis are consistent with this argument.

6.4.3. Store-dominant SME omni-channel retailers

Consumer steering association with superior financial performance

Store-dominant omni-channel SMEs (retailer group C in Figures 8 and 9) that belonged to configurations associated with superior financial performance operated store networks covering selected key locations (six or seven stores in Study E, presented in Paper V). They steered all orders simultaneously towards the store channel, the delivery mode with the lowest retailer cost, and a preferred delivery partner, a combination that may minimise last-mile distribution costs.

Potential sources of last-mile distribution competitive advantages

For store-dominant omni-channel SMEs, the potential sources of competitive advantage were last-mile distribution cost minimisation and selective free last-mile delivery coverage in key locations.

6.4.4. Non-store-dominant SME omni-channel retailers

Consumer steering association with superior financial performance

Non-store-dominant omni-channel SMEs (retailer group D in Figures 8 and 9) that belonged to configurations associated with superior financial performance operated narrow store networks, comprising one store in Study E. They steered all orders towards a preferred delivery partner, which may minimise last-mile distribution costs.

Potential sources of last-mile distribution competitive advantages

For non-store-dominant omni-channel SMEs, three potential sources of competitive advantage were identified: last-mile distribution cost minimisation, selective free last-mile delivery coverage through a narrow store network, and widespread free delivery coverage through unconditional free remote delivery. This combination may attract consumers who prefer store delivery and have convenient access to the limited store network, as well as consumers who prefer remote delivery or seek rare products.

6.4.5. Consumer steering and competitive advantage

Consumer steering capabilities are conceptualised as capabilities that orchestrate last-mile distribution resources. The findings reveal strategic links between consumer steering capabilities, retailer groups, and superior financial performance, highlighting consumer steering as a key factor in last-mile distribution strategy and competitive advantage, as summarized in Figure 10.

Figure 10. Consumer steering and competitive advantage in last-mile distribution

It should be acknowledged that the causal relationships between consumer steering capabilities, strategically aligned configurations, competitive advantages in last-mile distribution, and superior financial performance have not been conclusively established. Nevertheless, the research presented in this thesis provides a valuable foundation for future investigations into strategic consumer steering and distribution in non-grocery omni-channel retailing. In particular, it offers a basis for further studies aimed at strengthening and validating claims regarding the causal links among consumer steering, strategic fit, competitive advantage, and firm performance.

6.5. Methodology discussion

This section critically reflects on the methodological choices made in the thesis and their implications for interpreting the findings. Particular attention is given to the challenges of researching an emerging phenomenon, the consequences of the research design, fsQCA limitations, and the potential influence of the doctoral student's professional background on the research process.

6.5.1. Researching an emerging phenomenon

Strategic last-mile consumer steering remains an emerging research area (e.g., Galiullina et al., 2024, Brockhaus et al., 2025). A consequence of conducting research in a rapidly developing field is that concepts, practices, and theoretical explanations may evolve during the research process. This challenge was particularly relevant because retail practice appeared to develop faster than the corresponding academic literature (Huebner et al., 2022).

The evolving nature of the phenomenon created a risk that some concepts could be incompletely operationalised in earlier studies. For example, the importance of conditional free remote delivery became more apparent during the later stages of the doctoral project. Although the phenomenon was captured in the observational Study E, the structured interview study (Study D) was not originally designed to examine this practice in depth. Consequently, the thesis provides stronger evidence regarding observable

steering configurations than regarding retailers' underlying motives for using particular delivery fee structures.

Consider this limitation when interpreting the findings. The thesis provides insight into how consumer steering is configured and how configurations are associated with financial performance, whereas the explanatory mechanisms behind some practices remain less developed and require further investigation.

6.5.2. Consequences of the research design

The research design combined a systematic literature review, semi-structured interviews, structured interviews, structured observations, and configurational analyses. This combination enabled the phenomenon to be examined from several perspectives and contributed to a richer understanding of strategic last-mile consumer steering. At the same time, the design introduced limitations that should be considered when interpreting the findings.

Most importantly, the empirical studies relied primarily on cross-sectional data. Consequently, the thesis cannot conclusively establish causal relationships between consumer steering capabilities, competitive advantage, and financial performance. The configurational analyses identified combinations of conditions associated with return on assets and profitability, but they cannot determine whether the identified capabilities caused the observed outcomes or whether alternative explanations contributed to the results.

Financial performance is influenced by numerous factors beyond last-mile distribution, including assortment strategy, pricing, organisational efficiency, market conditions, and competitive positioning. Consequently, the findings should not be interpreted as demonstrating that consumer steering capabilities alone generate superior performance. Rather, the findings identify configurations that were consistently associated with superior financial performance among the retailers examined.

Another consequence of combining several research methods is that different studies captured different aspects of the phenomenon. The interviews primarily provided insight into managerial reasoning, objectives, and

perceptions, whereas the observation study captured actual consumer-facing steering practices. The configurational analyses subsequently examined how observable practices were associated with financial outcomes. As a result, the thesis provides stronger evidence regarding retailer practices and configurations than regarding the underlying mechanisms through which these practices influence performance.

The research design also limited the ability to examine whether the identified configurations remain effective over time. The resource-based view is concerned with competitive advantage that may persist, yet the research captures retailer practices and performance at a specific point in time. The findings should therefore be interpreted as identifying configurations associated with superior performance rather than demonstrating sustained competitive advantage.

The doctoral student originally intended to complement the research with longitudinal analyses. Consumer steering data were collected for multiple years, but complete financial data were unavailable for a substantial proportion of retailers when the thesis was finalised. The feasibility of collecting historical consumer steering data from archived webpages was also investigated, but checkout-specific delivery-fee information was unavailable for part of the retailers. Consequently, a robust longitudinal analysis could not be completed. Future research should therefore examine the proposed relationships using longitudinal or experimental designs that permit stronger assessments of causality and persistence over time.

6.5.3. Fuzzy-set qualitative comparative analysis limitations

FsQCA proved valuable for examining a phenomenon characterised by interdependence, strategic fit, and multiple pathways to performance (Kumar et al., 2022, Malik and Ali, 2024, Ketchen et al., 2022). The methodology enabled analysis of how combinations of capabilities and firm characteristics operated jointly rather than focusing on isolated net effects (Chenavaz et al., 2022, Zhou et al., 2021).

At the same time, fsQCA involves important trade-offs. One limitation is that the number of conditions that can be included simultaneously is restricted

(Fiss, 2011). As the number of conditions increases, solution complexity also increases substantially, reducing interpretability. Consequently, simplifications were necessary when modelling the relationships between consumer steering capabilities and financial performance.

The configurational models therefore cannot capture all potentially relevant last-mile explanatory factors. Although case backtracking and interpretation were used to identify possible omitted explanations, relevant conditions may still have been excluded from the models.

The fsQCA results should therefore be interpreted as identifying plausible configurations associated with superior financial performance rather than as exhaustive descriptions of all possible pathways to success.

6.5.4. Doctoral student background and reflexivity

The doctoral student entered the research process with extensive professional experience in business-to-consumer logistics and omni-channel retailing. This experience facilitated access to decision-makers, supported the identification of practically relevant research questions, and provided contextual understanding of the phenomenon under investigation.

However, such experience also creates methodological risks. Prior industry knowledge may influence which issues are considered important, how empirical observations are interpreted, and which explanations appear plausible. In emerging research areas, these risks can be particularly pronounced because theoretical boundaries are less established.

The doctoral student therefore continuously reflected on the potential influence of prior assumptions throughout the research process. Nevertheless, complete researcher neutrality is neither realistic nor necessarily desirable. The objective was instead to maintain awareness of potential biases and critically evaluate interpretations against empirical evidence and relevant theory.

Accordingly, professional experience should be viewed simultaneously as a methodological resource and a potential source of bias. While it supported

access, understanding, and practical relevance, it also required continuous reflexive awareness when interpreting empirical findings.

7. Conclusions and further research

This chapter presents the concluding remarks, research implications, practical implications, limitations, and directions for further research.

7.1. Concluding remarks

Strategic last-mile consumer steering plays an important role in last-mile distribution strategy by bridging firm strategy and last-mile distribution strategy. This thesis developed a last-mile configuration framework that presents possible configurations of last-mile distribution and consumer steering. It conceptualised last-mile distribution cost minimisation and free last-mile distribution service performance as potential sources of competitive advantage. Free last-mile distribution service performance may be achieved through selective free last-mile delivery coverage, widespread free last-mile delivery coverage, or a combination of both.

Last-mile consumer steering was conceptualised as comprising single, dual, and simultaneous consumer steering capabilities that orchestrate last-mile distribution resources, including warehouses, brick-and-mortar stores, collection points, and delivery fleets. Such resource orchestration may minimise last-mile distribution costs and enable free last-mile distribution service performance. Both outcomes may contribute to last-mile distribution competitive advantage and, potentially, superior financial performance.

The findings showed that consumer steering is configurable and may influence last-mile distribution resources. They also identified potential strategic fits between consumer steering capability configurations associated with superior financial performance and four retailer groups. Across these groups, the findings further identified potential sources of last-mile distribution competitive advantage that may be supported by the orchestration of last-mile distribution resources through consumer steering capability configurations.

Simultaneous steering, conditionally free remote delivery, and delivery partner steering were identified as consumer steering capabilities that may

contribute to competitive advantage and superior financial performance when combined in appropriate configurations.

Taken together, the findings indicate that consumer steering capabilities may be configured to contribute to last-mile distribution competitive advantage. They identify potential strategic fits between consumer steering capability configurations associated with superior financial performance and distinct retailer groups. They also show which last-mile distribution capabilities these configurations may support.

7.2. Research implications

The research establishes consumer steering as a distinct research area within last-mile distribution in omni-channel retailing and demonstrates its strategic importance and prevalence in practice.

It contributes to the resource-based view by conceptualising last-mile consumer steering capabilities as capabilities that orchestrate last-mile distribution resources. It transfers established distribution capabilities to the highly competitive omni-channel retail context; the thesis conceptualises last-mile distribution cost minimisation and free last-mile distribution service performance as potential sources of competitive advantage (Defee and Fugate, 2010, Morash et al., 1996, Persson, 1991). It further conceptualises free last-mile distribution service performance as achievable through selective free last-mile delivery coverage, widespread free last-mile delivery coverage, or a combination of both. It identifies consumer steering capabilities that may constitute sources of competitive advantage, demonstrates that consumer steering is configurable, and identifies potential strategic fits between consumer steering capability configurations associated with superior financial performance and four retailer groups characterised by different firm sizes and sales channel mixes (Aslam, 2025, Sharma and Dutta, 2023). The findings specify the configurations in which simultaneous consumer steering, conditionally free remote delivery, and delivery partner steering may contribute to last-mile distribution competitive advantage and superior performance (Brockhaus et al., 2025).

This thesis contributes to transaction cost economics in the last-mile context by providing insights into delivery partner governance and the minimisation of last-mile distribution transaction costs.

The thesis contributes to configuration theory by demonstrating that last-mile distribution is configurable, extending prior last-mile configuration frameworks (Marchet et al., 2018, Hübner et al., 2016a), and identifying consumer steering capability configurations associated with superior financial performance.

7.3. Practical implications

The findings offer actionable insights for last-mile decision-makers operating under intense competitive and financial pressure. First, omni-channel retailers should use consumer steering to support financial performance while maintaining the desired level of logistics service. Second, consumer steering should serve as a bridge between firm strategy and last-mile distribution strategy. Third, because consumer steering is configurable, delivery-fee decisions should be considered jointly across delivery channels, modes, partners, and order-value thresholds rather than in isolation. Fourth, consumer steering configurations should be aligned with retailer characteristics, particularly firm size and sales channel mix. Fifth, conditionally free remote delivery may be particularly suitable for large retailers with many online orders. Sixth, the thesis identifies consumer steering capabilities that omni-channel retailers may develop and combine. Finally, the last-mile configuration framework provides a basis for strategic discussion by presenting possible configurations of last-mile distribution and consumer steering. Together, these insights provide a practical framework for using consumer steering capabilities to orchestrate last-mile distribution resources and potentially create competitive advantage.

7.4. Limitations

It should be acknowledged that the causal relationships between consumer steering capabilities, strategically aligned configurations, last-mile distribution competitive advantages, and superior financial performance have not been conclusively established. Nevertheless, the research presented in this

thesis provides a valuable foundation for future investigations into strategic consumer steering and distribution in non-grocery omni-channel retailing. In particular, it offers a basis for further studies aimed at strengthening and validating claims regarding the causal links among consumer steering, strategic fit, competitive advantage, and firm performance.

7.5. Further research

The thesis opens several interdisciplinary avenues for further research involving logistics, marketing, finance, artificial intelligence, and retail scholarship. First, longitudinal and experimental studies are needed to examine the proposed causal relationships among consumer steering, strategic fit, competitive advantage, and firm performance. Second, time-series studies could assess whether competitive advantages are sustained over time. Third, comparative studies in contexts beyond Sweden could examine the transferability of the findings. Fourth, activity-based costing models could improve understanding of retailers' actual last-mile distribution costs and potential incomes for different delivery alternatives. Fifth, geographical consumer steering should be examined as a potential source of competitive advantage. Finally, rapid developments in artificial intelligence offer opportunities to investigate dynamic consumer steering and adaptive order fulfilment based on real-time retailer, competitor, and consumer information.

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Appendix I: County differences

Table A provides an overview of population, number of stores, inhabitants per store, and inhabitants per square kilometre per County in Sweden.

Table A. Population and store density per County in Sweden (Handelsrådet, 2026, SCB, 2026)

County	Population	Number of stores	Inhabitants per store	Inhabitants per km^2
Stockholms County	2 486 251	4 702	529	381
Västra Götalands County	1 777 803	3 614	492	74
Skåne County	1 433 083	2 921	491	130
Östergötlands County	472 529	887	533	45
Uppsala County	410 575	647	635	50
Jönköpings County	369 722	772	479	35
Hallands County	346 090	853	406	63
Örebro County	308 357	596	517	36
Södermanlands County	300 440	561	536	49
Dalarnas County	286 043	660	433	10
Gävleborgs County	283 452	603	470	16
Värmlands County	283 037	705	401	16
Västmanlands County	280 756	506	555	55
Västerbottens County	279 028	560	498	5
Norrbottens County	248 927	552	451	3
Kalmar County	245 477	588	417	22
Västernorrlands County	240 640	526	457	11
Kronobergs County	203 121	412	493	24
Blekinge County	156 616	333	470	53
Jämtlands County	132 736	352	377	3
Gotlands County	60 852	161	378	19
Sweden	10 605 535	21 511	493	26

Appendix II: Study B interview guide

The last-mile decision-maker interview guide consisted of five questions:

1. What does “last-mile” logistics mean to you?
2. What are the logistics variables that you consider when designing your last-mile activities?
3. Rank the three most critical firm characteristics when designing last mile?
4. Are any of the logistics variables that you mentioned earlier influencing firm performance more than others?
5. How do you believe that COVID-19 and Amazon.se will influence e-commerce logistics strategies going forward?

Appendix III: Study C interview guide

Descriptive section:

Question 1: Full company name?

Question 2: What is your position?

Question 3: How big share of your turnover / revenue does e-commerce represent?

Answer options: 0%, 1-10%, 11-30%, 31-50%, 51-70%,70-90%, 91-99%, 100% and a "don't know" option.

Firms answering 0 or 100% were excluded from the study since these firms are not omni-channel retailers.

Question 4: How many years has the company been active as an omni-channel retailer?

Answer options: less than 1 Year, 1-2 Years, 3-5 Years, more than 5 Years, and a "don't know" option.

Last-mile delivery configuration section:

Question 5: Which delivery mode does the company offer consumers?

a. Attended home deliveries
b. Unattended home deliveries
c. In-store C&C
d. Attached C&C
e. Solitary C&C
f. Other delivery mode

Answer options on presented alternatives*: Yes or no.*

Question 6: Does the company offer consumers eco-friendly delivery alternatives?

Answer options: Yes or no.

Question 7: Which delivery velocities do the company offer consumers?

a. Same day
b. Next day
c. 2 to 3 working days
d. 4 to 5 working days
e. More than 5 working days

Answer options on presented alternatives: Yes or no.

Question 8: Does the company offer consumers specific home delivery time slots?

Answer options: Yes or no.

Question 9: In what area does the company delivery online orders?

a. Local
b. Regional
c. National
d. International

Answer options on presented alternatives: Yes or no.

Question 10: How is the transportation service organised?

a. Milk-runs
b. External delivery partner
c. Line-haul and local distribution
d. Alternative transport service design

Answer options on presented alternatives: Yes or no.

Question 11: Is the delivery fleet fossil free?

Answer options: Yes, no, and partly fossil free.

Question 12: Governance of last-mile deliveries?

a. Performed in-house
b. Fully outsourced
c. A hybrid solution

Answer options on presented alternatives: Yes or no.

Last-mile back-end fulfilment configuration section:

Question 13: In what type of fulfilment locations do the company fulfil online orders?

a. Central warehouse
b. Separate online fulfilment centre
c. In-store
d. Supplier warehouse

Answer options on presented alternatives: Yes or no.

Question 14: What is the level of fulfilment automation in the main online order fulfilment location?

a. Manual picking
b. Partially automated
c. Fully automated

Answer options on presented alternatives: Yes or no.

Question 15: Is the store replenishment and online order fulfilment integrated in the central warehouse (if online orders are fulfilled in the central warehouse)?

a. Separate fulfilment
b. Semi integrated
c. Fully integrated

Answer options on presented alternatives: Yes or no.

Question 16: Does the company operate with symmetric or asymmetric assortment?

a. Symmetric assortment
b. Asymmetric assortment

Answer options on presented alternatives: Yes or no.

Question 17: How do you allocate online orders to fulfilment locations?

c. Static allocation (always the same location)
d. Dynamic allocation

Answer options on presented alternatives: Yes or no.

Question 18: Governance of last-mile back-end fulfilment?

a. Performed in-house
b. Fully outsourced
c. A hybrid solution

Answer options on presented alternatives: Yes or no.

Last-mile consumer steering configuration section:

Question 19: Does the company use time slot price differentiation to steer consumers towards different time slots?

Answer options on sub-questions: Yes or no.

Question 20: What inventory availability information is shown online?

a. Inventory information related to all channels and locations are displayed online
b. Only online channel inventory information is shown online

Answer options on presented alternatives: Yes or no.

Question 21: What return options are online consumers offered?

a. In-store returns
b. Remote returns from home or collection points

Answer options on presented alternatives: Yes or no.

Question 22: What free return options are online consumers offered?

a. In-store returns
b. Remote returns from home or collection points
c. No free return options at all

Answer options on presented alternatives: Yes or no.

Question 23: Are delivery times differentiated?

a. Yes
b. No, all delivery times are the same

Answer options on presented alternatives: Yes or no.

Question 24: Does the company offer consumers free delivery options?

a. Free in-store C&C delivery
b. Free solitary C&C delivery (courier offices)
c. Free solitary C&C delivery (parcel terminals)
d. Free attended home delivery
e. Free unattended home delivery
f. Free remote delivery over a certain order value
g. Free freight subscription programs (e.g., Amazon Prime)
h. Other free delivery option

Answer options on sub-questions: Yes or no.

Appendix IV: Study D interview guide

A) How big share of your turnover / revenue does e-commerce represent?

Answer options: 0%, 1-10%, 11-20%, 21-30%, 31-40%, 41-50%, 51-60%, 61-70%, 71-80%, 81-90%, 91-99%,100%, and a "don't know" option.

Firms answering 0 or 100% were excluded from the study since these firms are not omni-channel retailers.

B) Do you steer your consumers towards a:

a. Delivery channel
b. Delivery mode
c. Delivery partner

Answer options on sub-questions: Seven-point Likert scale and a 'don't know' option.

C) Do you prefer that your consumer selects?

a. In-store delivery
b. Solitary C&C delivery
c. Home delivery

Answer options on sub-questions: Seven-point Likert scale and a 'don't know' option.

D) How do you steer your consumer from a logistics perspective?

a. Delivery fees
b. Delivery information on your website
c. Delivery time differentiation
d. Pre-selected delivery alternatives
e. Product availability information online

Answer options on sub-questions: Seven-point Likert scale and a 'don't know' option.

E) Do you steer your consumers in another way from a logistics perspective than pre-defined options given in question D?

Answers on open-ended questions in free text

F) What are your objectives when steering consumers?

a. Firm strategy
b. Financial performance
c. Reduce fulfilment costs
d. Improve store turnover
e. Environmental and social aspects
f. Logistics service
g. Online order fulfilment capacities

Answer options on sub-questions: Seven-point Likert scale and a 'don't know' option.

G) Do you have any other objective to steer your consumers from a logistics perspective than pre-defined options given in question F?

Answers on open-ended questions in free text

H) How does your consumer steering influence your future logistics?

a. Online fulfilment warehouse size
b. Number of warehouses
c. Warehouse automation level
d. Number of delivery options
e. Number of stores
f. Logistics role of stores

I) Is your future logistics influenced in any other way due to your consumer steering than pre-defined options given in question H?

Appendix V: Study E observation guide

The delivery fee observation guide comprised the following items:

1. What is the in-store C&C delivery fee?
2. What is the lowest delivery fee for solitary C&C orders?
3. What is the lowest home delivery fee for parcel deliveries?
4. What is the lowest home delivery fee for letter deliveries?
5. How many delivery partners does the retailer collaborate with?
6. Additional items for omni-channel retailers operating with more than one delivery partner for a given delivery mode:
    a) What is the delivery fee for solitary C&C delivery for each delivery partner available to the consumer?
    b) What is the delivery fee for parcel home delivery for each delivery partner available to the consumer
    c) What is the delivery fee for letter delivery to the home for each delivery partner available to the consumer?

Appendix VI: E-commerce logistics configuration framework

The e-commerce logistics configuration framework in omni-channel retailing is presented in Table B.

Table B. E-commerce logistics configuration framework

	Parameters	Alternatives			
1 Supply and Internal Distribution (S&ID)	1.1 Availability	In-stock	Supply to order		
	1.2 Vendor order picking	Drop-ship	Cross-dock	Dual approach	
	1.3 Replenishment location	Central warehouse	e-Fulfilment centre	Store	
	1.4 Inbound transport	Full-truckload	Less-than-truckload	Milk run	
	1.5 Inbound transport operation	In-house	Outsource		
	1.6 Supply & internal distribution	Dynamic	Static		
2 Last Mile Consumer Steering (LMCS)	2.1 Online availability visibility	Web store	Physical stores		
	2.2 Free delivery mode (always)	Attended HD	Unattended HD	In-store or attached C&C	Solitary C&C
	2.3 Free delivery option	Above a certain order value	Free freight subscription programs		
	2.4 Slot price differentiation	Price differentiation	Same price		
	2.5 Delivery time differentiation	Time differentiation	Same delivery time		
	2.6 Promote courier or service	Online information	Pre-selected check-out option		
	2.7 Free return mode	In-store	Remote	No free return modes	
3 Last Mile Back-end Fulfilment (LMBF)	3.1 Location	In-store	e-Fulfilment centre	Central warehouse	Vendor
	3.2 Assortment optimization	Symmetric	Asymmetric		
	3.3 Order allocation	Dynamic	Static		
	3.4 Automation	Manual	Semi-automated	Fully automated	
	3.5 Integration	Separated	Integrated	Capacity-optimized	
	3.6 Single order consolidation	Order consolidation	Several deliveries		
	3.7 Order batching	Order batching	No sorting		
	3.8 Fulfilment operation	In-house	Hybrid solution	Outsource	
	3.9 No. outsourcing partners	1	2	3	> 3
4 Last Mile Delivery (LMDe)	4.1 Delivery mode	Home or other destination		Click & Collect	
		Attended	Unattended	In-store	Attached	Solitary
	4.2 Velocity	Same day	1 – 3 days	4 – 5 days	> 5 days
	4.3 Eco-friendly deliveries	Yes	No		
	4.4 Time slot	Specific	Flexible	Undefined	
	4.5 Courier selection	Alternatives	No choice		
	4.6 Delivery area	Local	Regional	National	International
	4.7 Integrated transport system	Separated	Integrated		
	4.8 Transport service	Milk run	Courier	Linehaul with local distribution	
	4.9 Transportation fleet	Fossil-fuelled	Fossil-free		
	4.10 Vehicles	Manned vehicles	Autonomous delivery vehicles	Unmanned aerial vehicles	
	4.11 Transport operation	In-house	Hybrid solution	Outsource	Collaborate
	4.12 No. outsourcing partners	1	2	3	> 3
5 Reverse Logistics (RL)	5.1 Returns mode	Home	Letter	Solitary	In-store
	5.2 Returns handling location (RHL)	Store	e-Fulfilment centre	Central warehouse	Return centre	Vendor
	5.3 Returns area	Local	Regional	National	International
	5.4 Reverse consumer transport	Milk run	Courier	Local distribution with linehaul	
	5.5 Final inventory location (FIL)	Store	e-Fulfilment centre	Central warehouse	Vendor
	5.6 Transport to inventory location	Full-truckload	Less-than-truckload	Milk run	
	5.7 Transport operation to RHL	In-house	Outsource		
	5.8 Return operation	In-house	Outsource		
	5.9 Transport operation to FIL	In-house	Outsource		

Strategic Consumer Steering in Omni-Channel Last-Mile Distribution

Capability Configurations for Competitive Advantage

The rapid expansion of e-commerce and contraction of physical store networks have made last-mile distribution a strategic priority in omni-channel retailing. Retailers face a fundamental tension: consumers increasingly expect a wide choice of delivery alternatives, often free of charge, while last-mile distribution accounts for a substantial proportion of retail revenues. Against this background, this thesis develops an understanding of strategic consumer steering in omni-channel last-mile distribution and its role in creating competitive advantage.

The research establishes consumer steering as a distinct area within last-mile distribution and demonstrates its strategic importance. It shows that last-mile distribution is highly configurable and introduces a framework for analysing last-mile configurations. Cost minimisation and free last-mile distribution service performance are conceptualised as potential sources of competitive advantage, with free service performance achievable through either selective or widespread free-delivery coverage.

The thesis further conceptualises last-mile consumer steering as single, dual, and simultaneous capabilities through which omni-channel retailers orchestrate distribution resources. It identifies consumer steering capability configurations associated with competitive advantage across four retailer groups differing in firm size and sales channel mix. Across these groups, simultaneous steering, conditionally free remote deliveries, and delivery partner steering formed part of configurations associated with superior financial performance.

The findings contribute to the resource-based view, transaction cost economics and configuration theory, while providing a foundation for further research on strategic consumer steering and last-mile distribution in non-grocery omni-channel retailing. For practitioners, the message is clear: carefully designed combinations of delivery options, pricing conditions and partner arrangements can help turn the last mile from a cost challenge into a source of competitive advantage.

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