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Illuminating impatience and urgency in last-mile deliveries – evidence from a diary study of Swedish consumers

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ABSTRACT

To better understand the consumer behaviours that drive demand for fast deliveries, this paper explores two key temporal aspects of the consumer journey: urgency and impatience. Urgency reflects a need for quick delivery, while impatience stems from a desire to receive products as soon as possible. Urgency and impatience merit attention to further understand consumer behaviour in relation to fast last-mile deliveries, as these pose challenges for logistics efficiency and environmental sustainability, particularly in the last-mile. The purpose of this paper is to explore urgency and impatience in the last-mile consumer journey, and the influence of these two concepts on the speed of last-mile deliveries. Additionally, the paper introduces the potential effects of urgency and impatience on environmental sustainability of such deliveries. The study uses diary entries from 15 Swedish e-commerce consumers over one month, followed by semi-structured interviews. Findings reveal that both urgency and impatience appear to be important denominators of consumer behaviour in the last-mile consumer journey. Further, urgency and impatience can have a direct impact on consumer choices regarding last-mile delivery method, including speed of delivery and reception of delivered orders. The paper also gives an increased understanding of how urgency and impatience can have implications for more environmentally sustainable last-mile deliveries. By taking a consumer-centric perspective on last-mile deliveries, this paper joins the recent academic conversation focusing on an increased understanding of the consumer to improve logistics operations.

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Introduction

Logistics is concerned with delivering goods efficiently and at the right time (Wilding and Newton, 1996). Time is a critical factor across the supply chain (e.g. Amorim et al. 2024; Langley and Holcomb 1992; Paluzzi et al. 2025; Savelsbergh and Woensel 2016), especially in the last leg – commonly referred to as the last mile – where consumers receive online orders (Buldeo Rai, Verlinde, and Macharis 2019). Last-mile deliveries typically span from the order penetration point to the final destination (Lim, Jin, and Srari 2018). Fast deliveries

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are increasingly used by retailers in the last mile as a competitive differentiator (Amorim et al. 2024; Savelsbergh and Woensel 2016), and consumers not only expect quick deliveries but also demand timeliness to be satisfied (Daugherty, Bolumole, and Grawe 2019; Paluzzi et al. 2025).

However, the push for speed in last-mile deliveries has implications beyond customer satisfaction. Indeed, the last mile is widely regarded as the most inefficient and environmentally damaging part of the supply chain (Mangiaracina et al. 2015), often due to the lack of consolidation and efficient transport routing. These inefficiencies are frequently tied to short planning horizons driven by fast delivery expectations (Á. Halldórsson and Wehner 2020; McKinnon 2018). Further, hurried consumers might make less sustainable choices along the online consumer journey, such as collecting their ordered products in a non-sustainable way (Niemeijer and Buijs 2023). Thus, understanding fast last-mile deliveries is essential, not only to meet customer expectations but also to mitigate environmental impact.

While fast deliveries are often perceived as a necessity (Daugherty, Bolumole, and Grawe 2019), not all consumers require them (e.g. Sallnäs and Björklund 2020). Some may act out of habit or convenience, placing orders at the last minute simply because fast delivery is available. If longer lead times can be accepted by some consumers, there will be a larger flexibility for the retailer and logistics actors to plan an efficient and environmentally sustainable transport set-up (e.g. McKinnon 2018), without necessarily compromising customer satisfaction (Paluzzi et al. 2025).

Hence, for retailers and logistics companies to be able to balance sufficient logistics customer service in terms of fast deliveries, with environmental concerns, there is a strong need to understand consumers' ways of thinking and acting (e.g. Daugherty, Bolumole, and Grawe 2019; Esper et al. 2020; Paluzzi et al. 2025). Despite consumers' direct influence on logistics outcomes (Sallnäs and Björklund 2023; Vakulenko et al. 2019), research on consumer perspectives in last-mile logistics remains limited (Olsson, Hellström, and Vakulenko 2023). Interestingly, Esper et al. (2020) advocate for a consumer-centric approach, emphasizing the importance of incorporating consumer experiences into logistics design. This paper, therefore, takes a much-needed consumer-centric approach to fast deliveries.

In this paper, we argue that two key time-related aspects – urgency and impatience – play a central role in shaping consumer behaviour during the online consumer journey (Ali, Maqsood, and Janjua 2025; Daugherty, Bolumole, and Grawe 2019; Paluzzi et al. 2025), and, hence, can have an impact on the speed of last-mile deliveries and their environmental sustainability. Urgency reflects a genuine need for quick delivery, often triggered by external factors such as limited-time offers (Ali, Maqsood, and Janjua 2025), while impatience, on the other hand, stems from a desire to receive products as soon as possible, influencing both purchase decisions and satisfaction levels (Chen et al., 2005; Paluzzi et al. 2025). Both impatience and urgency have the potential to impact consumer behaviour, albeit both have been largely overlooked in the context of last-mile deliveries (Paluzzi et al. 2025 being one exception). We argue that in order to further understand consumer behaviour in relation to fast last-mile deliveries, urgency, and impatience must be studied further.

With this as a background, this paper adopts a consumer-centric approach to last-mile logistics (Esper et al. 2020), with a focus on how urgency and impatience influence the

consumer behaviour, and, in turn, the need for fast last-mile deliveries. The purpose of this paper is to explore urgency and impatience in the last-mile consumer journey, and the influence of these two concepts on the speed of last-mile deliveries. Additionally, the paper introduces potential effects of urgency and impatience on environmental sustainability of last-mile deliveries.

In line with Olsson, Hellström, and Vakulenko (2023), who highlight the lack of a holistic view of customer experience in last-mile logistics, the paper at hand takes a much-needed broad view of consumers' perspectives on last-mile deliveries. That means that rather than limiting to a certain delivery location, such as home delivery (Olsson, Hellström, and Vakulenko 2023; Paluzzi et al. 2025) or parcel points and lockers (Niemeijer and Buijs 2023), it instead applies an inclusive perspective of what consumers encounter in their consumer journeys through the means of a diary study (e.g. Bolger, Davis, and Rafaeli 2003; Ohly et al. 2010).

The remainder of this paper is structured as follows: A literature review outlines the last-mile consumer journey and the two focal time-related aspects – urgency and impatience – and ends with a conceptual framework. This is followed by a methodology section describing the qualitative diary study. The results are then presented and discussed, including implications for fast last-mile deliveries and environmental sustainability. Finally, the paper concludes with key insights for research and practice, along with suggestions for future studies.

Literature review

The last-mile consumer journey

When making an online purchase, there are several activities covering multiple steps in the consumer journey (Vakulenko et al. 2024); this journey has been captured in different ways in the literature (e.g. Lemon and Verhoef 2016; Mu and Zhang 2021; Vakulenko et al. 2019, 2024). For example, Lemon and Verhoef (2016) developed a process model for the consumer journey, including the three stages of pre-purchase, purchase, and post-purchase, highlighting touchpoints that consumers encounter during the journey, categorised into four types of ownership; brand, partner, consumer, and social/external. Mu and Zhang (2021) identified five steps in the online consumer journey, of which the first three can be placed in a pre-purchase stage (consumer search, click decision, and browsing time), followed by the purchase and, finally, post-purchase frustration. Also in the online context, Vakulenko et al. (2024) identified three categories (delivery, packaging, and return) and 12 specific touchpoints in the online consumer journey that were found to impact the consumer experience of the purchase. In Vakulenko et al. (2019), an online-consumer journey map was suggested, visualising 1) the flow of an order, 2) important stakeholders (consumer, retailer, and transport company), and 3) the choices and actions of consumers along the journey path. While a general trait of consumer journeys is a step-wise procedure that might seem to be a linear process (e.g. Mu and Zhang 2021; Vakulenko et al. 2019), it is important to acknowledge that consumers enter new journeys with the experiences of previous journeys. For example, Lemon and Verhoef

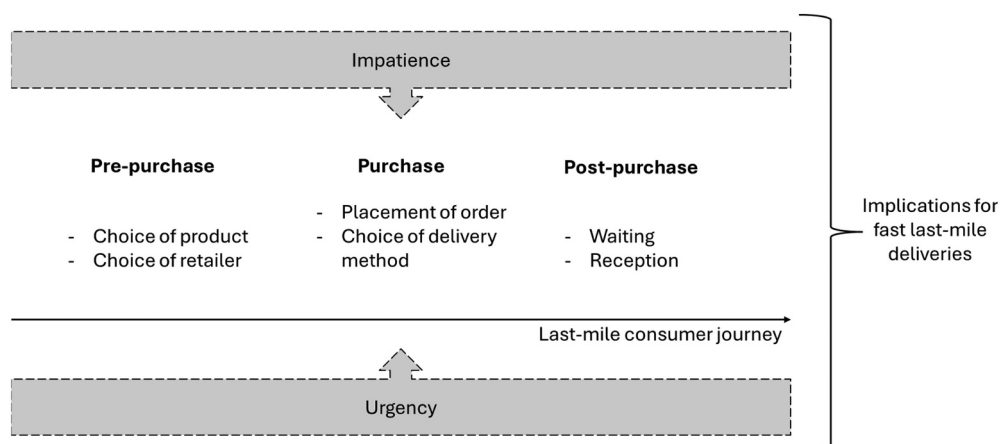


Figure 1. Conceptual framework.

(2016) visualised that a feedback loop can arise in any of the three stages before, during, and after the purchase, influencing steps earlier in the consumer journey.

Based on Vakulenko et al. (2019) and Lemon and Verhoef (2016), an online consumer journey for last-mile deliveries can be illuminated, with the general three stages of pre-purchase, purchase, and post-purchase as a basis (see Figure 1 for conceptual framework). In the pre-purchase stage, the consumer chooses the retailer and the product(s) to order (Vakulenko et al. 2019). In the purchase stage, the consumer makes the actual decision about the specific order. In the last-mile delivery context, this not only means placement and payment of the order (Lemon and Verhoef 2016), but also includes the choice of the delivery method (Vakulenko et al. 2019). In fact, consumers are often met by a number of delivery alternatives (Buldeo Rai, Verlinde, and Macharis 2019). This means that the consumer must make a choice between several different aspects of last-mile deliveries (Sallnäs and Björklund 2020). These are typically: delivery lead-time (i.e. the projected time between order and delivery) (Sallnäs and Björklund 2020); delivery location (e.g. home delivery, pick-up at parcel points, pick-up at parcel lockers, pick-up in retailers' stores) (Á. Halldórsson and Wehner 2020); and transport company (Sallnäs and Björklund 2020). Although this might seem to be many parameters for consumers to encounter, Vakulenko et al. (2019) suggested that consumers do not necessarily distinguish between the different actors when evaluating the logistics service – rather, they view the last-mile delivery actors from a holistic perspective, i.e. as one single actor delivering their orders.

Finally, a number of post-purchase activities arise. Vakulenko et al. (2019) distinguish between waiting, including tracking of the order, reception, product check-up, and, in some instances, product return. For the purposes of the study at hand, waiting and reception are regarded as most relevant in relation to the speed of last-mile deliveries. With regards to the reception, consumers can either take an active role, collecting the ordered products at a pick-up place (parcel points, parcel lockers, or retailers' stores), or a more passive role as a receiver of the products in the case of home deliveries (Á. Halldórsson and Wehner 2020), which can be either attended or unattended (Olsson

et al., 2023). These roles have implications for the speed of last-mile deliveries and for the environmental sustainability of these deliveries.

Time-related aspects of consumer behaviour: urgency and impatience

The two time-related aspects in focus in this paper are urgency and impatience. Both are of particular relevance when taking a consumer-centric perspective, but have received limited attention in the last-mile logistics literature, despite their potential to impact the speed of deliveries.

Urgency in logistics has mostly been associated with emergency-related matters from an operator perspective, for example '*the reaction time available for responding to an incoming order*' (Van Lon et al., 2016, p. 617). For e-commerce, and a consumer-centric perspective, urgency can be said to describe consumers' actual or perceived time constraints. Such constraints can be placed on the consumers by retailers, for example through time-limited sales offers or count-down timers (Ali, Maqsood, and Janjua 2025), but can also arise from consumer circumstances, such as the need to get something delivered before a certain date. Urgency has previously been identified as impacting human behaviour. For example, Zhu, Yang, and Hsee (2018) recognised the urgency effect in a study considering urgent versus non-urgent and important versus non-important tasks. The urgency effect means that people tend to perform urgent tasks over non-urgent, even though they are unimportant. In a recent study in an e-commerce context, Ali, Maqsood, and Janjua (2025) showed that urgency, perceived through limited availability of products, triggered consumers to act faster on their online purchase than they would have done otherwise. There is reason to believe that urgency plays an important role regarding consumers' choices in the last-mile customer journey, thus affecting the speed of last-mile deliveries. However, this relationship between urgency and consumer delivery choices has, to the best of our knowledge, been neglected in the academic literature.

In addition to urgency, and in line with Paluzzi et al. (2025), consumer impatience is, in this paper, argued to be of relevance for last-mile deliveries. Outside the domain of last-mile logistics, impatience has been identified as significantly relevant to understanding consumer behaviour (Chen, Ng, and Rao 2005; Hardisty and Weber, 2020). Chen, Ng, and Rao (2005) postulate that impatience can, for example, determine consumers' wish for fast service and delivery as well as their preferences towards early rather than later payoffs. While the previous example illustrates how impatience affects behaviours, other studies have instead focused on how consumer impatience can be affected. For example, Shaddy and Lee (2020) studied price promotions and found that these can noticeably trigger consumer impatience. The relevance of focusing on consumer impatience in last-mile logistics was first highlighted by Daugherty, Bolumole, and Grawe (2019), who argued that such an understanding will have important implications for logistics customer service, and thus for retailers and logistics companies wanting to satisfy consumers. They argue that '*Today's consumers are different and extremely impatient*' (Daugherty, Bolumole, and Grawe 2019, p. 5).

What, then, is consumer impatience? Impatience is a psychological state of a consumer (Hardisty and Weber, 2020), and Daugherty, Bolumole, and Grawe (2019) equate consumer impatience with the consumers' desire to get their orders as soon as possible.

A slightly different interpretation is suggested by Hardisty and Weber (2020), who define impatience as the negative emotion associated with waiting for a positive event (Hardisty and Weber, 2020). Impatience is thus present before a consumer receives their online order (Paluzzi et al. 2025), and a typical example is the consumer waiting for the delivery of an online order (Hardisty and Weber, 2020). Consumer impatience in the context of last-mile logistics is yet to be fully understood in the academic literature, and studies delving into the concept are scarce. However, with their experimental study in the specific context of home deliveries, Paluzzi et al. (2025) made an important contribution by showing that consumer impatience mediates the relationship between time-based logistics performance and consumer satisfaction. Impatience with both delivery speed and delivery timeliness was studied in an experimental setting, in both cases showing the mediating effect. Further, Paluzzi et al. (2025) argue that retailers wanting to improve their last-mile deliveries should focus on delivery speed and delivery timeliness in order to reduce consumer impatience and thereby increase consumer satisfaction.

Conceptual framework

Tying together the last-mile consumer journey with the two time-related aspects of urgency and impatience, a conceptual framework is depicted in Figure 1. This framework guided the analysis of the empirical data and is visible in the structure of the results. The framework draws on Lemon and Verhoef's (2016) process model for the consumer journey, including the three stages of pre-purchase, purchase, and post-purchase, further detailing these in addition to drawing on Vakulenko et al. (2019). The framework highlights that the concepts of impatience as well as urgency may relate to various activities in the three stages of the last-mile consumer journey. The framework relates to previous research in a number of ways. For example, it builds on the research into impatience by Paluzzi et al. (2025), but adds a second time-related aspect, i.e. urgency. While Figure 1 visualises a sequential last-mile consumer journey, it is important to keep in mind that there can be a feedback dimension that influences consumer choices (Lemon and Verhoef 2016).

Methodology

A qualitative diary study, combined with follow-up interviews, of consumers' last-mile e-commerce events for one month were deemed appropriate to capture time-related aspects of the last-mile consumer journey, and to allow for a more holistic approach to consumer experiences than seen in many previous studies (in line with Olsson, Hellström, and Vakulenko 2023; Sallnäs et al. 2024). One of the main strengths of diary studies is the opportunity to gather data in people's natural life contexts (Ohly et al. 2010); in *'life as it is lived'* (Bolger, Davis, and Rafaeli 2003, p. 579). The diary study thus enabled the researchers to follow consumers during the actual purchases and deliveries of products ordered online, which was deemed important to capture time-related aspects of last-mile logistics, such as impatience and urgency. Another strength with diary studies is the possibility to capture consumers' perceptions and thoughts at the same time as, or very close to, the occasion, without the drawbacks of answers in retrospect. Additionally, in comparison to other data collection methods, such as direct observations, the use of diary studies allowed for the potential non-linearity of online

purchases to be captured, as respondents can record, for a period of an entire month, their daily thoughts on potential purchases and their browsing time (e.g. Mu and Zhang 2021), without necessarily placing an order.

Sampling

Sweden was chosen as a suitable geographical context for the diary study, due to the common occurrence of online shopping amongst the Swedish population. In an average month, 71% of Swedish consumers aged 18–89 conducted online purchases, and this figure has been above 65% for the past five years (Svensk 2025). Sweden is also a relatively mature e-commerce market, exemplified by the fact that by 2014 about one-third of Swedish consumers aged 18–79 shopped online at least once per month (PostNord 2015). The most common types of products are pharmacy, clothes, and shoes (Svensk 2025). Electronics has the highest share of online shopping versus physical stores (49%), followed by clothes and shoes (30%), and pharmacy (23%) (PostNord 2025). Of further relevance for the diary study, 91% of Swedish consumers say that it is important to be able to select how their purchased item is delivered, and 20% wanted online retailers to prioritise fast deliveries (PostNord 2025). In fact, 18% of consumers who shop online stated that a main reason for shopping in a physical store was that they do not want to wait for the delivery (PostNord 2025). Even so, it should be noted that Sweden differs from many other European countries in that it is less densely populated, at 25.8 per m² (SCB 2025).

A purposeful sampling approach (Patton 2002) was applied, drawing on extended professional and social contacts to identify participants. This ensured accessibility and a level of familiarity that facilitated participation, while avoiding individuals with close personal ties to the researchers. All respondents were approached via e-mail or telephone before participation, to inform them about the study and to give them the possibility to accept or decline the invitation. The respondents were selected to provide a variety of age (under 30, 30–49 and above 50), location in Sweden (urban, rural, geographical spread), and gender. Further, frequency of online shopping was included in the selection criteria. Respondents were asked if they shop online at least once per month before being included in the study. A few frequent shoppers were also included. In total, 16 respondents were recruited for the study, from which 15 participated in both the diaries and the interviews, while the final respondent became ill and did not participate. The sample size of 15 is well in line with previous research applying diary studies (e.g. Carlander, Trygg, and Moshfegh 2019 with their 11 respondents). Table 1 describes the demographics of the respondents.

Data collection and analysis

Several options are available for collecting data, such as paper and pencil diaries, augmented paper diaries, and electronic data collection (Bolger, Davis, and Rafaeli 2003; Ohly et al. 2010). Here, the web-based survey tool Microsoft Forms was used. Further, diaries can be time-based, event-based, or a combination (Bolger, Davis, and Rafaeli 2003). This study relies on time-based diaries, completed once per day (on some occasions, more – see below). The diaries relied on the registration of specific events, such as completing an online purchase or picking up a delivery. The respondents were instructed that

Table 1. Overview of respondents in diary study.

Respondent	Born	Occupation/employment	Household type	Region	No of purchases	Type of products
1. George	1951	Retired	House, 2 adults	Suburb	6	Pharmaceutical, Nautical, Technical DIY, Electronic accessories
2. Olivia	1962	Works full-time in music	Flat and holiday home, 2 adults	Medium-sized town/countryside	2	Pet food
3. Emily	1975	Works full-time in advertising	House, 2 adults, 2 children	Suburb	10	Clothes, Watch, Porcelain, Shoes, Pet food, Nautical, Jewellery, Pharmaceutical
4. Harry	1974	Works full-time as research manager	House, 2 adults, 2 children	Suburb	12	Tools, Home textile, Automotive, Books, Pharmaceutical, Technical spare parts, Clothes, Security, Jewellery
5. Grace	1990	Mainly parental leave, some part-time work as engineer	House and additional flat, 2 adults, 1 child	Smaller town/big city	1	Furniture
6. Tom	1951	Retired	House and holiday home, 2 adults	Medium-sized town/countryside	0	During interview said that shops online 1–2 times/month. Mentioned earlier purchases of books, gardening, clothes
7. Sophie	1991	Works full-time in traffic planning	House, 2 adults, 2 children	Medium-sized town	2	Beauty, Pharmaceutical
8. Daisy	1949	Retired	House, 1 adult	Countryside	4	Books, Gardening, Pharmaceutical, Cleaning
9. Lily	1975	Works full-time as an engineer	House, 3 adults	Countryside	4	Beauty, Party, Gardening
10. Noah	1997	Student in engineering	Flat, 2 adults	Medium-sized town	5	Tobacco, Pharmaceutical, Sports & Leisure
11. William	1983	Works full-time as purchasing manager	Flat, 2 adults, 2 children	Big city	4	Clothes, Gardening, Pharmaceuticals
12. Ruby	1984	Works full-time in HR	House, 2 adults, 2 children	Big city	4	Clothes, Electronics, Food, Interior design
13. Isabella	2001	Works part time in a retail store	Flat, 1 adult	Smaller town	2	Pharmaceutical, Lenses
14. Jack	1989	Works full-time as policy advisor	Flat, 2 adults	Big city	3	Clothes, Books
15. Charlotte	1999	Student in engineering, and part time work in finance	Flat, 1 adult	Medium-sized town	0	During interview said that shops online 1–2 times/month. Mentioned earlier purchases of shoes and beauty

completing their diaries once a day was sufficient, rather than the exact point in time when the events occurred. Respondents were advised to complete the diary in the evening, when most of the day had passed, but no strict time was set. The respondents were also informed that they could add information a second or third time, if more e-commerce events would occur after the first diary entry.

The form was built as a semi-structured questionnaire. It consisted of six subsections (see Table 2 for an overview, and Appendix 1 for details). The first logged the date, the second purchases made, the third notifications, the fourth deliveries, fifth browsing without placing an order, finishing with general reflections. The questions in sections two to four were looped to allow for multiple purchases, notifications, and deliveries to be logged. Both open-ended and closed questions were used. The majority of the open-ended questions allowed long answers, but a few were used to specify the purchase, so that it could be followed through the sections and over time, for example, 'Specify which purchase (company and type of item)'. There were also four short open questions asking for price, distance, and time. Closed questions had yes or no answers, date, or alternatives. When alternatives were used, the option 'other' was included, where the respondent could write an alternative. One question did not have 'other' as an option, but was a variation of yes and no while offering multiple alternative answers (Yes, I have made a collection, Yes I have had a home delivery, Yes I have had a delivery to my letter box and No). Depending on answers, respondents were given different questions, i.e. if the respondent answered that a home delivery had been received, questions concerned home delivery, while if the respondent answered that a collection had been made, questions regarding home delivery were skipped.

The questionnaire was tested in a number of iterations, where colleagues and family members, acting as consumers, were asked to fill in the questionnaire and immediately communicate concerns and suggestions for improvements. As a means to increase credibility (A. Halldórsson and Aastrup 2003), three researchers were involved in the process of constructing the questionnaire and went through it jointly on three occasions before it was deemed ready for data collection.

Respondents were given individual diaries, through a web-link to a personal Forms questionnaire. If no e-commerce events had occurred, the diary took a few minutes to complete. If events had occurred, the diary took approximately 10 minutes to complete. The respondents then visited the same personal Forms link every day for one month (25 April to 24 May 2024). Respondents were deliberately not informed prior to the study that one of the main purposes of the diaries was to identify various aspects of time that influence consumers in their online shopping.

Table 2. Questions in the questionnaire.

	No. of questions	No. of loops	Open questions				Closed questions			
			All	Long	Short	Specifying	All	Y/N	Alt	Date
1. Date	1	0	0				1			1
2. Purchases	21	4	13	7	3	3	8	4	4	
3. Notifications	9	4	4	3		1	5	3	2	
4. Deliveries	10	4	4	2	1	1	6	1	5	
5. Searches	3	0	2	2			1	1		
6. Reflections	1	0	1	1			0			

Instead, the initial information stated that the study aimed at understanding e-commerce habits and behaviours.

After the completion of the diary entries, digital interviews were conducted the following month to follow up on the respondents' responses and to log background data about the respondents. The interviews included reflections regarding the specific purchases and the time period of the diary, as well as reasons and details behind answers. Questions were compiled in an interview guide (see Appendix 2), ensuring that all respondents got the same questions, as a means to increase dependability (A. Halldórsson and Aastrup 2003). Specific focus during the interview was given to time, asking follow-up questions regarding statements relating to time. These interviews lasted approximately 30 minutes and were conducted by two researchers, where one took extensive notes and the interviews were recorded.

For the analysis, the answers were compiled into an Excel file. One sheet was created per respondent and specific purchases were colour-coded to make it easier to follow each purchase from browsing, via purchase and notifications, to delivery. In addition, the total number of responses were sorted according to replies to specific questions (e.g. 'I made the journey only to collect the item', 'I got to the pick-up location in the following way', and 'This was important to me when selecting delivery method'). The data from the diaries and the follow-up interviews were coded in NVivo. Statements related to time were given a label, for example 'time between notification and collection', and thereafter grouped according to different stages in the online purchase journey. From this analysis, impatience and urgency emerged as interesting concepts. The analysis was of an abductive character (Kovács and Spens 2005), literature was revisited in several iterations, and empirical statements were related to the theoretical concepts of impatience and urgency, respectively. Thereafter, they were related to the last-mile consumer journey process, and activities therein. Three researchers took part in all stages of the research process, thus enabling researcher triangulation and increasing confirmability, in line with A. Halldórsson and Aastrup (2003).

Results

This section outlines urgency and impatience found in the study, sorted by when in the last-mile consumer journey they appear, and what aspect of the journey they relate to. An overview with supporting quotes can be found in [Table 3](#).

Urgency

In this study, we noted several examples of consumers' time constraints denoting urgency.

Of 59 purchases, 26 were noted as urgent and 20 not urgent. Urgency related to the choice of retailer in the pre-purchase stage, to the placement of order and choice of delivery method in the purchase stage, and finally related to reception in the post-purchase stage.

In the pre-purchase stage, urgency was mentioned with regards to deciding to go to a physical retailer. For example, if it was urgent, the consumer would shop in a physical store rather than order online (U1a in [Table 3](#)). On the other hand, one of the respondents

Table 3. Urgency and impatience per stage of the consumer journey as found in the study.

Category	Sub-category	Quotes
URGENCY PRE-PURCHASE STAGE: Urgency related to the choice of retailer	U1a: Fast with online retailer	'If I purchase online it will be possible to receive it before I can go to the store and shop myself' [Harry] – who has a subscription with next day delivery. 'An [pharmacy] item that had run out. We were on our way to go and buy [in physical store]. But then checked the prices and realised that it was much cheaper to buy online. And they had express delivery. I could shop online and collect.' [Sophie]
	U1b: Can go to physical retailer if urgent	'If it was urgent, I would have bought it in a store.' [Ruby]
	U2a: Time-limited offer – placing order during campaign	'the order was placed today because of a promotional campaign.' [Sophie]
	U2b: Planning the purchase (not urgent)	'It is seldom that I get really rushed. I usually know if something will be needed soon and I make sure that it is there before there is a panic.' [Sophie] 'most online retailers have campaigns at regular intervals. It is usually worth the wait.' [Sophie] 'Not so urgent, getting a head start' [George] – refilling his supply of sunscreen.
	U2c: Not urgent when planning purchase	only Sophie noted that the order had to be placed before a specific time to get the delivery options.
	U2d: Cut-off time (ordering before a certain time)	'My own behaviour, or that of the family, has actually changed.' [Harry]. 'I order and receive the next day . . . if it's really urgent I go to the store, but like the day before yesterday, I got delivery the next evening, it cost a third and still it is delivered to home.' [Harry]
	U2e: Subscription with free next day delivery	'For a birthday, that is approaching.' [Harry] 'stock at home is out, so ASAP.' [Noah] 'as soon as possible.' [William, Ruby, Lily, Noah, George, Emily] 'It was faster than expected.' [Emily]
	U3a: Urgent need for a specific date, for a gift, or out of stock	'No urgency with the delivery, selected the alternative that was free.' [Emily] 'Selected home delivery because it was free.' [Lily]
	U3b: Exceeding expectation (not as urgent)	'I did not reflect on the transport options. It was less important to me exactly when I would get the product [. . .] no urgency to get the product at all.' [Jack] – regarding a spontaneous purchase of a comic book that he had thought about for 15 minutes before placing the order 'went and collected the parcel on the way home from work.' [Emily]
	U3c: Price higher priority than time	'if it is something you really need, then automatically you collect it faster.' [Isabella]
U3d: Less important with delivery time (not urgent)	'at Christmas [names transport provider] will tell you that they want you to pick-up faster . . . if they really want you to pick-up fast, then you pick-up fast.' [Isabella]	
U4a: Urgent to collect		
POST-PURCHASE STAGE: Urgency related to reception		
IMPATIENCE		

(Continued)

Table 3. (Continued).

Category	Sub-category	Quotes
PURCHASE STAGE: Impatience related to placing order	11a: Multiple purchase orders rather than one, to get fast deliveries	'I receive free delivery even with only one product in the purchase. I choose separate orders since it is not certain that the different products are available through the same Amazon centre. If they consolidate products the speed may go down.' [Harry] 'There will be more boxes in the system and potentially more [transporter name] vehicles ... I hope the two boxes are placed in the same car. But I see anyway the car in our neighbourhood every evening.' [Harry]
	11b: Placing an order quickly or spontaneously without planning	'Spontaneous purchase, can get here when it gets here.' [Daisy] 'There was an offer from [retailer name] with a 30% discount.' [Ruby] – regarding spontaneous purchase of sauna accessory
	12a: Want to get it fast despite not needing it	'I mean of course it is not an urgent need, but when you have planned the purchase for a long time it is fun to get it fast, partly for practical reasons so that you know if the sizes fit etc, but also you just want the product.' [Noah] 'I can manage without the product. But eager to try out my new product.' [Noah] 'no stress really, but always fun to get your goods relatively fast, like within a week.' [Noah] 'would not cry if it took seven days to get a t-shirt.' [Noah]
	12b: Perceived potential need rather than actual urgency	'In itself not an urgent need of a sauna accessory, but once I had ordered I wanted it as fast as possible.' [Ruby] 'good that it goes fast in case it is something you really need the same day or the day after.' [Isabella]
POST-PURCHASE STAGE: Impatience related to reception	12c: No impatience – not needing fast delivery	'the parcel will get here when it gets here.' [Jack]
	12d: Dislike of uncertainty regarding delivery time	'Uncertainty, not knowing when it will arrive is no fun. It is OK that it takes a week, but then it should be clear when you order that it takes a week. It is often not until you get to the check-out. And sometimes you cannot see it even then and you do not know when it would arrive [...] if it is not super clear when I can expect the parcel delivered, I would rather go to a physical store.' [Ruby] 'Parcel points have opening hours ... you need to adapt.' [Lilj]
	13a: Concern that opening hours will constrain pick-up of parcel	'I did not need to take a queue ticket for the parcel locker so it might be easier.' [Emily] 'as long as I do not have to pick-up at a parcel point I am satisfied.' [Ruby] 'wait until I get to work on Monday.' [Sophie] 'if it is possible to coordinate, I try to do that. In parcel lockers it does not usually lie very long, then I will go and pick it up. It is rare that I get a notification and feel that I need to go and get it immediately.' [Sophie]
	13b: No impatience – wait to coordinate collection	'Pure luck that they came the day when I was free in the evening. Often they give a wide time span and so wide that you cannot stay at home.' [Olivia]
13c: Appreciation of information regarding delivery	'first time span was afternoon/evening that day, then it became 17–22 [...] between 20–21 and then it was acceptable [...] otherwise] not being able to walk the dog all night.' [Olivia]	

(Harry), who had a subscription that offered next day delivery felt that it would be faster to shop online than drive to a physical store, as he could depend on the fast delivery from his Amazon subscription (U1b in Table 3). Different approaches to urgency were thus found between respondents in the pre-purchase stage.

In the purchase stage, the results indicate an interesting diversity between the consumers in terms of how planned their purchases were, relating urgency to the placement of order. Consumers' responses ranged from spontaneous purchases, of which one example is Jack who had thought for 15 minutes before ordering a comic book, to very planned, as in the case of Sophie who described herself as planning her purchases well in advance, so that they seldom became urgent (U2b in Table 3). Even so, Sophie described placing an order for a beauty product a particular day because of a promotional campaign, indicating urgency in placing the order while the campaign was still available (U2a in Table 3).

Also in the purchase stage, and urgency related to the placement of order, we found that a subscription to Amazon Prime, with a monthly fee including free home delivery the next day, seemed to change Harry's purchasing behaviour, increasing his online purchases (U2e in Table 3). His reliance on and expectations of next-day delivery seemed to create an urgency by placing the order later, relying on it being sufficient to order the day before the item is needed rather than to plan ahead and allow a longer delivery time.

Further, we expected some consumers to report on urgency related to placing the order before a cut-off time, to get it before a certain date. However, only Sophie noted such a time (U2d in Table 3), indicating that in general this is not visible to the consumers, and thus does not induce urgency.

It was also clear that urgency existed in many instances in the choice of delivery method, influencing the delivery time that was of interest to consumers, for example when needing the item for a gift (U3a in Table 3). In contrast, the delivery time was less important to some respondents, for example noting that price took priority over time (U3c in Table 3), meaning that it was not as urgent when selecting delivery method.

In the post-purchase stage, respondents expressed urgency related to the reception of their ordered items, measured by the time between consumers receiving information that their parcel is ready and the actual collection/delivery. The diaries revealed that the consumers varied in how fast they acted to collect their deliveries, some noting quick collection (U4a in Table 3). Interestingly, it was also exemplified that the urgency may be imposed by transport providers wanting consumers to collect their orders fast (and in that way clearing space for other parcels), thereby indirectly affecting the speed of the last-mile delivery.

Impatience

Examples of consumer impatience were also evident in the diary study. Despite not needing the products that had been ordered quickly (no urgency), there were several instances where the consumers clearly stated that they wanted a fast delivery. In the purchase stage, impatience related to the activities of placing the order as well as choice of delivery method. It also related to reception in the post-purchase stage.

First, in the purchase stage, impatience was identified when placing an order quickly or spontaneously without planning, for example due to a discount (I1b in Table 3). Harry,

with his subscription of next day delivery, described how he conducted separate online purchases with single products, placed consecutive days, rather than coordinating and ordering at one time (I1a in Table 3), which would result in fewer (consolidated) deliveries.

In particular, impatience could be seen as related to choice of delivery method in the purchase stage. Respondents reflected that they wanted to get their parcel fast, despite there being no real need for urgency (I2a in Table 3), or only a potential future need (I2b in Table 3). This influenced them when selecting delivery method, showing interest in fast delivery.

While some of the respondents became impatient when selecting delivery method, despite their need not being urgent, there were also comments about not needing fast delivery (I1c in Table 3). Thus, not all consumers become impatient regarding the delivery time. Furthermore, impatience was expressed in terms of dislike of uncertainty regarding delivery time (I2d in Table 3), impacting consumers in the choice of delivery, even to the point of cancelling the order.

There were also examples of impatience in the post-purchase stage related to the reception. Availability of collection points or parcel lockers is behind some of the instances of impatience, for example opening hours or needing to queue (I3a in Table 3), indicating that there may have been negative experiences in the past. In contrast, there were many examples of consumers waiting to coordinate their collection of parcels with other errands (e.g. I3b in Table 3), indicating lack of impatience.

Finally, for home deliveries, consumers expressed impatience related to reception in terms of delivery information. Consumers do not want to wait around for long periods of time waiting for the parcel to arrive (I3c in Table 3). Rather, they appreciate information regarding specific delivery times, allowing them to make other plans.

Discussion

The discussion focuses on urgency and impatience in relation to fast last-mile deliveries. It also includes a section regarding environmental sustainability of last-mile deliveries.

Urgency and impatience in relation to fast last-mile deliveries

First, urgency appears to be an important denominator of consumer behaviour in the online consumer journey. The empirical examples show the most obvious appearances of urgency due to an urgent need, e.g. for an approaching birthday or missing a medical item, which influences the need for a fast last-mile delivery. Urgency is also related to the planning horizon, where there are large differences among the empirical examples – some consumers plan ahead and seldom get rushed, while others have a shorter, more reactive planning horizon, or get hooked by an attractive time-limited offer. However, a rushed decision on a purchase does not necessarily imply the need for a fast delivery. Thus, it seems as while retailers postulate that consumers are impatient and that ever-faster deliveries are needed (Amorim et al. 2024; Daugherty, Bolumole, and Grawe 2019), there is far from always an urgent need on the part of consumers. There is, however, a risk that more and more of those who plan ahead postpone the placement of their orders, as the e-commerce industry teaches consumers that online orders can be delivered fast, as illustrated in the empirical example of Harry, who had a subscription promising next day

delivery and adapted his shopping to this, relying on that one retailer (Amazon) for fast and free home deliveries. Such behaviour is likely to be determined by a mix of good and bad experiences of previous delivery methods, and there thus appears to be a feedback loop between the pre-purchase and purchase stages in terms of choice of retailer and choice of delivery method. This is in line with Lemon and Verhoef (2016), who illustrate feedback loops between different stages of the customer journey, based on consumer experiences. In fact, non-urgent needs can become urgent if consumers do not act on them in time. This has implications for choices in the consumer's journey, and can impact, for example, the choice of delivery method, where a faster delivery is desirable just because of the short planning horizon. It can also impact the collection of an order in the reception at the post-purchase stage. Instead of picking up the order when other errands need to be done, consumers might rush to the pick-up point or the parcel locker to collect the parcels immediately.

Second, the empirical analysis corroborated what Paluzzi et al. (2025) and Daugherty, Bolumole, and Grawe (2019) have suggested: impatience, that is, a *feeling* on the part of consumers to want their order ASAP, is indeed an important aspect of last-mile deliveries. While Paluzzi et al. (2025) confirmed this for home deliveries, the study at hand illustrates that impatience also appears to be of relevance for other types of spatial delivery alternatives, such as delivery to pick-up points or parcel lockers. Further, findings show that impatience is present both in the purchase and the post-purchase stages of the consumer journey. While Paluzzi et al. (2025) focused on the impatience at the purchasing stage, the paper at hand widens the focus to a more holistic view of impatience in the consumer journey. For example, we found examples of impatience even when placing the order, such as the consumer placing several consecutive and separate orders with Amazon rather than one order containing several items, reasoning that the delivery speed might be faster.

Further, impatience was also noted in the post-purchase stage of the consumer journey. On the one hand, this can be compared to the findings of Paluzzi et al. (2025), as they study impatience with timeliness of home deliveries. However, the findings of this study point to impatience also being present in the post-purchase stage with regard to other delivery methods, in particular related to reception (where consumers hurried to pick up their order at a parcel box or pick-up point as quickly as possible due to impatience).

Further, an important finding of this research is that impatience is not always present. Instead, results clearly point to the fact that not all consumers perceive the feeling of impatience in their consumer journey. Rather, there are examples of consumers who seem to be less rushed. This brings us to one of the main findings of the study at hand: consumers are diverse, as also noted by Amorim et al. (2024), and far from all can be said to be 'extremely impatient', to use the phrasing of Daugherty, Bolumole, and Grawe (2019, p. 5). While retailers have been found to perceive an increased demand for faster deliveries (e.g. Sallnäs and Björklund 2020) and offer such deliveries as a way to stand out from competing retailers (Savelsbergh and Woensel 2016), this research points to the need to differentiate between different types of consumers, as they, indeed, are diverse. Further, consumers seem to range from those who are impatient regardless of circumstances to those that are never or rarely impatient. This means that there is, as suggested by the results from the diary study, a large group of consumers who sit somewhere in-

between, and that circumstances can change where on the ‘impatience spectrum’ they can be found. For example, the results strongly suggest that putting a price on a fast delivery method compared to a slower one decreases the level of impatience of consumers, or, at least, they do not act on their impatience. In other words, the results indicate that consumers are very seldom prepared to pay for delivery.

Third, and as already implied, while impatience and urgency separately have implications at the different stages of the online consumer journey, the findings also suggest a close relationship between the two. Despite a non-urgent need, consumers often get impatient with the delivery speed, which in turn can impact both the choice of delivery method and how fast items are collected. The findings, therefore, suggest that consumers act as if there is an urgent need when, in fact, there is not. Instead, they get impatient.

In line with the above, this research adheres to recent suggestions that not all consumers value the same time-related last-mile delivery attributes (Amorim et al. 2024), and there is not a ‘one size fit all’. In line with Amorim et al. (2024), we suggest that with the help of more advanced consumer data, it should be possible for retailers to differentiate their offerings for different types of consumers, e.g. those who need urgent delivery, those who are impatient and those with neither urgency nor impatience. In Figure 2, four different categories of situations for consumers are illustrated, showing the potential for retailers to differentiate their offerings on delivery speed. Specifically, the categorisation relies on a distinction between the presence of urgency/no urgency on the one hand, and impatience/no impatience on the other. It highlights how these time-related concepts can be understood in relation to fast last-mile deliveries, how they affect

	NO IMPATIENCE	IMPATIENCE
URGENCY	<p style="text-align: center;">A <i>Urgency, No impatience</i></p> <p>Fast deliveries needed</p> <p>Planning horizon of consumers can reduce urgency</p>	<p style="text-align: center;">B <i>Urgency & Impatience</i></p> <p>Fast deliveries needed</p> <p>Important for retailers to be able to offer fast deliveries for these consumers and situations</p>
NO URGENCY	<p style="text-align: center;">C <i>No urgency, No impatience</i></p> <p>Slower deliveries acceptable to consumers</p> <p>Consumers choose the most convenient and cheap delivery</p>	<p style="text-align: center;">D <i>Impatience, No urgency</i></p> <p>Fast deliveries expected but not required</p> <p>Possibility to reduce impatience and thereby expectations of fast delivery (e.g. through cost)</p>

Figure 2. Categorisation of consumer urgency and impatience.

the need for fast deliveries (e.g. category B), and when fast deliveries might not be needed (e.g. category C). The categorisation is a first attempt to use urgency and impatience as a denominator of consumer perceptions and behaviour, and should be given more detailed attention in further research.

Urgency and impatience in relation to environmental sustainability

Finally, we strongly believe that an increased understanding of urgency and impatience in relation to consumer choices can expand the opportunities for more environmentally sustainable last-mile deliveries. Given that too short lead-times hinder efficient logistics and high fill-rates (Allen, Piecyk, and Piotrowska 2017; McKinnon 2018), the time available for transport and thus the speed of deliveries is relevant. In this section, the potential effects of urgency and impatience on environmental sustainability of last-mile deliveries are introduced. Figure 3 provides an overview of proposed relationships between environmental aspects and urgency and impatience related to activities in the last-mile consumer journey, which are outlined below.

First, impatience and urgency in the purchase stage may reduce time, and thereby opportunities, to plan efficient transport. Conversely, lack of urgency or impatience in the purchase phase can mean that consumers opt for slower delivery alternatives, allowing more time for planning efficient transport, such as routes and capacity utilisation. The amount of time required for planning efficient transport is linked to urgency and impatience in the following way. For the choice of delivery method, urgency means that a faster delivery may be selected, influencing the time available for transportation, including the time for planning transportation. Similarly, impatience causing consumers to opt for faster delivery also influences the time available for transportation. Furthermore, impatience when placing the order, in terms of ordering items separately rather than combined, also influences the planning of transportation. Specifically, the impatience connected to an offer of a next day delivery, regardless of urgent need, leads to a shorter transport time.

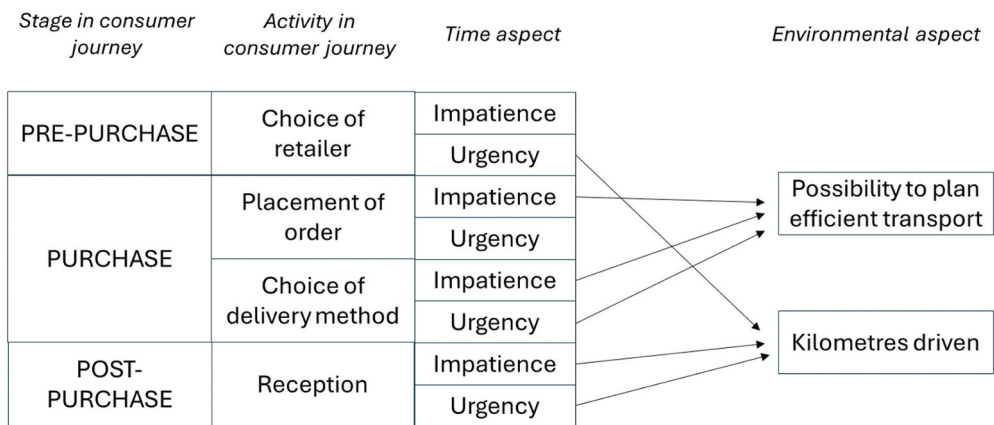


Figure 3. Proposed relationship between environmental aspects and urgency and impatience related to activities in the consumer journey.

Second, impatience and urgency in the post-purchase stage may result in shorter time frames for collection, which in turn may influence kilometres driven. This relates to the kilometres driven by car, where Niemeijer and Buijs (2023) found that collection from pick-up points involved a large extent of consumer trips by car. Trip-chaining, i.e. coordination with other errands, would reduce the car kilometres per delivery. Kilometres driven is linked to urgency and impatience in the following way. Urgency in the reception, meaning that consumers collect their parcels fast, impacts the speed of the time from order placed to its delivery to a consumer's home. Similarly, impatience can have the same effect. Both urgency and impatience in reception may lead to consumers collecting their parcels as quickly as possible, thus not coordinating with other errands, leading to additional kilometres driven. Conversely, lack of urgency and lack of impatience in reception can mean that consumers take longer to collect their parcels, allowing more time for coordination with other errands and thereby opportunities for fewer kilometres driven. The study at hand found that consumers tried to coordinate their collection of parcels with other errands, for example picking up items on the way home from work. Furthermore, impatience in the reception may influence the number of failed deliveries, and thereby the kilometres driven. Specifically, impatience means that consumers do not want to wait many hours by the door for a home delivery and the delivery could fail if the consumer is not there. A failed delivery may mean a new delivery attempt or that the consumer is asked to go to a pick-up point, both resulting in additional kilometres compared to if the initial delivery had succeeded.

Finally, urgency in the pre-purchase stage may mean that consumers opt for travelling to a store for purchasing or collecting the item. This travel influences kilometres driven by consumers, as it may be further than the closest pick-up place. Alternatively, urgency in the pre-purchase stage may mean that the consumer selects home delivery, in which case the kilometres driven are not by the consumer but rather by a delivery vehicle that delivers many parcels on its route.

As this paper only proposes relationships rather than delving deeply into the environmental sustainability related to urgency and impatience, we see a strong need for future research to do so. Furthermore, there should be an opportunity for retailers to guide these consumers to select the more environmentally sustainable alternative (i.e. the slower alternative) in different ways, as exemplified by Sallnäs and Björklund (2020).

Conclusions, implications, and further research

Understanding consumers is essential for efficient last-mile logistics that also satisfy consumer needs (e.g. Daugherty, Bolumole, and Grawe 2019; Esper et al. 2020; Paluzzi et al. 2025; Vakulenko et al. 2019). The paper set out to explore urgency and impatience in the last-mile consumer journey, and the influence of these two concepts on the speed of last-mile deliveries. Additionally, the paper set out to address potential effects of urgency and impatience on environmental sustainability of last-mile deliveries. Through the use of a diary study, the paper answers calls for more research into consumer behaviour and perceptions in the context of consumer-centric supply chain management (Baldi et al. 2024). The main findings of the paper include: 1) both urgency and impatience appear to be important denominators of consumer behaviour in the last-mile consumer journey; 2) urgency

and impatience can have a direct impact on consumer choices regarding last-mile delivery method, including speed of delivery and reception of delivered orders; 3) urgency complements impatience in understanding consumer behaviour underlying the need for fast last-mile deliveries; and 4) the increased understanding of urgency and impatience can have implications for more environmentally sustainable last-mile deliveries.

Research implications

By taking a consumer-centric perspective on last-mile deliveries, this paper joins the recent academic conversation focusing on an increased understanding of the consumer to improve logistics operations (e.g. Baldi et al. 2024; Esper et al. 2020). The study corroborates with this literature, as it illustrates the importance of understanding the diversity of consumers. Specifically, it highlights that not all consumers are equal, and that far from all become impatient and need fast last-mile deliveries, which in turn has implications for how retailers and transport providers can plan their last-mile logistics operations. Thereby, the study also questions the previous so-called truth that all consumers are impatient and that ever faster deliveries should be the norm (Daugherty, Bolumole, and Grawe 2019). Further, findings corroborate with Amorim et al. (2024) who suggests that it should be possible to differentiate offers of speed of delivery to different types of consumers.

Additionally, this paper answers the call for research into consumer impatience posed by Daugherty, Bolumole, and Grawe (2019). Together with Paluzzi et al. (2025), this study is one of the first to empirically illustrate the impact of consumer impatience on last-mile deliveries. Notably, the study at hand adds to the findings of Paluzzi et al. (2025) in three main ways. First, whereas Paluzzi et al. (2025) focus on home deliveries, this paper shows that impatience is of importance regardless of the delivery alternative, and thus, for example, deliveries to pick-up points and parcel lockers as well. In fact, impatience is suggested to impact the actual choice of delivery method. Second, the findings show that impatience is present not only in the waiting for home deliveries to arrive, as in Paluzzi et al. (2025), but also for the reception of deliveries to pick-up points and parcel lockers. This has implications for how fast consumers pick up their deliveries, which in turn can affect the environmental impact of last-mile deliveries (e.g. Allen, Piecyk, and Piotrowska 2017).

Third, we introduce the concept of urgency in the last-mile consumer journey, and suggest it to be an important denominator of consumer behaviour, not least as it appears to affect consumer impatience in different stages of the consumer journey.

Finally, an additional research contribution is the use of a diary study in a logistics context. To the best of the authors' knowledge, this method is seldom employed and we believe it contributes with detailed insights into consumer behaviour that in turn can affect last-mile logistics (see e.g. Ignat and Chankov 2020; van Loon et al. 2015). In fact, Baldi et al. (2024) proposed that new methodological perspectives are needed to capture consumer behaviours, and we argue that the diary study method has strong potential in this domain.

Managerial implications

The research can guide retailers and logistics companies in their efforts to meet customer needs and expectations at the same time as efficiency and, potentially, environmental sustainability improvement. The knowledge gathered about urgency and impatience can be used by retailers and logistics companies to create opportunities and new ways of acting in relation to time. The findings that consumers differ in terms of urgency, impatience, and planning horizons has implications for retailers and transport providers. Specifically, they suggest that by understanding their consumer base, retailers can differentiate their offers and, in turn, hopefully increase efficiency and decrease environmental impact of their transportation. Therefore, [Figure 2](#), is one of the main practical contributions of this paper. Indeed, even though a fast delivery option can motivate consumers to use e-commerce, our study shows that there is a wide variation of how time is perceived among the consumers. In particular, the fast lead time may not be needed so often, hence there may be room for diversifying the delivery options towards consumer needs and meet the different expectations through adapting delivery solutions, e.g. through recent technology development. One way to do so could be to distinguish between four different types of situations for consumers, as illustrated in [Figure 2](#).

Limitations and further research

This study is limited to the Swedish context, and future studies into urgency and impatience should include other geographical regions to find similarities and differences between different contexts. Further, while [Paluzzi et al. \(2025\)](#) make an important contribution in terms of customer satisfaction and impatience, there is a pressing need to delve further into urgency and impatience in combination – to also understand their impact on sustainable last-mile deliveries. Finally, while the findings of urgency and impatience in this study were mainly found inductively in rich, empirical material, there is a need to study these two time-related concepts in more depth in more detailed studies. While we still argue for the consumer-centric approach and study of actual consumer behaviour, the selection criteria of consumers would benefit from focusing on specific groups of respondents.

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References

- Ali, F., H. Maqsood, and Q. Janjua. 2025. "Psychological Triggers in Online Shopping: The Influence of Scarcity, Urgency, and Personalization on Consumer Buying Behavior." *The Critical Review of Social Sciences Studies* 3 (2): 269–289.
- Allen, J., M. Piecyk, and M. Piotrowska. 2017. *Analysis of Online Shopping and Home Delivery in the UK*. Report. University of Westminster.
- Amorim, P., N. DeHoratius, F. Eng-Larsson, and S. Martins. 2024. "Customer Preferences for Delivery Service Attributes in Attended Home Delivery." *Management Science* 70 (11): 7559–7578. <https://doi.org/10.1287/mnsc.2020.01274>.

- Baldi, B., I. Confente, I. Russo, and B. Gaudenzi. 2024. "Consumer-Centric Supply Chain Management: A Literature Review, Framework, and Research Agenda." *Journal of Business Logistics* 45 (4). <https://doi.org/10.1111/jbl.12399>.
- Bolger, N., A. Davis, and E. Rafaeli. 2003. "Diary Methods: Capturing Life as It Is Lived." *Annual Review of Psychology* 54:579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>.
- Buldeo Rai, H., S. Verlinde, and C. Macharis. 2019. "The "Next Day, Free Delivery" Myth Unravalled: Possibilities for Sustainable Last Mile Transport in an Omnichannel Environment." *International Journal of Retail & Distribution Management* 47 (1): 39–54. <https://doi.org/10.1108/IJRDM-06-2018-0104>.
- Carlander, J., K. Trygg, and B. Moshfegh. 2019. "Integration of Measurements and Time Diaries as Complementary Measures to Improve Resolution of BES." *Energies* 12 (11): 2072. <https://doi.org/10.3390/en12112072>.
- Chen, H., S. Ng, and A. R. Rao. 2005. "Cultural Differences in Consumer Impatience." *Journal of Marketing Research* 42 (3): 291–301. <https://doi.org/10.1509/jmkr.2005.42.3.291>.
- Daugherty, P. J., Y. Bolumole, and J. Grawe. 2019. "The New Age of Customer Impatience: An Agenda for Reawakening Logistics Customer Service Research." *International Journal of Physical Distribution & Logistics Management* 49 (1): 4–32. <https://doi.org/10.1108/IJPDLM-03-2018-0143>.
- Esper, T. L., V. E. Castillo, K. Ren, A. Sodero, X. Wan, K. L. Croxton, A. M. Knemeyer, S. DeNunzio, W. Zinn, and T. J. Goldsby. 2020. "Everything Old Is New Again: The Age of Consumer-Centric Supply Chain Management." *Journal of Business Logistics* 41 (4): 286–293. 12267. <https://doi.org/10.1111/jbl.12267>.
- Haldórsson, A., and J. Aastrup. 2003. "Quality Criteria for Qualitative Inquiries in Logistics." *European Journal of Operational Research* 144 (2): 321–332. [https://doi.org/10.1016/S0377-2217\(02\)00397-1](https://doi.org/10.1016/S0377-2217(02)00397-1).
- Haldórsson, Á., and J. Wehner. 2020. "Last-Mile Logistics Fulfilment: A Framework for Energy Efficiency." *Research in Transportation Business & Management* 37:100481. <https://doi.org/10.1016/j.rtbm.2020.100481>.
- Hardisty D J and Weber E U. (2020). Impatience and Savoring vs. Dread: Asymmetries in Anticipation Explain Consumer Time Preferences for Positive vs. Negative Events. *J Consum Psychol*, 30(4), 598–613. <https://doi.org/10.1002/jcpy.1169>
- Ignat, B., and S. Chankov. 2020. "Do e-Commerce Customers Change Their Preferred Last-mile Delivery Based on Its Sustainability Impact?" *The International Journal of Logistics Management* 31 (3): 521–548. <https://doi.org/10.1108/IJLM-11-2019-0305>.
- Kovács, G., and K. M. Spens. 2005. "Abductive Reasoning in Logistics Research." *International Journal of Physical Distribution & Logistics Management* 35 (2): 132–144. <https://doi.org/10.1108/0960030510590318>.
- Langley, C. J., Jr, and M. C. Holcomb. 1992. "Creating Logistics Customer Value." *Journal of Business Logistics* 13 (2): 1.
- Lemon, K. N., and P. C. Verhoef. 2016. "Understanding Customer Experience Throughout the Customer Journey." *Journal of Marketing* 80 (6): 69–96. <https://doi.org/10.1509/jm.15.0420>.
- Lim, S. F. W. T., X. Jin, and J. S. Srai. 2018. "Consumer-Driven e-Commerce." *International Journal of Physical Distribution & Logistics Management* 48 (3): 308–332. <https://doi.org/10.1108/IJPDLM-02-2017-0081>.
- Mangiaracina, R. Marchet G., S. Perotti, A. Tumino, and. 2015. "A Review of the Environmental Implications of B2C E-Commerce: A Logistics Perspective." *International Journal of Physical Distribution & Logistics Management* 45 (6): 565–591. <https://doi.org/10.1108/IJPDLM-06-2014-0133>.
- McKinnon, A. C. 2018. *Decarbonizing Logistics: Distributing Goods in a Low-Carbon World*. London: Kogan Page.
- Mu, J., and J. Z. Zhang. 2021. "Seller Marketing Capability, Brand Reputation, and Consumer Journeys on e-Commerce Platforms." *Journal of the Academy of Marketing Science* 49 (5): 994–1020. <https://doi.org/10.1007/s11747-021-00773-3>.

- Niemeijer, R., and P. Buijs. 2023. "A Greener Last Mile: Analyzing the Carbon Emission Impact of Pick-Up Points in Last-Mile Parcel Delivery." *Renewable and Sustainable Energy Reviews* 186:113630. <https://doi.org/10.1016/j.rser.2023.113630>.
- Ohly, S., S. Sonnentag, C. Niessen, and D. Zapf. 2010. "Diary Studies in Organizational Research: An Introduction and Some Practical Recommendations." *Journal of Personnel Psychology* 9 (2): 79–93. <https://doi.org/10.1027/1866-5888/a000009>.
- Olsson, J., D. Hellström, and Y. Vakulenko. 2023. "Customer Experience Dimensions in Last-Mile Delivery: An Empirical Study on Unattended Home Delivery." *International Journal of Physical Distribution & Logistics Management* 53 (2): 184–205. <https://doi.org/10.1108/IJPDLM-12-2021-0517>.
- Paluzzi, H., H. Chen, M. Howe, P. J. Daugherty, and T. Tokar. 2025. "Consumer Impatience in the e-Commerce Home Delivery Context: A Consumer-Centric Supply Chain Perspective for Time-Based Competition." *International Journal of Physical Distribution & Logistics Management* 55 (1): 1–21. <https://doi.org/10.1108/IJPDLM-03-2024-0102>.
- Patton, M. Q. 2002. *Qualitative Research & Evaluation Methods*. Sage Publications. California.
- PostNord. 2015. "E-Barometern 2014 Årsrapport [In English: Annual Report 2014]. <https://www.postnord.se/siteassets/pdf/rapporter/e-barometern—aldre/e-barometern-arsrapport-2014.pdf>.
- PostNord. 2025. "E-Barometern 2024 Årsrapport [In English: Annual Report 2024]. https://www.postnord.se/siteassets/pdf/rapporter/e-barometern-2024/e-barometern_arsrapport_2024_v2.pdf.
- Sallnäs, U., and M. Björklund. 2020. "Consumers' Influence on the Greening of Distribution – Exploring the Communication Between Logistics Service Providers, E-Tailers and Consumers." *International Journal of Retail and Distribution Management* 48 (11): 1177–1193. <https://doi.org/10.1108/IJRDM-07-2019-0213>.
- Sallnäs, U., and M. Björklund. 2023. "Green e-Commerce Distribution Alternatives – A Mission Impossible for Retailers?" *The International Journal of Logistics Management* 34 (7): 50–74. <https://doi.org/10.1108/IJLM-07-2022-0271>.
- Sallnäs, U., M. Hüge-Brodin, M. Björklund, and F. Eng-Larsson. 2024. "Green Distribution Alternatives: Actors, Roles and Responsibilities." In *Environmentally Responsible Supply Chains in an Era of Digital Transformation - Research Developments and Future Prospects*, edited by P. Evangelista, J. Hallikas, and M. Y. Jaber, 101-118. Edward Elgar Publishing Limited.
- Savelsbergh, M., and T. V. Woensel. 2016. "50th Anniversary Invited Article—City Logistics: Challenges and Opportunities." *Transportation Science* 50 (2): 579–590. <https://doi.org/10.1287/trsc.2016.0675>.
- SCB. 2025. "Statistics Sweden, Statistical Database. Population Density Per Sq. Km, Population and Land Area by Region and Sex. Year 1991 – 2024. Accessed September 6, 2025. https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START_BE_BE0101_BE0101C/BefAreaITathetKon.
- Shaddy, F., and L. Lee. 2020. "Price Promotions Cause Impatience." *Journal of Marketing Research* 57 (1): 118–133. <https://doi.org/10.1177/0022243719871946>.
- Svensk, H. 2025. "E-Handelsindikator Årsrapport 2024 [In English: Online Retail Indicator Annual Report 2024], <https://www.svenskhandel.se/api/documents/pressmeddelanden/E-handelsindikatorn%20hel%C3%A5r%202024.pdf>.
- Vakulenko, Y., D. Figueirinhas, D. Hellström, and H. Pålsson. 2024. "The Impact of Order Fulfillment on Consumer Experience: Text Mining Consumer Reviews from Amazon US." *International Journal of Physical Distribution & Logistics Management* 54 (6): 558–585. <https://doi.org/10.1108/IJPDLM-11-2023-0434>.
- Vakulenko, Y., P. Shams, D. Hellström, and K. Hjort. 2019. "Service Innovation in e-Commerce Last Mile Delivery: Mapping the E-Customer Journey." *Journal of Business Research* 101:461–468. <https://doi.org/10.1016/j.jbusres.2019.01.016>.
- van Lon, R. R. S., E. Ferrante, A. E. Turgut, T. Wenseleers, G. Vanden Berghe, and T. Holvoet. 2016. "Measures of Dynamism and Urgency in Logistics." *European Journal of Operational Research* 253 (3): 614–624. <https://doi.org/10.1016/j.ejor.2016.03.021/>.

van Loon, P., L. Deketele, J. Dewaele, A. McKinnon, and C. Rutherford. 2015. "A Comparative Analysis of Carbon Emissions from Online Retailing of Fast Moving Consumer Goods." *Journal of Cleaner Production* 106:478–486. <https://doi.org/10.1016/j.jclepro.2014.06.060>.

Wilding R D and Newton J Michael. (1996). Enabling time-based strategy through logistics - using time to competitive advantage. *Logistics Information Management*, 9(1), 32–38. <https://doi.org/10.1108/09576059610107888>

Zhu, M., Y. Yang, and C. K. Hsee. 2018. "The Mere Urgency Effect." *Journal of Consumer Research* 45 (3): 673–690. <https://doi.org/10.1093/jcr/ucy008>.