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What's the point of the collection point?

A case study in Gothenburg

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Table of contents

List of figures.....	iii
List of tables.....	iii
Abstract.....	iv
Acknowledgements.....	v
Abbreviations and wordlist.....	vi
1. Introduction.....	1
1.1 New developments in last mile deliveries.....	2
1.2 Problem description and analysis.....	3
1.3 Purpose.....	4
1.4 Scope.....	5
1.5 Structure of the dissertation.....	6
2. Literature review.....	7
2.1 Definitions and literature areas.....	7
2.2 Effects of CDP's.....	10
2.3 Optimal implementation of CDP's.....	11
2.4 Customers' attitudes towards CDP's.....	13
2.5 Summary and discussion of literature review.....	15
3. Method.....	17
3.1 Research paradigm.....	17
3.2 Regarding case studies.....	22
3.3 Research approach.....	23
4. Results.....	30
4.1 Questionnaire, general questions.....	30
4.3 - Results SQ ₁ : Is a reason to become a CDP to get customers into the store?.....	33
4.4 - Results SQ ₂ : Is a reason to become a CDP to make an effort to improve the environment? ..	35
4.5 - Results SQ ₃ : Is a reason to become a CDP to make a profit from the parcels?.....	36
4.6 - Results SQ ₄ : Is a reason to become a CDP to utilize excess space in the store?.....	38
4.7 - Results SQ ₅ : Is a reason to become a CDP to decrease the volatility of income?.....	40
4.8 - Results Point Allocation Method.....	41
4.9 Summary of results.....	42
5. Analysis and discussion.....	45
5.1 – Effects of operating a CDP and eventual profits.....	45
5.2 Effects on physical space.....	48
5.3 Customers attitudes.....	50
5.4 Environment.....	51
6. Conclusions and contributions.....	54

6.1 The most important reasons to operate a CDP?	54
6.2 Recommendations to carriers.....	55
6.3 Contributions	56
6.4 Further research	56
7. Limitations.....	57
References	58
Appendix A – Interview guide: Pilot study.....	64
Appendix B – Interview guide: Main study.....	65
Appendix C - Results - interviews.....	69

List of figures

Figure 1: Terminology of city logistics. Adapted from Cardenas et. al., (2017).....	9
Figure 2: Description of the research process	23

List of tables

Table 1: Positivism and interpretivism. Adapted from Collis and Hussey (2013) p. 50	19
Table 2: Summary of sample.....	28
Table 3: General questions	30
Table 4: Questions regarding SQ ₁	33
Table 5: Question regarding SQ ₂	35
Table 6: Questions regarding SQ ₃	36
Table 7: Questions regarding SQ ₄	38
Table 8: Questions regarding SQ ₅	40
Table 9: Results PA questionnaire	41
Table 10: Summary categorized results.....	43

Abstract

It not uncommon to read things such as “New record for E-commerce this year, again” in headlines of newspapers. In the case of Sweden, collection and delivery points, CDP's, are the most common way of delivering parcels. During 2018, new headlines started to appear in the newspapers, saying that stores becomes reluctant to operate as CDP's, mainly due to inefficiencies and poor financial results. Simultaneously, increased consumption and parcel volumes are correlated, raising the question of how these two will go together. It increases the interest of investigating how the CDP's are performing, what are the reasons for operating a CDP and what can different carriers do to increase the attractiveness of operating CDP's.

Through a combined method case study, semi-structured interviews and Points Allocation method, the question of why one operates a CDP is investigated. The data is collected in the city of Gothenburg, Sweden, during the spring of 2019.

The study concludes that corner shops and grocery stores have different motives for operating a CDP. The most important reasons for operating a CDP are to increase cross-selling of other products, followed by increased service level for the customers and increased income from the compensation of handling the parcels. No environmental reasons were found, while being used as one of the benefits of the solution by other scholars. An increased knowledge in this area helps improve and optimize the existing CDP networks, the incentive structures and aid in choosing locations, as well as finding new delivery solutions.

Key search words: CDP, Point Allocation, City Logistics, Parcel delivery, collection and delivery point, Last-mile delivery

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Sincerely,

Pierre Larsson

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Abbreviations and wordlist

CDP - *Collection and delivery point*

Corner shop - *A smaller store with sweets and a limited supply of groceries. Often owned and operated by the same person.*

Cross-selling - *Selling an additional item or product to an existing customer.*

GHG - *Greenhouse gases*

PA - *Point Allocation*

Post offices - *Former post offices used in Sweden up until 2008.*

1. Introduction

Half of the Swedish population have an average distance of 1000 meter to a CDP, (Trafikanalys, 2017), with one of the major postal carriers, Postnord, running approximately 2000 CDP's in the nation as of 2017 (Postnord, 2017). This implies a high coverage and usage of this solution as a means of collecting parcels ordered online, as an alternative to home deliveries or purchases in stores. Sweden, in 2017, had 432 transport operators who, combined, transported 99 million parcels between 0-31.5kg. Every year the number of parcels increases. For example, during the period 2016 to 2017 Sweden experienced an increase by 20% (Trafikanalys 2017). This has, to some extent, historical reasons with the closing of post offices and moving their activities into grocery stores and corner shops after 2008. The development occurred similar in time to the surge in e-commerce in recent years, causing grocery and corner shops to work double as both post office (with activities of sending and receiving parcels) and selling food or similar. Many CDP's in Sweden need to handle large amounts of parcels during special sales periods, such as Christmas, and many CDP's become inefficient because of space or staffing constraints. Some CDP's get such large amounts of parcels that they cannot receive all of them at the same time, until customers have collected some of parcels and freed up storage space. This leads to the need for more staff during these peak periods which the payment model doesn't support, i.e. CDP operators make less profit during these peaks (SVD, 2017).

In Sweden, one of the most common CDP's are grocery retailers, one of the larger being the grocery chain ICA. Due to the high workload and space requirement caused by the parcels, one starts to see trends of ICA and other retailers turning down the opportunity to offer CDP services (mitti.se, 2017; dn.se, 2019).

In Sweden and other countries which have a similar system of CDP's there is a unique situation regarding trip chaining, giving customers the opportunity to combine shopping and parcel pick up, that might not exist in other countries to the same extent, as well as unique pressures on the CDP's. It is therefore valuable to increase the knowledge regarding these CDP's, especially since e-commerce is dramatically pushing the needs for development in this area. One argument in favour of CDP's is that they provide a convenient solution for customers and shippers alike, reducing trips on both ends (McLeod, Cherrett, 2009).

An argument against them are that it creates unnecessary trips to these CDP's, compared to customers' own mailbox (Nobat & Omar, 2016).

Previous research shows many positive effects on both trip distances and greenhouse gas emissions from using CDP's compared to home deliveries, also known as point-to-point (McLeod, Cherret & Song, 2006; Punakivi, Yrjölä & Holmström, 2001).

Together with the vast existing network for parcels, it is reasonable to believe that the CDP is a concept that is here to stay in Sweden, at least for the foreseeable future. To make sure this system, and its associated upsides, works there are several pieces that must fit together, the most important ones being a network of the physical CDP's and customers willing to use them. Previous research in the field of city- and urban logistics tend to focus on the effects of different measures, for example implementing CDP solutions compared to home deliveries on dimensions such as costs, distance driven and greenhouse gas (GHG) emissions. Another focal point is how to optimize the networks to reduce the distance, while a third is the customers' attitudes towards CDP's. The studies in these areas tend to focus on large metropolitan areas, such as major European capitals. Little attention has been given to the situation in smaller cities, which have different characteristics than the mega cities of the world. The same lack of attention exists regarding qualitative analysis from the actual CDP's themselves in the smaller setting. This dissertation aims at filling this gap by providing qualitative analysis useful to improve the CDP network in small European urban areas.

The authors of this dissertation believes this knowledge is important for both carriers and CDP operators in the future, because carriers needs to invest substantially in their network in the proper way to make them an attractive option for their customers, while CDP operators simultaneously must work towards choosing carriers who can deliver their customer's products to them in a successfully, reliable and efficient way.

1.1 New developments in last mile deliveries

Many new developments for the CDP's are currently in the making. From an interview with a business developer at a large carrier there are several issues being considered at this point in time, amongst them the predicted increase of parcels and where the CDP is likely to fit in the future delivery network.

For example, a CDP in the future may be an unstaffed, brand neutral, locker under your house, making all home deliveries a success, thus reducing the strain on, or even need of, existing CDP's. It may have more sophisticated return services, such as Leveriet (Leveriet, 2019), where you may try your recently delivered clothes and return them at the same time with the help of the staff. However, in the nearest future the CDP is, according to this carrier, the main way of receiving parcels. In the longer term, the increased volume of parcels is likely to make these new ways of collecting parcels more profitable, making the current CDP one of many ways to receive items in the future.

When online shopping increases in volume, the network of CDP's must grow with it, to decrease last mile bottlenecks. It becomes increasingly important for carriers to attract and keep a large network of CDP's, both in terms of geographical reach and volume (either in number of points or in the size of them).

1.2 Problem description and analysis

The problem with the current parcel delivery system in Gothenburg is that the demand is increasing at a rate where it will be difficult to keep a high service level in the last mile delivery system going into the future. Currently, the urban parcel delivery system is the bottleneck of e-commerce, i.e. the last mile delivery. Stakeholders are requesting more in terms of flexibility, speed and reliability when ordering online. Many companies start to compete with each other, offering the same service, where the differences between them becomes clear in the last mile delivery because of the growing bottle neck (Zhang, Matteis, Thaller & Liedtke, 2018). Building a sustainable competitive advantage is one of the things that retailers strive for, but it can be difficult to achieve. A competitive advantage is sustainable only if the advantage is difficult to imitate by competitors. (Levy, Weitz & Jacullo, 2012). More successful last mile deliveries might be one of these competitive advantages.

From an informant interview with a Business Development Manager from Postnord it seems that increasing the amount of CDP's at the same rate as demand will be difficult. A swede has an average 1000 meter to a CDP throughout the country (Trafikanalys, 2017). To make the current network keep up with the increasing volume of parcels the individual CDP's must increase in size, or the number of CDP's must increase drastically.

It was suggested increase to one every 500 meters, according to the Business Development Manager. When the number increases there is a risk that each CDP gets too few parcels for it to be worth the investment, while some still gets too many to be efficient because demand may be spatially uneven. There might be too many too close to each other, leading to confusion for the delivery driver as well as customer collecting their parcels.

Too many CDP's close to each other also reduces the consolidation benefits. A stop on every corner is similar to individual home deliveries from the carriers perspective, while the customer may have to go to many CDP's because of different carriers, thus reducing the satisfaction and possibilities of efficient trip chaining, according to the Business Development Manager. This raises the potential question whether CDP's may be going through a shift.

1.3 Purpose

The purpose of this dissertation is to identify the main reasons for operating a CDP in Gothenburg, Sweden. Therefore, the research question becomes the following:

RQ: What are the main reasons for operating a CDP?

To the author's knowledge, the rationale behind opening a CDP specifically is scarcely researched. The situation in Sweden with its special characteristics, such as strong CDP presence and high IT usage amongst the population, makes for a suitable geographical area to focus on. Gothenburg is one of the major metropolitan areas in the nation, where many customers are clustered in a relatively small area, providing a large sample of eligible CDP's within a small radius.

This knowledge is important for practitioners at the carrier level when recruiting, offering incentives to, and retaining their CDP's. That being said, this knowledge could potentially already exist within different carriers' organizations, but is generally obtained as part of a business transaction, such as pitch or negotiation. The information is most likely biased as a consequence of this, according to interviewed practitioners. To identify the main reasons for operating a CDP, five sub questions was formulated which are to be investigated by interviews:

SQ1: Is a reason to become a CDP to get customers into the store?

SQ2: Is a reason to become a CDP to make an effort to improve the environment?

SQ3: Is a reason to become a CDP to make profit from the parcels?

SQ4: Is a reason to become a CDP to utilize excess space in the store?

SQ5: Is a reason to become a CDP to decrease the volatility of income?

1.4 Scope

This dissertation is about the parcel distribution, by use of staffed CDP's, as defined in Chapter 2. No special consideration has been taken to unstaffed CDP's, aka lockers, because of the special set of conditions and rules that apply to those solutions and not to staffed ones. The geographical area that is used for data collection is Gothenburg, Sweden, because of the areas special characteristics, i.e size and spatial division between crowded and deserted neighbourhoods. For example, Gothenburg was considered to have a sufficient amount of CDP's to be able to reach a large enough sample. Expanding the geographical area, thus travelling to a comparable city in another part of the country, was therefore excluded because the results were not expected to be different.

The second reason all interviews were conducted inside the city was because of the difficulties to schedule interviews with corner shops. These shops did not have staff to spare for scheduled interviews, making scheduling virtually impossible and traveling to these places in hope of an interview an inefficient endeavour. The sample was restricted to people actively handling the parcels on a daily basis or those with knowledge of how it is conducted. In stores, with many employees and managers, an interview was requested with someone with knowledge of the parcel handling, therefore it was assumed that the respondent had this knowledge regardless if the interview ultimately was with a manager or employee.

In addition, the sample was restricted in its size by the information that was received. Information saturation, i.e. the respondents answered the same and no new information was gathered, were reached during the seventh interview. Therefore, a sample of 10 was deemed enough to yield enough information to draw informed conclusions.

1.5 Structure of the dissertation

This dissertation is structured as follows; the second chapter contains a literature review within the field of CDP's and logistics as well as a theoretical framework on which the analysis will be performed; the chapter part is an elaboration of the chosen methods which is explained and motivated, the fourth chapter presents the gathered results, while the fifth discusses these results and their implications, followed by a discussion and finally some concluding remarks.

2. Literature review

This chapter covers the literature regarding the role of CDP's in e-commerce. The first part of this chapter introduces the definition of a CDP from carrier's perspective and a definition of city logistics. The second part of this chapter explains the effects of CDP's. The third covers the optimal implementation of CDP's, while the fourth part covers customers' attitudes towards CDP's.

According to Ejvegård (2009) it is crucial to have established a solid theoretical background to build a strong foundation for a thesis. A solid theoretical background means that theories are confirmed from several different sources which confirms or contradicts theories (Ejvegård, 2009). Backman (2008) agrees with Ejvegård and mean that it is crucial to know what has been done within an area before studying a subject within that area. Finally, it is important to critically question sources validity (Backman, 2008).

2.1 Definitions and literature areas

Weltevreden, (2008), defines a collection and delivery point as a place where customers may collect and send parcels. These could be unattended, such as a row of lockers, or attended where a clerk gives the customer the parcel. An attended one is sometimes referred to as a service point, this view is shared by Xu, Hong and Li (2011).

Wang & Lan (2015) divides it into five kinds of strategies for CDP's: the convenience store chain mode, intelligent box mode, "scattered little stores" mode, self-run store mode and express service point mode, all with their pros and cons. The convenience store chain mode has good locations but limited space. The intelligent box mode uses flexible automated boxes, with the drawback of high investment costs. Scattered little stores uses pet shops and similar with the advantage of numerous possible partners, but with uneven service levels. Self-run store mode comes with higher service levels but higher costs. The last one is express service point mode where customers pick up their parcels from transport companies' terminals.

The carrier DB Schenker describes their CDP's as a kiosk, grocery store or similar with generous opening hours where the customer can collect their parcel. It is described as especially suited for e-commerce companies.

These CDP's can manage parcels of up to 20kg and the customer gets notified by DB Schenker when the parcel is ready for pickup (DB Schenker, 2017). Similarly, a CDP, according to Postnord (2018), is a designated point where you can not only send and receive parcels, but also buy stamps, send letters and similar. Bring, yet another freight company, describes it as a location where the customer may pick up their parcel either from a locker or from an employee of the store (Bring, 2019).

There seems to be a consensus regarding the function and definition of a CDP, i.e. a place where one may receive and send parcels instead of receiving them at home. In practice it is usually some kind of store with a special counter, suited for the weight of heavy parcels, in connection to a storage area, where customers pick up and send parcels similar to a postal office.

Although it seems straightforward, other definitions do exist and might capture the definition in the future. One of them evolves from the strategic partners that are on the rise. For example, a food delivery company and an electronic retailer in Sweden are, since a few years, collaborating in terms of deliveries. While you are on the internet, browsing for groceries, why not add that lamp that you have forgotten to buy for several weeks and have it delivered in the same bags as your groceries. A quote from a well-established podcast in Sweden, Logistikpodden, elaborates on what a future CDP might be:

“It feels like there will be many new roles. What is a CDP? Maybe the grocery bag is a CDP in the future” - Arnäs, (2019)

The definition used in the research in this dissertation is the former that is customary in the industry, a place where a customer collects and sends parcels.

The existing research on the topic of home deliveries and collection and delivery points (CDP's) has three main topic areas or themes; effects from using CDP's, attitudes towards the concept and how to optimize their implementation. Several literature studies has been conducted on the topic of city logistics and last mile issues, one of them are Cardenas, Borbon-Galvez, Verlinden, Van de Voorde, Vanelslander & Dewulf (2017) who outlines the differences in scope between the interrelated and previously interchangeable topics of city logistics, urban goods distribution and last mile delivery, see Figure 1.

City logistics is described as an umbrella term for the research regarding modelling routes and networks, as well as research regarding public policies and decision-making affecting the city as a unit and the inhabitants in it. An emphasis is placed on improving the inhabitant's quality of life. Cardenas et. al., describes city logistics like this

"[...] city logistics attempts to manage the relations within the movement of goods inside the city and its inhabitants pursuing a better quality of life for them "- Cardenas et. al., (2017) p. 25

Urban goods distribution is described as concerned with locations of logistics facilities, modal choice, externalities such as noise pollution, and policies. One of the problems in this field is the lack of standardised units and methods for collecting data (ibid.).

Last mile delivery is described as the final leg of a transportation journey and the field is increasingly operational in its scope compared to city logistics and urban goods distribution. Focus is on routing, fuel costs, capacity planning, delivery windows and vehicle choices (ibid.)



Figure 1: Terminology of city logistics. Adapted from Cardenas et. al., (2017)

Pålsson, Petterson Winslott Hiselius (2017) investigated the literature regarding e-commerce and energy expenditure and found that e-commerce, including special buildings and extra packaging related to shipping, seem to be beneficial for the environment compared to regular shopping.

Finally, Melacini, Perotti, Rasini, & Tappia, (2018) identified a lack of research in strategies for omnichannel retailing, how stores and e-commerce could be used together to improve business models.

2.2 Effects of CDP's

CDP's can have different effects and one of the themes are the effect that CDP's have on costs, emission of greenhouse gases and time. For example, Punakivi, Yrjölä & Holmström (2001) examined the effects of locker banks and individual lockers attached to customer's homes, a type of CDP, and concluded that from an economic standpoint this was a feasible option to improve the last mile deliveries.

The costs could be reduced by approximately 60% compared to traditional home deliveries. Punakivi and Tanskanen (2002) later found that the costs of these solution could be earned back in a period of between one and two years.

McLeod, Cherret & Song (2006) investigated the effects CDP solutions might have on the vehicle miles and found that these were reduced by up to 80 percent, although in a limited area of the UK. McLeod and Cherret (2009) revisited the CDP solution, this time modelling a solution where the CDP was located in a train station. The savings in vehicle miles was found to be closer to 30% this time, with a 20% reduction in greenhouse gas emissions. Song, Cherret & Guan (2011) confirmed these results in a larger study including attended CDP's such as collecting a parcel from a convenience store. Another result from their study was that the current CDP networks are designed to handle relatively small and few parcels. If CDP's would become the norm for deliveries, then CDP's would likely experience other issues such as capacity constraints, congestion etc. Despite that, Song, et. al. (2011) still suggests that CDP's could be an important role in the future of e-retailing. A similar study was conducted by Dell'Amico and Hadjidimitriou (2012), this time in France, which also got similar results of improved delivery efficiency and less greenhouse gas emissions.

Durand and Gonzalez-Feliu (2012) took the route of using computer simulations, comparing scenarios of modes of grocery shopping. After the simulations, it was concluded that between in-store picking and delivering, warehouse-picking and delivering and warehouse-picking and delivering to a CDP, the two second scenarios has the least negative impact on emissions and miles travelled, because of the possibilities to optimize these routes and operations.

Similar results were found by Brown and Guiffrida (2014) and Nabot and Omar (2016) who ran simulations and statistical analysis and focusing on a real case scenario of Jordan, respectively. In both these cases, the savings, with regards to emissions of greenhouse gases, were found to be substantial when replacing individual car trips with optimized home deliveries.

Boyer, Prud'homme & Chung (2009) also used computer simulations to conclude that the main determinants of delivery efficiency, thus affecting vehicle miles and costs, are customer density and the length of delivery windows. Further investigations have been conducted by Wygonik, Erica, Goodchild & Anne (2016). Their paper covers how design of delivery service and the urban form, in which it operates, impacts the performance of miles travelled and CO₂, NO_x, and PM₁₀ emissions. The study provided information about the relationship of land use and the dependent variables used: CO₂, NO_x, and PM₁₀ emissions. One conclusion shown was that increased road density or decreased distance to the warehouse reduces the impacts of the dependent variables. Another conclusion was that last mile goods movement relying on delivery services resulted in the lowest generation of CO₂ per customer, however not in road dense locations.

There are also effects on the actual stores that operates as a CDP. Weltevreden (2008) found, with interviews of carriers and CDP's, that there is a certain level of commission involved in handling a parcel for a carrier. In 2008, in the Netherlands, he found that the commission was around 0,2 euros. It was also found that the average customer entering a CDP to collect a parcel spent around 12 euros in the store. Morganti, Dablanç & Fortin (2014) found that in 2014, the commission had gone up to 0,5 euros on average, this time in France. It was also found that the commission only one of the reasons for operating a CDP, the other one being to increase customer traffic (ibid).

2.3 Optimal implementation of CDP's

Regarding the optimal implementation of CDP's and different kinds of delivery boxes there have been several studies as well, many of which in later years uses simulations instead of empirical data. As for empirical data, Weltevreden (2008) found that, in the Netherlands, the public postal companies operated CDP's in rural areas while the private sector operated in the urban areas, using grocery stores and convenience stores respectively.

In the same article a correlation between income, frequency of online shopping, proximity to a CDP and usage of a CDP was found. Morganti et. al. (2014) had similar results, with the main conclusion that a CDP should be close to a train station, at least in France where the study was conducted. They also found that one of the obstacles for implementations were of an economic nature, i.e. high property prices. The prices create problems for the kiosks operating the CDP's because of the need of storage space for all the parcels, parcels that does not economically justify its own rent. The optimal flow of 10-30 parcels/CDP/day, which was found to be exceeded during peaks, also posed a problem.

A study by Andriankaja (2012) investigated the links between location of parcels services and their clients in Paris. The findings, according to her paper, shows significant clustering of logistics facilities outside of Paris. The optimal solution would be to have them closer to the city centre. However, because of the high property prices it is still more cost efficient to have them outside the city than inside, an effect known as logistics sprawl. A final notice from the study is that environmental aspects are left out of the equation and could potentially change the picture.

Many cities around the world have complex problems when it comes to dealing with city logistics. Ruesch, Hegi, Haefeli, Matti, Schultz & Rüttsche (2012) looked into urban freight transport and development of conurbations in Switzerland and developed conclusions to improve urban freight transports. For example, they argue that land use in highly populated cities must better integrate freight and logistics infrastructure and that awareness must be raised amongst relevant actors. There is a need for cooperation, with input from both private actors and the public, to develop strategies to give freight a significant role in cities compared to the one of public transport of passengers.

Xiao, Wang, Lenzer & Sun (2017) conducted a study, interviewing representatives of businesses, regarding the developments in the city of Shenzhen, China. Their conclusions pointed in a similar direction as the majority of literature that is reviewed, that CDP's in all its forms becomes more frequent because of changing customer demands. Zenezini, Lagorio, Pino, Marco & Golini (2018) also conducted interviews with actors in the delivery sector in Italy, to understand why the logistics system is the way it is. It was found that the use of locker banks or individual lockers is not feasible at this point because of the many legal and administrative obstacles connected to locker banks in public spaces.

They also found that their sample value the personal contact one gets through a home delivery, which speaks to the lockers' disadvantage. In a more technical vein, Deutsch and Golany (2018) simulated the situation for parcel lockers in Toronto, Canada, and came up with the optimal number of 65 locker facilities, which gives a sense of the investment needed to run one of these systems profitable.

Much of the existing literature regarding CDP's focuses on alternative measures, to reduce the impact of last mile deliveries and consequently reduce the negative aspects of them. A study by Carotenuto, Gastaldi, Giordani, Rossi, Rabachin & Salvatore (2018) with focus on last mile delivery examines the pros and cons of point-to-point delivery and lockers. The study also concludes where to best position lockers in order to minimize consumer's deviations when collecting their goods. By applying a heuristic method, it was found that travel distance fell by about a quarter and travel time was cut in half when using lockers compared to point-to-point distribution. In case of externalities, the study also reports a reduction of more than 21% in CO₂ emissions in the locker scenario, even though the end consumers CO₂ emissions never were included in the calculation.

Interestingly enough, there seems to be a consensus amongst scholars of the positive applications for CDP's, whereas Zenezini et. al. (2018) points out the many obstacles of a successful implementation, such as legal obstacles and investments. This discrepancy highlights the difficulties to align the optimal solutions with the reality of practitioners.

2.4 Customers' attitudes towards CDP's

The third theme is the customers' attitude towards CDP solutions, such as locker banks and pickup points. The green and social delivery report made by B2C Europe (2018) found that there is a lack of knowledge amongst consumers regarding the environmental impact and delivery of a shipment. For example, 58% of consumers in their sample had no idea that express delivery had a higher environmental impact than a standard delivery. Simultaneously, they also report that when consumers are informed about the negative impacts of deliveries, they are immediately willing to choose more sustainable alternatives. This could indicate that consumers seem to be poorly informed regarding this area.

Moroz and Polkowski (2016) found, in a survey of Polish millennials, that the main reasons for using locker solutions were price and convenience. The same was found by Ghajargar, Zenezini & Montanaro (2016) who surveyed university students in Italy.

Oliveira, Morganti, Dablanc & Oliveira (2017) conducted a survey in Brazil, consisting of a number of bundles that the sample would rank in order of preference.

The final result of this exercise was that, for this sample, in Brazil home delivery was the most preferred solution, while the most important factors was the amount of flexibility in delivery windows. For an increase in these two factors they were prepared to pay extra, which suggests that locker or CDP solutions might be a more common solution in the future.

In a similar style, Colla and Lapoule (2012) conducted research on the success factors when developing a click and collect system for grocery stores, identifying several of them from the customer's point of view such as convenience and price. As retailing becomes more and more digitized, consumers are starting to do more and more purchases over the internet.

As the deliveries increase, so does the interest of finding a sustainable last mile delivery solution. Buldeo Rai, Verlinde & Macharis (2018) found that consumers in Belgium, tend to care about environmental aspects related to reduce vehicle km. For example, they found that 44.6% of their sample are ready to wait longer if less vehicle kms are driven, and 56.2% said that they are willing to collect parcels in CDP if less vehicle kms are driven. When it comes to incentives to pay, their sample also found that people are not interested in paying extra for delivery with a sustainable vehicle (57.1%) and not willing to pay extra for delivery with a cargo bicycle. However, their sample included many answers which were neutral, and this could be an indication that consumers tend to be of low interest and/or have low knowledge about sustainability in last mile delivery.

Another qualitative study was made by Abbad, Abbad & Saleh (2011) who used a questionnaire approach to examine the various barriers and limitations of e-commerce in Jordan. Six possible barriers were investigated: security and trust, internet experience, enjoyment, language, legal issue, technology acceptance. The study found that, at the time, the greatest barrier was non-technical, that participants in the study were likely to be unaware of the possible technical issues, suggesting that e-commerce will rise in this part of the world too.

2.5 Summary and discussion of literature review

These four themes paint a picture where many scholars have paid attention to issues associated with the implications of increased amount of CDP's, where to place them, minimizing distances and how it affects decision making, and finally attitudes towards them. A consensus appears to exist regarding the benefits of CDP's, compared to separate home deliveries. Despite this, some researchers suggest that the CDP's causes extra trips to these places, thus offsetting the environmental benefits. Other authors also suggested that home deliveries are more beneficial, if they are optimized. The remaining question is how feasible an optimized route is in practice and how product returns would be included in this.

The environment and route optimization aside, the customers' attitudes are another important part of the puzzle. The literature suggests that most customers are more concerned with convenience and price than the environment, where some customers consider the personal interaction with a delivery-person as part of the convenience. The studies that found the personal contact important were conducted in areas different from Sweden in one important way - people at home during the day. In Italy and Brazil, the sample had someone present in the home, ready to receive a parcel. Receiving a parcel when you are at home will always be more convenient than going outside to collect it. The concept of convenience is likely to be different in a multi-income household, where the inhabitants are absent during the day. The conclusion that might be drawn is that the CDP solution must be constructed in a way that is both cheaper and more convenient or marketed as environmentally friendly enough to offset any inconvenience for the end customer. It is also likely that the attitudes will change as the work pattern of households change. The knowledge about where to locate the CDP's might help to improve the convenience.

Previous research agrees on where to place these CDP's, in public transport hubs and where people are already moving around. What is not researched is how these networks could be constructed in areas with a spatial division between work and residential areas. In a megacity, such as Paris, a large proportion of customers goes through the public transport hubs, making it reasonable to put CDP's close to these. In other areas, where public transport is less dominant as a tool for commuting, might require other locations. This does not seem to be researched. Computer simulations are commonly used to research these issues and have their merits, but a lack of empirical data from real experiments exists.

Most relevant to this dissertation is the literature regarding the incentives for operating a CDP, namely Weltevreden (2008) and Morganti, et. al. (2014). These articles states that the main incentives offered to CDP's are a commission and the possibility to increase customer traffic. It is stated independently of each other in different countries and with half a decade between them, making it relevant for the analysis later in this dissertation.

All in all, to the best of the author's knowledge, the area of urban logistics and CDP's are well researched in large urban areas, while the implications for smaller ones are being overlooked.

3. Method

In this chapter there will be an explanation and motivation for the chosen method, as well as motivation for not choosing alternative methods. This chapter also includes detailed steps in how the study was performed and what different type of research paradigms that exist. Finally, the reliability, validity and generalizability of this research is covered.

3.1 Research paradigm

There are several different research paradigms that could be used to conduct a study and to answer the research question of this dissertation. Collis and Hussey (2013) identifies two main paradigms as end points on a sliding scale; positivism and interpretivism. These two paradigms, or approaches if you will, are connected to the type of data that is needed as well as methodological choices. A research paradigm is also a philosophical construct of how the researcher sees the world and the topic of investigation. Choosing an appropriate method for a study requires the researcher to think about the context, own perceptions and what goals should be reached, different goals and questions are appropriate for different methods.

Below follows a brief introduction of the three major research paradigms, with their main characteristics, critique and when they are to be used. Subsequently follows a discussion of how the research paradigm was identified and influenced the methodological choices for this dissertation.

Positivism

Positivism is the natural choice when one considers the topic of investigation unaffected by the researcher. The paradigm considers the world driven by natural laws and causal relationships, which are assumed in theory and then proven right by data or experiments (Collis & Hussey, 2013). For example, water boils at the same temperature, regardless if the researcher watches the water during the process or if the researcher is in the next room. Therefore, this paradigm is well suited for natural sciences, where hypotheses are proven true by experiments and large sets of data and observations. These large datasets are usually expressed in numerical values, suitable for statistical testing for relationships and causal effects, and are thusly called *quantitative data* (ibid).

This kind of research also aims for revealing the truth about the topic being investigated, with a focus on removing bias, having a representative sample and asking questions without influencing the answers. It commonly uses experiments, surveys and time series to draw conclusions from a sample that may be generalized to a larger population (ibid).

Collis and Hussey (2013) continue to describe the critique against this paradigm, much of which regards its applicability to the social sciences. For example, the critics say that many events or subjects are impossible to investigate without affecting the subject itself. An example of this would be to sit in a room and take notes of what is happening, it is likely that the behaviour is different than it would have been otherwise, often referred to as the Hawthorne effect (Frey, 2018). Collis and Hussey (2013) point out several other weak points in this paradigm, such as the difficulty of having completely unbiased researchers, too strict research designs that may miss other relevant findings and the difficulties related to express some findings with numerical values.

Interpretivism

Interpretivism is on the opposite side of the research paradigm spectrum (ibid). One way of explaining interpretivism is that it is everything that is not positivism. Another way is that this kind of research has the goal of explaining *why*, instead of *how* or *how often*. When the goal is to explain *why* it cannot always be expressed numerically and existing theories may not be tested, so one needs qualitative data such as interviews (ibid). The research paradigm then becomes interpretivism. One of the major differences is that the subject changes when it starts to be observed, for example the previously mentioned worker or student in a room being watched.

Because the researcher is interested in the *why*, the subject must be allowed to elaborate on the answers, making the data collection more time consuming per observation than a positivistic data collection. Interpretivistic data, qualitative data, is then richer in its content but smaller in its sample (ibid). The upside of this is the possibility to use the data for generating theories, rather than testing them. It also creates results that are relevant to what is being investigated to a high degree but might not be aggregated to be representative of a larger population (ibid). Table 1 shows a summary.

Positivism	Interpretivism
Larger samples	Smaller samples
Artificial locations, e.g. labs	Natural locations, e.g. observations in real life
Tests hypothesis	Generates theories
Gives quantitative data	Gives qualitative data
High reliability, low validity	Low reliability, high validity
Results can be generalized to larger populations	Results can be generalized to similar settings

Table 1: Positivism and interpretivism. Adapted from Collis and Hussey (2013) p. 50

Pragmatism

As a middle ground, between these two end points is the pragmatic view that one may take. Research in the pragmatic tradition lets the research question guide the methodological choices, to choose the one most suitable to answer it (ibid). An example of a pragmatic research might be a combination of quantitative and qualitative data, or time series of qualitative interviews.

Reliability

Collis and Hussey (2013) defines reliability, in the setting of scientific writing as follows:

“Reliability refers to the accuracy and precision of the measurement and absence of differences in the results if the research were repeated.” - Collis and Hussey (2013), p.52

This means that a dissertation, or method, with a high reliability is one where the results are likely to be the same if the same method is followed as in the original dissertation. To achieve a high reliability, it is therefore important to show all the steps of the research and to discuss sampling techniques etc. A dissertation with low reliability is one where the results are unlikely to be replicated. One reason this may be the case is if the setting or event is unique or difficult to replicate in itself. Low reliability may call the results and outcomes of the study into question.

This dissertation strives towards a high reliability, the event that is being researched is easily accessible and the methodology is not one with a high level of complexity. To increase the reliability a research methodology with high transparency was chosen, for the same reasons it was decided to provide the full information about all steps during the research process as well as all the data. This is helpful if anyone was to replicate this research again in another place or time.

Validity

“Validity is the extent to which a test measures what the researcher wants it to measure and the results reflect the phenomena under study.” - Collis and Hussey (2013), p. 53

The validity of this dissertation is to be considered high, because the respondents were asked the research question point blank. Therefore, it is assumed that the answers from the interview will help to answer this question and fulfil the purpose of the study. One critique that is possible to have against the results in this study is that some of the respondents did not fully understand the questions, did not care enough about the survey to elaborate or did not have the full information required to give the best possible answer. If true, this would reduce the validity of the results. However, it is assumed that both managers and employees share information with each other, so that employees have a basic grasp of the direction of the business and managers have knowledge of what happens in all aspects of the business. The sample is also consisting of managers who also conduct the day-to-day operations, which provides them with the hands-on knowledge managers may otherwise lack.

Generalizability

“Generalizability is the extent to which the research findings (often based on a sample) can be extended to other cases (often a population) or to other settings”. Collis & Hussey, (2013), p. 54

For this research, the assumption is that the findings are to be similar when conducted in similar circumstances, meaning that the results yielded in Gothenburg is applicable to cities of comparable size such as Malmö. The reason behind this assumption is that the conditions for doing business, such as legal requirements, taxes, salaries etc., are roughly the same, meaning that the underlying reasons should be that as well.

Tax rates differs slightly between regions of the country, so does the salary level, but still, nationwide regulations on salaries, working hours, labour conditions and to some extent rent and noise regulations exists. These regulations are making the conditions rather similar.

The actors involved, at least on the carrier side, are also the same throughout the country and in some cases the world so the incentives given by these would also be similar. It is not believed that business-owners in different parts of the country will act differently, just based on their geographical location. That way, the results will bring insights that may prove useful in more settings than the one investigated in this dissertation.

Discussion of research paradigm

This dissertation could use several different approaches and research paradigms. The question about why one would become a CDP could be answered by creating a set of hypothesis, which would be tested by the use of quantitative survey data. Two major issues were found with this approach, sample and hypotheses. As for the sample it would need to be relatively large to yield robust results that could successfully be statistically tested. It would also need to be either random or representative of the population of CDP's as a whole. As for being representative, the number of CDP's in Sweden and Gothenburg is constantly changing, thus making a properly representative sample an exercise in statistics possibly worthy of a dissertation in itself, without necessarily yielding more interesting results. For the hypotheses it goes back to the critique of the positivist paradigm, that the results are limited by the researchers own beliefs of the underlying reasons which in turn creates the hypotheses. The reasons that would be tested with this quantitative approach would be derived from the literature review but at the same time limit the results to just these, excluding the possibility of new findings - a possibility the authors wanted to keep open.

On the other side of the spectrum is the interpretivist approach, with the possibility of in-depth interviews with a few operators. This would yield deeper insights into the reasoning behind the choice to start and to continue operating a CDP. At the same time this approach would limit the number of respondents, because of time constraints and limited access to respondents, and limit the generalizability to only those with similar characteristics.

Because the authors goal was to gain insights that might be both useful to practitioners and academia the possibility to draw conclusions about a larger population had to exist, as well as the possibility to find new motivations.

For this reason, the choice fell on semi-structured interviews with an additional quantitative component. This pragmatic paradigm is guided by the research question and purpose of the dissertation, thus have the benefits of both paradigms. The semi-structured interviews take less time to conduct per interview than unstructured ones, thus making it possible to collect a larger number of observations. It also reduces the need for interview scheduling, thus increasing the number of respondents that are willing to participate. By taking this approach the sample size is increased and with it the generalizability and keeping the opportunity for the respondents to add new answers the authors had not included in the questionnaire.

As for the quantitative component of the research it gives the opportunity to create a solid numerical benchmark that might be compared to other areas or time periods, which increases the possibility to apply the same method to other comparable samples. This could have been done with only quantitative methods, but a dissertation with only this part would miss the goal of the research question.

In short, this dissertation uses the case-study method within a pragmatic interpretivist paradigm, which will be explained in detail below.

3.2 Regarding case studies

This study aims at filling the research gap with regards to CDP's and their motivations in Gothenburg, Sweden. For this report a case study methodology has been chosen, using the guidelines set up by Eisenhardt and Graebner (2007). A case study methodology aims at answering *how* and *why*, using several approaches - of which semi-structured interviews are a common method, trying to highlight extreme situations instead of patterns, reducing the need for representative samples since it is not the aim of the study (ibid). Ketokivi and Choi (2014) also elaborates on the merits of the case study as a research method, highlighting the need to fulfil the *duality criterion* i.e. the need to focus on a specific situation but at the same time have results that may be generalized.

Ketokivi and Choi (2014) also describes the three ways case studies can be used, namely for theory generation, theory testing and theory elaboration.

Theory generation is when you generate a new theory based on your findings, testing is to test if another theory is applicable to a specific case, while theory elaboration tries to combine existing theories to explain the findings within the case.

At the same time, the case study, as it appears within the field of logistics has been criticised. One example of this is the literature study made by Pedrosa, Näslund & Jasmand (2012). They surveyed case studies published in peer reviewed journals and found that a large majority had problems with the description of the process, for example how the case has been chosen or the coding of interview answers. For that reason, they conclude that the case study as a method need an increased transparency regarding the steps taken, to increase the ability to replicate the research.

3.3 Research approach

Semi-structured interviews

This dissertation has the goal of elaborating on existing theories and will rely upon a case study approach, considering that urban freight data is difficult to obtain (Ambrosini & Routhier, 2004). An overview of the process is presented below in Figure 2.

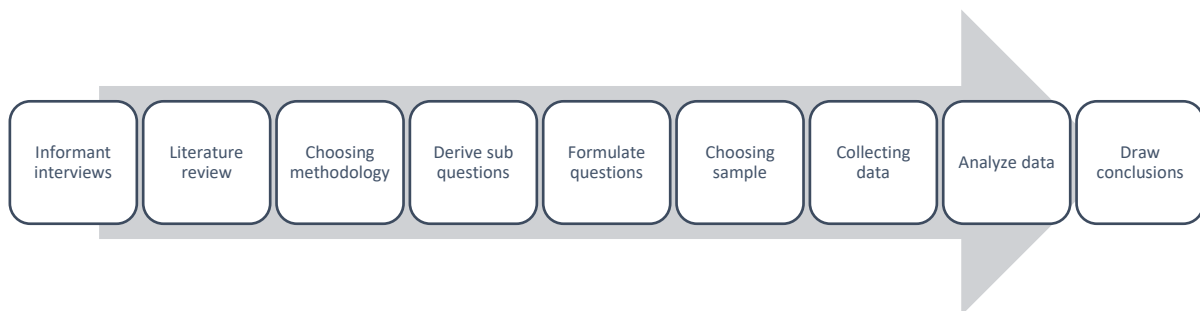


Figure 2: Description of the research process

The research will use semi-structured interviews with managers and employees of CDP's, as is customary with case studies. In addition to this, a Business Development Manager at Postnord, one of the larger carriers, was interviewed and provided insight into the current state of CDP's and its associated problems.

As a consequence, questions one through seven in Appendix B were specifically added as per requested from this carrier. All interviews were conducted during the spring of 2019. The CDP's were identified using the online registry from the postal company Postnord and subsequently cross-referenced with the corresponding registry from the carriers DHL and DB Schenker. By comparing the names and locations of CDP's in the three lists it was possible to identify both CDP's that are only collaborating with Postnord and those who collaborates with more than one carrier.

The first step was to perform a pilot study with two randomized CDP's, one each from the two types of CDP's i.e. single and multi-carrier CDP's. These interviews were relaxed in their structure, with broad open-ended questions followed by discussions, aiming at increasing the knowledge about potential problems and the current state of operating a CDP. The questions are found in Appendix A and were derived in correspondence with the supervisor for this dissertation. Several topics suited for further investigation were identified, amongst them the potential problems of overlapping IT systems, poor delivery scheduling and the effects of seasonal events. From these interviews, it was decided to focus on investigating the factors most important to attract and retain a CDP, as seen from the CDP's view, instead of, for example, investigating how to set up the optimal IT system or how to improve delivery scheduling.

The results of these interviews evolved into the question this dissertation aims at answering, namely which factors are most important for CDP operators when deciding to be and stay a CDP. Once a direction of investigation had been established a literature review was conducted, from where question eight through 19 evolved. Later the method of conducting semi-structured was matched and identified as a common methodology. This approach was chosen since the most significant difference between structured and semi-structured interviews are that in structured interview the interviewer is not allowed to deviate from any of the questions whereas in semi-structured interviews the interviewer has freedom to elaborate further towards wherever the interviewee takes the conversation. The process of elaborating on questions was expected to generate more interesting results. Nevertheless, the literature review also provided insights in the previous research, helping to identify what is already known and to construct questions whose answers will add to the existing knowledge in the field.

Points Allocation Method

Considering that this area is relatively unexplored, especially to the context of Gothenburg, it was decided to include a Point Allocation (PA) method to complement the semi-structured interviews. The purpose is to increase the validity, reliability and precision of the findings. This is supported by Bryman and Bell (2011, p.28), cited "*the use of a mixed methods approach that combined quantitative and qualitative research enable a more rounded and complete picture to be drawn.*" Through the literature review and informant interviews different factors for a well-functioning CDP was identified.

These factors were the same as the ones used to construct the interview questions, the different options in the PA questionnaire are therefore based on the expected answers from the interviews. For this reason, the available options in the PA questionnaire are slightly different from the interview questions in how they are formulated. The reason for choosing this route was to give the respondents a chance to answer questions in a quantitative and qualitative way, as well as rank their answers and options which is expected to generate more robust answers. The PA questionnaire was filled out by the individuals being interviewed, as a final part of the interview process.

The PA method is one where the respondent is given several factors, to allocate a fixed amount of points between the given factors. The sum cannot exceed the fixed amount of points. In this case the respondent was given 100 points to allocate between the factors, which can be found in Appendix B. By adding this extra step the respondents have the opportunity to rank different factors, a ranking that can be contrasted to the results of the interviews.

There are both advantages and disadvantages with the PA method. The advantage with this method is that it tends to produce non-linear results, giving a better chance to detect which option is most important. The disadvantage with this method is that it causes the respondent a lot of stress and throughout allocating points the respondent will have to re-evaluate how important each option is (Bottomley, Doyle & Green, 2000).

Deriving sub questions

The sub questions were derived by the use of two methods, informant interviews and the literature review in an interpretivistic fashion. The informant interviews, together making up the pilot study, were conducted with employees of CDP's and industry insiders. The reasoning for this being that these people know what works and what does not, why they do things the way they do.

The literature review provided knowledge of what has been done before, what knowledge exists and why these conclusions have been found. The previous research indicated several reasons to operate a CDP, which were found to be appropriate for study in this dissertation.

The first sub question tries to explain what the motivations are for operating a CDP. One aspect emphasized in both the pilot study, literature review and the informant interview was that cross-selling was important. Observing this factor, the decision was made to integrate this aspect and further investigate it by adding subqueries related to this relationship in the questionnaire. The second sub question was derived from the environmental aspects, mainly coming from the previous literature as an important benefit of the CDP concept. Additions to this process came from conversations with the manager at Postnord, especially as new and innovative last mile delivery solutions were brought up, which also had positive environmental aspects to it.

The third sub question was born from the results of the pilot study, i.e. informant interviews, that was performed. One specific CDP operated four different carriers and made a convincing case that they were, actually, making money directly from the parcels, contrary to the findings in previous literature. The compensation relative to goods, e.g. chocolate bars, was low, which motivated an investigation into this phenomenon and if it could be found in other CDP's as well.

The fourth sub question also emerged during the pilot study, when it was observed that little or close to no leftover space existed in the stores. It was further developed and discussed during the interviews of the pilot study as an increasing problem.

The last, fifth, sub question also evolved from the pilot studies, as one of the CDP's claimed to be experiencing an increased stability in the cash flow due to operating parcels.

A total of five sub questions were developed which were to be answered through the questionnaire. The sub question can be found in Chapter 1.3 and throughout the Chapter 4. In addition to the five sub questions another set of queries to each sub question was developed. Asking these different questions was believed to generate a broad and clear picture of the operator's opinions, without running the risk of getting biased answers by asking directly out (i.e what they are "supposed" to say). This tactic also opened the opportunity for the respondents to answer freely and generate answers that would otherwise ave been difficult to obtain.

Generating a sample

The previously generated list of CDP's were used to attempt to schedule interviews. At this stage, the CDP's lacking contact information, i.e. phone numbers, were removed from the list because of the difficulties in reaching them for scheduling purposes. It was also common that some of the phone numbers found as contact information was actually the phone number to the specific carrier that they operated for, these were also left out. Left were the CDP's with contact information, which was possible to reach with public transport within the city limits of Gothenburg. Attempts to schedule interviews were made and it soon became evident that scheduling is not something that corner shops are willing to do, because of lack of staff and workload of parcel deliveries.

Only two scheduled meetings were possible, one with a grocery store and one with a corner shop. The natural strategy, at that point, was to conduct a convenience sample of CDP's from the list, located in an area close to the scheduled interviews. It was assumed that if one CDP had the possibility to schedule a meeting at a certain time, because of lower workload, others might have time for an interview at a similar time. Because of this reason, the strategy became to simply go into the CDP and ask for an interview with someone who have knowledge of the parcels. With this strategy, only one out of 11 visited CDP's declined interviews, citing lack of time.

When information saturation was reached, the geographical area was expanded across the other side of the city (Göta Älv), to the Lindholmen area, in hope of receiving different information. This was, unfortunately, not the case.

Description of the sample

All of the observations were CDP operators for Postnord, with half of the sample acting as a CDP for more than one carrier. DB Schenker and DHL were the second most common carrier with four and UPS and Bring being the least common, details of which can be found in Appendix C.

The grocery stores had all opted for a Postnord-only strategy, while the small corner shops had opted for more than one carrier, most of whom delivered parcels for DHL and DB Schenker in addition to Postnord. Exception from this is Respondent 4, who only worked with Postnord.

Respondent 1 is an outlier in terms of business model, describing its business as a store that helps their customers with shipping, printing and mail services and do not conduct classic corner shop activities such as selling candy.

The corner shops mostly had the manager behind the counter, or accessible for interviews, leading to the manager being interviewed. The grocery stores, except for one, had no managers available for interviews so these were conducted with employees familiar with the CDP activities. It is natural that the answers are somewhat different, with the employees not having access to the same information regarding business decisions, but more knowledge of the day-to-day activities. Table 2 below provides a summary of the sample.

Summary of sample				
Respondents	Type	Manager/Employee	No. of carriers	Date
1	Other	Employee	2	13/3-19
2	Grocery store	Manager	1	13/3-19
3	Corner shop	Employee	4	14/3-19
4	Corner shop	Manager	1	14/3-19
5	Grocery store	Employee	1	14/3-19
6	Corner shop	Manager	4	14/3-19
7	Corner shop	Manager	3	15/3-19
8	Corner shop	Manager	3	15/3-19
9	Grocery store	Employee	1	15/3-19
10	Grocery store	Employee	1	15/3-19

Table 2: Summary of sample

Point Allocation in practice

After each semi-structured interview were finished, all respondents that were also offered to participate in the PA analysis. The PA questionnaire were handed over, on paper, and an explanation of how to fill the questionnaire was given. Further information was also provided, upon request, about what the different alternatives meant. The respondents were given 100 points to freely distribute among the different alternatives. The questionnaire existed in both Swedish and English, but still some of the respondents had difficulties understanding the different alternatives. This in turn led to the authors having to give further information which could have impacted the answers.

To make sure the respondents participated in the questionnaire the authors assured the respondents that they were present to answer any questions if something would come up. The respondents were given unlimited time and space so they would not feel like they were being supervised.

Making sense of and analysing the data

The interviews were recorded and later transcribed. For easier analysis, the transcribed answers were translated from Swedish to English and summarized into Appendix C. The summarized answers were divided into categories, to make the reading and interpretation of the results easier and make sure the major points of the results are conveyed in a simple manner. These categorised answers are found in Table 11, Chapter 4.9. The analysis was performed with the help of previous literature in the area, using the three different themes found in Chapter 2 as a starting point. In addition to these themes, the insights from the informant interviews and results from the PA questionnaire were used to analyse the results.

4. Results

This chapter contains the results from the semi-structured interviews performed in the city of Gothenburg during spring 2019. It also contains results of the point allocation (PA) questionnaire. First the results of a set of background questions are presented to give the reader a sense of the operations of a CDP. In Chapter 4.2 onwards, the results are presented in relation to the sub questions in detail.

4.1 Questionnaire, general questions

This part will show the results related to the operations of a CDP and differences between the carriers, to give the reader a better understanding of the concept and challenges and to put the analysis in a context and frame.

	General questions
Q1	<i>What carriers are you a CDP for?</i>
Q2	<i>Why you have chosen these carriers?</i>
Q3	<i>Please, describe how you view the possibility to open up for more carriers?</i>
Q4	<i>What would be the consequences if you stopped handling parcels?</i>
Q5	<i>Please, describe the process from where a parcel enter the store until it leaves the store again. How much time does it take?</i>
Q6	<i>How does the inbound/outbound deliveries into the store differ between carriers? (Times, number/day, interpersonal)</i>
Q7	<i>In which ways does the IT systems differ between carriers?</i>

Table 3: General questions

The corner shops chose their carriers mainly based on the size of carriers. The answers vary between more casual ones to slightly more analytical ones referring to the size of the chosen carriers. These answers suggest that the respondents had a limited analysis regarding carrier choice. As for the grocery stores the most frequent answer to why they chose their carrier were that this specific chain uses Postnord, or that Postnord is the largest one. In general, the employees of grocery stores did not really know.

WE TOOK AS MANY AS WE COULD SQUEEZE IN – **RESPONDENT 3**

THEY WERE THE FIRST TO ASK, I GUESS – **RESPONDENT 5**

THEY ARE THE LARGEST ONE IN SWEDEN I GUESS. I DON'T KNOW ACTUALLY – **RESPONDENT 10**

“THERE ARE DHL, THERE ARE SCHENKER, THERE ARE LOTS OF THEM. BUT POSTNORD IS THE LARGEST PLAYER, WE WANT THAT ONE HERE” - **RESPONDENT 2**

The third question, Q3, regarding the possibility to open up for more carriers, was not as clear cut between the different kinds of CDP's. Six were not positive to this possibility, the majority referring to the lack of space in the store as the main obstacle.

One used the interoperability with more carriers as the main reason why this is not seen as positive and one thought it was too many CDP's in the area already - not considering it a problem for the store itself. The remaining four were positive to the possibility to work with more carriers.

"YOU CANNOT WORK WITH EVERYONE EITHER, IT BECOMES TOO MESSY, THERE ARE DIFFERENT SYSTEMS THAT WE WORK IN, SO IT BECOMES A BIT OVERWHELMING" - RESPONDENT 1

"NO, ONE AT A TIME STILL FEELS MORE MANAGEABLE. TO MAKE IT WORK TOO." - RESPONDENT 5

"BECAUSE THERE ARE THREE DIFFERENT, AND THEN THE NUMBERS BECOMES MIXED, FOR EXAMPLE 6195 IF THE CUSTOMERS DON'T KNOW WHO SENT IT. WITH MORE COMPANIES IT BECOMES MORE DIFFICULT" - RESPONDENT 8

"IT WOULD PROBABLY BE VERY NICE, BUT WE WOULD HAVE LOST MANY CUSTOMERS TOO. RIGHT, PEOPLE WHO SMALL-SHOPS AND GET THEIR PARCELS AND SUCH" - RESPONDENT 10

"FRANKLY, THIS IS MORE OF A SERVICE. IT'S NOT LIKE YOU FEEL "OH HOW MUCH MONEY THIS IS GENERATING" NO, BECAUSE IT ISN'T. IT'S MORE OF A SERVICE FOR THE CUSTOMER. THE WAY ONE SEES IT, IT IS BECAUSE CUSTOMERS COMES IN AND GOES SHOPPING TOO, SO THAT'S THE REASON, NOT FOR THE MONEY" - RESPONDENT 5

The consequences of giving up the CDP solution was the question (Q4) with the most variation in the answers, this far. Three of the 10 did not consider the CDP activities as their main business and would not see this as a major problem. All but one being grocery stores, the third focusing mainly on postal services and printing - none of them seeing CDP as their core business. Key themes in the answers to these questions are increased cross-selling, increased traffic, and increased service levels. For the corner shops, the combined picture that emerges is one where the parcels are a major part of the business, with the decreased traffic and drop in cross-selling being the main fear.

"WE HAVE A LOT OF PROFIT ON THIS, WE GET COMMISSION ON IT, WE WOULD LOSE A LOT. NOW WE FEEL THAT PEOPLE COME IN FOR THEIR PARCEL, BUYS SOMETHING, AND IT BECOMES A GOOD COMBINATION. AND THE COMMISSION ISN'T THAT BAD BECAUSE THERE ARE A LOT OF PEOPLE COLLECTING" - RESPONDENT 8

"WE WOULD GO OUT OF BUSINESS" - RESPONDENT 3

"NO, BECAUSE AS I SAID IT IS VERY GOOD FOR THE STORES. THE BIG STORES, LIKE ICA AND COOP, THEY ALSO HAVE THESE KIND OF SERVICES BUT IT BECOMES EXPENSIVE FOR THEM, THEY MUST HIRE. BUT WE, MANY SMALL SHOPS IN THE AREA, IN THIS AREA THERE'S ONE EVERY 100 METERS, IF I'M THE ONLY ONE WITH PARCELS THE CUSTOMER COMES HERE AND BUYS SOMETHING AT THE SAME TIME. THAT'S WHY IT'S GOOD." - RESPONDENT 6

"IT WILL BE A GREAT LOSS, YOU MAKE MONEY FROM IT. IT DRAWS CUSTOMERS TOO, WHEN THE CUSTOMER COLLECTS A PARCEL, THEY BUY CIGARETTES TOO" - RESPONDENT 4

This pattern, focusing on increasing traffic in the hope of increased cross-selling, is common in all answers but more important for the smaller shops than for the larger grocery stores.

Q5-7, describes the parcels way through the store and the differences in this process between the carriers, when applicable. All followed the same pattern of scanning, placing the parcels on shelves or the floor, waiting for the final customer to collect it, scanning again and then handing the customer the parcel. Some differences were found, with regards to how the parcels were numbered and how they were supposed to be sorted within the store. Different carriers used different systems, which could cause confusion, especially when the customer did not know which carrier had shipped the parcel. For example, Postnord and DHL sorts the parcels depending on the last four digits in the tracking number and these are written on the outside of the parcel. DB Schenker uses notes and stickers that are put on the parcel instead.

The time a parcel spent in the store ranged from less than one day to two weeks, but most parcels seemed to be picked up within a day or two. The time it took to do all the steps seemed to be around 5 minutes per parcel under regular working conditions.

There are also differences with the IT systems. Postnord uses a dedicated computer that is provided to the CDP's, a handheld device for scanning, as well as a smartphone app for the same purpose. In addition to this, a specific label printer is used, which were indicated by some to be taking up too much space in relation to its usefulness - because it can only print Postnord labels and nothing else. DHL and DB Schenker used web-based systems for the scanning and tracking, a solution that caused mixed feelings. Some indicated that this was a fast and convenient system, while others found it to be unstable and slow compared to the dedicated one of Postnord. One also singled out Postnord's system as the least stable one, the one causing the most errors, making it difficult to draw any definitive conclusions about the best or most popular system.

4.3 - Results SQ₁: Is a reason to become a CDP to get customers into the store?

As mentioned in Chapter 3, a set of sub questions were developed, based on the informant interviews and literature review, the first set is seen below in Table 4. One of these informant interviews generated the idea that a store becomes a CDP to attract customers. When the idea was found to be supported by previous literature, questions regarding this were included to gather more information.

	Is a reason to become a CDP to get customers into the store?
Q8	<i>Please, explain what reasons you see for handling parcels</i>
Q9	<i>Are the reasons the same now as when you started?</i>
Q10	<i>What is your view on the claim that being a CDP increases cross-selling?</i>
Q11	<i>What is the change in visitors to this store? Can it be expressed in numbers?</i>

Table 4: Questions regarding SQ₁

"WHEN WE STARTED A FEW YEARS AGO WE WERE KIND OF FIGHTING OVER THIS, EVERYONE WANTS THIS, IT COULD BE GOOD YOU KNOW, SOME WERE HESITANT BUT IT WAS ABOUT GETTING ON THE BANDWAGON [...] SOME COMPETITORS THOUGHT IT TOOK TOO MUCH SPACE, BUT FOR US IT IS PROFITABLE. WE GET THE CUSTOMER DOWN HERE" - RESPONDENT 2.

"GET THE CUSTOMER IN HERE, THEY STILL HAVE TO COME HERE TO GET THEIR PARCEL THAT THEY'VE BOUGHT. THEN THEY GO IN AND SHOP. THAT'S IT" - RESPONDENT 5

"I GUESS IT'S A SERVICE FOR THE CUSTOMERS, BECAUSE AS A WHOLE YOU PULL THE CUSTOMER TO THE STORE. AND THEN, THE CUSTOMER WANTS IT." - RESPONDENT 9

"IT DRAWS THE CUSTOMER INTO THE STORE, HOPE THEY BUY SOMETHING ELSE. OUT OF 10 MAYBE ONE OR TWO BUYS SOMETHING. IT'S LIKE A FREE FLOW OF CUSTOMERS COMING IN THAT WAY" - RESPONDENT 7

When asked why the specific store started offering the CDP service the answers differed markedly, again on the grocery/corner shop axis. The answers from the corner shops suggested that the main reason was to attract customers into the store and to earn commission from the carriers, based on the number of

parcels being handled. They also named the increased cross-selling, based on the assumed increased number of customers into the store. The grocery stores had a different motivation - increased service levels.

All the grocery stores used some variation of the phrase *increase service for the customers*, while none of the respondents further elaborated in what way this would increase the service level, or in which way this could fit in a larger business model. A majority of these respondents also spoke about the increased traffic and increased cross-selling.

The overarching theme of the answers was the possibility of increasing the flow of customers into the store and that they simultaneously would buy an additional item while in the store. This was expected, based on the informational interviews, but it was also expected that the

"AS I MENTIONED, IT WAS IN THE BEGINNING BUT NOT ANYMORE. IT BARELY DRAWS ANY [CUSTOMERS]. I SEE MAYBE ONE IN 10 WHO BUYS SOME CANDY OR SOMETHING, BUT YOU SHOULDN'T TRUST THAT AT ALL" -
RESPONDENT 3

corner shops would consider the CDP activities as their core business instead of the other way around.

There were two different views of the original reason for operating a CDP. According to three out of 10, the original reason was to make profit from the commission, while the rest stated that the original reasons were the same as the current reasons - increasing cross-selling. All, except two, stated that the CDP operation increases cross-selling. Of the two that did not state this, one grocery store and one corner shop, one answered that it is a marginal effect. The reason behind this being the fact that there are many shops in the area that customers might go to instead for their small purchases. The other one, the corner shop, stated that it increased cross-selling originally, but it had decreased over time.

Regarding the number of visitors, before and after the start of the CDP operations, the answers from the respondents suggested an increase in customers to the store, or at least an increase in traffic. Eight of out of 10 said it was an increase, with one having no information about this, and one assuming it did not create an increase. One point to note was that no direct information on this seemed to exist, not even from the manager of a large grocery store. Therefore, the respondents assumed a great increase, up to four times, while some had just noticed an increase in traffic without any specification of how much.

As a summary, these findings suggested that increasing customer traffic is one of the reasons to operate a CDP.

4.4 - Results SQ₂: Is a reason to become a CDP to make an effort to improve the environment?

	Is a reason to become a CDP to make an effort to improve the environment?
Q12	<i>What environmental reasons exists for handling parcels?</i>

Table 5: Question regarding SQ₂

It was assumed, due to the large impact the literature suggested that CDP's have on vehicle miles and GHG emissions, that CDP's would have an environmental agenda behind the decision. Especially for grocery stores, who appeared to be spending a lot of resources on trying to build an environmentally friendly brand. This notion proved to be wrong, as the

OH, NOTHING I'VE EVER THOUGHT ABOUT, AND I DON'T THINK ANYONE ELSE HERE HAVE EITHER" - RESPONDENT 10

"FOR THE ENVIRONMENT? NO, IT PROBABLY WASN'T ANY THOUGHT ABOUT THAT, AT LEAST NOT TO MY KNOWLEDGE" - RESPONDENT 5

grocery stores had no environmental agenda or branding behind this decision. The employees seemed to have the idea that a CDP may be less bad for the

environment than home deliveries, and the managers were just stating that they are environmentally friendly but seemed to have pushed this part of the responsibility onto someone else.

The corner shops on the other hand seemed to have given the environment, and their place in the chain, a bit more thought. Many of the respondents talked about the reduced trips for the customers that they can walk to the CDP instead of driving. No one had initially considered delivering parcels for environmental reasons.

In short, based on the interviews, there was no support for the idea that one opens a CDP for environmental reasons.

"ENVIRONMENT... IT IS CLOSER TO THE CUSTOMER, FASTER, THEY DON'T HAVE TO DRIVE A CAR. ALL PARCELS ARRIVES AT ONE PLACE, SO THE DRIVERS DON'T HAVE TO GO AND LEAVE PARCELS TO EVERY HOUSEHOLD" - RESPONDENT 3

4.5 - Results SQ3: Is a reason to become a CDP to make a profit from the parcels?

	Is a reason to become a CDP to make a profit from the parcels?
Q13	What is your view of the compensation from the parcels?
Q14	In what way does it differ between the carriers?

Table 6: Questions regarding SQ3

The third sub question was investigated by the use of questions 13 and 14, about the commission from the parcels. Nine of the 10 respondents stated that the commission was too low, some stated that it was better before. Earlier it was something that directly contributed to the revenue of the store but had been reduced to an unprofitable level for most CDP's. The picture that emerged was that the cost of handling a parcel was higher than the commission, simultaneously the number of parcels made it profitable thanks to the added customer traffic.

"IT IS NOT A HIGH COMMISSION, NO. POSTNORD IS VERY LOW, BUT IT IS ONLY THE SERVICE. POSTNORD HAVE A LOT OF LETTERS, ON THE LETTERS YOU CAN ONLY GET ONE SEK. THE STAFF HAS AT LEAST 120 SEK/HOUR. FOR ONE PARCEL THAT'S FIVE MINUTES, PLUS RENT AND ELECTRICITY AND EVERYTHING. BUT JUST THE SALARY - 120 DIVIDED BY 60, TWO SEK/MINUTE. YOU SEE? A LETTER NEEDS AT LEAST FOUR-FIVE MINUTES, YOU REGISTER AND SCAN IT, THAT'S 10 SEK, RIGHT?" - RESPONDENT 6

"THE COMMISSION PER PARCEL MAY NOT BE THAT MUCH, A FEW SEK. BUT THE NUMBERS MAKES IT SOMETHING OVER A MONTH" - RESPONDENT 8

"I WISH IT WAS HIGHER.... [LAUGH] BUT... YEAH...." - RESPONDENT 5

One of the small corner shops provided a calculation.

At the same time other respondents seemed content with the commission because the decrease in money per parcel was perceived to be offset by the increase in the number of parcels.

There was also a difference in the payment model depending on the carrier. While this appeared to be fluid over time, with contracts continually being negotiated, there were still patterns in this area. In the sample, those who only worked with Postnord the prevailing attitude was that the commission was too low per parcel, but they did it for other reasons. For the corner shops, who were more dependent on the carriers and used more than one carrier, this area was more complex. Corner shops also seemed to share the notion that Postnord paid the least, but they had the largest volume. DB Schenker and DHL paid more, either per parcel or per time spent, but generally had a lower volume.

"IT IS FINE, IT IS GOOD. IT WAS BETTER BEFORE BUT THEY REDUCED IT. BUT STILL, THE CUSTOMERS ARE INCREASING SO IT BECOMES A BALANCE, YOU CAN SAY" - RESPONDENT 4

THE COMMISSION IS BASICALLY... IT IS MARGINALLY UP AND DOWN. ALMOST THE SAME. POSTNORD IS STILL BETTER COMMISSION YOU COULD SAY, BECAUSE THEY HAVE MORE PARCELS" - **RESPONDENT 7**

COMMISSION, WELL, DHL HAVE THE BEST I CAN SAY. BUT THE NUMBER OF PARCELS IS SO AND SO. SCHENKER AND POSTNORD IS THE SAME" – **RESPONDENT 1**

SCHENKER GIVES THE MOST, BASED ON THE TIME YOU SPEND. POSTNORD GIVES THE MOST FOR THE PARCELS BUT IS THE SLOWEST. DHL GIVES THE MOST BUT IS EXTREMELY SLOW, AS I SAID A LOT MORE TIME TO HANDLE THE PARCELS COMPARED TO THE OTHERS." - **RESPONDENT 3**

IT'S DIFFERENT. SCHENKER IS THE BEST, THEN DHL. THEY PAY A LOT MORE. AND THE PARCELS FROM DHL AND SCHENKER ARE COMPLETELY DIFFERENT. LOTS OF BAGS. LOOK! FROM POSTNORD AND DHL THEY'RE ALMOST ALWAYS BOXES, IT'S EASIER WHEN YOU PUT THEM ON THE SHELVES" - **RESPONDENT 8**

Respondent 3 focused on commission per time spent while

Respondent 8 related the commission to space

It seemed like no one in the sample were operating a CDP solely for the commission.

4.6 - Results SQ4: Is a reason to become a CDP to utilize excess space in the store?

	Is a reason to become a CDP to utilize excess space in the store?
Q15	<i>How do you consider the space allocation?</i>
Q16	<i>How do you manage a situation when you get too many parcels, for example many deliveries at the same time or during peak sales periods?</i>
Q17	<i>If you would not have used this space for parcels, what do you believe it would have been used for instead?</i>

Table 7: Questions regarding SQ4

Question 15, 16 and 17 concerned the space in the store, how it is perceived and what the parcel storage area would had been used for if there was no parcel activity. The answers from the respondents were similar to each other suggesting they experienced problems during peaks and felt it took up a lot of space in the store. One outlier, Respondent 4, had by far the largest store and consequently did not experienced any problems during peak periods. The

"IT BECOMES CRAMPED IN THE STORE. CHRISTMAS, FOR EXAMPLE, THEY ARE EVERYWHERE, AND MANY ARE ON HOLIDAY AND DON'T PICK UP THEIR PARCELS, SO THEY'RE HERE FOR TWO WEEKS, SO IT'S TIGHT" - RESPONDENT 1

"WELL, FOR EXAMPLE THIS ONE IS PRETTY BIG. YOU CAN'T PUT IT ANYWHERE, IT IS 1X1 METERS. IT'S FOUR PARCELS AND THEY TIE IT TOGETHER SO IT'S ONLY ONE PARCEL. SO, IT BECOMES CHEAPER FOR SOMEONE, IN THE END YOU CAN'T RECEIVE IT. IT'S BEEN HERE FOR 10 DAYS! AND THE CUSTOMER CAN'T COLLECT ANYTHING THIS BIG, BUT IN THE END HE ONLY PAYS FOR ONE FREIGHT" - RESPONDENT 6

descriptions from the answers ranged from small problems to huge ones.

The follow-up question to this was regarding how CDP operators managed the space

during peaks, as it was considered to be difficult in general. One aspect that is not evident in the written answers was the rolling of eyes, deep sighs and looks upon the respondent's faces when they answered this question. In the end most just answered that they manage - somehow.

The only outlier was, again, Respondent 4 thanks to the large space in the store.

"[...] IT IS ROUGH. DURING HOLIDAYS IT CAN GET VERY DIFFICULT FOR US, LIKE CHRISTMAS OR BLACK FRIDAY. AT THAT POINT IS VERY DIFFICULT. [...]

WE JUST HAVE TO FIX IT. PARCELS IN THE BASEMENT, AND THEN YOU HAVE TO RUN. WELL YEAH YOU JUST HAVE TO KIND OF FIX IT IN THE BEST WAY POSSIBLE. OR SOME WAY" - RESPONDENT 10

Other respondents focused on the staffing, with several of the respondents using extra staff during the peaks. All in all, the peak periods were seen as a stressful time with parcels everywhere and where the efficiency went down, rather than going up when it was needed the most.

"WE HAVE THAT PROBLEM EVERY DAY. SOMETIMES SCHENKER COMES AT AROUND NINE IN THE MORNING, OR 10, THEN POSTNORD AT 11. BUT SOMETIMES EVERYTHING ARRIVES AT THE SAME TIME, ALL THE LORRIES ARRIVE AT THE SAME TIME, THAT IS DIFFICULT. THEY HAVE NO COMMUNICATION WITH EACH OTHER, NO THEY DON'T" - RESPONDENT 6

"[...] THEY JUST DUMP IT IN A PILE AND SAY "FIX IT". SO MOST OFTEN THEY ARE IN A PILE SOMEWHERE IN THE WAREHOUSE. IT'S A LOT OF EXTRA WORK. FIND A SHELF HERE, SQUEEZE IT INTO SOME CORNER THERE. YOU KIND OF INVENT AN EXTRA SHELF ON TOP OF THE OTHER ONE AND SQUEEZE IT IN. I'VE GOT A WHOLE WALL OF SHELF THAT HAVEN'T BEEN USED SINCE CHRISTMAS" - RESPONDENT 3

As for the space, it was expected that the parcels were using space that would otherwise not would have been used. This did not seem to be the case however, because most of the respondents did not seem to have a clear picture of what alternative

use the space could have had. Five of 10 subjects claimed that they would have used the area to sell goods, one of which added that no one buys that specific type of goods anymore, so it would not work.

Two stated that the parcel area was previously used for betting services, but due to the increase in online betting this had become unprofitable. One stated that the betting area would have been increased, with an added café area, if the parcels were to be removed. Two stated that it had previously been used as a storage area and would revert to that if the CDP operation would cease to exist.

These answers did not support the idea that you become a CDP to make use of excess space. It did however suggest that many stores had existing space and chose to utilize it for parcels.

"BEFORE, WE HAD VIDEOS AND GOODS AT THAT TIME, CANDY AND SUCH. THEN ICA KVANTUM OPENED, THE CANDY GOT HARDER SO WE GOT RID OF IT, THEN WE DOWNSIZED MORE AND MORE, THEN THE MOVIES WENT DOWN. WELL, THAT HAPPENED BUT THAT'S POSITIVE WITH THE PARCELS - WE WOULD HAVE LOST EVERYTHING WHEN THE BIG ONES CAME" - RESPONDENT 8

"IT WAS BETTING MOSTLY. BUT BETTING IS DYING IN THESE CORNER SHOPS. PEOPLE ARE MOSTLY BETTING ONLINE, THAT'S WHY WE TURNED TO PARCELS INSTEAD" - RESPONDENT 7

4.7 - Results SQ5: Is a reason to become a CDP to decrease the volatility of income?

	Is a reason to become a CDP to decrease the volatility of income?
Q18	<i>Please, describe the flow of parcels for a duration of a year</i>
Q19	<i>In what way, if any, does the income from the parcels smooths the income for the store?</i>

Table 8: Questions regarding SQ5

All respondents, except one, stated that the flow of parcels followed a certain pattern. Respondent 1, the outlier, had not been a CDP for a sufficient period of time. The pattern was that different sales periods, such as Black Friday in November and Christmas in December represented the difficult peaks. After those, the volume slowly decreased until the summer. During autumn the volumes slowly increased again.

Because this pattern was expected, it was believed that the CDP operation created smoother incomes for the stores over a year. For example, ice cream was assumed to be sold more during the summer than during winter, but also less and more parcels respectively. Again, no respondent found an effect and it was not considered interesting enough for them to investigate. A majority of the respondents seemed to have a problem understanding this question and concept, which was tried to be solved by using the aforementioned ice cream example. This had a marginal effect on the understanding of the question, which affected the answers and results.

As a summary, these findings support the idea of seasonality in the parcel volume. The information regarding income-smoothing was of low quality, i.e the respondents did not understand the question or gave answers unrelated to the questions after further explanation was given. Unfortunately, because of this reason many of the answers are not valid and no conclusions regarding this can be drawn.

4.8 - Results Point Allocation Method

Respondent	1	2	3	4	5	6	7	8	9	10	Total
Option											
Good geographical location	50	30	70	5	12	9	30	25	25	20	276
Increase cross-selling from parcel pickup				10	12	23	20	17	5	30	116
Appropriate staffing		15		38	12	18		17		10	110
Increase service levels for the customers			5	10	24	7	10		20	15	90
Compensation from the parcels makes it profitable			5	10	6	18	5	33		10	87
Decisions on business group level	50	15		5	12						82
Proper delivery scheduling				10	24			8	25	10	76
Branding purposes		15				6	10		25		56
Space in the store		0	20	10		7	5			5	47
Reducing vehicle miles of transports		10				5	20				35
IT systems interoperability between carriers and other business		15									15
Make an effort to improve the environment				5		6					11
Total	100	100	100	100	100	100	100	100	100	100	1000

Table 9: Results PA questionnaire

Table 9, above, shows the 12 different factors in the PA questionnaire and the results of the same. Among the 12 different factors, *Good geographical location* scored the highest with 276 out of 1000 points, i.e. 27.6%, more than twice as much as the second option, *Increase cross-selling from parcel pickup* (11,6% of the points). After that there was a more even spread among the different factors with *Appropriate staffing* (11%) coming in at a third place, *Increase service levels for the customers* (nine percent) in fourth place, *Compensation from the parcels makes it profitable* (8,7 percent) fifth place, *Decisions on business group level* (8,2 percent) sixth place, *Proper delivery scheduling* (Seven point six percent) seventh place and *Branding purposes* (5,6 percent) eighth place. All of the factors mentioned, this far, received at least five percent or more, regarded as the cut-off for being considered important. The remaining received less than five percent, from highest to lowest was; *Space in the store*, *Reducing vehicle miles of transports*, *IT systems interoperability between carriers and other business* and finally *Make an effort to improve the environment*.

4.9 Summary of results

All respondents replied that the reason for operating a CDP was related to getting customers into the store to drive cross-selling, whilst the grocery stores added that it was an additional service for their customers. Generally, it did not seem as important for the grocery stores to get people into the store to increase cross-selling, compared to corner shops. The respondents also agreed on the current and historical reasons - that the reasons had not changed since they initially started to operate a CDP. Respondent 5 was the only outlier, saying that from the start it might have been because of the compensation from the parcels.

The consensus continues, with most respondent agreeing to the notion that cross-selling is increased when operating a CDP. The outliers this time were Respondents 1 and 3, who did not agree that an effect existed, while Respondent 9 suspected only a small effect on the cross-selling. All respondents, except for Respondent 9, claimed that the CDP operations had contributed to an increase in visitors to the store, but it could not be expressed in numbers at that point in time for undisclosed reasons. One of the main reasons for operating a CDP appears to be to increase the customer traffic to the store, not pure financial, as seen in Table 11, Q8. Consequently, the answer to the first sub question, *SQ1*, is yes. The other possible reasons might be contributing factors but are not stated as explicit reasons in the interviews. The PA-questionnaire supported these findings, with location and the possibility for cross-selling being named as the most important factors as well.

When asked about environmental reasons to operate a CDP, many respondents unfortunately got somewhat confused. Some answered that their organization worked proactively with environmental aspects and wanted to profile themselves as environment friendly. Other respondents replied that they had no clue or had no answer to this question. Making an effort to improve the environment, *SQ2*, was expected to be a contributing factor and the disregard of this aspect, from the CDP's, was one of the most unexpected results.

As can be seen in Table 11, Q12, no respondent had anything to say regarding this. This factor did not score high in the PA questionnaire either, see Table 9, further backing the notion that this does not really matter.

Summary Categorised results										
Responden/ Question	1	2	3	4	5	6	7	8	9	10
1	2	1	4	1	1	4	3	3	1	1
2	Tradition	Size	Size	No answer	Tradition	Tradition	Tradition	Size	Tradition	Size
3	Sceptic	Good	Sceptic	Good	Sceptic	Good	Good	Sceptic	Sceptic	Sceptic
4	No effect	Effect - less business	Effect - less business	Effect - less business	Effect - less business	Effect - less business	Effect - less business	Effect - less business	Effect - less business	Effect - less business
5	2	1	14	14	1	1	3	2	0	2
6	No difference	-	No difference	-	-	Difference	Difference	-	-	-
7	No category	No category	No category	No category	No category	No category	No category	No category	No category	No category
8	Not financial	Not financial	Financial	Not financial	Financial	Financial	Financial	Financial	Not financial	Not financial
9	Same reason	Same reason	Do not know	New reason	New reason	New reason	Same reason	New reason	Do not know	New reason
10	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	Increase	Increase	No response	Increase	Do not know	Increase	Increase	Increase	No increase	Increase
12	No answer	No category	No env reason	No answer	No env reason	No env reason	Env reason	No env reason	No answer	No answer
13	Low	Low	Low	Fine	Low	Low	Low	Low	Low	Low
14	-	-	-	-	-	-	-	-	-	-
15	Lack of space	Lack of space	Lack of space	Enough space	Lack of space	Lack of space	Lack of space	Lack of space	Lack of space	Lack of space
16	Temp measures	Temp measures	Temp measures	No need for measures	Extra staff	So solution	Extra staff	Temp measures	Temp measures	Temp measures
17	Goods for sale	Goods for sale	Goods for sale	Unclear	Goods for sale	Storage	Other	Goods for sale	Other	Goods for sale
18	Other flow	Low summer high winter	Low summer high winter	Low summer high winter	Low summer high winter	Other flow	Low summer high winter	Low summer high winter	Low summer high winter	Low summer high winter
19	Smoothing	No smoothing	No smoothing	Do not know	Do not know	No answer	Smoothing	No answer	No smoothing	No smoothing

Table 10: Summary categorized results

On the other hand, the compensation had clearly been considered in more depth by all participants. All respondents, except Respondent 4 argued that it was too low. The respondents highlighted that the compensation from the parcels might have been low and often did not support its own costs. Due to the volume of parcels the compensation eventually added up to a significant income. The differences between the carriers yielded, as expected, many similar answers because of the standardised contracts between carriers and CDP's. None of the multi-carrier CDP's ranked Postnord as the highest bidder in terms of money/parcel.

Other respondents elaborated with other aspects than just the compensation from the parcels, such as the time it took to receive and deliver a parcel. That the commission-levels were considered too low, as per sub question *SQ*₃, was expected but the realization that no profit was expected from the parcels themselves were also not foreseen. Table 11, Q13, shows the consensus in a clear way. Again, this also is supported by the ranking in the PA analysis, Table 9, leading to the conclusion that this is not the most important part of operating a CDP

*SQ*₄, addressing the existence of excess space was surprising, there were no little to no agenda for using it for anything but parcels, and the transition from goods to parcels appears to be gradual instead of on/off. Table 11, Q15, shows the consensus that there is not enough space in the stores to cope with the parcels. The question regarding what the area current occupying parcels would have been used for, if not for parcels, gave some of the most unexpected and diversified results. The answers ranged from: goods to sell (mainly groceries), to a café or lounge area.

Regardless of carrier, incentives etc the space in the store became a problem during the peaks, except for one CDP who had an extraordinarily large store. The peaks were identified as Christmas, Black Friday and generally the colder months, with summer being the slow part of the year. To solve the space-issues during the peaks many temporary solutions were presented, ranging from running up and down to the basement, building more shelves, stacking parcels on the floor and increase staffing. It was predicted that some seasonality, sub question 5, existed, at least that the peaks existed during Christmas. It was however not expected to find such a strong consensus on the fluctuations in parcel volume down to a monthly level, with the peaks in winter and low volumes in summer.

As a summary, the CDP's agree on most dimensions. They are one today to increase customer traffic, have too low commission, did not start for the environment and have troubles with the space during the peaks in winter. They did not become a CDP to offset lower income during some periods and they did not do it to fill excess store space. From this sample it is evident that the success of a CDP is linked to the number of customers collecting parcels and their propensity to purchase something else while they are in there.

5. Analysis and discussion

The following chapter starts with analyses of the results in relation to the themes identified in the literature review in Chapter 2, as well as the themes identified in the pilot study.

5.1 – Effects of operating a CDP and eventual profits

Whether CDP's decide to operate CDP's in their facilities or not seems to partly be driven by the commission generated by the parcels and partly by the desire to generate traffic into the store. According to the results, many answered that the compensation was considered low. There were some differences between carriers, but it was not researched in detail exactly how large the difference was. However, some respondents gave an indication that the range was roughly 3-7 Swedish kronor per parcel, fairly close to the 0,2 and 0,5 euros mentioned in Weltevreden (2008) and Morganti et. al. (2014) respectively. Interestingly, even though the compensation was perceived as low, most CDP's were open and optimistic about the idea of adding yet another carrier, even though they were already operating for one, two, or even three carriers. A few answered that it operationally would be difficult to integrate another carrier, but still they were willing to accept more parcels and more work, because of the increased traffic. Weltevreden (2008) found that roughly a quarter of all parcel collections resulted in cross-selling. One interview suggested one in ten which is considerably lower. The PA analysis did not provide much insight into the opinions about adding another carrier. Instead, it showed that delivery scheduling and IT systems interoperability was not considered especially important compared to other factors. This contradicts the answers in the interviews that emphasized the possible complexities involved when working in many systems at the same time.

Overall, the CDP's agreed that the compensation from the parcels were low per parcel, while simultaneously having a high volume. Since many of the collection points were reaching their limits, especially in terms of space, some of the CDP's were still arguing that the compensation was not sustainable in the long run.

One of the CDP's made a mathematical example showing that the time it takes to handle a parcel does not cover the direct expenses for the staff, no other costs included (see Chapter 4.5). The example suggests that, as an isolated product, the parcel is a poor one that should be substituted for something that generates a profit on its own. However, it became clear that the sheer volume of parcels and the economies of scale generated enough traffic and subsequent income to break even. To earn money on the parcels themselves do not appear to be a sole motivation for a CDP to operate it with the current commission levels. The possibilities of earning a commission from the parcels scored fairly high in the PA analysis, contradicting the idea that the commission is irrelevant coming from the interviews. Taking the two results together it appears to be an important part of the concept for the CDP's. Even if the commission is stated as too low it appears to be important enough to be top of mind for the respondents.

The possibility to smooth the income over a year was proposed as one of the benefits of operating a CDP in the informant interviews, because of the strong seasonality of the parcel and e-commerce business that was indicated. The majority of the sample stated that the peaks occurred in the colder months, such as November and December, while the warmer part of the year saw a lower volume of parcels. Especially the summer months of June and July appeared to be slow in terms of parcel volume and activity. Many reasons for this were suggested, such as seasonal sales leading up to Christmas and vacations in the summer when customers spend their money on other things than physical goods. The replacement of permanent residents in the city with tourists also came up as a reason. In light of these ideas, it appeared reasonable to believe that a corner shop close to the water would sell more ice cream in the summer when the parcels were low and the other way around. It was also expected that a grocery store would sell more soft drinks and picnic food in the summer. The assumption being that this balance would work the other way around too, that fewer people would pop into the corner shop for something to chew on while on a leisurely walk in the cold November rain, but it would be offset by the traffic generated by the parcels.

The results in this study did not support this, which could have several reasons. Perhaps this was not a question that had been analysed prior to the start of the CDP operation, or perhaps the knowledge of the seasonality did not exist in the carriers' organizations either at that point in time and were not communicated to the CDP. That carriers did not know this do, however, seem unlikely.

It is also unlikely that no analysis has been conducted regarding customer flows during a full year, at least in grocery stores. It is possible that small corner shops, often staffed and owned by the same person, invests the time and resources into the running of the shop instead of counting customers, but still it seems unlikely that this had not been considered.

A third option is that the question was asked in a difficult way to people without the necessary information to answer it. This is likely, because the question often had to be explained, with examples. Despite the examples, the income smoothing argument did not seem to be a concept that was considered relevant or understandable for the respondents. This leaves a fourth option, that the income smoothing potential is really not one that was used as an argument for starting a CDP, or one being considered when it is running.

Assuming the parcels does not smooth the flow of income over time, but merely replaces products for parcels, an increased knowledge of the flows could have several implications. For example, a store could use their parcel area for parcels in the colder, busier, months and transform it into something else during the slower summer months to optimize the space over the course of a year.

The seasonality, combined with the apparent lack of smoothing effects, suggests that operating a CDP is a seasonal business for the autumn and winter. If operating a CDP is a seasonal business it does not make sense to operate one the whole year round, a finding which could be used to develop new solutions for carriers. For example, carriers could use temporary space in attractive locations such as train stations, in the style of a pop-up shop, during the peak periods as an effort to reduce the strain on the existing CDP's. By operating these short-term CDP's, the carriers reduces the build-up and stress on the existing networks and makes the existing ones more efficient, in turn making it more attractive to be a part of it. This is already a time proven method for seasonal goods in Sweden, such as strawberries being sold outside of supermarkets in the summer and Christmas trees next to gas stations and in parking lots. Opening an extra delivery space in the supermarket parking lot the weeks after Black Friday might be possible, while a pop-up shop in a train station might be more difficult and expensive

5.2 Effects on physical space

The informant interviews suggested that a reason for operating a CDP might be to use excess storage space in the store, space that might otherwise have been unproductive. The results from the interviews did not indicate this, even if space was important at peak times. The results from the PA questionnaire neither supports nor contradicts this because it was ranked in the middle.

Space does not appear to be that important compared to other factors, when forced to rank it. It was something that caused problems in within the store at times, based on information during the interviews. Oftentimes the parcel area utilized space that previously were used for storing goods directly for sale. As the sale of goods decreased it became replaced with parcels instead, which contradicts the expected results. Some suggested that the parcel area had, or would otherwise be, used as storage. The question that arises is if a storage area is considered unproductive or not, the answer could go both ways.

Some respondents did not know the alternative use of the parcel space, specifically employees of grocery stores. This might be due to the fact that they were employees and therefore not the one making this kind of decisions. It could also indicate that this is not considered an important issue by the management, if it was it would likely be discussed in some fashion in the company, the lack of discussions indicating excess space. The results, relating back to the research question, does not suggest that excess space is one of the key motivations behind the decision to open a CDP, while it still might be a contributing factor.

An interesting finding is the indications of a competitive relationship between the parcel area and the betting area that exists, or had existed, in a majority of the stores visited. Traditionally, many had an area filled with tables and TV screens where customers could follow e.g. horse racing and football and place bets in the store. As some respondents said, this is increasingly moving online thanks to smartphones and apps while the physical store space is being replaced with parcels instead. This betting area may also be questioned, as to if it is productive or not and of what its purpose is. It is likely that the betting area is a way to drive customer traffic, similar to the parcel services, although in a state of decline. If that is the case, the space becomes more productive than before, but the results does neither support nor rejects this idea.

The results do not indicate that the stores, regardless of type, have excess space waiting to be filled with something and it just happens to be parcels. Instead, it happens gradually. Previously profitable areas, such as betting areas, shelves of DVD movies or storage area for milk and bread is being replaced with shelves for parcels, floor space for large parcels and collection desks. It is difficult to draw any definitive conclusions regarding the excess space, in part because the stores do not seem to regard it in these terms.

What is clear is that the space now seems productive, because it is considered to be fulfilling its purpose which is to increase the traffic to the store.

It is interesting to note that the space allocated for parcels rarely seem to be of sufficient size and seems to be poorly suited for the parcels, as well as poorly adjusted to the volatility in the flow of them. The shelves are often similar in height and size of a bookshelf, which is good to store smaller parcels. When larger one arrives, such as the 1x1m lawn chairs mentioned in one of the interviews in Chapter 4, the space is not suited for this. The carriers use a weight limit of 20-30 kilos for delivery to a CDP. Within the logistics industry this is considered a small parcel, compared to the containers and pallets also being moved by these companies, but within a small corner shop, this is large. When visiting these stores, none had any lifting or moving equipment. With the lack of equipment, many boxes of 25 kilos are heavy and bulky enough to cause workplace injuries, as well as block shelves needed for smaller parcels.

The large parcels become a problem for these stores. In the next step, the customer must collect it from the store and may have to use a car, which might be difficult to legally maneuver close enough to a corner shop on a busy town square. One way of solving this problem of ill-fitting large parcels could be for the carriers to provide the CDP's with suitable lifting equipment or carts. They could also re-route larger parcels to other CDP's, so it becomes a two-tiered system - one for small parcels and one for larger where the customer could pick it up with a car. A two-tiered solution could help with decreasing the problems facing smaller corner shops and fits the grocery stores better, because they have the equipment and parking lots already. By developing the CDP concept in a way like this the efficiency is likely to increase for the smaller shops, while on the same time utilizing the advantages within parcel collection that larger grocery stores have.

Utilizing this kind of solution would however risk off-setting some of the positive environmental aspects of CDPs, e.g. less driving to the store (Guiffrida & Brown, 2014), and the convenience could be questioned.

5.3 Customers attitudes

Most respondents answered that operating a CDP had positive impacts on the number of customers that went into the store. If the respondent was a manager or employee made no difference, neither did it make a difference if it was a corner shop or a grocery store. It became clear from the interviews that the research question, regarding the reasons to open a CDP - was to increase customer traffic, in turn to generate an increased sale of goods. The motivation in the end is to generate profits for the store, which is not surprising, where parcels are one way of many to reach this goal.

The interviews showed that the corner shops were concerned about offering customers a CDP that was convenient, while grocery stores were concerned about adding a special service to the customers who were grocery shopping. According to Moroz and Polkowski (2016), Ghajargar et. al., (2016) and Oliveira et. al., (2017), customers are most concerned with price and convenience when it comes to having parcels delivered, which is supported by the results from the interviews. The main difference between them was that corner shops were optimistic about their parcels, while the grocery stores saw it as a burden. These stores saw it as something they had to put up with, to fulfil the requirements of a full-service grocery store. The main similarity between corner shops and grocery stores was that they were both well informed about the perceived effects of increased traffic to the store that operations of CDP's offered.

Providing convenience and service were reoccurring themes in the answers by the interviewed CDP's as well. The concept of *extra service* was one of the most important, or perhaps easiest to formulate, reason of opening a CDP for a grocery store. It was also frequently occurring for the corner shops. Worth noting is that none of the respondents formulated this in terms of changed prices for the end customer, instead as a service or as improved convenience. The delivery window constitutes a large part of the convenience (Oliveira et. al., 2017), thus suggesting that the possibility to collect the parcel at a convenient time is what matters to the customers and is what the stores are trying to achieve.

The delivery window is also important to the university students in Ghajargar et. al., (2016), again supporting the argument that a CDP is popular because of the increased delivery window. All this was said in the interviews and is backed up in the PA. The service levels and cross-selling scored amongst the highest, when forced to rank, which supports the claims in the interviews and previous literature.

The convenience is also linked to the location, which was emphasized in the results of the PA questionnaire. By offering other products, such as milk and other common goods, the stores were able to increase the volume of parcels, because the goods and parcels are piggy backing off each other. Having a good geographical location came out as the largest factor for operating a CDP successfully. According to the interviews this links back clearly to profit, either directly by compensation from the parcels or in increased cross-selling in the store – which in turn is connected to the convenience for the final customer.

5.4 Environment

According to the respondents, their customers are not concerned about environmental aspects. The main motivation for picking up a parcel in a particular CDP is stated as being convenience, even if millennials are prepared to pay extra for an eco-friendly delivery (Moroz and Polkowski, 2016). The convenience and creation thereof for the customers appears, with respect to the research question, to be an important factor for many of the stores when choosing to keep operating a CDP.

The respondents were asked about their environmental incentives towards operating a CDP, whether or not the possible environmental upside was a reason for starting. Based on the literature review, it was expected that this might be the case for the larger grocery stores, especially since some of them are trying to emphasize their green credentials in various marketing channels. According to the existing literature, CDP's reduces both vehicle miles and GHG emissions and is supported by several authors, such as McLeod, Cherret & Song (2006), McLeod and Cherret (2009), as well as Cherret and Guan (2011). This information was not emphasized in the interviews.

Some of the respondents briefly mentioned that CDP's might have positive effects in terms of environmental aspects, such as not having to travel far to different shops but rather getting all parcels delivered to the closest CDP near their job or home, for example. These findings are in line with the findings of Durand and Gonzalez-Feliu (2012). The effect of directly reducing effective vehicle miles in the city was however never taken into consideration and consequently never mentioned as a reason for opening a CDP. The findings of this dissertation show that this seemed to not be the case. The grocery stores had not considered the parcel collection as a part of their environmental work at all. One reason for this situation might be that the interviews were mainly done with the employees of grocery stores, who might not have access to the information necessary to discuss the specific aspect. Simultaneously, it was assumed that this information should have trickled down through the organization. The manager of a grocery store specifically mentioned that the chain aimed at being sustainable, but the CDP did not seem to be a major part of this work. To the authors this seemed strange, since it is believed that CSR (Corporate Social Responsibility) is an important part of the modern business and reducing GHG emissions is a common way of earning green credentials. The reduction in GHG emissions and vehicle miles were believed to be an important factor, but it was not the case in this sample. At a glance this seems strange, because of the underlying assumption that companies want to reduce their environmental impact. Instead, it became evident that the businesses are more concerned with running their business profitably, regardless of it being a grocery store or corner shop, than the environmental consequences.

The corner shops had given their part in the logistics network more thought, where many of the respondents elaborated upon their part in it and the reduction in car trips for the customers. Despite this, none seemed to have an environmental agenda behind the decision to operate a CDP. Boyer, Prud'homme & Chung (2009) found that customer density was a major determinant of the efficiency of a CDP and for levels of emissions, as did Brown and Guiffrida (2014), who found that GHG emissions are reduced with trips to a CDP instead of a store. This seemed to have been more top of mind than the direct environmental concerns. Concepts similar to *many households around here* frequently occurred in the interviews, suggesting that this was more important. Having a larger customer base made sense from a business standpoint because the number of parcels would likely have increased.

A larger customer base for the CDP would have been more environment friendly than a smaller one, because the consolidation benefits would have been bigger and the trips to the CDP probably would have been shorter than if the geographical area were larger.

All in all, based on the answers from the interviews there seemed to be no major connection between environmental improvements and the choice to start a CDP. The customers do not seem to care much about it according to the CDP's that were interviewed, which is in accordance with previous studies (Iwan et. al., 2016; Moroz & Polkowski, 2016; Oliveira et. al., 2017). The results from the PA questionnaire supports this lack of interest in the environment from the CDP's side, contradicting the expected results.

The environmental effects might have greater implications for carriers than the individual CDP that is only one piece of the network. With this knowledge, the incentive to become more environmentally sustainable shifts towards the carriers, to improve the incentives to become a CDP and in turn their networks. If the carrier's goal is to improve their environmentally sustainable image, they might need more CDP's, not necessarily greener ones. With more places for customers to pick up their parcels the possibility of trip chaining for customers increases, as well as the possibility to optimize routes and drive vehicles with higher filling rates. As mentioned in Chapter 1, these outlets cannot be too many either.

So, to decrease the environmental impact the carriers must optimize the CDP network, collaborate with their competitors and make it profitable for stores in the most attractive locations to deliver the carriers parcels.

6. Conclusions and contributions

In the following chapter, conclusions will be drawn based on the results, analysis and discussions. The conclusions are presented with consideration to previous findings made in the field. The first part answers the research question, the second part proposes recommendations to carriers, and the last part presents ideas for future research in this field.

6.1 The most important reasons to operate a CDP?

The results suggest that the most important factor for corner shops, and to a great extent the grocery stores as well, are the possibility to draw customers to the store, who purchases something else and to increase service levels. There is a slight difference between corner shops and grocery stores; the corner shops perceive CDP activities as a means of increasing cross-selling while grocery stores tend to perceive it as an additional, required and expected, service to offer their customers. Increased service level is important and the fact that customers have started to expect being able to collect their parcels at grocery stores could have several implications. The interpretation of this is that some stores operate a CDP mainly because they cannot stop, because of the pressure from customers to provide the service - but exactly how appreciated this is does not seem to be known. No environmental agenda appears to exist, despite the possible environmental gains that seem to exist from the CDP system. There also does not seem to have existed an excess of store space that is now used for parcels, having too much space does not appear to be a reason for operating a CDP in itself. In addition, there is no support for the idea that parcels smooth out the income for the CDP, however the idea of seasonality in the volume is supported.

The PA questionnaire suggested that the location of the CDP was important, which is related to the possibilities of customer traffic. At the most attractive locations the traffic is likely to be the highest, making the question of the actual increase in cross-sales is more important. It is necessary for the CDP's to analyse this in more depth and for carriers to make sure it is worth the effort for the store or face the risk of replacing the parcels with something that generates actual sales. Staffing was also suggested to be important.

Many of the problems associated with peak periods was regarding staffing and space. For the CDP concept to work in the future the space problems and staffing issue must be solved, improved forecasts could be one way of addressing this.

When taking both the interviews and PA questionnaire into account to answer the research question, it is clear that the possibility to get customers into the store is the most important reason for operating a CDP followed by increasing service levels and convenience for the customer, for this an appropriate (i.e. crowded) location is the most important factor.

6.2 Recommendations to carriers

With the results, mentioned in Chapter 5, in mind there are many things the carriers, might consider to improve regarding the CDP network. First of all, because the main reasons to handle parcels as a shop is to increase customer traffic and increase cross-selling, it is important that this is achieved. It is difficult, if not impossible, for a carrier to translate individual trips into purchases of chocolate bars, but it might be possible to aid the smaller stores with analytics or other assistance. The carriers could improve their proposition with hard data of what the parcel/purchase ratio is and adjust their commission accordingly. For shops with higher conversion rates, the commission could be lower, to finance an increase in commission to the stores with lower conversion rate - just to keep the network at the right size and prevent closures.

Another type of assistance is for the grocery stores that often seemed to view the parcels as an inconvenience to get customers into the store or to increase the service. This inconvenience, and thus the attractiveness of being a CDP, could decrease by having more help with packing and sorting from the drivers (drive in pairs of two, one drives and then two are sorting the parcels at the store) or sorting them differently before leaving the terminals. It could also be solved by having unattended lockers within the store, the way recycling of PET bottles is done today, forcing the customers into the store but freeing staff to do other things.

The results also suggested that Postnord was not the preferred carrier, it was present in shops mainly because its size. The implication is that if Postnord were to lose market shares or if the competitors reach a high enough volume, their main advantage is lost, causing them to lose even more when the CDP network falls apart as well.

6.3 Contributions

This research contributes to the understanding of the drivers of CDP's from a CDP's perspective, by providing insights in what is important and not and what their motivations are. Practitioners may benefit from this knowledge when recruiting CDP's and offering incentives, negotiating contracts and deciding on commission levels.

The research adds to the academic discussion of the implementation of CDP's and how it is done in the best way and why. Previous research has focused on the attitudes of customers, environmental and financial effects and implementation issues related to CDP's in large cities, while this research aimed at filling the research gap related to the CDP's perspectives in smaller cities. An increased knowledge of the CDP's attitudes will help in designing the future networks and optimize its function. The knowledge that the reason for handling parcels is to increase customer traffic, for the purpose of cross-selling, is new and presents new paths the research may take.

6.4 Further research

Further research can take many avenues, to improve the knowledge about the CDP's role in the logistics system. One of the most obvious is to investigate the buy rate, i.e. how many of the parcel collections that translates into cross-selling, or to look at the costs and time that is associated with handling a parcel. Another one is to optimize the flow of parcels, because the problems at peak times seem to be more related to the parcels size than the number of them. The collaboration and development of the shipments going into the store is also one area that might be looked into, so is the possibilities for off hours delivery of parcels - leaving the daytime for collection and off hours for sorting them in the store. A two-tiered system, small parcels to one CDP and larger to another, could also be investigated and lends itself well to computer simulations, to see if it would yield any benefits compared to the present system.

Yet another route is to examine the CDP market from a game theoretical standpoint, because the market seems to have few actors and may suffer from market failures as a consequence of this.

A final possible area for future research is to explore whether there are alternatives for the traditional types of collection points existing today. As the numbers of parcels increase, perhaps a more widespread and diversified system of CDP's is needed. That would open up for a many potential improvements - which could be valuable to investigate.

7. Limitations

Limitations of this dissertation is that the results might not be applicable to other settings, such as countries with a different regulatory environment, a market with more carriers or where the consumer behaviours are different. The dissertation is further limited by the short time frame, and small sample, in which the interviews were conducted. Interviewing at a different time of the year might yield different results because other issues are at the top of the respondent's minds. Interviewing a larger sample might also yield different and more robust results.

No statistical tests or similar quantitative methodology has been implemented; therefore, no results can be claimed to be statistically significant or not and no effects can be definitively proven.

Problems related to the reliability of the PA analysis exists, because some of the respondents did not successfully sum up their score to the total of 100 point that was given, and adjustments were made. Some distributed fewer than 100 points and some gave more than 100 points. The options were presented in the same order every time, thus not randomized.

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Appendix A – Interview guide: Pilot study

Questionnaire - informant interviews with CDP operators

What's your view of being a CDP?

What does it mean to be a CDP?

Why do you offer parcel collection services?

What is working well?

What is working poorly?

What is your compensation?

Will you continue to offer CDP services in the future?

Appendix B – Interview guide: Main study

Interview guide - semi structured - Swedish & English version combined

English in italics

Allmänna operationella startfrågor/General operational starting questions
<ul style="list-style-type: none">• Vilka är ni utlämningsställe för?• <i>What carriers are you a CDP for?</i>• Varför just dessa transportföretag?• <i>Why you have chosen these carriers?</i>• Hur ser ni på möjligheten att öppna upp för fler aktörer än de ni har idag?• <i>Please, describe how you view the possibility to open up for more carriers?</i>• Vad skulle det innebära för er om ni slutade dela ut paket?• <i>What would be the consequences if you stopped handling parcels?</i>• Kan du beskriva processen från där paketet kommer in genom dörren tills den kommer ut genom dörren? Hur lång tid tar det?• <i>Please, describe the process from where a parcel enter the store until it leaves the store again. How much time does it take?</i>• Hur skiljer sig inleveranserna mellan olika aktörer? (Tider, antal tillfällen/dag, bemötande)• <i>How does the inbound deliveries into the store differ between carriers? (Times, number/day, interpersonal)</i>• Hur skiljer sig utleveranserna mellan olika aktörer? (Tider, antal tillfällen/dag, bemötande)• <i>How does the outbound deliveries into the store differ between carriers? (Times, number/day, interpersonal)</i>• På vilka sätt skiljer sig IT systemen mellan transportörer?• <i>In which ways does the IT systems differ between carriers?</i>
<p><i>SQ₁: Man vill bli CDP för att få in folk i butiken</i></p> <p>SQ₁: Is a reason to become a CDP to get customers into the store?</p>

- Förklara vilka anledningar du ser till att ni lämnar ut paket
- *Please explain what reasons you see for handling parcels*
- Är det samma anledningar nu som när ni valde att starta?
- *Are the reasons the same now as when you started?*
- Hur ställer du dig till påståendet om att CDP ökar merförsäljning?
- *What's your view on the claim that CDP's increases cross-selling?*
- Hur ser förändringen i besökarantal ut? (Kan det uttryckas i siffror?)
- *What is the change in visitors to the store? (Could it be expressed in numbers?)*

SQ₂ *Man vill bli CDP för att göra en insats för miljön*

SQ₂: Is a reason to become a CDP to make an effort to improve the environment?

- Hur ser de miljömässiga skälen ut till att ni lämnar ut paket?
- *What environmental reasons exists for delivering parcels?*

SQ₃: *Man vill bli CDP för att tjäna pengar på paketen*

SQ₃: Is a reason to become a CDP to make a profit from the parcels?

- Hur ser ni på ersättningen per paket?
- *What's your view of the compensation from the parcels?*
- På vilket sätt skiljer den sig mellan olika aktörer?
- *In what way does it differ between carriers?*

SQ₄: *Man vill bli CDP för att använda extra utrymme i lokalen*

SQ₄: Is a reason to become a CDP to utilize excess space in the store?

- Hur ser ni på plats åtgången?
- *How do you consider the space allocation?*
- Hur hanterar ni en situation där ni får för många paket, t.ex flera leveranser på samma gång eller vid peak sales perioder?
- *How do you manage a situation where you receive too many parcels, for example several deliveries at the same time or during peak sales?*
- Om ni inte lämnat ut paket på denna yta, vad hade ni troligtvis gjort med den istället?

- *If you wouldn't have used this space for parcels, what do you believe it would have been used for instead?*

SQ5: Man vill bli CDP för att minska volatiliteten i intäkter.

SQ5: Is a reason to become a CDP to decrease the volatility of income?

- Kan du beskriva flödet av paket under loppet av 1 år?
- *Please describe the flow of parcels for the duration of a year?*
- På vilka sätt, om några, gör paketen att intäkterna blir så jämna som möjligt?
- *In which, if any, ways does the income from parcels smooth out the incomes of the store?*

Questionnaire Point Allocation Method

Please distribute 100 points amongst the most important factors when operating a CDP.	
Option	Points
Good geographical location	
Increase cross-selling from parcel pick ups	
Make an effort to improve the environment	
Reducing vehicle miles of transports	
Space in the store	
Increase service level for the customers	
Branding purposes	
Decisions on business group level	
Compensation from the parcels makes it profitable	
Appropriate staffing	
Proper delivery scheduling	
IT-systems interoperability between carriers and other business	

Appendix C - Results - interviews

	Interview Respondent	1	2	3	4	5	6	7	8	9	10
	<i>Manager/Employee</i>	Employee	Manager	Employee	Manager	Employee	Manager	Manager	Manager	Employee	Employee
Q1	<i>What carriers are you a collection point for?</i>	Postnord, UPS	Postnord	Postnord, Schenker, DHL and Bring	Postnord	Postnord	Postnord, Schenker, DHL and Bring	Postnord, Schenker, DHL	Postnord, Schenker and DHL	Postnord	Postnord
Q2	<i>Why have you chosen these carriers?</i>	Likes them, co-operated for many years	Postnord is the largest carrier	We took as many as we could fit in the store	<i>No information/No answer</i>	They came up with the question first	Because they are good to get the customers into the store	They chose us	Because they are the three largest	Coop has Postnord as carrier	They are the biggest in Sweden
Q3	<i>Please, describe how you view the possibility to open up for more carriers</i>	Sceptic. Difficult with too many carriers	We see that as positive	Very low, there is no room left in the store	It is seen as positive	No, it would be too difficult to manage	Yes, we would like that a lot	Yes, we are open for suggestions	Sceptic, it is too difficult with too many carriers	Sceptic, there are too many CDPs in the area already	No, it is mostly a question of space
Q4	<i>What would be the consequences if you stopped handling parcels?</i>	It would not have a large effect	The number of customers would decrease	We would go out of business	It would be a great loss. We would lose a lot of sales	Indirectly if would have a large effect because the service-level drops	It would not be good	Less income, lower turnover	We would lose a lot	It would probably have an effect	We would probably lose a couple of customers
Q5	<i>Please, describe the process from when a parcel enters the store to when it leaves the store again. How much time does it take?</i>	About 1-2 days. The process takes about 5 minutes in total	About 1 day	Between 2 hours to 2 weeks	Maximum 2 weeks	2-3 minutes	About 5 minutes	One to 3 days	1-2 days	<i>No information/No answer</i>	1-2 days

Q6	How does the inbound/outbound deliveries differ between the different carriers (times, numbers/day, interpersonal)?	There are no differences	<i>Only one carrier</i>	No difference	<i>Only one carrier</i>	<i>Only one carrier</i>	DHL Express depends on the number of parcels. Schenker uses notes. Postnord and DHL uses the last 4 digits in the parcel-number	No difference	It does not differ that much, only if it is a new driver who wants to help carry the parcels inside.	<i>Only one carrier</i>	Only one carrier, but it depends a lot on the driver
Q7	In which ways does the IT-systems differ between carriers?	Postnord uses their own system, UPS uses a hand-held device.	Postnord uses their own system, Pablo	Schenker has the fastest system. DHL is the fastest, but most robust. Postnord's often causes errors.	<i>Only one carrier</i>	<i>Only one carrier</i>	Postnord's system is the fastest, while Schenker and DHL are a bit slow.	They use different web-based systems.	Schenker is the easiest. Postnord is good too, DHL is a bit difficult.	Only one carrier. Postnord's system is quite basic.	Everything goes thru a computer which Postnord sent them. Also uses an app.
Q8	Please, explain what reasons you see for handling parcels	We got a request from Postnord. We have UPS because the use them to send things anyway.	It creates extra value for the customer	Economic reasons, the parcels generate money	Because people order online instead of going to a store.	To get the customer into the store	The commission and added sales	Pulls customers into the store, in the hope that they will buy something else	Help the business to run. Increased sales	Service to the customers.	It is a service. A small extra income and added sales.
Q9	Are the reasons the same now as when you started?	Yes	Yes	Do not know, have heard that it is to get customers into the store.	Yes, and it is better now. It becomes more and more mail.	In the beginning it may have been for the commission too.	"No, it is a lot more"	Yes	"No, now I think it is better, more fun to work with the mail"	I do not dare to answer that	No, before it was more for the commission. Now it is more about the service.
Q10	What is your view on the claim that being a CDP increases the point-of-sales sales?	No	Yes	It was like that in the beginning, but it is no longer the case.	Yes	Yes	Yes	Yes	Yes	Marginal effect.	Yes
Q11	What is the change in visitors to this store? Can it be expressed in numbers?	It has increase, a lot more pop-ins.	It has increased a lot and keeps increasing.	No response	Tre, four times more	It should increase, but do not really know.	It increases	It increases	It increases	Do not think so	It increases

Q12	What environmental reasons exists for handling parcels?	No information/No answer	Coop wants to work sustainable. It is unclear how much Coop can influence. It is mostly in Postnord's hands.	It is good to be close to the customers. But all paper and plastic are believed to outweigh the positives	No information/No answer	There probably was no thought of the environment when they started with this.	Believes there are positive environmental aspects with CDPs, but no own environmental reasons	The customers do not have to take the car to different stores. All the parcels are bundled in the same place.	Do not think parcels containing liquids should be sent to the CDP.	I do not dare to answer that.	No idea, never reflected on that.
Q13	What is your view of the compensation from the parcels?	Does not matter, it is so low anyway.	It does not add up the way it is today.	It has become too low	It is fine.	Low	Low	Low	Low. But the number of parcels makes it something.	Low. You do not do this to make money from it.	Not adequate.
Q14	In what way does it differ between the carriers?	UPS is better than Postnord, but Postnord has a larger number of parcels.	Only one carrier	Fairly large difference. Schenker is best per unit of time spent. DHL pays the most. Postnord have the volume.	Only one carrier	Only one carrier	Schenker is best, then DHL and Postnord is last.	Postnord has the worst commission, but the highest volume.	DHL have the best commission. But Schenker and Postnord has the quality.	Only one carrier	Only one carrier
Q15	How do you consider the space-allocation?	It becomes cramped. Especially during Christmas and Black Friday.	It creates problems at peaks and if the customers do not pick up the parcels quickly.	It is problematic. In two years' time the store will not have room for goods, but only parcels.	No problem. I have a very large store.	It takes up a lot of space.	It takes up a lot of space.	It takes up a lot of space.	It takes up a lot of space. Small parcels are better than big ones.	It is chaos during Christmas. We have Saturday-deliveries which smooths the flow.	It is cramped, especially during the holidays.
Q16	How do you manage a situation when you get too many parcels, for example many deliveries at the same time or during peak-sales periods?	We manage it somehow. Build more shelves	Use alternative storage-space	A pile in the storage-area. It becomes very inefficient.	We manage it without problems.	Additional staff during Black Friday and Christmas, for example.	It is a regular problem. No specific solution to it.	We try to be two people in the store.	We manage it somehow.	Milk-carts, piles, manage it somehow.	We manage it somehow. Use the space in the basement.

Q17	<i>If you would not have used this space for parcels, what do you believe it would have been used for instead?</i>	Use it to store packaging material.	Goods, arts and craft-supplies.	Goods for sale.	Goods perhaps. But does not really work to sell goods. Unclear.	Goods for sale.	Only have packages in the storage area, so it would have been storage.	Before, it used to be betting but now that is dying.	Movies, groceries, candy.	Café or similar lounge area, coffee, buns, larger area for gambling.	More spacious area in general, more self-checkouts or displays for chewing-gum etc.
Q18	<i>Please, describe the flow of parcels for a duration of a year</i>	Do not really know, because the service has not been implemented long enough. But it increases a lot during Black Friday, Christmas and January.	Summer low. Black Friday and Christmas is high. Spring and autumn is normal while the summer is low.	A peak during Black Friday and Christmas. Decreases during spring, low during the summer and increases during the autumn.	Special days and sales - it increases. Summer is low. Christmas and Black Friday is high.	It is pretty smooth, except during Christmas and new year - then it goes up a lot.	Black Friday and Christmas is a lot. The number of parcels increases every year.	July and August is low. Apart from that it is fairly stable all year except Black Friday and Christmas.	Peak during the winter, drops during spring, increase in the autumn. Summer is low.	Christmas is very much, the rest of the year it is fairly stable. Can be a bit more during certain sales.	Christmas is a lot, then it decreases slowly towards the summer and increases during the autumn.
Q19	<i>In what way, if any, does the income from the parcels smooths the income for the store?</i>	Yes, it smooths out the income.	No effect exists.	They are not very good at it.	We cannot determine that, we get commission by the parcel.	No, this effect has never been. considered important to investigate.	<i>The respondent did not understand the question.</i>	Could be a small effect, maybe.	<i>The respondent did not understand the question.</i>	Do not think it is an effect, at least not in a larger store.	Do not think it is an effect.

