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The effect of regional labour market policies on the location choice of distribution centres in the Netherlands

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The picture on the front page is obtained from https://fokkerlogisticspark.com/

Preface

Before you lies my master thesis 'The effect of regional labour market policies on the location choice of distribution centres in the Netherlands'. This thesis is the final part of the master Human Geography at Utrecht University. During this master I chose to follow the track *Economic Geography: Business & Location*, which was a good stepping stone for the subject of this thesis. The research has been carried out from March to August 2018, combined with an internship at Buck Consultants International.

I would like to thank Martijn, who supervised my thesis, for making sure I was off to a good start, giving relevant feedback and encouraging me to make my own choices during the process.

At Buck Consultants international I wish to thank a few people especially: Marcel for providing me with the opportunity to write my thesis at the consultancy and helping with setting up the research, Kees for sharing his expertise in the field and helping me to get in touch with experts, Jeroen for finding time to give feedback while being on secondment and last but not least my fellow interns for debating issues and talking about the difficulties of writing a master thesis.

Furthermore, I would like to thank all of the people I interviewed, without whose cooperation I would not have been able to conduct this analysis. Because of these interesting conversations, I learned a lot about the logistics sector, which was quite unknown to me before.

I am ready for my next challenge!

I hope you enjoy your reading.

Anne van der Weg

The Hague, 6th of August 2018

Summary

The logistics sector is a substantial part of the Dutch economy. The sector contributes 62 billion euro (more than 10% of the GDP) to the Dutch economy according to Statistics Netherlands (2016). Since 2008, the aim of the government is to make the Netherlands the European market leader in the control of international goods flows in 2020 (Commissie Van Laarhoven, 2008). According to Van Geffen *et al.* (2017), the logistics sector is growing to this day and the demand for expanding existing distribution centres (DCs) and growth at new locations is extensive. Nowadays, nearly 2 million square metres of DCs are being developed in the Netherlands each year, compared to not even a million square metres in 2013. Not only the amount of DCs is increasing, the warehouses are getting bigger in size as well (Verweij *et al.,* 2018). This growth provides thousands of new jobs and millions of euros in investments each year. However, the downside is that top logistics locations are becoming scarce and companies increasingly experience the disadvantages of a tight labour market (Van Geffen *et al.,* 2017).

The tight labour market is decreasing the attractiveness of logistics hotspots in the Netherlands according to the media and recent research (Tempo-Team, 2017; Van Geffen *et al.*, 2017). Policies and projects are implemented in various regions in the Netherlands to match supply and demand in the logistics labour market. However, little is known about the effect of this in terms of DC location choice and which policies are most effective. This study can add to the existing literature by filling in this knowledge gap. From a societal point of view, this is relevant because both decision makers within logistic firms and regional policy makers could use the insights to stimulate the supply side of the labour market in logistics regions. This may keep logistics regions attractive, provide economic growth and strengthen the position of the region within a national or international context. Another question that arises is whether or not these policies are necessary. Automation or moving to a region with sufficient labour supply could be alternatives for logistics companies. Therefore, the aim of this study is to provide insights into the effect of regional active labour market policies on DC location choice.

First, a literature study was carried out and supplemented with secondary data. Thereafter, a qualitative case study was performed by doing in-depth interviews with various experts in 3 logistics regions: Greater Amsterdam, North Limburg and Twente. The data is transcribed, coded and analysed by using NVivo software.

Based on the gathered data, it can be concluded that regional labour market policies focused on logistics do not influence DC location choice. Although the awareness of a tight labour market is increasing, decisionmakers expect it to be solved by short-term solutions such as calling in employment agencies. Continuation of this process may lead to increasing problems in the future since the expected growth of the economy and increase of DCs in the Netherlands. To avoid future labour market problems, policy recommendations are given and a model of the regional labour market policy making process and its relation to DC location decision is created based on the literature review and interviews.

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1. Introduction

1.1 Research motive and relevance

The logistics sector is a substantial part of the Dutch economy. The sector contributes 62 billion euro (more than 10% of the GDP) to the Dutch economy according to Statistics Netherlands (2016). Since 2008, the aim of the government is to make The Netherlands the European market leader in the control of international goods flows in 2020 (Commissie Van Laarhoven, 2008). According to Van Geffen *et al.* (2017) and Colliers International (2017), the logistics sector is growing to this day and the take-up of logistics space is increasing (figure 1). Not only the amount of DCs is increasing, the warehouses are getting bigger in size as well (Verweij *et al.,* 2018). This growth provides thousands of new jobs and millions of euros in investments each year. However, the downside is that top logistics locations are becoming scarce and companies increasingly experience the disadvantages of a tight labour market.

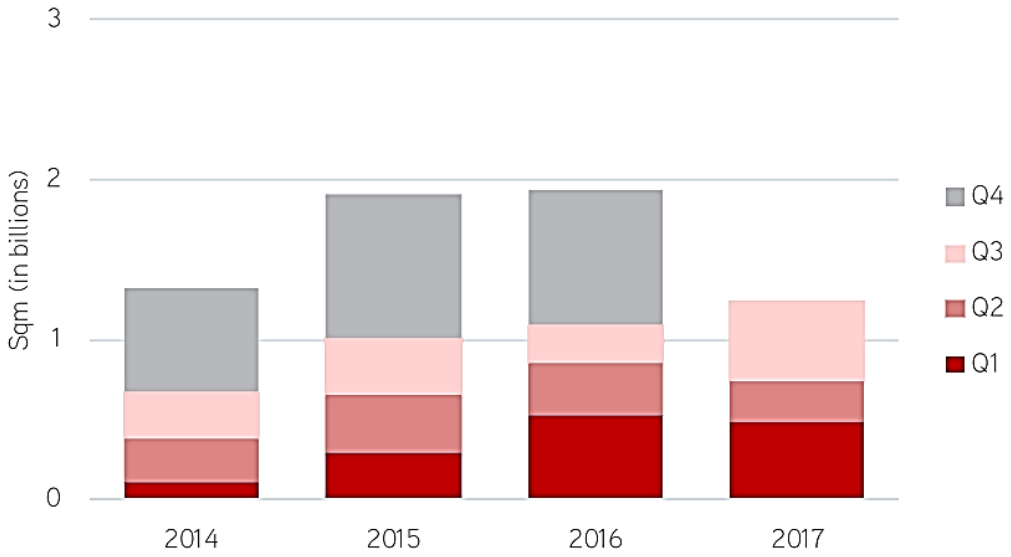

Figure 1 Quarterly take-up of logistics Space in the Netherlands. Source: Colliers International, 2017

Figure 2 shows that the scarcity of both staff members and professionals is increasing in the Dutch logistics sector since the third quarter of 2015 (Tempo-Team, 2018b). The scarcity index is calculated by Randstad Market Intelligence based on the ratio of labour demand and supply.[1] As the index is higher, it will usually be more difficult to attract staff. An index of 100 represents the balance of the demand-supply ratio. According to Van Geffen *et al.* (2017), causes of the high ratio are the aging and shrinking of the labour force, the higher demands on the level of education of logistic workers and the poor image of logistics among students. Finding and keeping good employees can hinder future growth of logistic companies. Therefore, the availability of employment is becoming increasingly important for making a sustainable location choice in logistics.

Figure 2 Scarcity Index Logistics Employees in The Netherlands. Source: Tempo-Team, 2018b.

[1] Labour demand is measured on the basis of online vacancies measured by Jobdigger. Labour supply is a combination of the number of short-term unemployed persons (persons registered with the UWV for a maximum of 6 months) together with employees actively looking for other work, which consists of data from Statistics Netherlands on the working population and data from Randstad Market Intelligence based on respondent research (B. van Krimpen, personal communication, 11 May 2018).

Scarcity of logistics staff members manifests itself in a large part of The Netherlands. Nevertheless, there are regional differences. As seen in figure 3, the labour market for logistics staff members is very tight[2] in the middle (Utrecht/Amsterdam) and south of the country. The movement that is seen compared to the first quarter of 2017 is that the scarcity of logistics staff members is increasing throughout the Netherlands. The very tight logistics labour market in the Eindhoven region and North Limburg has expanded with West Brabant, Central Brabant and Central Limburg (Figure 3). All these regions are in the top 10 logistics locations in the Netherlands by JLL (2017). This implies that mainly logistics hotspots have to do with scarcity on the labour market. Because of these differences, it is relevant to study the effects at the regional level.

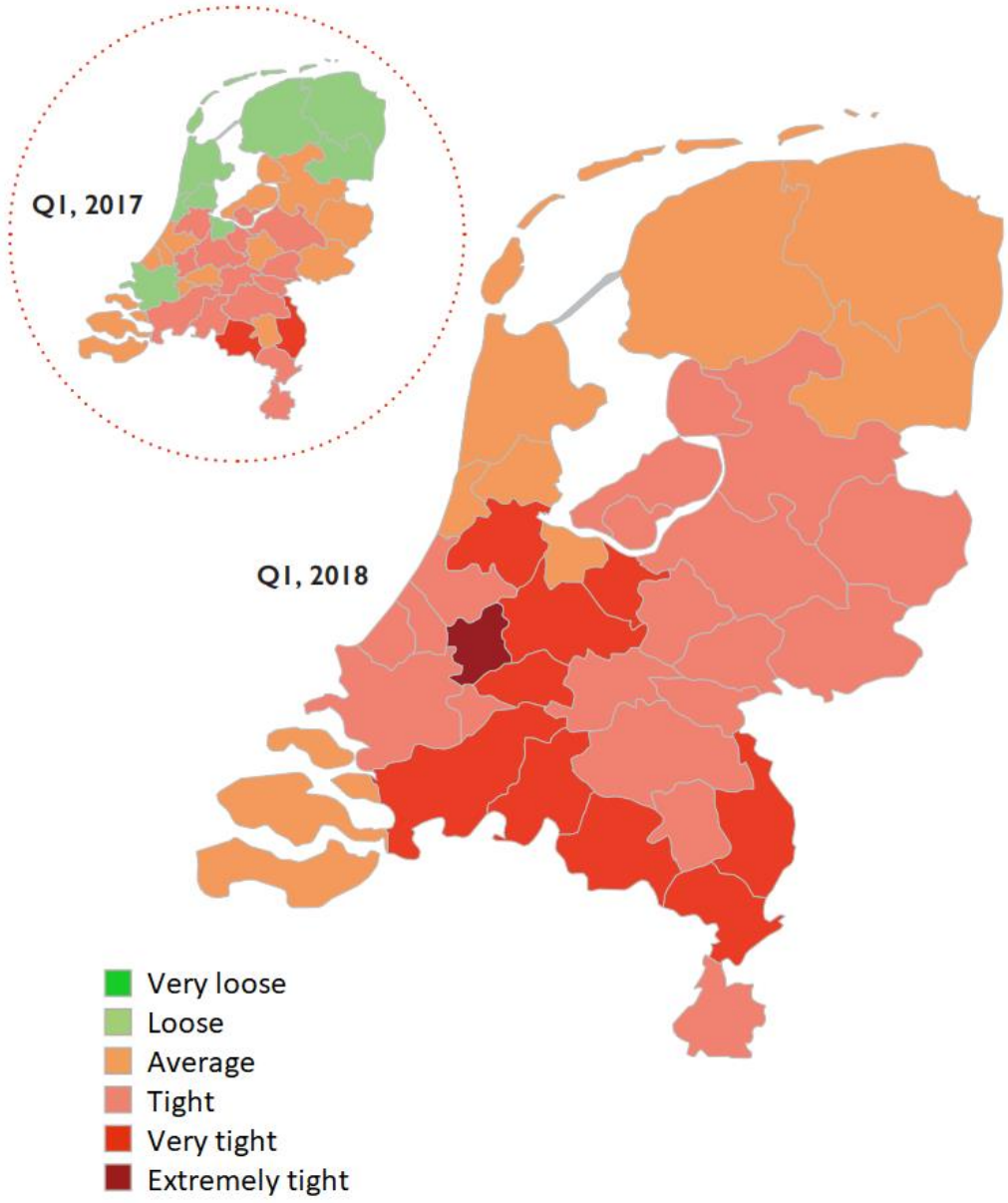

Figure 3 Regional Scarcity Logistics staff members in The Netherlands. Source: Tempo-Team, 2018a.

[2] The scale is measured by Randstad Market Intelligence as follows: If the scarcity index is >0 and <=0.50, the labour market is labelled as 'very loose'. >0.50 and <=0.80 is 'loose'. >0.80 and <=1.2 is 'average'. >1.2 and <=2 is 'tight'. >2 and <=4 is 'very tight'. >4 and <=100 is 'extremely tight' (B. van Krimpen, personal communication, 11 May 2018).

The tight labour market is decreasing the attractiveness of logistics regions in the Netherlands according to the media and recent research (Tempo-Team, 2018a&b; Van Geffen *et al.*, 2017). However, it is unknown what the effect of this will be in terms of DC location choice and to what extent policies are effective in matching supply and demand in regional logistics labour markets. This study can add to the existing literature by filling this knowledge gap. From a societal point of view, this is relevant because both decision makers within logistic firms and regional policy makers could use the insights to implement this type of policy more efficiently in the future. This may keep logistics regions attractive, provide economic growth and strengthen their position within a national or international context. Another question that arises is whether or not these policies are necessary. Automation of processes or simply moving to a region with sufficient labour supply could be alternatives for logistics companies. Therefore, the aim of this study is to provide insight into the effect and of logistic regional labour market policies on DC location decisions.

1.2 Research questions

Based on the gap identified, the following research question is formulated:

''To what extent do regional labour market policies influence the location choice of distribution centres?''

The following sub-questions are used as guideline to answer the main research question:

1. *What active labour market policies are initiated to match logistics supply and demand in Dutch regions?*
2. *How do experts in the field perceive the current and expected labour market situation in Dutch logistics regions?*
3. *How do experts in the field perceive the effectiveness of the initiated policies?*
4. *Which (regional) factors are important for the location choice of distribution centres?*
    a. *Is the importance of the factor labour availability changing?*
    b. *What role do regional labour market policies play in this?*

1.3 Reading guide

First, an overview of relevant economic geographic and other literature is given in chapter 2. This chapter concludes with a conceptual model which forms the foundation for the further empirical research. In chapter 3, the methods used in the study are described and the choices made are substantiated with arguments. The results of the empirical research are then described in chapters 4 to 7, following the structure of the sub-questions. Chapter 4 is intended to answer sub-question 1 regarding the initiation of current regional labour market policies in logistics. Sub-question 2 concerning the current and expected labour market situation as perceived by experts in Dutch logistics regions will be answered in chapter 5. In chapter 6, the perceived effectiveness of the initiated policies will be discussed. The theory on location factors in DC location choice will be supplemented with results from the empirical research in chapter 7. Based on the results presented, the completed model of the regional labour market policy making process and its relation to DC location decisions is created and elaborated on in chapter 8. Finally, chapter 9 outlines the main conclusions, which form the answer to the main research question. Additionally, recommendations for further research and the discussion about limitations to the study are discussed.

2. Theoretical framework

In this chapter, relevant location theories and concepts regarding spatial concentration and location choice in logistics and labour market policies will be elaborated on. Firstly, literature on location factors considered most important in DC location decisions will be reviewed. By doing this, the link between economic geographic theories and the logistics labour market can be made. Subsequently, relevant trends and developments in the logistics sector are mentioned and the importance of the focus on a regional level is discussed. Then some insights in Active Labour Market Policies and examples of this in Dutch logistics will be given. Since collaboration between academia, industry and governments could be important for organizing labour market-oriented projects, the Triple Helix approach is included in the theoretical framework. At the end of this chapter, a conceptual model is derived to act as a link between literature, methodology and results.

2.1 Location factors in the logistics sector

To begin with, it is important to define what is meant by the 'logistics sector' in this research. Therefore, the definition in the 'Topsector monitor 2017' is used (Statistics Netherlands, 2017). This concerns all logistics activities that are being performed in transportation and storage. Within this sector, the subsector Transportation and Transhipment is focused on the transportation of goods in all possible modalities, such as road and water transport. The second subsector focuses on storage, services and support activities. Shipping agents, freight forwarders and companies that focus on ICT, advice and research in the field of logistics are also included in this subsector (Statistics Netherlands, 2017). When it comes to location choice, the focus in this research will be on distribution centres. This focus is relevant, because selecting a suitable DC location has become one of the most important decision issues for distribution industries in order to reduce transportation costs, enforce operation efficiency and logistics performance according to Chen (2001). Moreover, DCs are part of distribution structures. Decisions on these structures are important to companies as they allow them to balance customer service levels and logistics costs (Onstein *et al.,* 2018).

Several factors can play a role in logistics location choice. Hong and Chin (2007), studying 40 Chinese cities, found that the location choices of foreign logistics firms are positively influenced by market size, market demand, labour quality, transportation network's capacity (road, air, sea and rail), and agglomeration economies. To measure the labour quality in this research, the proportion of skilled workers in a city was used. According to Hong and Chin (2007), the availability of high-quality labour is important since logistics providers need to offer some highly professional services to customers. Within the economic geography literature and other research streams there are more relevant theories regarding factors that influence DC location choice. In the following paragraphs, a literature review will be provided.

2.1.1 Accessibility

Accessibility is one of the key drivers in DC location selection. On a domestic level, Holl and Mariotti (2017) found that access to transportation infrastructure (highway, airport, seaport) and proximity to urban areas are the most important location determinants for logistics firms in Spain. Moreover, Holl and Mariotti (2017) concluded that speed and costs are crucial determinants of efficient logistics which makes access to efficient transportation infrastructure a key location factor. Verhetsel *et al.* (2015) performed a stated choice experiment among managers of logistics companies in Flanders to identify the key factors in the search for suitable locations for logistics sites. They concluded that the access to seaports is one of the most important location factors for logistics sites in Belgium. In the Netherlands, port accessibility was found to be an important factor by Kuipers and Eenhuizen (2004). These results suggest that logistics firms could value accessibility over labour availability and costs.

2.1.2 Agglomeration economies

Logistics firms are spatially concentrated in various regions in The Netherlands (Van den Heuvel *et al*., 2013). At the same time, these logistics 'hotspots' are dealing with a very tight labour market (Tempo Team, 2017). This could imply that spatial clustering is more important for logistics firms than the availability of a suitable workforce. Therefore, it is important to know why special concentration of logistics activity occurs.

The geographic concentration of companies is studied extensively. Marshall (1956) did pioneering work on agglomeration economies and described three sources, namely labour market pooling, inputs sharing, and knowledge spillovers. Later on, Porter (1998) defined a cluster as 'the geographic concentration of interconnected companies in the same industry, which both compete and cooperate'. A well-known example is Silicon Valley, a cluster in the high-tech industry. Sheffi (2012) defined a logistics cluster as the geographical concentration of: (1) firms offering logistics services, (2) the logistics functions of manufacturers and retailers, and (3) companies with logistics intensive operations (such as automobile manufactures or bulk commodities distributers) for whom logistics is a large part of the cost. The reason for the concentration of firms may be due to: nearness of suppliers, access to community infrastructure, large local markets and the existence of a large pool of labour. Warffemius (2007) found that agglomeration advantages in the Schiphol region is the most important location factor for European distribution centres (EDCs). This was surprising because the traditional answer to the question why EDCs like clustering around Schiphol is that EDCs will be attracted by the airport because it is important for them to be able to use air transport.

As more firms cluster together, diseconomies of agglomeration may emerge such as: congestion, rising land costs and high demand for labour in relation to its supply (Warffemius, 2007). The high demand for labour in relation to its supply in logistic hotspots might promote spreading of DCs.

2.1.3 Demand levels, service levels and product characteristics

Demand levels, service levels and product characteristics are factors that are mentioned in the supply chain management and transportation literature (Onstein *et al.,* 2018). Since these factors are to a lesser extent part of the economic geography literature, they are merged into a single factor in this review. These factors are closely related, because both product characteristics and demand levels influence service requirements. On a demand level, demand volatility and the spatial demand pattern are factors that influence location decision. When demand volatility is high, flexibility and responsiveness on a service level are required. When it comes to product characteristics, product value density, packaging density, inventory policy and production and sourcing locations are of importance (Onstein *et al.,* 2018).

2.1.4 Land costs and availability

Hesse (2004) stated fourteen years ago that the need for cheap land for increasingly large facilities was the second most important consideration for DCs looking for a location. As mentioned in the introduction, DCs are still increasing in amount and size in the Netherlands today (Verweij *et al*., 2018). Moreover, Verhetsel *et al.* (2015) found that land rent is the most important location factor for logistics sites in Belgium. Lower land costs and the availability of larger plots of land may cause peripheral areas to be attractive locations for large DCs.

2.1.5 *Labour availability*

Buck Consultants International (2017) developed a framework to assess the attractiveness of logistics regions, or *regional logistic ecosystems* (figure 4). The framework is made based on the expertise of the firm, gained from working with logistics service providers, real estate developers and governments. 'Labour market' is one of the pillars that are used in the assessment. According to BCI (2017), the impact of the labour market on logistics regions is growing. As mentioned in the introduction, Van Geffen *et al.* (2017) supports the growing importance of the labour market factor. As shown in the figure, logistics regions should work on the image of working in logistics, Human Resource Development, training programs and the availability of staff at all educational levels through triple helix collaboration. In chapter 2.4, triple helix collaboration in a regional context is further discussed.

Figure 4 Logistics Ecosystem. Source: Buck Consultants International, 2017.

The other three pillars are: innovation and sustainability, market and business development and physical business environment (figure 5). Within the pillar physical business environment, accessibility of transport infrastructure and the availability of suitable buildings and lots play a role. This is in line with classical location choice theories that stress the importance of accessibility of transport infrastructure and land rent costs as most important location factors for companies (Verhetsel et al., 2015). The pillar 'market and business development' is mainly about market size, which is in line with the study by Holl & Mariotti, 2017. According to BCI (2017), the other pillar, innovation and sustainability, is crucial because its impact on logistics regions is growing as well. Grazia Speranza (2018) addresses recent technological advances and sustainability goals as current trends in logistics.

Prologis (2017) performed a research among logistics operators across Europe to find out which location decision drivers are most important. In the research, no distinction is made between different kinds of operators like shippers and logistics service providers. The major findings from this research are the following:

1	Immediate access to major consumption centres is paramount
2	Major population centres with the highest consumption are increasingly important
3	Importance of overall costs was comparatively low
4	Importance of labour, whether by proximity as in Western Europe (like the Netherlands) or by cost as in Poland

Table 1 Europe's most desirable logistics locations, major findings. Source: Prologis, 2017.

Based on these outcomes, Prologis' (2017) main message is that investment in infrastructure and labour availability are key to the success of a logistics hotspot. This again shows the importance of labour in the location choice of logistics companies.

2.1.6 Contextual factors

Lastly, a wide array of contextual factors can be seen as a factor in relation to DC location decisions according to Onstein *et al.* (2018). Contextual factors include zoning laws, presence of a business park, cost of living, cost of doing business, logistics real estate availability, local taxes and subsidies, international trade conditions, costs of insurance policies, customs performance and labour conditions (Ostein *et al.,* 2018).

In summary, this review indicates that accessibility, agglomeration, demand and service levels, land rent, labour availability and contextual factors are the main factors that drive decision making. Furthermore, existing studies show that the labour market plays an increasingly important role in DC location decision. It is stated that the current trend in this field (the tightening of the labour market) is a bottleneck for DC location decision. In response to this review, a few remarks have to be made. Firstly, economic geographic theories are criticised for not taking transaction costs into account (McCann & Mudambi, 2005). According to Onstein *et al.,* (2018), an example in this case can be the transaction costs of severance which can influence companies to relocate within their current region. Secondly, the literature does not distinguish different types of companies, while location factors may be different for national DCs than for regional DCs for example. Lastly, it must always be considered that location choice can be coincidental. Berg (2010) found that locations are frequently discovered by chance rather than systematic search based on interviews with 49 business owners in Dallas. Furthermore, he stated that large projects, like DCs are, benefit from going somewhere no others had bet on before.

2.2 Regional labour markets in Dutch logistics

The focus on a regional level is relevant because in the Netherlands, the labour market is organized on that geographical scale. The Netherlands is classified in 35 labour market regions to provide labour market information (UWV, 2017, appendix A). According to Tordoir (2013), the labour market regions broadly reflect the so-called 'Daily Urban & regional System' in which the workforce operates. To function on a daily basis, distance and time are important limitations for people having to travel for work, social contacts and facilities. For that reason, Daily Urban & Regional Systems are more or less demarcated into urban areas and regions. More or less, because the map of frequent interactions is different for each individual and company (Tordoir, 2013). An investigation into the relations between Dutch cities and regions (Atelier Tordoir & Regionplan, 2015), showed that the labour market for less knowledge-intensive jobs (MBO, applied education level) is most tied to urban areas and regions in the Netherlands. The labour market for knowledge-intensive jobs (HBO & WO, higher education level) is a more national market where employees are prepared to move over large distances.

2.3 Active labour market policies

Active Labour Market Policies (ALMPs) are used to mobilise unused labour resources. The primary target groups are unemployed or employed people at risk of involuntary job loss (OECD, 2018). Bonoli (2010) distinguishes four types of ALMPs, namely incentive reinforcement, employment assistance, occupation and human capital investment (table 2). The tools given in table 2 can be used to solve the mismatch between the number of unemployed people and the number of logistics job vacancies in Dutch regions.

Type	Objective	Tools
Incentive Reinforcement	Strengthen positive and negative work incentives for people on benefit	– Tax credits, in work benefits – Time limits on recipiency – Benefit reductions – Benefit conditionality
Employment Assistance	Remove obstacle to employment and facilitate (re-)entry into the labour market	– Placement services – Job subsidies – Counselling – Job search programmes
Occupation	Keep jobless people occupied; limit human capital depletion during unemployment.	– Job creation schemes in the public sector – Non-employment-related training programs
Human capital investment	Improve the chances of finding employment by upskilling jobless people	– Job-related vocational training

Table 2 Four ideal types of active labour market policy. Source: Bonoli, 2010.

Another strategy that can be used in projects aimed at matching labour supply and demand in logistics is 'employer branding' (Panteia, 2016). This strategy focuses on a different target group, namely students and people that work in a different sector. Improving the image of the logistics sector and its employers may increase influx of employees.

2.3.1 Target groups on an educational level

In pursuing regional labour market policy, Cörvers (2014) finds it useful to differentiate between three target groups based on their level of education: lower educated, secondary educated and higher educated. The target groups are approached in a specific way, which increases the effectiveness of the policy. In this theoretical framework, only the approach focused on the lower educated target group will be discussed, since the research is aimed at the bottom end of the labour market. According to Tempo Team (2018b) there is a lot of demand for truck drivers, logistics staff (reach truck drivers, order pickers and forklift drivers. These are all functions that are needed for warehousing operations.

According to Cörvers (2014), activation at the bottom of the labour market is of great importance, because the (net) employment rate among the lower educated is generally small compared to the other groups. In the third quarter of 2017, the net employment rate among the lower educated people in the Netherlands was 51,5 % (Statistics Netherlands, 2017). To compare, the employment rate among people with a secondary and higher education level was 73,9% and 83,2% respectively. Therefore, a lot can be gained at the bottom of the labour market by means of labour-intensive policy measures.

Cörvers (2014) indicates that the sustainable use of lower educated people can be tricky. In many cases, these people are employed on flexible jobs where there is no investment in their human capital through education or training. To prevent this workforce from being employable for a short period and subsequently no longer possess the right knowledge, employers, in consultation with the business community, educational institutions, the UWV and local authorities, should ensure a better interpretation of the flexible contracts to improve informal and formal training. This again emphasizes the importance of TH networking on a regional level (Etzkowitz and Leydesdorff, 2000).

2.3.2 Examples of active labour market policies in Dutch logistics regions

The scarcity in the labour market of logistics regions in the Netherlands is frequently discussed by newspapers and other media. The Dutch Broadcast Foundation (2018), stated that an extreme shortage of staff has arisen in the logistics sector the last year. Some other articles give examples of policies that are currently initiated. One of these policies is initiated by the province of Limburg called ‘Zo werkt Limburg!’ roughly translated: This is how Limburg works! The plan must ensure a better functioning labour market. The Limburg Provincial Executive worries that the growing amount of difficult to fill vacancies will lead to stagnation of economic growth (Transport Newspaper, 2018).

Several Dutch regions have created ‘sector plans’ to stimulate the match between employers and employees. Examples are sector plans in the Zwolle region, ‘Transfer Centre Logistics’ in Twente, the ‘Sector Service Point Logistics’ in Limburg, ‘Smart Logistics Centre Venlo’ focussing specifically on the Venlo-Venray region and the ‘Breeding pond Logistics staff members’ in Northeast Brabant. Often, these sector plans are a cooperation between employers and employee organizations, governments, knowledge institutions and regional boards (portoftwente.com, 2018). This is a good example of a Triple Helix collaboration (Etzkowitz and Leydesdorff, 1995, 2000) that is formed. An important aim of these sector plans is to guide and educate workers and people with social security to work in promising professions and sectors with employers who have difficult to fill vacancies.

2.4 Triple Helix collaboration

When it comes to implementing labour market policy and projects, Triple Helix (TH) networking can be of importance. This is the cooperation between firms, educational institutions and governments on knowledge co-production (Etzkowitz and Leydesdorff, 1995). On a regional level, this means that regional firms, regional educational institutions and local authorities combine their efforts to contribute to regional development and innovation (Etzkowitz and Leydesdorff, 2000). To achieve this, the three helices must seek for overlapping boundary interests. Yet, these boundary interests can have a different meaning for each helix and there can be other conflicting needs and stakes (Sol et al., 2013). A study into triple helix networks in seven Dutch horticulture Greenport regions by Geerling-Eiff *et al*. (2017) indicated that it is easier to develop a shared vision in which the partners agree on what they want to achieve together in their region, if a relationship between TH partners is formed through preliminary bottom-up actions (e.g. projects).

Firms can benefit from participating in regional TH networks. Elvekrok *et al.* (2017) found that the primary benefits are access to new knowledge and the improved regional collaboration itself. Seeing this research is focused on the availability of employees in a region, access to new knowledge would mean access to 'knowledged' employees. The role of the regional educational institutions in this is producing graduates and other personnel and provide education and therefore trained people (Lawton Smith & Bagchi-Sen, 2010).

The goal of the regional government is to contribute to regional development and innovation by collaborating with regional firms and educational institutions (Etzkowitz and Leydesdorff, 2000). In the context of this study, regional development could mean stimulating labour supply to stay attractive for logistics firms. The question is what governments can, and are allowed to, do in this matter. Implementing policies aimed at enhancing labour supply in a region costs time and money, while according to Weber's least cost theory of industrial location, DCs will move to regions where staff supply is sufficient to quantitatively fill the demand for labour. Since firms seek a site of minimum transport and labour costs (Weber, 1929).

2.5 Trends and developments

For this research, trends and developments that influence the Dutch logistics sector and regional labour supply and demand on a social, economic and political level are relevant. In this paragraph, a brief overview of the relevant trends and developments will be given.

According to Transport and Logistics Netherlands (TLN, 2017), more and more people are living in an urban environment. Cities are increasingly important for the economy, yet they also become more and more crowded. This urbanization imposes other requirements such as housing, healthcare, safety, energy and infrastructure (TLN, 2017). These developments influence supply chains and logistics.

Furthermore, the world is increasingly prosperous. To meet the growing need, great amounts of products are being produced. This stimulates the logistics sector because these products need to be stored and transported. However, it also threatens scarcity of raw materials. Therefore, sustainability is an increasingly important topic (DHL, 2016).

As people are getting more prosperous, higher demands are set. According to the logistics trend radar by DHL (2016), the convergence of offline and online commerce has resulted in an 'anytime, anywhere, from any device' mentality for consumers. This causes an increase in the demand for night work in DCs in the Netherlands as stated by the Dutch Broadcast Foundation (2018). An important precondition for stimulating e-commerce is an adequate legislative framework that regulates night work in DCs, makes quick deliveries possible and lowers wage costs. Legislative frameworks are implemented on a national level. Therefore, this trend mostly affects DC location decisions on an international level.

An important factor for the decreasing labour supply is population ageing. The share of employees from the age of 55 is increasing. Figure 5 shows the age structure of the transport and logistics sector[3] compared to the total working population in the Netherlands. The top three age categories are overrepresented in the transport and logistics sector (Van Zenderen *et al.,* 2017).

Figure 5 Age structure in logistics sector compared with Dutch working population. Source: Sector institute Transport and Logistics, 2017.

Another trend that could influence the logistics labour market is robotization and automation. There are, however, various ideas about how this development will affect the labour market. Robotization and automation could have a positive impact on the labour market because robots need to be computer programmed, operated and maintained. Benedict Frey *et al.* (2013) imply that as technology races ahead, low-skill workers will reallocate to tasks that are not affected by computerization. These tasks require creative and social intelligence, so workers will have to acquire these skills. Mikušová *et al.* (2017) suggest that the lack of labour power is the biggest motivation for implementations of robotic workplaces. By means of robotic workplaces, the increasing customer requirements and need for productivity can be met. According to BCI (2017), more and more DCs will become robotized in the coming years. Within 15 years, approximately 35,000 jobs in DCs bigger than 10,000 square metres will be lost through robotization and automation (BCI, 2017). Since the implementation of robotization in warehouses costs time and money, this trend could be viewed by DC location decision makers as a long-term solution rather than a solution for the current personnel shortage.

Because of decentralisation, local governments are becoming increasingly influential in the Netherlands; for example, by developing business locations. In addition, budget cuts lead to a smaller government organization, which results in increasingly bringing in third parties for obtaining knowledge and expertise (TLN, 2017). This could be one of the reasons for the regional division of labour market policies.

2.6 Conceptual model

Based on the existing literature, a conceptual model is derived (Figure 6). All the discussed location factors that influence DC location decisions are included in the model. This study is mainly focused on one of the location factors, labour availability, which is influenced by supply and demand of

[3] In this case, the transport and logistics sector is understood by all companies that fall under the scope of the Collective Labour Agreement for the transport of goods and the Training and Development Fund for the Carriage of Goods by Road and the Rental of Mobile Cranes (SOOB). Own drivers, the flexible non-core workforce and drivers working at dispensed companies are not affiliated to the collective labour agreement (Van Zenderen *et al.,* 2017).

labour in the Dutch logistics sector. Economic, social and political developments influence the supply and demand of labour, which on its turn determines the labour market situation in Dutch regions. Through TH collaboration, policies and projects aimed at matching supply and demand in a tight labour market are implemented. The dashed line and the red boxes represent the main research question: To what extent do regional labour market policies influence the location choice of distribution centres?

Based on the literature review, it is expected that regional labour market policies and projects positively influence DC location decisions because labour availability is an increasingly important location factor (BCI, 2017; Van Geffen, 2017; Prologis, 2017). Furthermore, it is expected that logistics hotspots pay more attention to making policies and projects in this field, since the scarcity on the labour market appears to be highest in those regions (Tempo Team, 2018a).

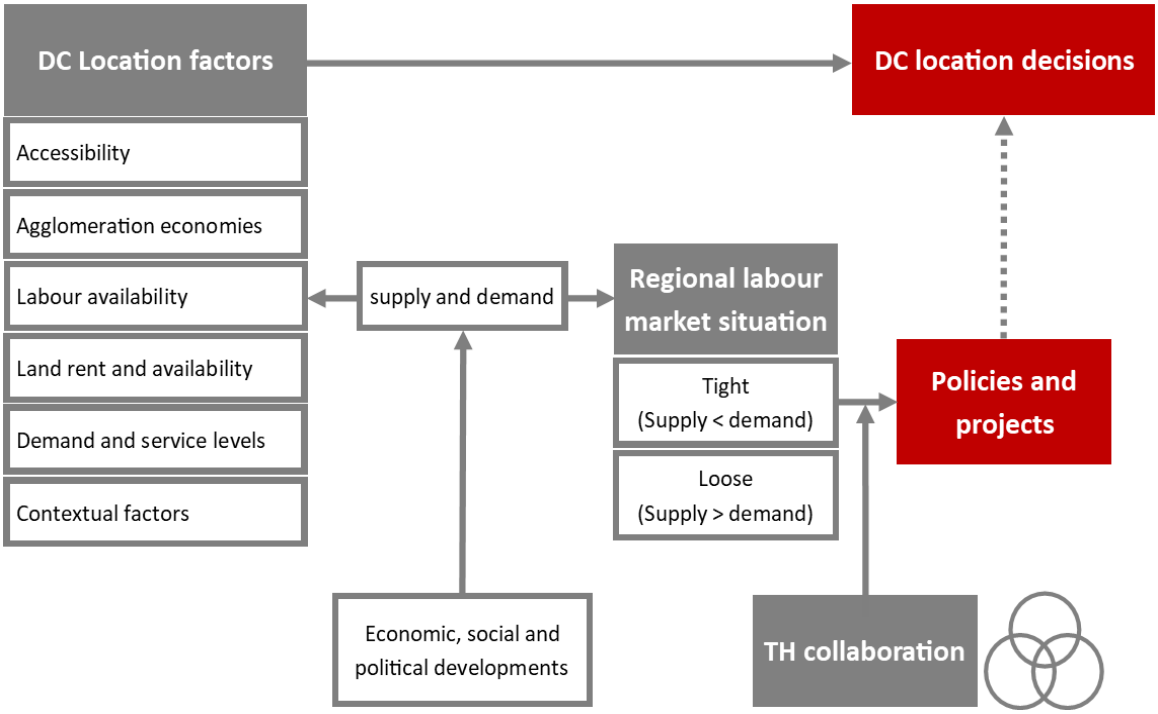

Figure 6 Conceptual Model based on literature review. Model by the author.

3. Research Methods

In the following chapter, the research methods are explained based on the sub-questions. Furthermore, the case selection will be elaborated on.

3.1 Qualitative case study

For this research, a qualitative case study method with a deductive orientation is applied. This means that the theory, conceptual model and research questions are formulated before the data is collected. However, the conceptual model was supplemented after the qualitative analysis of the data, which is a more inductive approach (figure 7). The time frame for conducting this research was six months (March 2018 until August 2018). The research is combined with an internship at Buck Consultants International. In addition to data that is collected within the time frame, knowledge and information about ongoing projects performed by this consultancy firm were used.

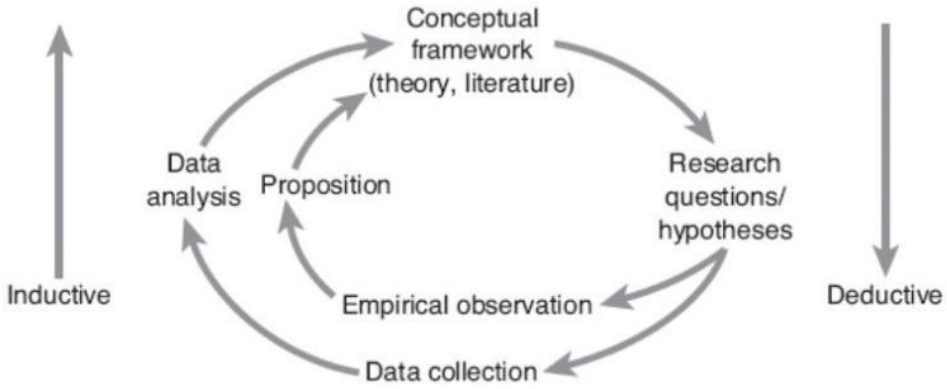

Figure 7 Research Wheel. Source: Rudestam & Newton, 2007.

3.2 Literature review

4. *Which (regional) factors are important for the location choice of distribution centres?*
    a. *Is the importance of the factor labour availability changing?*
    b. *What role do regional labour market policies play in this?*

Sub-question 4 was answered by conducting a literature review on regional concentration and location dynamics of logistics firms and the importance of the labour market in this context. Scientific papers, reports and secondary statistics (CBS, STL, BCI, UWV, JLL) were analysed. The collected information forms the theoretical framework in chapter 2. The framework was added with available literature on regional labour market policies and a link with current developments in the logistics sector was made to provide a theoretical basis for sub-questions 1 to 3.

3.3 Case selection

The regions that were selected as cases for this research had to meet the following requirements: the regions have to play a substantial role in the Dutch logistics sector and secondary data regarding the regional labour market has to be available. In this research, the NUTS 3 (Coordination Commission Regional Research Programme) regional classification is used (See Appendix B). For labour market related research in the Netherlands, a different regional classification is used (UWV 2013, See Appendix A). However, in the case of the selected regions, the regional boarders are similar. JLL (2017), an investment management company, made a ranking for logistics locations in the Netherlands. The ranking analyses 40 NUTS 3 regions based on eight topics including 28 different indicators (JLL, 2017). Greater Amsterdam and North Limburg are top logistics spots according to JLL (2017) and Prologis (2017). At the same time, these regions are dealing with a very tight labour market according to Tempo Team (2017). Twente is a less popular logistics region according to these two research agencies. Nonetheless, Tempo Team indicates that the logistics labour market is tight in this region. Twente is selected as third region to see whether there are differences in terms of policy making and DC location choice between logistics hotspots and less popular logistics locations.

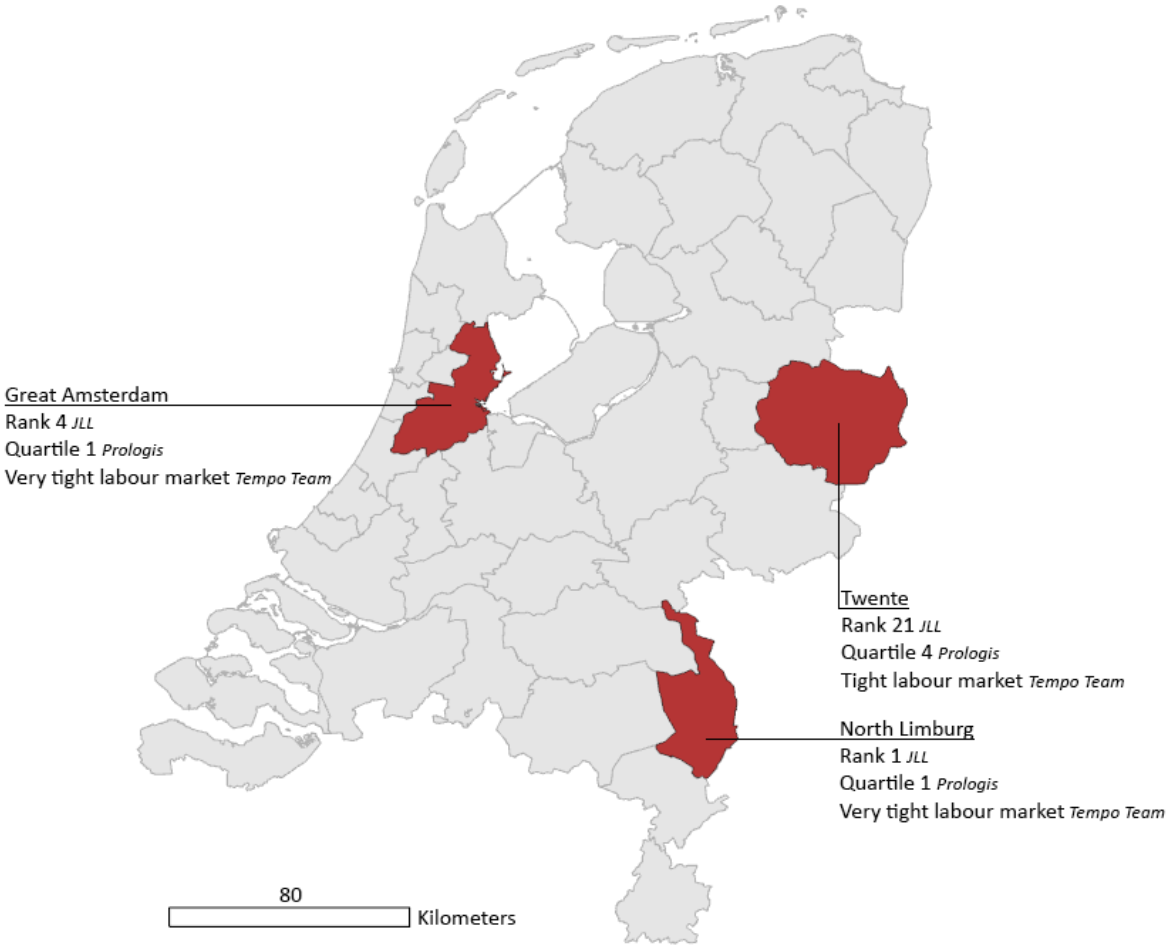

Figure 8 The selected Dutch regions based on NUTS 3 classification. Made by author using GIS and Photoshop.

There are regional differences when it comes to age distribution of the logistics workforce as well. This is reflected in the percentage of employees over 55 compared to the total number of employees in the Netherlands. In 2015, 16 percent of employees in the Greater Amsterdam region were 55 years or older. In North Limburg this was 20 percent and in Twente 22 percent (Figure 9). This difference could influence regional labour market policies. The figure shows that the percentage of employees over 55 will increase significantly in all regions in the coming years (Van Zenderen *et al.,* 2017).

Figure 9 Share of employees aged 50+ per NUTS 3 region and expected in 2025. Sector institute Transport and Logistics, 2017.

To get a better image of the size of the logistics labour markets in Twente, Greater Amsterdam and North Limburg, a table with the share of the transport and storage labour market based on the total number of jobs in the region is provided (See Table 3). In the Netherlands, the share of jobs in the sector is 5% based on the total number of full-time, part-time and temporary jobs. When this is compared to the selected logistics regions, it is clear that the share of the sector is relatively small in Twente (3,4%) and relatively large in Greater Amsterdam (7,6%) and North Limburg (8,9%). This is in line with expectations, as Greater Amsterdam and North Limburg score higher in the logistics rankings (JLL, 2017; Prologis, 2017).

	The Netherlands	Twente	Greater Amsterdam	North Limburg
Transport and storage	420.450	10.260	71.800	12.330
Total	8.444.810	303.820	943.710	137.640
%	5%	3,4%	7,6%	8,9%

Table 3 Share of jobs in transport and storage, based on the total number of jobs, fulltime, part time and temporary workers. Source: LISA, 2017.

3.3.1 Logistics real estate in Twente, Greater Amsterdam and North Limburg

As mentioned in the introduction, DCs are increasing in amount and size in the Netherlands. Dutch newspaper De Volkskrant (2018) published an article about the 'big boxes' that take over the Dutch landscape. In the article, Venlo, a city in the North Limburg region, is frequently mentioned as logistics hotspot with multimodal access via road, water and rail. Michael Kors, VidaXL, Lidl and Arrow Electronics are companies that opened large DCs in Trade Port Noord (logistiek.nl, 2018). Vtech, one of the largest toy manufacturers in the world, announced the establishment of a large DC in Almelo, a city in the Twente region. The arrival of Vtech provides estimated 250 new jobs in the region (logistiek.nl, 2018). PostNL and SEKO Logistics announced to open large DCs in the Greater Amsterdam region this year (logistiek.nl, 2018). According to Savills (2018), the highest rent levels are paid in Amsterdam, Rotterdam and Utrecht. Prices are between 45 and 65 euro. In Tilburg, Venlo, Roosendaal and Tiel, rent levels start at 35 euro per square metres. Rent levels in Twente are not mentioned in the report.

3.4 Snowball sampling

Snowball sampling is used to gather information on the running labour market projects in the Dutch logistics sector. First, a list of contacts was made by selecting a policy officer in the field of economy or labour for each Dutch province and contact list consisting of employees at municipalities and third parties from a previous project at BCI was added. This resulted in a list of 25 experts in the field of regional labour markets. An email was sent to these experts with a brief explanation about the research and a request to send information about current projects aimed at the logistics labour market in their region. Some experts forwarded the email or suggested another expert who they knew could offer more information. For the interviews, the experts that replied with information on the Greater Amsterdam, Twente and North Limburg regions were approached. This resulted in two respondents per region. The contact details of the remaining 6 experts were obtained through the BCI network.

3.5 Semi-structured interviews

1. *What active labour market policies are initiated to match logistics supply and demand in Dutch regions?*
2. *How do experts in the field perceive the current and expected labour market situation in Dutch logistics regions?*
3. *How do experts in the field perceive the effectiveness of the initiated policies?*
4. *Which (regional) factors are important for the location choice of distribution centres?*
    a. *Is the importance of the factor labour availability changing?*
    b. *What role do regional labour market policies play in this?*

After the case selection, qualitative data for each region was collected to answer the sub-questions as complete as possible. In this way, the literature review and secondary data were supplemented with actual experiences and opinions from experts in the field. Semi-structured interviews with decision makers in DCs, policy makers from the selected regions and logistics real estate specialists with knowledge on a national perspective were performed, transcribed and analysed by using NVivo. To get a well-founded overview of what is going on in the region, at least 3 experts per region have been interviewed. A complete list of the interviewed experts is provided in the appendix (See Appendix C). According to Yin (2009), there are two main strengths about using interviews as a source of evidence for a case study research. First, interviews are targeted as they focus directly on the case study topics. Second, interviews are insightful as they provide perceived causal inferences and explanations on, in this case, labour market policies in logistics and their impact on DC location decisions.

3.6 Data analysis

The data collected by conducting interviews is transcribed in Word and coded and analysed in Nvivo. Coding pieces of text in the interviews brings forward what the different respondents have to say about a certain topic. Moreover, using Nvivo saves time because the software is capable of sorting, matching and linking the data. This makes it easier for the researcher to answer the research questions without losing access to the data source or context in which the data was obtained according to Clifford *et al.* (2010). The main codes and categories are derived from the literature review. Therefore, the main categories are 'labour market policies', 'labour market situation', 'DC location choice', 'logistics regions' and 'trends and developments'. Through open coding, new ideas were added to the code list like 'suggestions' (for future policy), 'obstacles' (for robotization) and 'communication between actors' (as a condition for effectiveness). The codes that were used for the analysis are displayed in a code tree (See Appendix D).

3.7 Validity, reliability, triangulation and ethics

In qualitative research, there are different views on how to ensure validity and reliability. During this research, an attempt has been made to limit the interpretation and subjectivity and to keep it transparent by transcribing the interviews and providing the codebook, list of respondents and interview questions for the semi-structured interviews (See Appendix D-G). To ensure internal validity, triangulation has been applied by using many different sources and theories in the research. Furthermore, the research method is described in detail to establish external validity. Reliability is obtained by submitting the results to the respondents for verification before handing in the official version of the thesis. Lastly, research ethics like privacy and informed consent are considered. To ensure this, the scope of the research was explained before the start of the interview and each respondent was asked for approval to record the interview.

Results

Figure 10 Geographical distribution of regional logistic labour market projects in the Netherlands. Created with My Maps by Google, 2018.

4. Current labour market policies in Dutch logistics regions

In this chapter the answer to the first sub-question is provided based on an overview of the ongoing projects that aim to match supply and demand in Dutch logistics regions. The first sub-question is as follows:

''What active labour market policies are initiated to match logistics labour supply and demand in Dutch regions?''

To provide an accurate overview of labour market projects in Dutch regions, for every province in the Netherlands a policy officer in the field of economics or labour market was contacted. As mentioned in paragraph 3.4, snowball sampling was used to build up a network of policy officers active in this field. This resulted in a list of 30 Labour market policies and projects in 13 different Dutch NUTS 3 regions. The projects have been put on a map as points to show their geographical distribution (See Figure 10). The list including additional information about the projects is put in a table which can be found in the appendix (See Appendix G)[4]. The map shows that not only in logistics hotspots like Brabant, North Limburg, Rotterdam and Amsterdam invest in labour market projects. Regions like Zeeland, Nijmegen, Zwolle and Twente took initiative as well. After contact with policy officers and conducting internet research, no labour market projects were found in the centre and north of the Netherlands.

In Twente, the entrepreneurial association Port of Twente is an important driver of projects aimed at improving the regional economy by creating employment for the logistics sector. The association is part of the Strategic Logistics Alliance (SLA) which is initiated by the province of Overijssel and invests in TH collaboration between logistics actors in the region (Programme manager SLA province of Overijssel, personal communication, 7 June 2018). Furthermore, a 'logistics week' is organized to promote the sector among high school students and people who are receiving benefits (weekvandelogistiek.nu, 2018). These initiatives are marked as three points on the map in the Twente region (See figure 8).

Labour market policy in the Greater Amsterdam region is more focused on the technical sector according to the strategic labour market advisor of the province North Holland (personal communication, 23 May 2018). Still, logistics firms and regional training centres set up the House of Logistics focused on recruiting and training the logistics craftsman of the future (Project leader House of Logistics, personal communication, 13 June 2018). In addition, there is the Airport Community Schiphol which is focused on the Schiphol area. This organization aims to sustainably strengthen the labour market for the aviation sector, including DCs located near the airport (Programme manager Airport Community Schiphol, personal communication, 25 May 2018).

Due to the improving economy in the Limburg region, the plan of attack 'ZO WERKT Limburg' (ZWL) was launched by the province in October 2017. According to the education and labour market policy officer at the province of Limburg, this integrated programme links long-term strategy to concrete short-term actions and aims to quickly tackle existing barriers in the labour market. The strategy is to forge alliances between organizations that are active in the labour market. In addition, the Human Capital Agenda has been running since 2014 and focusses on various sectors that are of importance to Limburg, including logistics. The main objective is to provide sufficient and qualified staff, tailored to the demand of the regional business community. Within the logistics sector in Limburg, various networks are active with implementing programs and projects aimed at increasing the labour participation of job-seekers and lateral-entry workers towards logistics, improving the image of the sector for future employees, engaging people to the sector and better cooperation

[4] The list in appendix G includes all projects that came up during the research and the interviews. This is by no means an exhaustive list, but it gives an indication of the many projects taking place.

between education and businesses. Smart Logistics Centre Venlo is a collaboration platform initiated and executed by entrepreneurs that also stimulates projects in the field of the labour market. Within the labour market region of North Limburg, more projects are drawn up to stimulate jobseekers to work for the logistics sector, including the 'Logistics Passport' project, a collaboration between the Venlo municipality, UWV, training centres and employment agencies. Two public-private partnerships are important to mention in this region: Centre for Logistics Craftsmanship at the intermediate vocational education level and the Knowledge Distribution Centre Limburg at the higher vocational education level, both aimed at improving collaboration between businesses and educational institutions to realise state of the art training and knowledge sharing (personal communication, 3 August 2018).

Various tools are used to achieve the goals for the initiated projects. Based on the list of 31 regional projects, the following main tools are distinguished:

- Schooling (focused on students)
- Sector Marketing
- (re)entry programmes (focused on unemployed)
- Triple Helix Collaboration
- Training (focused on employees)
- Lateral entry programmes (focused on people working in other sectors)

Schooling, sector marketing and (re)entry are most frequently mentioned on the organization websites as tools to improve the regional logistics labour market. This indicates that the main target groups are students and unemployed, which is slightly different from the target group that is mentioned by the OECD (2018). This can be explained by the sectoral approach, given that students must be attracted to the sector in order to choose to work in it. Entry programmes resemble the ALMP type 'employment assistance' by Bonoli (2010). Schooling, training and lateral entry programmes are examples of Human Capital investment (Bonoli, 2010). Setting up a platform for TH collaboration is also used as a tool for improving the logistics labour market. The effectiveness of the aforementioned tools will be discussed in paragraphs 6.4 and 6.5.

5. Perceived labour market situation in Dutch logistics regions

To gain insight into the way the logistics labour market situation is perceived by experts, semi-structured interviews were conducted. By means of the results of the interviews and relevant quotes [5], the second sub-questions will be answered in this chapter:

''How do experts perceive the current and expected labour market situation in Dutch logistics regions?''

5.1 Twente

The interviewed experts did not experience problems with finding enough employees for the DCs in the Twente region yet. however, it emerged that the tension on the logistics labour market is increasingly being felt, especially since more sizable DCs with a high demand for logistics employees are being established in the region. The following quotes substantiate this statement:

''The regional labour market in the field of distribution was for a long time reasonable to good, but you see now that it is becoming tight in logistics. You see more and more companies in logistics settling here.'' – HR Manager Timberland Europe, personal communication, 25 May 2018

''[…] we have the largest growth in Almelo in the XL Businesspark. There is a Chinese toy manufacturer now and it needs 200 employees in a short term. Well, the employment agencies are working hard to get those people. But also Wehkamp, for example, will double in size. So that also means a lot of extra jobs. So there is an urgency.'' – Programme manager SLA province of Overijssel, personal communication, 7 June 2018

The plant manager of a chemical distribution company based in the XL Businesspark in Almelo with about 45 logistics employees, indicated that up to now, enough employees are available. However, he mentioned that finding employees is becoming harder because big companies are settling in the business park (Personal communication, 13 June 2018).

5.2 Greater Amsterdam

On a provincial level, the need for employees in the technology sector is higher than the need in the logistics sector. Nevertheless, there is a need for logistics employees according to the project leader of the House of Logistics and the Director of international marketing and acquisition at the Schiphol Area Development Company (SADC), who both communicate regularly with the logistics business community in the region.

''[Logistics companies] simply can't process their deliveries because they don't have enough hands.'' – Project leader House of Logistics, personal communication, 13 June 2018

''Our experience is, hands are needed, but higher-skilled staff is needed too, so it often concerns both categories.'' – Director International Marketing & Acquisition SADC, personal communication, 27 June 2018

According to the interviewed experts, the Greater Amsterdam region can still meet the demand for labour because of the young workforce and the relatively small companies that settle in the region.

''Here in the region we have, if you look at the demography of the Netherlands, we have a lot of youngsters here in Amsterdam. Larger families, many young people, but that also decreases a bit.'' – Programme manager Airport Community Schiphol, personal communication, 25 May 2018

[5] In this thesis, all quotations from the interviews are translated from Dutch to English by the author.

''So I think because the operations here are relatively small […], the whole issue of staff is a little less acute here than in other parts of the country.'' – Director International Marketing & Acquisition SADC, personal communication, 27 June 2018

5.3 North Limburg

As the following quotes indicate, the very tight labour market for logistics staff members as indicated by Tempo Team (2018) (see figure 3) is not experienced in that extent in the North Limburg region:

''If you are going to ask a group of companies; what is the problem at the moment, then it is often sparsely.'' – Education and Labour market policy officer province of Limburg, personal communication, 20 June 2018

''When [a DC] does decide not to go to Venlo and why, then this is the talk of the town because it always went smoothly. But we do not experience that ourselves yet.'' – Education and Labour market policy officer province of Limburg, personal communication, 20 June 2018

Besides, the experts do not perceive the labour market situation in the region to be different from the situation in the rest of the country.

''If you look at the stories about the logistics hotspots ranking, then it says; Venlo-Venray does not rank high. Then in the next paragraph it is explained that it is actually the same throughout the Netherlands.'' – Commercial Director Greenport Venlo, personal communication, 3 July 2018

During another interview, the Business developer at WDP, a logistics real estate company, mentioned an example of a project that did not select Venlo in 2017 because they thought they would not find enough employees in the region (personal communication, 19 June 2018). It is not clear on what information resources this decision was based.

Despite the nuances that are made, the urgency to tackle the shortage on the labour market in Limburg is recognized by the province:

''But that does not influence the fact that we recognize the urgency. This is why the plan of attack is a topic with the Provincial Executive.'' – Education and Labour market policy officer province of Limburg, personal communication, 20 June 2018

5.4 The Netherlands

According to the interviewed experts, the tight labour market is more of a national problem than a problem that is only occurring in logistics regions.

''[…] if you need 300 employees next week, then you will not succeed anywhere in the Netherlands.'' – Commercial Director Greenport Venlo, personal communication, 3 July 2018

''[The regional logistics labour market] is becoming tighter, but that is more of a general problem in the country I think.'' – HR Manager Timberland Europe, personal communication, 25 May 2018

A point that must be made here, is that the demand for labour is not only increasing for the logistics sector. The STL investigated developments in terms of labour demand and supply for other sectors and concluded that there will be greater labour shortages in the ICT and healthcare sector (Researcher at STL, personal communication, 29 June 2018).

5.5 Conclusions

Some experts do indeed experience the drawbacks of a tight regional labour market for the logistics sector. Others indicate that the problem is not as big as the numbers may suggest. It was frequently mentioned that the tight labour market is more of a national problem and that the demand for labour is increasing in all regions.

The provinces of Overijssel and Limburg acknowledge the urgency for action in the logistics labour market and are driving initiatives in Twente and North Limburg. As mentioned in chapter 4, the provincial government of North Holland does not aim its labour market policy on the logistics sector. The interviewed experts indicated that the urgency in Greater Amsterdam might be less because of the younger workforce and smaller logistics establishments. In Twente and North Limburg there are examples of large DCs settling in the region which quickly need 'hands', i.e. manual workers. This causes pressure on the relatively small workforce. The need for manual workers was often mentioned by the experts. After further questioning, it was also mentioned that higher-skilled personnel are needed. However, the demand for this group in DCs is more difficult to express in figures.

Overall it can be concluded that the extreme tight labour market as indicated by Tempo Team (2018) is not perceived yet by experts in the studied regions. Nevertheless, the urgency to act in terms of matching labour supply and demand for the logistics sector in the near future is felt in all three regions. The regional differences are not as big as expected, since finding suitable employees is becoming more difficult throughout the country and in other sectors as well.

6. Effective regional labour market policy in logistics

By conducting in-depth interviews, insights in the effectiveness of labour market policies and projects were obtained through the expertise of the respondents. In this chapter, the results are set out to answer the third sub-question:

''How do experts perceive the effectiveness of the initiated policies?''

6.1 Organization and financing

TH collaboration was mentioned in all interviews as fundamental for forming effective regional policy. Through close collaboration, information and knowledge about the logistics labour market can be exchanged smoothly. Subsequently, it can be determined whether sector specific policy is needed.

''What is important of course, and what you see everywhere, is the regional DNA; what does the region have to offer, what kind of businesses are there and what is needed for it?'' – Education and Labour market policy officer province of Limburg, personal communication 20 June 2018

The focus on the logistics sector in provincial labour market policy does not appear to be a condition for initiating projects in this field. The approaches in all three regions are bottom-up. The province can drive initiatives, like in Twente and North Limburg, yet regional organisations carry out the projects. The projects are often financed with governmental funds and supplemented with contributions from the companies that want to make use of the projects (Project manager OostNL, personal communication, 6 June 2018).

Policy makers acknowledge that the labour market for less knowledge-intensive jobs is tied to regions in the Netherlands (Atelier Tordoir & Regionplan, 2015). Besides, decision makers within distribution centres indicate that it is advantageous for the company that employees live in the region because of limited travel allowance (HR manager Timberland, personal communication, 25 May 2018; Plant manager Vivochem, personal communication, 13 June 2018).

When it comes to difficulties in policy making, experts indicated the tension between the short-term need for staff of DCs and policy programs that have a medium or long-term horizon. This must always be considered when implementing labour market policy:

''Policy is not made for a year, but for a longer period of time, so there is a tension because companies think for a year'' – Education and Labour market policy officer province of Limburg, personal communication, 20 June 2018

''If someone must be trained, then of course that takes a certain amount of time. […] So if you have a demand now, then it doesn't help to say that people are being educated. However, it is relevant for the demand in the future.'' – Director International Marketing & Acquisition SADC, personal communication, 27 June 2018

6.2 Respond to trends and developments

During the interviews, population ageing and robotization were most frequently mentioned as developments that can influence the labour market. According to the sector developer logistics at LIOF, more and more companies are starting to work with robots (personal communication, 20 June 2018). However, it is difficult to predict how robotization is going to influence the labour market due to two reasons. Firstly, short term lease contracts can be an obstacle as robotization is a big investment that has to be made worthwhile. Secondly, it is not clear in what way this development will change the number of employees and the skills that are required (Sector developer logistics LIOF & business developer WDP, personal communication).

Population ageing in the logistics sector is easier to predict and therefore, easier to tackle through policy measures. During the interviews, sustainable employment frequently came up. According to a researcher at STL lateral-entry programmes executed by the institute, aimed at training people from other sectors to become a truck driver, have proven to be effective (personal communication, 29 June 2018). The programme manager of the Strategic Logistics Alliance at the province of Overijssel also indicated that this 'intersectoral exchange' is important for sustainable employment (personal communication, 7 June 2018).

To keep employees to work in a DC for a longer period, companies can also take measures themselves. Examples are improving working conditions, raising salary and simply reducing the flexible workforce, as mentioned during one of the interviews:

''Big companies want to reduce their flexible workforce, because they want to keep employees longer because they expect shortages.'' – Researcher at STL, personal communication, 29 June 2018

6.3 Sector marketing and demarcation

Ten out of the twelve interviewed experts named sector marketing or 'making the logistics sector sexy' as an effective policy measure. As mentioned in chapter 4, sector marketing is used as tool in running labour market projects. However, experts think that more sector marketing would be useful to improve the negative image people have of working in logistics.

[…] more projects should be initiated to make working in logistics sexy. – Project Manager OostNL, personal communication, 6 June 2018

''I originally worked in the logistics sector, but logistics always has a fairly negative image.'' – Business Developer WDP, personal communication 19 June 2018

According to the project manager of the Airport Community Schiphol, the negative image is due to the fact that people associate logistics with order picking and physical work, while supervisors and planners are also needed. Because the 'logistics sector' is such a broad concept, many different stories are distributed which can cause confusion and frustration, as indicated by the following quote:

''And what I find unfortunate for example, is that in yesterday's letter from Minister Koolmees from social affairs, about the labour market shortage, he mentions the transport sector. He is talking about the truck drivers. He is not talking about the big bulk of other professions in the logistics sector.'' – Education and Labour market policy officer province of Limburg, personal communication 20 June 2018

6.4 Conclusions

''You need to have enough people, but you also need to be able to actually get and keep these people into the labour process as a region. And the logistics sector will also have to show: This is what we do! So it must be an attractive sector.'' – Programme Manager SLA province of Overijssel, personal communication 7 June 2018

This quote sums up what is important to keep in mind when implementing regional labour market policy in the logistics sector. With an emphasis on *region,* as policy makers and decision makers within DCs acknowledge that the labour market for less knowledge-intensive jobs is most tied to regions. Through TH collaboration and a bottom-up approach, policies are implemented in optimal alignment with the business community.

To ensure labour availability for the logistics sector in the long term, it is advisable for regional governments, educational institutions and businesses to focus on sustainable employment and sector marketing. As mentioned in chapter 4, marketing is already a frequently used tool in labour market projects to attract students and unemployed to work in logistics. Nevertheless, the interviewed experts indicated that more can be invested in marketing the sector to potential employees. A better delineation of the various components that make up the sector would also help in this matter.

To aim for sustainable employment, it is recommended to invest more in training and lateral entry programmes. Due to the aging population, people must work for a longer amount of time. Investing in improving the skills of employees currently working in logistics, ensures that they stay connected with the sector and remain interested in their work. This also applies to people who are currently working in different sectors and would like to do something different. For this, lateral-entry programmes can be used.

7. Location choice of distribution centres

In the following chapter, the theoretical framework as described in paragraph 2.1 will be supplemented with the results of the empirical study. Furthermore, the link between labour availability, labour market policy and DC location choice in practice is elaborated on. Consequently, the fourth sub-question will be answered:

''Which (regional) factors are important for the location choice of distribution centres?''

a. ''How important is the factor labour availability?''

b. ''What role do regional labour market policies play in this?''

7.1 Accessibility

The findings in the literature about access to efficient transportation infrastructure being a key factor in DC location decision (Holl & Mariotti, 2017) can be confirmed based on this qualitative research. The following quotes support this statement:

''I think that many chose, and choose, for Venlo and the region Noord Limburg due to aspects regarding infrastructure and accessibility.'' – Education and Labour market policy officer province of Limburg, personal communication 20 June

''The first [location factor] is infrastructure concerning both delivery and distribution. Because we are a distribution centre after all, hence a lot comes in and a lot goes out. Therefore, infrastructure is considered. That goes for water, rail and road.'' – HR Manager Timberland Europe, personal communication, 25 May 2018

Accessibility is the explanatory factor for less logistics activity in the north of the country. This could explain the fact that no logistics labour market policies were found to be initiated in the regions of Groningen and Friesland.

''We can settle at multiple locations; however, we cannot choose the centre of Groningen due to the infrastructure over there. In that case, we would be too far away from the port.'' – HR Manager Timberland Europe, personal communication, 25 May 2018

7.2 Agglomeration economies

DCs cluster together in business parks like Greenport Venlo, Businesspark XL Twente and around the Schiphol area. When asked why this clustering occurs, access to seaports and airports and the availability of large plots of land were named as main features of business parks (Business developer WDP, HR manager Timberland, Director international investment & marketing SADC). It was striking that the proximity of other companies and the exchange of knowledge or services were not mentioned as agglomeration benefits. An agglomeration disadvantage is that large DCs are attracted to the business parks that demand a lot of employees in a short period of time, as discussed in chapter 5.

7.3 Labour availability and labour market policy

The availability of labour is considered as an increasingly important factor for DC location choice by the interviewed experts. This is in line with the literature (BCI, 2017; Van Geffen *et al.,* 2017; Prologis, 2017). However, regional labour market policies do not seem to influence DC location choice.

''The connection between labour market and education has not been an important point on the agenda when deciding upon their investment. […] Not all of them perform a labour market analysis.'' – Researcher at STL, personal communication, 29 June 2018

With ‘them’ logistics real estate investment companies are meant. When the business developer at WDP was asked whether their customers indicate that they find it important that labour market policy is being implemented in the region, he replied with: ‘’No, never really.’’ (personal communication, 19 June 2018). The following quote indicates that the logistics sector developer at LIOF does not think that labour market policy influences DC location choice either:

‘’I think that they find it pleasant that there has been collaboration. But hearing from companies that they are specifically positioning themselves due to a SMART [a regional labour market project] goes a little too far I think.’’ – Sector developer logistics at LIOF, personal communication, 20 June 2018

The low interest of DCs in regional labour market policies may have to do with the tension between the short-term need for staff of DCs and policy programs that have a medium or long-term horizon, as described in paragraph 6.1.

7.4 Land costs and availability

Land costs and the availability of land are viewed as substantial location factors by experts. As expected based on the literature (Hesse, 2014; Verhetsel, 2015), this location factor causes regional differences as large scale DCs tend to locate in cheaper peripheral areas where large plots of land are available, such as the southern parts of the country:

‘’This region is considered to be relatively expensive for logistics operations. Most large-scale logistics operations are located in the more southern parts of the country such as the Venlo region or the Rotterdam-Venlo axis.’’ – Director International Marketing & Acquisition SADC, personal communication, 27 June 2018

‘’Of course, the price of the location is an important factor. […] if you position a DC in the middle of Amsterdam, then it will be a little bit more expensive than in [Twente].’’ – HR Manager Timberland Europe, personal communication, 25 May 2018

The Commercial Director at Greenport Venlo stated that the accessibility in relation to Rotterdam and the rest of Europe is the most important reason that North Limburg is an attractive region for DC locations. However, he immediately added the following:

‘’Plus the fact that we can provide large facilities starting from 6 to 20-30 acres.’’ – Commercial Director Greenport Venlo, personal communication, 3 July 2018

7.5 Demand levels, service levels and product characteristics

Demand levels, service levels and product characteristics are more important for regional DCs than for European DCs. For example, the HR manager at Timberland indicated that the company was indifferent in choosing Rotterdam or Twente because those distances do not matter for distribution in Europe. Therefore, Twente is most attractive because Rotterdam is more expensive (personal communication, 24 May 2018). When it comes to regional DCs, experts indicate that it is the best interest of the company to position themselves close to the market or at least in the central parts of the Netherlands to reach customers as quickly as possible and provide high service levels.

‘’When it concerns Cross Border E-fulfilment hotspots, a nice word, then Venlo would be the place to be. However, for example, the national distribution of Kruidvat and Albert Heijn are positioned next to arterial roads, close to the majority of the densely populated areas in the Netherlands, or where you are positioned in the centre of the country.’’ – Commercial Director Greenport Venlo, personal communication, 3 July 2018

''[the acceptable distance to the service area] strongly depends on the business. Look, if it is a European DC or an e-commerce company, then it is less important as far as I am aware. But, if you look at retail, for instance Albert Heijn, they really have to locate within a service area.'' – Business Developer WDP, personal communication 19 June 2018

These statements indicate that demand levels, service levels and product characteristics to a large extent determine in which region a DC will locate. Consequently, the importance of these factors is underexposed in the economic geographic literature.

7.6 Contextual factors and transaction costs

Contextual factors may include zoning laws, presence of a business park, cost of living, cost of doing business and logistics real estate availability for example. Tax benefits were mentioned during the interviews as a contextual factor that can influence location choice. This concerns differences between countries and therefore goes beyond the regional scope of this research. According to several interviewed experts, the presence of a business park does attract DCs to the region.

''Another thing Venlo has is the Greenport Venlo, a development company. This really is some additional service offering for unburdening those companies. And that is also very important for location choice.'' – Education and Labour market policy officer province of Limburg, personal communication, 20 June 2018

A good example of a case where transaction costs were the determining factor in making a location decision is the relocation of the Timberland DC. According to the HR manager (personal communication, 19 June 2018), they relocated in Twente simply because they wanted to maintain their staff, therefore saving the costs and effort of finding new staff in a new location.

7.7 Conclusions

Based on the gathered qualitative data, it can be concluded that accessibility to transportation networks and the price of logistics land are most important. In all probability this will remain so in the future. However, experts indicate that the importance of labour availability is increasing. Ultimately, a DC simply cannot function without employees.

The type of DC is proven to be important for differences in location decisions, as experts indicated that for European DCs it is less important to locate close to the market then for regional DCs. As expected based on the literature (Hesse 2014; Verhetsel 2015), large DCs are more likely to locate in regions like North Limburg and Twente as land prices are lower and more space is available.

DCs do not seem to consider the presence of labour market policies or projects when making a location choice. A possible explanation is the tension between the short-term need for staff of DCs and policy programs that have a medium or long-term horizon. For now, the short-term need can be fulfilled with calling in employment agencies. However, DCs that are already established in the region can experience difficulties finding employees as new establishments require a lot of staff. An image of labour shortage in a region can deter DCs from locating there (Van Geffen *et al.,* 2017; Prologis, 2017; Business developer WDP, personal communication, 19 June 2018). Still, it has to be kept in mind that the considerations as mentioned during the interviews are a result of satisficing behaviour and that a lot of locations are selected by chance (Berg, 2010).

Nevertheless, it is crucial for regional economic development to ensure that employees are available now and in the future for both DCs already established in the region and for new DCs to be established. Therefore, it is important that the full picture of location choice, a tight labour market, TH collaboration and policy making is understood by all parties. In the next chapter, an attempt has been made to model the aforementioned in full.

8. The completed model

The qualitative data that is gathered during this research is used to model the regional labour market policy making process and its relation to DC location decisions (See figure 11). As can be seen in the model, there is no arrow pointing from the 'policies and projects' box to the 'DC location decisions' box. This is because policies and projects executed in Dutch regions aimed at matching supply and demand in the logistics labour market do not influence DC location decisions. Although the awareness of a tight labour market is increasing, decisionmakers expect it to be solved by short-term solutions such as calling in employment agencies. Continuation of this process will lead to increasing problems as the amount of DCs is growing in the Netherlands. To avoid labour shortage in the long-term, a good TH network in the region is of importance to identify the regional DNA and suitable tools for implementing relevant policies and projects that influence regional labour supply. The regional DNA and the needs of the businesses and people in the region must be understood by the regional government to estimate whether sectoral or generic labour market policies are desired. If employment agencies can no longer offer a solution for the short-term labour demand, the interest of DC decisionmakers in these policies might increase. When this happens, regions that have set up policies by considering all components in this model could have a head start.

Based on the experiences of the interviewed experts, the following points of current good practice and points of improvement are identified and incorporated in the model (the numbers and colours correspond with those displayed in the model):

Current good practice

1. Exchange of information and knowledge about the logistics labour market through TH networks
2. Combining generic and sector specific policy (The province can be seen as driver and regional organisations carry out the projects. The balance between generic and sector specific policy is determined by the regional DNA)
3. Strengthening the logistics training landscape in optimal alignment with the business community

Points of improvement

1. Responding to trends and developments such as robotization through innovative projects
2. Strengthening the image of the transport and logistics sector through marketing and employer branding
3. More focus on sustainable employability through training and lateral-entry programmes

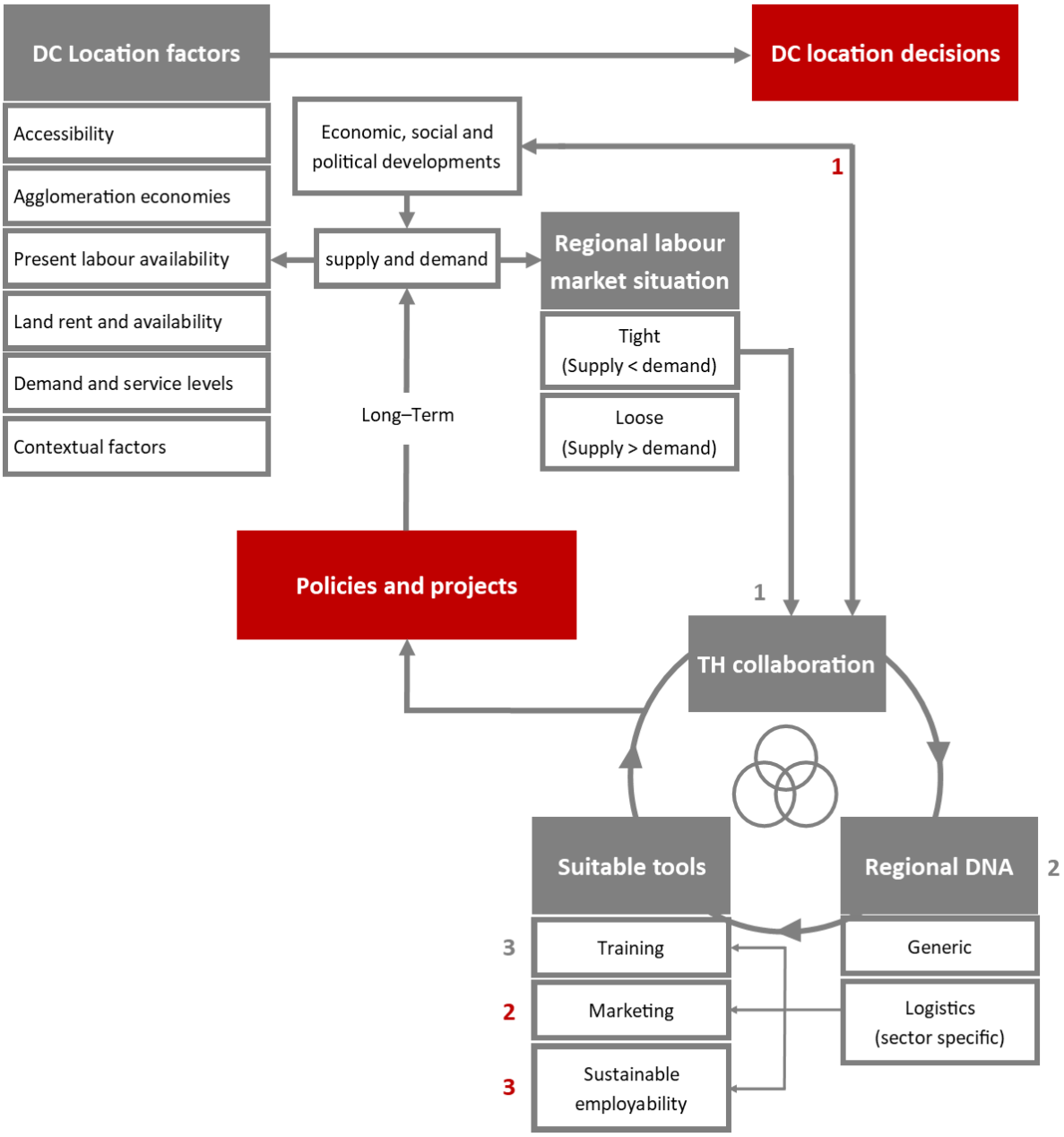

Figure 11 Completed model of the regional labour market policy making process and its relation to DC location decisions. Model by the author.

9. Conclusions, discussion and future research

9.1 Final conclusion and policy recommendations

''To what extent do regional labour market policies influence the location choice of distribution centres?''

Based on the gathered data, it can be concluded that regional labour market policies focused on logistics do not influence DC location choice. This may have to do with the tension between the short-term need for staff of DCs and policy projects that have a medium or long-term horizon. Although the awareness of a tight labour market is increasing, decisionmakers expect it to be solved by short-term solutions such as calling in employment agencies. Continuation of this process may lead to increasing problems in the future as the amount of DCs is continuing to grow in the Netherlands. To avoid drawbacks of an extreme tight labour market in the future, it is of importance that both decision makers and policy makers understand this process. Therefore, the relation between the long-term policy process, labour availability as location factor and DC location choice is represented in a model. The model adds to the existing literature by connecting economic geographic theories on DC location choice with regional labour market policies and TH collaboration. Furthermore, the model shows that sector specific policy should come forward through the regional DNA; the needs from companies and people in the region. As this research points out, the size of the logistics sector in the region does not determine this need. The urgency for action in the logistics labour market is acknowledged by experts in North Limburg, Greater Amsterdam and Twente.

To ensure labour availability for the logistics sector in the long-term, some policy recommendations are given based on the outcomes of this research. As changes in the labour market are ongoing, it is recommended to continue to innovate through close collaboration between regional governments, firms and educational institutions. In this way, it is possible to respond adequately to new developments such as robotization. The TH collaboration as described in quite dated literature (Etzkowitz and Leydesdorff, 1995) is frequently mentioned as a prerequisite for conducting effective policy today. The relevance of the focus on a regional level is confirmed, given the current need for employees on a lower education level in warehouses. This does not imply that there is no need for employees on a higher education level, yet this target group was left out of the scope of this research. Considering the ageing of the population, it is important that employees commit to the company and the sector so that employers are willing to invest in life long training. It is also recommended to policy makers to develop lateral-entry programmes as this encourages people to do what they are interested in so that they continue to work until they are older.

9.2 Discussion

The discussion that is described here is meant to make some critical comments that need to be taken into consideration after reading the conclusion. While conducting this research, the aim was to achieve a result as pure as possible. However, there are always factors that could potentially influence the outcomes of the research.

First of all, it must be taken under consideration that the model presented in chapter 8 is an attempt to display the relation between DC location choice and regional labour market policies in logistics as elegant as possible. Note that this is a reduction of the actual complexity in the field. I advise interested readers to consult the following literature sources to further develop their theoretical insight on which the model is built: Onstein *et al.* (2018) for a detailed literature review on the factors that determine distribution structure decisions in logistics; Van Geffen *et al.* (2017) for the importance of the factor labour market in DC location decisions and Van Zenderen *et al.* (2018) for a better understanding of the labour and education market in the transport and logistics sector.

Furthermore, experts in the field were consulted on their views to model the policy making process and its influence on DC location decisions. The sample size for this research was 12 experts and it could be argued that a bigger sample is desired to avoid missing new phenomena. Yet I deliberately chose for a maximum of 12 interviews for it was my aim to deliver the results on schedule, which is an important value in the logistics sector. Moreover, no new ideas were added after coding the last two interviews. This indicates a saturation of knowledge of everything seen to be relevant in the focus of this study. Consequently, no more interviews were conducted.

Mastering interview techniques is something that should not be underestimated. During the transcription of the data it became clear that sometimes, closed questions and even suggestive questions were asked. Another example is that follow-up questions were asked while the respondent just was about to continue talking. Not being afraid of silences might give the respondents time to reflect on their answers and provide more information in the end. For me, these are lessons learned yet this could have slightly influenced the quality of the data. Another point of discussion for using interviews as a source of evidence is the response bias as respondents may feel pressure to give answers that are socially acceptable. These are possible weaknesses that should always be kept in mind when interpreting qualitative data.

Lastly, the logistics sector is a broad sector and research agencies use different definitions to base their figures on. In this research, the used sources and definitions are always clearly stated. However, the labour market analysis would have been a lot more accurate if labour market data focused on warehousing activities would be available.

9.3 Recommendations for future research

This research has focussed on the location choice of DCs in the Netherlands and low-skilled jobs. The logistics sector contains much more than warehouses, order pickers and reach truck drivers. Future research could focus more on labour market policies aimed at high-skilled jobs in logistics. Perhaps that should be done from a national perspective, since people with a high level of education are less attached to their region.

In terms of effectiveness of labour market policies, quantitative research into the amount of people that found a job through training could be useful. This can be done, for example, by setting up a survey among logistics employers. Furthermore, it is advisable to conduct research into effective marketing strategies for engaging people in the logistics sector as the poor image of the sector is seen as a weakness by policy makers.

The time frame of this research was 6 months and the tightening of the logistics labour market is a recent development. Companies may not feel the urgency to consider regional policy when making a location choice now, yet they may show more interest if it turns out that they cannot get enough staff. When this growth of the sector continues, more employees are needed for the sector in a short period which will decrease the tension between short-term business needs and long-term policy focus. This might cause labour market policies to directly influence DC location choice after all. It is recommended to policy makers to keep up with developments in this area and to be creative in finding short-term solutions for the increasing labour demand of both current DCs and new establishments in the region.

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Appendix

Appendix A. Labour market regions (UWV, 2013)

Appendix B. COROP regions (NUTS 3 level) (NVM, 2017)

Appendix C. List of respondents

Region	Name	Organisation/company	Function
Greater Amsterdam	A. Kerling	House of Logistics	Project leader
	M. Hak	Airport Community Schiphol	Programme manager
	O. Steffers	SADC	Director international marketing & acquisition
Twente	J. Gramberg	Province of Overijssel	Programme manager Strategic Logistics Alliance
	B. Kemperink	OostNL	Project manager
	P. Slaghekke	VivoChem	Plant manager
	W. Wolthuis	Timberland Europe	HR manager
North Limburg	K. Collombon	Province of Limburg	Policy officer education & labour market
	D. Soons	LIOF	Sector developer logistics
	C. Heerings	Greenport Venlo	Commercial director
Nationwide	R. van Ast	WDP	Business developer and former director
	K. van Zenderen	STL	Researcher

Appendix D. Codebook

Code	Definition
Labour market policy or project	What respondents have to say about labour market policies and projects in their region or elsewhere in the Netherlands
Goals	The most important goals of regional labour market policies in logistics
Tools	The tools mentioned useful for reaching the above-mentioned goals
Employer branding	employer branding as a tool for labour market policy through better fringe benefits and creating more career opportunities
Marketing	Marketing the logistics sector as a tool for labour market policy
Training	Training of potential and current employees for the sector as a tool for labour market policy
Lateral-entry	Training of unemployed and benefit recipients for the sector as a tool for labour market policy
Target group	What respondents have to say about different target groups when it comes to logistics labour market policy
Regional	The most important target groups for logistics labour market policy on a regional level
National	The most important target groups for logistics labour market policy on a national level
Effectiveness	Coding the answer to the question: What makes an effective labour market policy or project?
Communication between actors	During the coding, communication between actors was frequently mentioned as the key to effective policy
Finance	Things that are said about the financing of regional labour market policies and projects in logistics
Organisation	Things that are said about the organisation of labour market policies and projects in logistics on a national or regional level
Suggestions	This is a new code because a respondent gave a suggestion for improving policy in the future
Triple Helix	What respondents have to say about triple helix collaboration in logistics regions
Labour market situation	How respondents perceive the current labour market situation in logistics
National	How respondents perceive the current labour market situation in logistics in the Netherlands
Regional	How respondents perceive the current labour market situation in logistics in their region
DC location choice	The most important location factors for DC location choice according to respondents
Transport infrastructure	What respondents have to say about transport infrastructure as location factor in DC location choice
Agglomeration effect	What respondents have to say about agglomeration effects as location factor in DC location choice
Retain staff	This is a new code because one respondent found this to be the most important factor that influenced location choice
Labour availability	What is said about labour availability as location factor in logistics
Contextual factors	What respondents have to say about contextual factors as location factor in DC location choice
Demand levels, service levels, product characteristics	What respondents have to say about demand levels, service levels, product characteristics as location factors in DC location choice

Regional labour market policy	Answers to the question: do you think regional labour market policy can influence DC location choice?
Land costs and availability	What respondents have to say about land costs and availability as location factor in DC location choice
DC type	This is a new code because respondents mentioned the importance of DC type in location choice
Logistics regions	This category was added to code what the respondents had to say about differences between logistics regions
Attractiveness	The key aspects of an attractive logistics region in terms of DC location choice
Competition	This code was added to find out how different respondents thought about competition between regions
Trends and developments	This category is added because it is a factor in the theoretical framework
Robotization	Robotization is a frequently mentioned trend that can influence the logistics labour market and is therefore an important code
Obstacles	During the coding, it became clear that some experts mentioned obstacles that can get in the way of robotization

Appendix E. Interview questions policy makers and project leaders (Dutch)

The interviews were held in Dutch. Therefore, this topic list and the transcripts of the interviews are in Dutch. The transcripts are not attached as appendix and can be requested via a.j.vanderweg@students.uu.nl.

Algemene vragen

1. Voor welke organisatie werkt u en wat is uw functie binnen de organisatie?

Vragen regionale arbeidsmarkt (logistiek)

2. Wat is volgens u de huidige situatie op de logistieke arbeidsmarkt in uw regio?
    a. Wat zijn de logistieke beroepen met de meeste openstaande vacatures?
3. In hoeverre verschilt deze situatie met die van andere regio's in Nederland?
4. In hoeverre denkt u dat ontwikkelingen zoals robotisering de problematiek op de logistieke arbeidsmarkt kunnen beïnvloeden?

Vragen regionaal arbeidsmarktbeleid (logistiek)

1. Welke projecten gericht op het bij elkaar brengen van vraag en aanbod op de logistieke arbeidsmarkt lopen er op dit moment in uw regio?
2. Hoe is het beleid/project tot stand gekomen?
    a. Wie waren de initiatiefnemers?
    b. Hoe wordt het project gefinancierd?
3. Wie is de doelgroep?
4. Wat zijn volgens u de belangrijkste doelen van de projecten en het beleid op het gebied van logistieke arbeidsmarkt in de regio?
    a. Welke van deze doelen zijn inmiddels behaald?
5. Wat maakt dit project/beleid effectief?
    a. Is dit een oplossing voor de korte termijn of lange termijn? Waarom?
    b. Wanneer is een project dat gericht is op het bij elkaar brengen van vraag en aanbod op de logistieke arbeidsmarkt volgens u geslaagd?
6. Wat is volgens u het belang van het uitvoeren van arbeidsmarktbeleid op regionaal niveau?
7. Wat is volgens u het belang van sectorspecifiek arbeidsmarktbeleid?

Vragen regionale competitie en locatiekeuze van distributiecentra

8. Vindt u uw regio een aantrekkelijke logistieke regio? Waarom?
9. In hoeverre heeft deze regio een voorsprong of achterstand op andere regio's als het gaat om logistiek?
10. In hoeverre draagt het logistieke arbeidsmarktbeleid in de regio bij aan de aantrekkelijkheid van de regio?
11. In hoeverre denkt u dat de projecten gericht op de logistieke arbeidsmarkt invloed hebben op de locatiekeuze van distributiecentra?

Afsluiting

12. Heeft u nog verdere informatie en/of opmerkingen over dit onderwerp?

Appendix F. Interview questions location decision distribution centres (Dutch)

The interviews were held in Dutch. Therefore, this topic list and the transcripts of the interviews are in Dutch. The transcripts are not attached as appendix and can be requested via a.j.vanderweg@students.uu.nl.

Algemene vragen

1. Voor welk distributiecentrum werkt u en wat is uw functie binnen het bedrijf?
2. Hoeveel mensen werken er ongeveer in dit distributiecentrum?
    a. Kunt u een inschatting maken van het aantal werknemers die ook in deze regio wonen?
3. Hoe lang is het distributiecentrum op dit adres gevestigd?
    a. Indien van toepassing: wat was het vorige adres?

Vragen locatiekeuze

4. Welke factoren waren van belang bij het maken van de locatiekeuze?
    a. Speelden de volgende factoren hierin ook een rol? (Indien niet genoemd)
        - Bereikbaarheid
        - Nabijheid van andere logistieke bedrijven
        - Service & logistieke afzetmarkt
        - Kavel prijs en beschikbaarheid
        - Beschikbaarheid van arbeid
        - Contextuele factoren zoals lokale belastingen en subsidies, kosten van levensonderhoud, bestemmingsplannen, aanwezigheid van een business park
5. Welke van de genoemde factoren zijn het belangrijkst bij het maken van de locatiekeuze?
6. Zijn er factoren die in de afgelopen twee jaar belangrijker of minder belangrijk zijn geworden voor de locatiekeuze van distributiecentra volgens u?

Vragen regionale arbeidsmarkt (logistiek)

7. Kunt u iets vertellen over de situatie op de logistieke arbeidsmarkt in uw regio?
    a. Is er voldoende geschikt personeel beschikbaar?
8. Weet u of er initiatieven zijn in de regio voor het bij elkaar brengen van vraag en aanbod op de logistieke arbeidsmarkt?
    a. Wat vindt u van deze initiatieven?
    b. Wanneer zijn dit soort initiatieven volgens u effectief?
    c. Denkt u dat dit soort initiatieven de locatiekeuze van distributiecentra kunnen beïnvloeden? Waarom?

Vragen regionale competitie

9. Waarom heeft u ervoor gekozen om het distributiecentrum in deze regio te vestigen?
    a. Heeft u een locatie in een andere regio in overweging genomen? Waarom?

Afsluiting

10. Heeft u nog verdere informatie en/of opmerkingen over dit onderwerp?

Appendix G. List of regional logistics labour market projects in the Netherlands

Naam project	Doorlooptijd	Afgerond	Schaalniveau	Regio	Initiatief vanuit	Thema's	Doelgroep	Doelen	Meer informatie
Sectorplan logistiek regio Twente	jan 2014 - jan 2016	Ja	Regionaal	Twente	Port of Twente	(om)scholing, zijinstroom		Behoud van kennis en vakmanschap in de sector, Inzet van (een) onafhankelijke arbeidsmakelaar(s)	https://www.sectorplannen.nl/overzicht-sectorplannen/t/twente/logistiek-twente
Sectorplan logistiek Twente	feb 2016 - feb 2018	Ja	Regionaal	Twente	Port of Twente	(om)scholing, instroom	Bedrijven, werkzoekenden, studenten (MBO, HBO & WO)	Behoud van kennis en vakmanschap in de sector, Inzet van (een) onafhankelijke arbeidsmakelaar(s)	http://www.portoftwente.com/arbeidsmarkt/
Week van de logistiek	1 week, maart 2018	Ja	Regionaal	Twente, Overijssel	Port of Twente, werkplein Twente, ROC van Twente, Gemeente Almelo	Marketing sector, instroom	Middelbare scholieren, mensen die ingeschreven staan bij Werkplein	Zorgen voor instroom van werklozen en promoten van de logistieke sector in Twente bij middelbare scholieren	https://www.weekvandelogistiek.nu/
Logistics Community Brabant			Regionaal	Brabant	Technische Universiteit van Eindhoven, Universiteit Tilburg, de KMA in Breda, de NHTV, de provincie Noord-Brabant en de gemeente Breda	Innovatie, instroom hoger opgeleiden	mkbers, studenten hogescholen en universiteiten	Zorgen voor voldoende instroom van hoger opgleiden	https://www.logistiek.nl/sociale-innovatie/nieuws/2018/04/logistics-community-brabant-wil-innoveren-met-fresh-brains-101163326
Kweekvijver Noordoost Brabant		Nee		Noordoost-Brabant	Gemeenten, ROC de Leijgraaf, bedrijven	Instroom	Instromers, status- en vergunninghouders	Op regionaal niveau vraag en aanbod bij elkaar brengen, talenten benutten en de voordelen voor bedrijven inzichtelijk maken.	https://www.vijfsterrenlogistiek.nl/nieuws/kweekvijver-logistiek-noordoost-brabant-officieel-van-start-2/
Fit4Robots			Regionaal	Zuidoost-Brabant	Bedrijfsleven en Provincie Brabant	Bijscholing	Medewerkers van bedrijven in logistiek, assemblage en verpakkingswerkzaamheden	Medewerkers worden opgeleid in het samenwerken met robots en in andere vormen van automatisering.	https://www.brabant.nl/actueel/nieuws/2017/maart/impuls-voor-17-vernieuwende-arbeidsmarktprojecten
Dag van de logistiek	1 dag, April 2018	Ja	Regionaal	Eindhoven	Summa college	Marketing sector	Jongeren	Jongeren laten zien dat de sector meer is dan vrachtwagens en heftrucks	https://www.ed.nl/eindhoven/groot-personeelstekort-in-logistieke-sector-in-regio-zuidoost-brabant~ad5dadfb/
Project Logistiek	1 jaar		Regionaal	Eindhoven	Vluchtelingenwerk, Manpower, Gemeente Eindhoven	Instroom	Vergunninghouders	20 vergunninghouders bemiddelen naar betaald werk in de logistiek binnen 1 jaar	https://eindhoven.raadsinformatie.nl/document/5681578/1/17bst01279_-_Bijlage_2_-_Voortgangsrapportage_Arbeidsmarkt_Q2_2017
Logistiek Daten			Regionaal	West-Brabant	StichtingViaquales (onderwijs & bedrijfsleven), werkgevers servicepunt, ROC west-Brabant en aantal logistieke bedrijven	marketing sector, instroom	Specifiek gericht op mensen uit de regio in plaats van bijvoorbeeld arbeidsmigranten. Dat voorkomt nieuwe huisvestingsproblemen. (Reggy Heijens)	Werkzoekenden koppelen aan de vraag vanuit bedrijfsleven (logistiek & transport)	http://www.viaquales.nl/actueel/nieuw-arbeidsmarktproject-logistiek-daten-sluit-perfect-aan-op-logistieke-hotspot/
De logistieke academie			Regionaal	Midden-Brabant	Logistiek Midden-Brabant	Bijscholing		arbeidskapitaal goed aan laten sluiten op de behoefte van de aangesloten bedrijven	http://www.midpointbrabant.nl/alle-projecten/logistiek/logistiek-academie-midden-brabant-6/
Summerschool Logistiek	6 maanden		Regionaal	Liemers Achterhoek	Logistiek Innovatiehuis Liemers Achterhoek	Scholing, alle niveau's	Werklozen MBO 1t/m3 niveau	Het aantrekken en opleiden van nieuwe aanwas werknemers die nu zonder werk thuis zitten in de logistiek op niveau MBO 1t/m3 met aanbod van baangarantie.	
Logistiek Expertise Centrum regio De Liemers			Regionaal	Liemers					Eindrapport logistieke arbeidsmarkt Gelderland
Talent innovative pool			Regionaal	Gelderland	KennisDC logistiek Gelderland, HAN	Scholing		Talenten boeien en behouden voor MKB	http://www.kennisdclogistiek.nl/projecten/talent-innovatie-pool
Logistiek Innovatie & Trainingscentrum			Regionaal	Regio Nijmegen		Scholing		Vraaggestuurd inrichten van scholing	http://www.lecregionijmegen.nl/logistiek-innovatie-trainingscentrum
Beroepsonderwijs in Logistics Valley			Regionaal	Logistics Valley	ROC Twente, ROC Nijmegen, ROC Rivor (Tiel), ROC Graafschapcollege (Doetinchem), provincie Gelderland, TLN	Scholing, dag van de logistiek, sectorale arbeidsmarktmanifestatie	Studenten, bedrijfsleven	Instroom vergroten logistieke bedrijfsleven, vraag gericht onderwijs vanuit dat bedrijfsleven, onderwijsontwikkeling in de samenwerking met het logistieke bedrijfsleven	http://www.lecregionijmegen.nl/projecten/beroepsonderwijs-in-logistics-valley

Platform Transport & Logistiek in Rivierenland			Regionaal	Zuid-west Gelderland	bedrijfsleven, onderwijsinstanties, VTL, TLN, KNV, UWV Werkbedrijf en het Werkgevers Adviespunt Rivierenland	Marketing sector, scholing	Studenten, bedrijfsleven		http://www.logistiekrivierenland.nl/
Centrum voor Transport en Logistiek in Noord-Veluwe			Regionaal	Noord-Veluwe	Regio Noord-Veluwe	Marketing sector, scholing, Triple helix samenwerking			http://www.regionoordveluwe.nl/nieuws/item/nieuws-economie-en-arbeid/vliegende-start-voor-centrum-voor-transport-logistiek
Logistiek Expertise Centrum regio Zwolle	jan 2016 - jan 2018	Ja	Regionaal	Zwolle	Regio Zwolle	Instroom, bijscholing	Werknemers binnen logistieke sector, werknemers die met ontslag worden bedreigd, personen met WW-uitkering	Deelnemers begeleiden naar een baan binnen de logistieke sector middels om- en/of bijscholing. Beoogd wordt dat 80% van de deelnmers het traject succesvol afrond met een nieuwe baan.	http://www.lecregiozwolle.nl/
Logistiek Paspoort			Regionaal	Venlo	UWV, de gemeente, WTD Opleidingen en uitzendbureaus uit de regio	Instroom	Werklozen die graag aan de slag willen in de logistiek		https://omroepvenlo.nl/nieuws/artikel/47403173
SMART Logistics Centre Venlo			Regionaal	Venlo	Provincie Limburg, LIOF	Marketing sector		Stimuleren van (potentiële) arbeidskrachten om te gaan werken in de logistiek	http://www.smartlogisticscentrevenlo.com/en
Centrum voor Logistiek Vakmanschap			Regionaal	Midden en Noord Limburg	Gilde opleidingen, bedrijfsleven, provincie	Scholing, triple helix samenwerking	mbo-studenten	Baankansen van mbo-studenten groter maken door opleiding beter te laten aansluiten op hun toekomstige werkomgeving	http://www.servicepuntlogistiek.nl/pages/activiteiten/centrum-voor-logistiek-vakmanschap.php
Centrum voor Vakmanschap Logistics and Warehousing	2015 -		Regionaal	Zuid-Limburg	ROC Leeuwenborgh, Limburg Economic Development	zij-instroom, bijscholing, triple helix samenwerking	Jongeren, werknemers werkzaam in sector, werkloze oudere volwassenen	Doel is in Publiek-Private Samenwerking (PPS) een Centrum voor Vakmanschap realiseren voor Logistics & Warehousing. Hierin worden opleidingstrajecten in het MBO gezamenlijk georganiseerd, ontworpen, ontwikkeld en bekostigd.	https://regionaalinvesteringsfondsmbo.e-formulier.nl/landkaart/
Samenwerkingsverband Beyond	2018 -	Nee	Regionaal	Zuid-Limburg	Twee uitzendorganisaties (flexpoint en Manpower), Gemeente Heerlen, EKK Eagle Simrax & ROC Leeuwenborgh	Marketing sector, scholing, triple helix samenwerking, binden	Mensen met een afstand tot de arbeidsmarkt	Mensen met een afstand tot de arbeidsmarkt duurzaam met een diploma laten uitstromen naar een baan in de Medische Logistiek.	https://www.wijlimburg.nl/nieuws-overzicht/samenwerkingsverband-moet-medische-logistiek-in-zuid-limburg-sterker-maken/
Themabijeenkomst Human Capital	1 ochtend, woensdag 9 mei 2018		Regionaal	Zeeland	Zeeland Connect	Human Capital logistiek, het zoeken en behouden van gekwalificeerd personeel voor MKB bedrijven in de logistiek	mkb ondernemers logistiek	Bijpraten over ontwikkelingen rond het thema human capital logistiek (en zoeken en behouden van gekwalificeerd personeel), mkbers laten deelnemen aan pilots en subsidieaanvragen	https://www.zeeland-connect.nl/agenda/150-themabijeenkomst-human-capital
Dare2Share (pilot)	-	-	Regionaal	Zeeland	Zeeland connect, topsector logistiek, provincie Limburg	Pilots Human Capital	HBOers en Studenten op MBO 3 en 4 niveau	beter ontsluiten van Hbo kennis en capaciteit voor het midden- en kleinbedrijf en daarmee bij te dragen aan oplossingen van de vraagstukken binnen het mkb in de logistiek, transport en supply chain management sector. Het maken van een efficiency slag (innovatie) binnen het mkb en het opdoen van ervaring voor zittend en aankomend Human Capital in de logistieke sector staan daarbij voorop. Naast Hbo'ers, zijn ook toptalenten van Mbo niveau 3 en 4 bij het project betrokken.	https://zeeland-connect.nl/images/PDF/2018-OPZuid.pdf
House of logistics	-	-	Regionaal	Metropoolregio Amsterdam	Logistieke bedrijven in de regio en ROC's	Scholing, marketing sector	logistiek vakman van de toekomst, MBO niveau	Het aanpakken van het werven en opleiden van de logistiek vakman van de toekomst	http://www.house-of-logistics.nl/
Luchtvaart Community Schiphol	-	-	Lokaal	Amsterdam (Schiphol)		Scholing, marketing sector, instroom	MBO 3,4 niveau	Aanbieden van BBL trajecten door goede samenwerking met werkgevers om te zorgen voor instroom	https://www.luchtvaartcommunityschiphol.nl/
CIV Logistiek Scheepvaart en Transport College (STC) Rotterdam	-	-	Regionaal	Westland	STC, TLN	Instroom	Jongeren met een afstand tot de arbeidsmarkt	Als STC meedoen aan Kansen voor Zuid, een arbeidsmarktinitiatief vanuit de gemeente Rotterdam, en Samen Sterk voor de Toekomst op Rotterdam-Zuid, een samenwerkingsproject tussen de STC-group, het bedrijfsleven en diverse maatschappelijke organisaties. Jongeren met een afstand tot de arbeidsmarkt worden begeleid opgeleid voor een startkwalificatie onder andere in transport en logistiek.	https://scheepvaartentransportcollege.nl/
Living Logistics Lab	-	-	Regionaal	Rotterdam		triple helix samenwerking, innovatie	Jongeren en bedrijfsleven	Biedt onderwijs en bedrijfsleven een fysieke ontmoetingsplaats waar nieuwe techologieen worden getoond. Ondernemers laten studenten (mbo of mbo & hbo gecombineerd) opdrachten uitvoeren. Denk aan bijvoorbeeld experimenten met nieuwe software of het uitproberen van alternatieve probleemoplossingen in het warehouse. Het lab is ook beschikbaar als vergaderfaciliteit.	https://maritiemnieuws.nl/81739/nieuwe-locatie-van-stc-group-geopend-door-aboutaleb/
Brancheplatvorm logistiek Westland	-	-	Regionaal	Westland	gemeente Westland, Werkbedrijf, rijschool en TLN	Scholing	MBO niveau 2 studenten	Initiatief voor MBO2 opleiding chauffeur wegvervoer.	https://www.patijnenburg.nl/nl/instroom-chauffeurs-centraal-bij-brancheplatform-transport-en-logistiek