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LABOURED LEARNING

INVESTIGATING CHALLENGED LOCALITIES THROUGH A
GEOGRAPHY OF VOCATIONAL EDUCATION

BY
KARIN TOPSØ LARSEN

DISSERTATION SUBMITTED 2017



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**INVESTIGATING CHALLENGED LOCALITIES THROUGH A
GEOGRAPHY OF VOCATIONAL EDUCATION**

Karin Topsø Larsen



AALBORG UNIVERSITY
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SUMMARY

Disparate localities across Denmark are currently experiencing increasingly divergent development trajectories. Access to education plays a significant role in unequal development processes outside the largest urban areas. Young people from these localities must negotiate limited local opportunity structures within the field of education. This thesis deals with the Danish Vocational Education and Training (VET) system and the role its spatial opportunity structures play for the development of challenged localities, as well as the for the demands made on young vocational students outside urban areas. The thesis applies an approach that analyses the factors that influence the opportunity structures within the VET system as well as an approach that examines young people's perceptions of their possibilities in relation to the concrete provision structures.

Based on a reading of existing research on the historical development of the VET system in relation to theories on processes of unequal development, this thesis analyses the factors and processes that affect the provision of VET education programmes in challenged localities. Empirically, the young students' transition trajectories into and through the VET system is investigated through a combination of statistical analysis and interview-based studies. The statistical investigation analyses the mobility and education patterns of youth cohorts from three case municipalities located in challenged localities in Denmark, including the young students's use of the nearest vocational institution. The qualitative analysis is based on 23 narrative interviews of young vocational students about their transitions into and through the Basic and Main VET programmes.

The findings show that on a national scale, the VET system is challenged by the dominance of a knowledge and innovation-based economic paradigm in conjunction with a marginalised position vis-à-vis the academic track. This is partially counteracted in areas where local and regional labour market structures remain dominated by an industrial production paradigm, which is the case on labour markets outside the country's urban areas. However, the VET system is also challenged due to its complex governance structures. Firstly, vocational college management systems favour institutions with a large student catchment area, which is a challenge for vocational colleges located in areas characterised by population decline. Secondly, the system is challenged by imbalances and lack of governance transition structures between the school-based logic of the Basic programme and the labour market-conditioned logic of the Main programme. This transition is further complicated by geographic mobility imperatives in challenged localities with limited education provision. The result of weak governance conditions is that it is left up to vocational education students to handle the system's internal imbalances and mobility requirements.

Students negotiate these requirements in various ways, which are analysed in terms of their differentiated orientation preferences displayed at two key transition junctions. While some students exhibit a vocational orientation preference, others display a mobility orientation preference, whilst a third group display a locality preference. Further analysis of the young people's transitions from the Basic into the Main programme shows that it is the young who lack a vocational orientation that are challenged by limited local education provision structures. Analysis of young people's social backgrounds suggest that especially children of unskilled parents and from environments where parents and social networks are marginalised on the labour market find the vocational identification process difficult. While the vocationally and the mobility-oriented are capable of handling the VET system's spatial complexity and mobility imperatives, young VET students, who are not vocationally embedded fall victim to the concomitant spatial complexity and locally-limited VET system.

With a point of departure in these findings, the thesis points to the negative consequences of current education provision structures and discuss whether the VET reform, which is currently being implemented, is likely to relieve or exacerbate these challenges and how this is likely to affect the development trajectories for challenged localities.

RESUMÉ

Danmark oplever i disse år en stigende divergens mellem forskellige områders udviklingsmuligheder. Blandt mange faktorer spiller uddannelse en væsentlig rolle i disse ulige udviklingsprocesser uden for de større byområder. Unge der er opvokset her udfordres af begrænsede lokale mulighedsstrukturer på uddannelsesområdet. Denne afhandling omhandler det danske erhvervsuddannelsessystem og hvilken betydning dets rumlige udbudsstruktur har for udfordrede lokalområders udviklingsmuligheder, samt hvilke krav dette stiller til de unge erhvervsuddannelseselever uden for de større byer. Afhandlingen anvender dels en tilgang, der analyserer hvilke faktorer, der har indflydelse på udbudsstrukturerne i det danske erhvervsuddannelsessystem, og dels en tilgang, der undersøger de unges opfattelse af deres mulighedsrum i relation til den konkrete udbudsstruktur.

På basis af eksisterende forskning om erhvervsuddannelsessystemets historiske udvikling, læst i relation til teorier om ulige udviklingsprocesser, analyseres hvilke faktorer og processer, der påvirker erhvervsuddannelsessystemets udbudsmuligheder i udfordrede lokaliteter. Afhandlingens empiriske del undersøger de unge elevers veje ind i og igennem erhvervsuddannelsessystemet gennem en kombination af statistiske analyser og interview-baserede undersøgelser. Den statistiske undersøgelse følger ungdomskohorters bopæls- og uddannelsesmønstre fra tre casekommuner fra udfordrede områder i Danmark, inklusiv de unges anvendelse af nærmeste erhvervsuddannelsesinstitution. Den kvalitative analyse baserer sig på 23 narrative interviews af unge erhvervsuddannelseselever om deres transitioner ind i og gennem erhvervsuddannelsens grund- og hovedforløb.

Analyserne viser samlet at erhvervsuddannelsessystemet på nationalt niveau er udfordret af dominerende produktionsparadigmer baseret på videns- og innovationsøkonomier i samspil med en marginaliseret position i forhold til de akademisk-rettede uddannelsessystemer. Dette modvirkes delvist i lokalområder, hvor lokale og regionale arbejdsmarkeder fortsat er struktureret efter et industrielt produktionsparadigme, et forhold der karakteriserer mange arbejdsmarkeder uden for landets større byer. Erhvervsuddannelsessystemet er dog også udfordret på grund af dets komplekse styringssystemer. Dels de nationale styringssystemer, der favoriserer erhvervsuddannelsesinstitutioner med et stort befolkningsopland, hvilket er en udfordring i lokalområder præget af befolkningstilbagegang; dels overgangen fra et skolestyret grundforløb til et arbejdsmarkedsbetinget hovedforløb, som præges af ubalancer og manglende styring. Denne overgang kompliceres yderligere af et geografisk mobilitetskrav i lokalområder med et begrænset lokalt udbud af uddannelser. Den manglende styring medfører, at det overlades til erhvervsuddannelseseleverne selv at håndtere systemets indbyggede ubalancer samt mobilitetskrav.

Eleverne håndterer disse krav på forskellig vis, hvilket analyseres ud fra deres orienteringspræference i to transitionssituationer. Mens nogle elever udviser en faglig orienteret præference, udviser andre en mobilitetspræference og atter andre en lokalitetspræference. Nærmere analyse af de unges overgang fra grund- til hovedforløb viser, at det er de unge der mangler en faglig orientering, der udfordres af et begrænset lokalt udbud. Yderligere analyse af de unges sociale baggrunde tyder på, at det især er børn af ufaglærte og fra miljøer, hvor forældre og omgangskreds er marginaliserede på arbejdsmarkedet, der har svært ved at orientere sig fagligt. Mens de fagligt og de mobilitetsorienterede er i stand til at håndtere erhvervsuddannelses-systemets faglige og rumlige kompleksitet samt mobilitetskrav, bliver de unge, der ikke kan finde en faglig identitet ofre for et på én og samme tid rumligt komplekst og lokalt-begrænset system.

Med udgangspunkt i disse resultater påpeger afhandlingen negative konsekvenser ved den nuværende udbudsstruktur og diskuterer hvorvidt den igangværende erhvervsuddannelsesreform afhjælper eller forværrer disse udfordringer og hvordan den kan forventes at påvirke udfordrede lokalområders udviklingsmuligheder.

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A PhD is a quest. It is personal, yet cannot be done alone. It is ambitious, yet also a humbling process. It is driven by a profound interest in a problem or field. The opportunity to immerse yourself in such a field is, above all, a gift.

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PART I: INTRODUCTION

CHAPTER 1. INTRODUCTION

This thesis is about challenged localities in Denmark and the role the vocational education and training system (VET) plays in their development trajectories. It is also about young people, who have grown up in challenged localities and the life choices they make as they move into and through the VET system. In fact, the thesis is about the inter-relationship between the Danish VET system in challenged localities and the role its spatial structures play in young peoples' education choices, and how the collective effect of those education choices shape local development trajectories.

‘Challenged localities’ is a collective term for a number of - in some senses - disparate localities that share the misfortune of experiencing negative development trajectories. Despite a general perception that Denmark, like a number of other Northern European countries, is an affluent society with relatively high levels of social and other equalities, its geographical inequality levels, in terms of differentiated development paths across regions and localities is increasing. While large urban areas experience unprecedented economic and demographic growth, challenged localities display an array of income, employment, demographic and social downturns and are emerging as losers in widespread restructuring processes. Economic restructuring and social transformation processes on global to local scales, produce conflicts – as well as new opportunities in different localities.

Education systems are vital sites of rupture and conflict during economic restructuring processes. During the last 10-15 years, the Danish education system, spanning from kindergarten classes in grade school to Ph.D. schools at the largest national universities, have been realigned in order to adhere to what has been termed global competitive demands (Ehlers 2013, Regeringen 2006).

This is also the case for the Danish Vocational Education and Training system. For most of the 20th century, it has been the largest education system in Denmark. During the past 2-3 decades, its position has gradually been marginalised in favour of higher education attainment. The VET system, however, continues to play a vital role for the provision of skilled labour, particularly for labour markets outside metropolitan areas.

However, the VET system is wrought with structural imbalances. At a time when all labour market forecasts predict a lack of vocationally educated labour in the near future, the VET system is failing to attract a sufficient number of young students, just as it fails to secure sufficiently high completion rates (Ministry of education 2016). There is also a miss-match between students' vocational wishes and labour market and apprenticeship position demands (Kirk, Lichtenberg et al. 2016). These challenges are widely recognised and a recently implemented reform – the 2015 VET Reform - seeks to address these challenges.

Less recognised is the spatial complexity of the VET system. As students transition through the system, they must make a series of vocational decisions, choosing between more than 100 different vocational programmes. Each vocation has its own spatial distribution pattern, which consists of two consecutive basic programmes followed by one main programme and minimum one apprenticeship position. Programme provision is highly dispersed geographically and vocational colleges in challenged localities provide a decreasing array of vocational programmes due to declining youth cohort numbers.

Vocational decisions, particularly for young people growing up in challenged localities, are spatial decisions. Some programme choices lead to locally provided schooling with the possibility of leading a life on local labour markets. Other programmes lead to schooling and apprenticeship positions on urban labour markets and require outmigration. Still other programmes have more diffuse spatialities where students may need to travel to schooling opportunities, but have access to both local and non-local apprenticeship markets. A central characteristic is that students at the outset of their education may not know where they can access all parts of the education and what completion of their vocational degree will demand in terms of geographical mobility. It is unknown whether the lack of local access, mobility demands or even the complexities of uncertainty have an effect on successful education completion.

The purpose of this thesis is to contribute to research and education planning knowledge about the relationship between the spatial complexities of the VET system and students' education transitions as well as how that relates to local development trajectories. This can be expressed in the following working questions:

1. How has the shift from a predominantly industrial production economy toward a more knowledge-based economy as well as shifts within its governance systems, shaped the current VET system? I am particularly interested in the factors that challenge the local provision of a wide array of VET programmes as well as access to local apprenticeships.
2. How does the structure of the vocational education system, as it manifests itself in challenged localities, affect young VET students' education choices and mobility patterns? I am particularly interested in how different groups of VET students negotiate or handle these spatial complexities and what socio-spatial inequalities this may result in.
3. How are the development trajectories of challenged localities affected positively or negatively by 1) the current structures and functions of the VET system and 2) different groups of young people's ability or inability to negotiate the VET systems' spatial complexities?

In the following, I elaborate on the challenges that many localities outside Denmark's urban areas face as well as on the challenges that the VET system struggles with on a national level.

Challenged localities

Rural areas outside the largest cities in Denmark are characterised by:

- High rates of employment within agriculture, industries and tourism
- Greater drop in employment shares during economic crisis
- Slower recovery in employment after crisis
- Relatively high shares of unskilled and vocationally educated labour combined with low shares of the highly educated
- A declining population
- An aging population
- High shares of youth outmigration
- Higher shares of vacated premises
- Relatively low housing prices (Regeringen 2016).

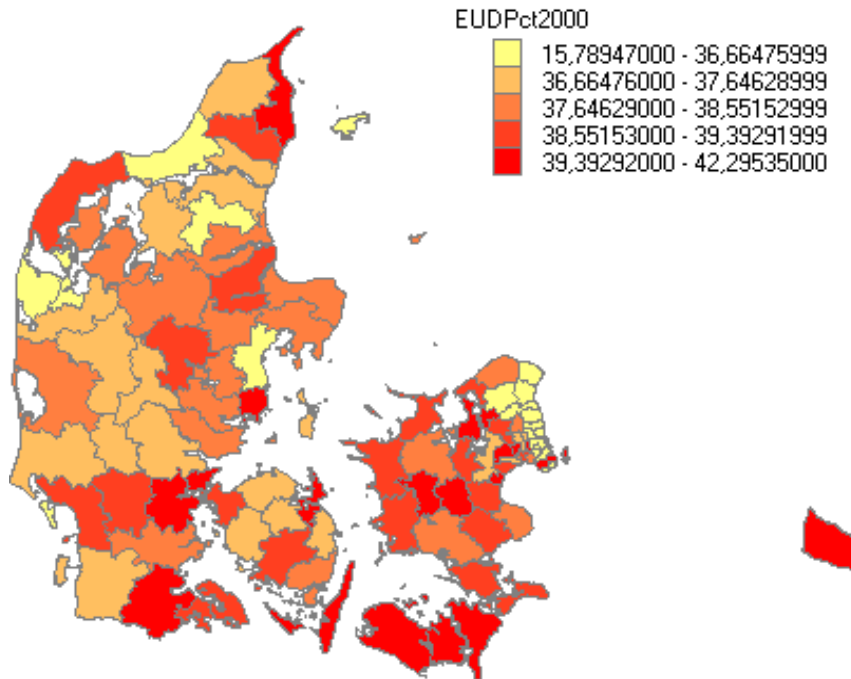
Almost 72 % of the Danish population in 2012 lived in one of the 11 largest cities in the country or in a catchment area to those cities, while 28 % lived in rural areas or in small cities and towns far away from the 11 urban areas (Ministeriet for By, Bolig og Landdistrikter 2013).

Demographic and labour market forecasts for the 2014-2024 period predict continued differentiated development in urban and rural areas of Denmark. This is primarily due to the outmigration of young people under the age of 25 from rural to urban areas. The population and labour force in rural areas is expected to decline for all groups under 60 years (Manniche et al, under publication). In other words, the processes of polarised development in Denmark are expected to continue.

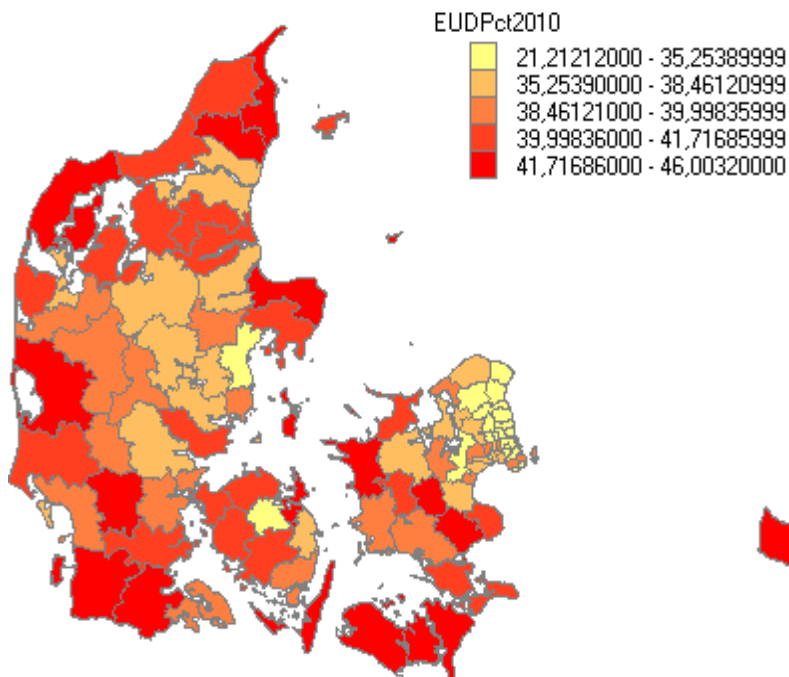
Despite these dichotomised development processes, rural areas outside the largest cities should not be cast simplistically as 'losers'. A significant share of Denmark's industrial production takes place here and is an economic sector that, although characterised by a significant drop in the number of employed, still accounts for approximately 17 % of market-based production in Denmark (Andersen, Kristensen et al. 2014). Thus, industrial production, which is primarily located outside the largest urban areas, continues to contribute significantly to national production and growth rates. However, compared to other economic sectors, for example information and communication, which is primarily located in urban areas, industrial production is lagging behind (Andersen, Kristensen et al. 2014). This same relation is mirrored when education levels between urban and rural areas are compared. While the general level of education amongst the rural population is increasing, education levels in urban areas rise quicker and the education gap between urban and rural areas continues (Huric Larsen, Hjalager 2012). This is primarily due to outmigration (Hedetoft, Stefaniak 2014).

It is characteristic that the share of the employed whose highest completed education is a vocational degree is highest outside the largest urban areas – and that the differentiated development trajectories between the largest urban areas and challenged localities is increasing.

Figure 1: Share of employed per municipality with VET degree, year 2000



Source: Statistics Denmark

Figure 2: Share of employed per municipality with VET degree, year 2010

Source: Statistics Denmark

Figures 1 and 2 indicate that the vocationally educated make up a significant share of employed labour in many municipalities, especially outside the largest urban areas. The municipalities that are light yellow, i.e. with the lowest share of vocationally education are Greater Copenhagen, Århus and Odense as well as their catchment areas. The municipalities that are the darkest shade of orange are all in rural areas. The development between the year 2000 to 2010 is shown by comparing figures 1 and 2, which indicates that the share of vocationally educated labour is increasing in rural areas and decreasing in urban areas.

A Challenged VET system

During the past 15-20, Denmark has seen a radical reshaping of education trends. The share of students who choose an academic upper secondary education after completion of their basic schooling has risen substantially from 58,6 % in 2001 to

74,3 % in 2016, while the share of youth who choose a vocational and training education (VET) has dropped from 31,7 % in 2001 to 18,4% in 2016¹.

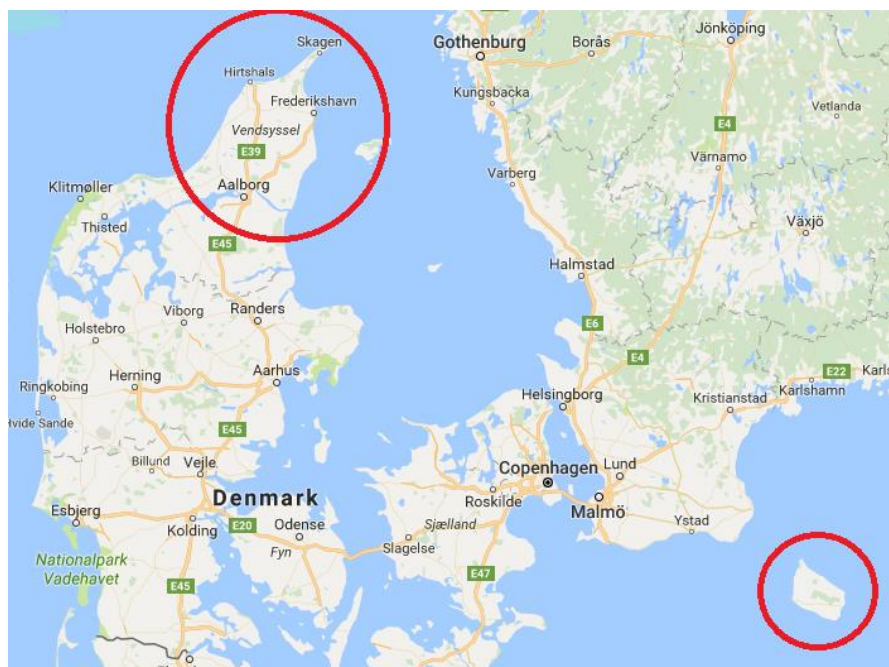
The VET system is also severely challenged by its high dropout rates. Drop-out rates in the upper secondary academic education system have decreased from 16 % in 2006 to 13 % in 2012, while they have increased within the VET system from 44 % in 2006 to 48 % in 2012².

As national policies aim to produce more VET students, I assume that any students who do not complete their VET education due to its spatial complexity is an unintentional policy output.

In recognising that challenged localities may have many structural conditions in common, I recognise that each location has particular historically, culturally and economically grounded particularities that differentiate them from each other. I also recognise that challenged localities may take many forms – as decidedly rural areas, primarily characterised by agricultural production, or medium-sized cities in rural regions, or restructured industrial areas. My work has empirically taken its point of departure in two sub-regional areas – the island of Bornholm and Vendsyssel. Both areas are characterised by production, employment and demographic challenges.

¹ [http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Statistik-over-tilmelding-til-ungdomsuddannelserne-for-9,-d,-og-10,-d,-klasse-\(FTU\)](http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Statistik-over-tilmelding-til-ungdomsuddannelserne-for-9,-d,-og-10,-d,-klasse-(FTU)) .

² <http://www.uvm.dk/Aktuelt/~//UVM-DK/Content/News/Udd/Erhvervs/2013/Sep/130904-Frafaldet-paa-erhvervsskolerne-er-stigende>

Figure 3: Map of Vendsyssel and Bornholm, Denmark

In order to analyse the role of the VET systems' spatial structures for student trajectories into and through the system, I have employed both a statistical analysis as well as an interview-based analysis. These have taken their point of departure in Vendsyssel and Bornholm.

The objective of this thesis is to generate knowledge about the forces that drive uneven development and the role particular education systems play in such processes. I am particularly interested in how the spatial structures – i.e. the provision geography of particular education systems -influence young peoples' perceptions of their education opportunities – and thus their education trajectories. I hope that this knowledge may help policy-makers make more informed policy decisions that are mindful of the differentiated effects of unilateral national education policymaking on different localities in Denmark. I also aim to contribute to regional actors' knowledge about the effects of institutional and programmed location dynamics on young peoples' education decision landscapes and thereby on their life trajectories. Finally, this thesis aims to contribute academically to the field of the geography of education on a number of points. Vocational education systems seem to have gone somewhat under the radar within socio-spatial education research, while research has tended to focus on either the compulsory or higher education system. Given the importance of vocationally-

educated labour on labour markets located outside urban areas, this is a relevant level of education to draw in when researching challenged localities. Theoretically, the thesis hopes to contribute to our understanding of transition geographies, i.e. the complexities of young people's education decision processes in different opportunity structures. Due to the novelty of studying the geographic structures and functions of the vocational education system, I regard this work as primarily exploratory and hope that it will also inspire others to expand our research on this subject.

CHAPTER 2. THESIS STRUCTURE

This thesis consists of five overall parts.

PART I is an introduction to my work and the problems that have motivated it. In chapter 1, I present the development challenges that a number of localities outside Denmark's urban growth centres currently face, amongst which is a shortage of vocationally educated labour. I also present the challenges the vocational education system faces as described by national policy makers. Finally, I open up for a discussion on whether there are specific challenges that primarily pertain to vocational education provision outside urban areas. Chapter 2 consists of this structural overview.

PART II consists of my theoretical framework and methodology. Chapter 3 is my theoretical framework, which draws on three overriding theoretical fields: the geography of education (section 3.1.), theories on uneven development in advanced economies (section 3.2.) and theories on youth transitions in connection with education (section 3.3.). I position myself within these fields by setting up two inter-related theoretical frames – one that focuses on analysing the vocational education system seen from a spatialised development perspective and one that focuses on analysing young peoples' perceptions of the opportunity structures they meet within the VET system. The chapter finishes with section 3.4., which presents my research questions. Chapter 4 is my methodology, which deliberates on the methodological implications of my theoretical frames and research questions on three levels: my approach to understanding and generating scientific knowledge (section 4.1.), the groundings of my theoretical choices (section 4.2.) and my scientific method choices and practises (section 4.3.).

PART III consists of chapter 5, which is my analysis of the Danish Vocational Education and Training system. Based on theories of uneven development and analysed through changes in key education spaces (section 5.1.), I study the VET system's path from a dominant industrial production-based education system to a marginalised and challenged system positioned on the fringes of a knowledge-based economy (section 5.2). The empirical input is primarily literature-based. The section finishes with a brief introduction to the VET Reform of 2015. Section 5.3. reflects on the challenges facing the current system, as analysed by me in the previous sections. The purpose is to outline the specific challenges that young students from rural localities face when they enter the VET system. A central point is that the transition structures into and through the VET system – i.e. the passage into the system and the passage from the Basic Programme into the Main Programme with an apprenticeship position – is immensely complex and requires VET students to be able to orientate themselves vocationally on both local and supra-local levels.

PART IV is a presentation of the two main empirical findings of the project. Chapter 6 presents the findings of my statistical-based analysis of young VET students' education and mobility patterns from three selected challenged localities. Sections 6.1. and 6.2. focus on education attainment patterns, comparing the mobility patterns of the vocationally educated with those who attain academic degrees and those who do not attain any formal education above compulsory schooling. Sections 6.3, 6.4. and 6.5. focus solely on those who obtain a vocational education and compare mobility patterns depending on the location of the vocational school. The overall purpose of the analysis is to provide the reader with an understanding of the spatial patterns generated by the VET system outside the largest urban areas. Chapter 7 presents the findings of the interview-based analysis of young VET students and their transition orientations and behaviours as they move into and through the VET system. A typology is set up based on these transition behaviours (section 7.1.). The effects of students' differentiated transition behaviours is analysed based on their vocational programme choices (section 7.2.) and the students' social backgrounds (section 7.3.). In section 7.4., I discuss the implications of the students' differentiated transition behaviours for their education trajectories and reflect over what this means in terms of ensuring a sufficient supply of vocationally educated labour for challenged localities.

PART V is divided into two chapters. Chapter 8 is my conclusion. It summarises my findings and presents a collected answer to the three research questions I present in section 3.4., discussing structural and functional aspects about the Danish VET system that challenge peripheralised labour markets. As an integrated aspect of this discussion, I implicate the ongoing 2015 VET Reform and reflect on its potential effects on processes of peripheralisation and centralisation. Finally, in chapter 9, I discuss the perspectives of my research on two counts – in relation to national VET policies and in relation to research on the role of education systems in challenged localities.

PART II: TOWARDS A GEOGRAPHY OF VOCATIONAL EDUCATION

The purpose of this part of the thesis is to present my theoretical frame for analysing how the spatial patterns of education provision interact with local development conditions.

Although PART II primarily is concerned with theoretically abstract approaches, these are repeatedly related to the empirical context, i.e. the vocational education and training system in Denmark today. A geography of education systems must take national specificities into account. Despite globally spreading educational markets and agendas, education reform continues to display significant and enduring national variations that must be recognised in research (Butler, Hamnett 2007). A process of repeated visits and revisits between the empirical case on the one hand and theoretical abstraction on the other is needed (Harvey 2006, p. 79)

The overall working question that guide this chapter is: in what ways can existing research within the field of the geography of education help me conceptualise how specific education systems influence positive and negative development processes.

It consists of two chapters:

Chapter 3 presents my theoretical framework and consists of four subsections. Section 3.1. presents the key terms I draw on from the geography of education. Section 3.2. presents the analytical dimensions I use drawn from theorising on processes of uneven development. Section 3.3. develops a theoretical understanding of how youth perceive their spaces of opportunity within education systems. Finally, section 3.4. presents my research questions.

Chapter 4 presents my methodology and describes how I approach my research, operationalise my theoretical frameworks and how I practise data construction and analysis.

CHAPTER 3. THE GEOGRAPHY OF EDUCATION

Section 3.1. provides a basic education geographic vocabulary and defines the key education spaces of enquiry used in my analyses. The key spatial vocabulary is based on previous research within the geography of education. Section 3.2. presents my frame for analysing processes of uneven development across space, discussing which societal dimensions are relevant to include in order to understand the relationship between education systems and processes of uneven development. I present and discuss each of the interrelated societal dimensions in the following sections: section 3.2.1. focuses on shifts in dominant production paradigms and how they diffuse differently across space, leading to uneven development; section 3.2.2. focuses on uneven access to power and influence through spatially uneven governance structures and processes; section 3.2.3. focuses on sociological dimensions and the spatial patterns of hierarchised social relations³. The fourth and final dimension focuses on mobility and mobility demands as a process of uneven development. This dimension is relevant as mobility imperatives increasingly figure in education attainment processes as does education-induced migration patterns. In each subsection, I discuss how the dimensions interact with shifts in the education systems and how these shifts can be observed through changes in the key education spaces identified above. The theories in section 3.2. and how I frame them, help me analyse the relationship between processes of uneven development and education systems.

Section 3.3. focuses on theories that help me analyse how young students perceive the spatialised patterns education systems produce, including education systems' mobility imperatives. While transitions are key processes within research on youth and youth sociology, the geography of education has not treated transitions as a key space. Transitions and their spatialities are particularly relevant in connection with the Danish vocational education and training system due to the structure of the VET system as there is a major internal transition imperative between the Basic and the Main VET programmes. Exogenous and endogenous shifts in education systems affect student flows into and through those education systems and generate new student geographies. Section 3.3 presents a theoretical frame for understanding the

³ These three dimensions of uneven development - the economic, the political and the social – as well as a discursive dimension – are treated in existing literature (Kühn, Matthias 2013, Kühn 2015). I do not unfold the discursive dimension in my analysis as this dimension primarily pertains to processes of legitimising differences between different social groups and across space. Although highly relevant, it goes beyond my analysis as I wish to focus on the vocational education system itself and on young VET students, not on discourse. For research on discourse pertaining to uneven development see (Pristed Nielsen 2016, Carter 2011)

relation between such shifts and how young students perceive their opportunities within education systems.

Finally, section 3.4. presents my research questions based on the problems that I outlined in Chapter 1 facing challenged localities in Denmark today and the theoretical frames that I have developed and presented in chapter 3.

3.1. APPROACHING THE GEOGRAPHY OF EDUCATION

The geography of education, in its broadest sense, studies the spatially disparate structures, which condition the production, dissemination, application and consumption of knowledge and education systems. It explores actors that have differentiated levels of access to socially and economically relevant and valuable knowledge⁴. It also studies the institutions, which produce this knowledge and the provided educations and their dissemination and application in society. The economic impacts of education and the mobilities of the knowledge imbued through formal education systems is an important aspect of the field. This is because actors take their personal knowledges with them as they move through space (Meusburger 2001).

Education institutions that impart formal education, skills and knowledge are not only distributed unevenly across space, they do not provide and make their knowledge equally available to different social groups. As the level of obtained education is a major factor in place-based competition at different scales (local, regional and national), it is an important aspect of uneven development. Formal education levels are also one of the primary objectively measurable indicators of social stratification, and research within the sociology of education is occupied with how uneven access to education can limit the goals, needs and decision-making processes and actions of different actors.

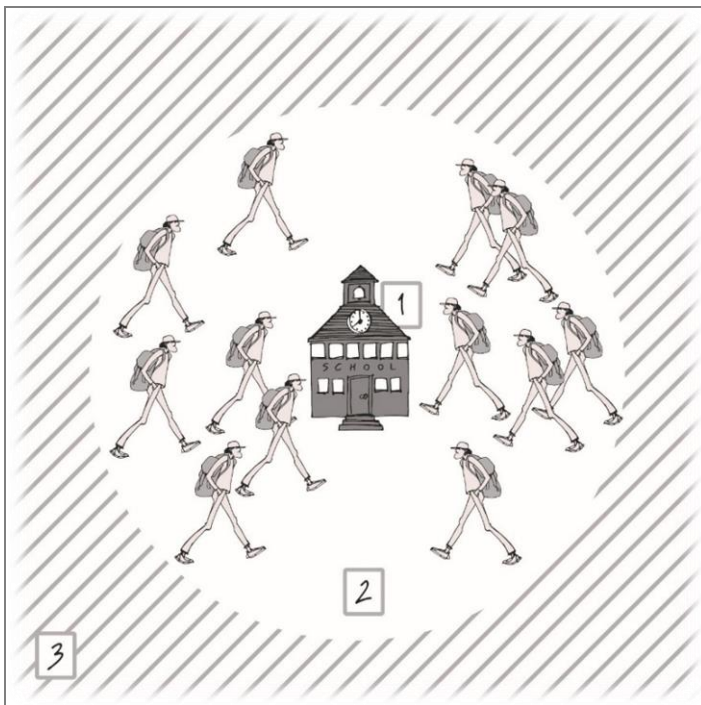
With increasing political attention placed on education, research within the field of the geography of educational has also increased (Butler, Hamnett 2007). There are two main factors involved. One concerns the construction of the welfare state, where the establishment of comprehensive social security systems explicitly aim at

⁴ This definition is based on Meusburger's seminal work: 'Bildungsgeographie' (Meusburger 1998). Within Anglophone research, economically relevant knowledge, which has been generated within the higher education system or in interaction between firms and knowledge institutions, is most often studied within economic geography. Within the German speaking research fields, this demarcation is not as marked in that the 'Bildungsgeographie' field has its point of departure in 'Bildung', which concerns all knowledge and formation from literacy, to schooling, the higher education and research as part of regional development processes. Had I taken my point of departure in understanding how vocationally educated labour contributed to innovation processes in firms, my work would be more centrally situated within economic geography.

promoting equal opportunity across social classes (Hansen 1987). The other concerns the role of knowledge for competitive advantages on global knowledge markets. With the rise of globalisation, governments strive to educate their populations in order to secure their future economic competitiveness (Butler, Hamnett 2007).

Educational institutions are the physical manifestations of education systems. It is here that the content of different education programmes and the social and cultural practices that surround learning throughout childhood and youth, take place (Thiem 2009). Therefore, education institutions are extremely important spaces of production and reproduction of social and cultural practises. As such, they function as producers of space, just as they are produced by space (Harvey, 2006). I elaborate on this statement throughout the section, where I outline how spaces are produced in relation to the location of educational institutions and vice versa, and by doing so introduce and define the central spatial concepts that I use in my analysis of the geographies of the vocational education system. The concepts, which will be defined, are: education institutions as places of simultaneous disembedding and empowerment and student catchment areas and regional contexts as opportunity structures.

Figure 4: the key spaces of education geographic analysis



Legend: 1: Educational institutions, 2: Student Catchment areas, 3: Regional contexts

Each key education space is discussed below.

AD 1: Education institutions

The first key education space, marked as [1] in figure 4, are educational institutions. Education systems manifest themselves through what is taught within the walls of education institutions (Meusburger 1998).

Above compulsory education, students segment into different education systems, the choice patterns of which are influenced by their social background, termed education positioning by Gravesen. He also argues that the social mix of students during compulsory schooling influences educational positioning (Gravesen 2012). Education positioning is also related to the place a young person has grown up (Paulgaard, Bæk Karlsen et al. 2012, Bæk 2015). In urban areas, such positioning often displays a spatial pattern that is related to the level of residential segmentation in the city (Hamnett, Butler 2013, Rangvid 2007). In rural areas, spatial patterns are more diffuse, but research suggests that family-based occupation cultures may play a significant role, especially in communities that have been reliant on primary production economies, i.e. fishing and agriculture (Corbett 2007, Hansen 2014). Thus, education positioning is tied into socially constructed value-hierarchies in the places students have grown up. There is a lack of research that has studied more economically complex rural spaces, such as small towns. Differently positioned social actors within a given space will display different education positioning patterns. This affects how large a share of a given local population will seek a particular type of education. This is not a fixed state, as education systems may shift the type of students they attract, generating new social patterns amongst the student body (Hansen 2011), which again has spatial affects.

Borrowing from Giddens' concept of disembedding, we may conceptualise education institutions, scoping from compulsory elementary to non-compulsory upper secondary schools, as extraneous institutions, which are placed into a locality and function as 'institutions of disembedding' (Giddens 1991). Giddens stresses the undermining of place through the expansion of disembedding mechanisms, such as abstract money systems or other systems that have a validity independent of its practitioners. Giddens ascertains that in traditional cultures, most social life was localised, except during periodic mass population migrations and by a few highly mobile individuals. What has changed in modernity is not due to increased mobility, but rather that "*place becomes thoroughly penetrated by disembedding mechanisms, which recombine the local activities into time-space relations of ever-widening scope*" (Giddens 1991, p. 146). In terms of schooling, we may perceive national education systems as disembedding students from local knowledge functions. Michael Corbett, based on studies in remote Canadian fishing communities, shows us how parents were sceptical about the usefulness of formal education. The types of knowledges that were acquired inside the local school building were not useful in local contexts, where the

economy was based on fishing. Rather, schoolchildren acquired knowledge sets that are useful for further schooling and for life in communities with different economic, social and cultural structures than the local community. In other words, the local educational institution was a place where young students were disembedded from purely local valuation and identity systems. Hence, the seminal title of Corbett's work: "Learning to leave" (Corbett 2009a, Corbett 2007).

Summing up, education institutions and the education programmes they provide are significant producers of space because they function as structures of opportunity for young people in given localities. Education systems can potentially produce shifts in identity formation, for example by embedding students into occupational identity formations (Billett 2011). Education systems that prerequisite a high level of mobility of its students can be understood as founding a rescaling of youth life experiences and can potentially be a producer of the capacity to be mobile. In other words, what takes place inside educational institutions is a re-scaling of previous life experiences into new opportunities.

A critical approach to this raises questions of exclusionary and inclusionary processes within education systems. If education systems do not provide and make their knowledge equally available to all social groups (Meusburger 1998), the development of students' mobility capacities as well as vocational identity formation processes, for example, is not imbued equally in all students within the same education system. To what extent does the vocational education system and how it manifests itself in the local VET institution, function as an inclusionary and/or exclusionary structure of opportunity for different groups of students?

Ad 2: Student catchment areas

The second key education space, marked as [2] in figure 4 above, concerns student catchment areas. These demarcate the geographical boundaries of the collective student body of a given educational institution. As entire student cohorts must pass through the education system within compulsory education, the boundaries between school districts determine the socio-spatial composition of students in each institution.

Within urban geography, this premise has been a primary object of research (see for example (Hamnett, Butler 2013, Butler, Hamnett et al. 2013, Hamnett, Butler 2011, Rangvid 2007, Freeman 2010). Within rural education research, the demarcation of one school district from another based on socially and ethnically segregated neighbourhoods has been less relevant. However, Bæck has argued that student compositional and contextual effects also need to be considered within rural education research (Bæck 2015). Instead, research has tended to focus on access and lack of access to education opportunities. Students with varying degrees of resources to be mobile negotiate landscapes of spatially 'fixed' institutions. Repeatedly, studies have shown that distance in itself is not a determining factor in education attainment (James

2001). Distance is, however, an interplaying factor - along with socioeconomic and place-based social and cultural conditions – that affects education trajectories (Faber 2014).

There is a fundamental difference between the function of catchment areas within compulsory education and non-compulsory education. Education systems that provide non-compulsory education attract or take in a certain portion or segment of a youth cohort. Depending on governance structure, they function on market conditions, competing to attract specific youth cohort market shares.

In rural areas, where youth cohort numbers are limited, market-based provision structures are challenged. This is especially the case if the particular education system takes in a decreasing share of (local) youth cohorts and/ or are located in areas with a declining population. The result may be very large catchment areas, increasing mobility imperatives and/or limited education provision. Thus governing education institutions and their catchment areas, including the degree to which these structures are market based, influences local opportunity structures. This raises critical questions about the systems of governance concerning the vocational education system and the resultant catchment areas that are produced. *What are the factors that influence education provision structures, including the size of catchment areas, within the vocational education and training system in challenged localities?*

AD 3: Regional contexts

The third key education space, marked as [3] in figure 4 concerns differences in the development context of the region or local area in which an education is provided (Meusburger 1998, Bæck 2015).

Christaller (1966) has provided a seminal model for understanding the variations and patterns of size and spacing between towns and cities, the so-called central places. His work was based on a conviction that some ordering principle governed the distribution of central places. He introduced a basic vocabulary that consisted of central places (towns of varying sizes) and their complementary region (catchment areas for commodities). Commodities could be particular service functions, shops, and other demanded products and services, or as in my case, particular education programmes. There was a basic premise that the provision of services is based on market conditions and thus economically driven. Christaller operated with a hierarchy of central places, where cities that extend their influence over a large area were termed 'central places of high order', and smaller towns with less extensive influence were described as 'central places of low order'. The service limit of each central activity was described by the outer limit of the range of the particular commodity in which it dealt. The 'central places of high order' were those with the widest range of commodities (Beavon 1977).

Christaller's hierarchical model is useful for visualising a landscape of hierarchized education institutions that compete against each other and whose catchment areas vary, depending on the spatial distribution of different education programmes. However, Christaller's model is based on an assumption about an even distribution of population and that the population has equal purchasing powers.

This is of course not the case in real life. Perceived from the point of view of young students, the education landscape may be described as differentiated 'opportunity structures'. Access to educational opportunities vary, simultaneously conditioned by the varied education landscape and by the resources held by the student to negotiate the education landscape. Thus, conditions and barriers directly and indirectly provide differently positioned social actors with different education opportunities: opening opportunities for some actors, close opportunities off for others (Bæck 2015). Differentiated opportunity structures may have an effect on student motivations, on their opportunity orientations and thus their choices.

The composition of student socioeconomic status within a given catchment area, including formal education levels, labour market positions and income levels, relies on the occupational and educational opportunities in the region, where the given education institutions and their catchment areas are located.

In addition, local and regional labour markets also constitute a significant structure that young people relate to either consciously in their education choices and/or especially for VET students, in connection with apprenticeship opportunities. As Bæck points out, opportunity structures relate to the context in which choices are being made (Bæck 2015). Students located in different geographical settings may perceive their individual opportunities in life differently, simply because they are different, depending on whether they have grown up in a rural area, small city or a large metropolitan area. However, such a simplistic structural determinism does not leave room for other concurrent influences. In other words, just as there is a recognition that *de facto* different opportunity structures exist, there must also be a recognition that varying perceptions of such structures influence young VET students' choices and behaviour.

Finally, the knowledge provided by particular education systems target different types of labour markets that are distributed unevenly across space. The value of gaining a particular formal education thus differs from one region to the next. For a student, the value of gaining a vocational education within a field that is dominant on the local labour market is immediately high. On the other hand, in a rural area where a majority of the work places require unskilled or vocationally educated labour, the value of gaining an academic upper secondary education is only realised on a supra-local scale.

This brings uneven development perspectives to the forefront as they shape the contexts in which educational institutions and their catchments areas are situated. In

the following section, I theorise on how processes of uneven development interrelate with the production of space through education systems.

3.2. EDUCATION SYSTEMS AND PROCESSES OF UNEVEN DEVELOPMENT

Why do different regions in the same national territory develop differently and what are the forces that drive favourable economic development trajectories in some regions whilst others face underdevelopment? How does this affect the supply, consumption and outcomes of national education systems? Does the geography of education systems affect processes of uneven development, and if so, how?

The purpose of this section is to present my conceptualisation of the relationship between the spatial structures of education systems (i.e. location of institutions) and local development conditions. Based on this, the section will conclude by setting up an analytical frame, which will be used in PART III to analyse how the structures and processes of the VET system influence regional development.

Most advanced capitalist economies are experiencing increased differences in regional development within their national spaces. While some regions or areas within regions are experiencing prolonged periods of economic and demographic decline, other regions within the same national territory are experiencing prolonged periods of economic growth, demographic increase, in-migration and agglomeration of economic, financial and innovative activities (Grunfelder, Rispling et al. 2016). These processes are termed 'peripheralisation' and 'centralisation' respectively. This chapter discusses how we can understand the role education systems play in these processes. *How do processes of peripheralisation and centralisation affect their spatial provision patterns and how do the education systems contribute to uneven development processes within national territories?*

Processes of peripheralisation and centralisation

In everyday usage, the term 'periphery' is used to denote geographical areas that are remote and isolated. The term also denotes a distance from the developing centres of the region or country, and is therefore associated with both economic and cultural 'backwardness'. Layman's usage of the term periphery and denoting large parts of non-urban Denmark as "Peripheral Denmark"⁵ stands in contrast to newer academic use of the term. There has been a shift from studying 'peripheries' and 'centres' to

⁵ See for example "Udkanten begynder lige uden for København" in *Jyllandsposten* 27.10.2013; "Forskere: Vi bliver nødt til at afvikle dele af Udkantsdanmark" in *Berlingske* 14.12.2016.

understanding the processes that drive differentiated development within national territories (Kühn, Matthias 2013, Kühn 2015). Binary explanation models consisting of, on the one hand perpetual underdevelopment - “...*in peripheries everything is in decline*” (Kühn 2015, p. 371) - and, on the other, perpetual growth in central development regions, have given way to more dynamic explanation models. The old static and dichotomised conceptualisations lack the ability to explain shifts or historical turning points, where peripheralised regions experience growth and enter paths of re-centralisation and vice-versa (Kühn 2015). In newer theorising, the notion that peripheral locations were fixed geographical territories has been abandoned in favour of a recognition that processes of centralisation and peripheralisation are constructed and therefore contain the potential to change. Processes of centralisation and peripheralisation can therefore take place in all types of geographical spaces, including inner-urban neighbourhoods in otherwise thriving urban areas as well as previously thriving industrial regions.

Recent academic work on peripheries focuses on relations and dynamic spaces of opportunity and resources. The focus is on the interrelated constructional processes, which differentiate regions that experience positive development processes vis-à-vis regions in negative development processes (Copus 2001, Danson, De Souza 2012). Such processes are both multi-dimensional and multi-scalar. The multiple dimensions political, economic, social and discursive. They are intertwined and enhance each other (Kühn 2015). Processes of economic peripheralisation are seen as being supported by, or perhaps even instigated through, processes of social marginalisation (Danson, De Souza 2012). This may also involve aspects of communicative marginalisation where uneven development is supported or legitimised through discourses on place-based social differentiation (Kühn, Matthias 2013). Lack of access to power in governance systems across scale is another dimension of peripheralisation (Herrschel 2012) as is lack of access to well-connected networks (Copus 2001). The complexity and multidimensional character of processes of uneven development call for them to be studied within their specific spatial and historical contexts.

Methodologically, the challenge of this PhD project becomes to investigate how differentiated economic processes, governance hierarchies and social stratification structures embedded within and around the vocational education system are constructed in particular spatial and historical settings.

As part of my positioning to do so, I provide a more precise understanding of each of the dimensions of uneven development processes and how they are related to education systems. In the following four sub-sections, the role of education systems in relation to processes of uneven development along economic, political, social and mobility dimensions are discussed.

3.2.1. DOMINANT PRODUCTION PARADIGMS

The first dimension of understanding uneven development processes concerns the disparate spatial effects of shifting production paradigms, whereby some regions or areas experience economic growth due to new production systems, while others experience economic decline. Within classic theories on uneven development, which evolved as a result of uneven development following decolonisation processes in the Global South, the most pervasive models of understanding have involved dichotomised centre-periphery and dependency theories (Wei 2015). These are less relevant when theorising on sub-national development conditions within advanced market economies, such as the Danish one.

Perez offers a dynamic conceptual frame for understanding meta-shifts in economic development across space, termed techno-economic paradigms (TEPs) (Perez 1985, Perez 2010). Her conceptualisation rests on the notion of technological revolutions, which generate comprehensive upheavals that affect the whole society, including profound institutional and social changes. According to Perez, these shifts take place after development or evolvement of new sets of technologies or production forms and are so pervasive that they have the capacity to spill over into other spheres of society and transform the rest of the economy profoundly.

New production forms change practises in terms of new organisational structures, new business models and strategies, spilling over from private enterprise into other societal spheres, including institutional and organisational structures far outside the sphere of production (Perez 1985, Perez 2010).

The diffusion of the new TEP is uneven – both spatially and temporally, meaning that the development trajectories of different regions are affected unevenly. According to Perez, techno-economic revolutions start in core regions that are historically and socio-spatially predisposed for the new TEP. The regions where the new techno-economic paradigm develops first and where the new norm becomes most pervasively entrenched, experience a long period of positive economic development. Reversely, regions that continue to be dominated by the economic and production norms of the former TEP experience long periods of economic downturn. As the new TEP increasingly becomes the new norm, other economies and the norms and institutions, which supported them, become marginalised.

The same conceptualisation may be used to understand shifts in the centralisation and marginalisation of particular education systems. In an economy that increasingly relies on knowledge-based innovations, the higher education systems – and the academic preparatory tracks, which feed them - become increasingly important. Simultaneously, the vocational education system, which was the primary education system of the industrial production paradigm, becomes marginalised vis-à-vis academic tracks.

Education policies and education institutions are examples of ‘laggards’ in Perez’ perception. She claims that public institutions tend to be exceedingly slow to reform and adopt new organisational forms, which correspond to the needs of the new TEP, typically lagging behind by as much as 20-30 years. They have only “...imitated the paradigmatic principles developed in firms when forced to respond to political pressures for effectiveness” (Perez 2010, p. 199).

With TEPs as a meta-narrative backdrop, I conceptualise national territories in advanced capitalist economies in perpetual spatio-economic flux, characterised by contested spaces of polarised development, where new TEPS dominate over old, marginalised production forms. We may also theorise that education systems exert ‘laggardly behaviour’ in such processes, continuing for a period to educate human capital for a demised TEP. This continues until a given turning point, where a complete realignment of national education policies shifts toward the new TEP.

The spatialities of the current dominant TEP

Over the last three decades, there has been a shift away from the mass industrial manufacturing-based production paradigm, which expanded and dominated from the post-World War I period and until the 1970s. The ‘new’, dominant production form has many names: the new economy, post-Fordism, flexible specialisation, the knowledge economy, cognitive capitalism etc. (Storper, Scott 2009). It is characterised by an intensely knowledge-driven economy, which competes on the capacity to be technically and economically innovative. Combined with forces of globalised capitalism and agglomeration of economic activities in urban spaces, there has been a profound shift in the spatialities of core and peripheral regions.

Cities grow and expand at the expense of other areas, re-enforcing centralisation and expansion processes, while other areas are characterised by the crumbling of former industrial strengths. Lorentzen describes this as a geographic division into growth and residual areas respectively. Growth areas are characterised by the emergence of knowledge intensive businesses, while the residual areas’ production forms are based on the old TEPs industrial production. The role of the periphery in the knowledge economy is as location of simple industries and more traditional craftsmanship forms and private services targeting a global market (Lorentzen 2009, Lorentzen 2012). Dominant economic sectors in rural peripheries therefore consist of agriculture, manufacturing, services, including tourism (Terluin 2003).

In terms of the geographies of the labour types most in demand, the industrial production system competes, amongst other dimensions, on access to low-cost labour, while the knowledge economy competes based on access to labour, which can interact with and contribute to technically and economically innovative communities. This is often perceived to consist of primarily highly educated labour (Storper, Scott 2009, Scott 2009, Hansen, Winther 2012). These patterns are not simple and there is

increasing evidence of a growing 'service class' made up of unskilled service workers and their influx into the largest metropolitan areas (Scott 2009).

Such Meta theorising does not take national economic structure variations into account. The 'varieties of capitalism' literature (Bathelt, Gertler 2005) stresses the importance of situating analysis of this kind in particular national economic contexts. Especially pertinent for my study is the Danish labour market structure, which is governed through a corporatist model whereby the labour market social partners (The Confederation of Danish Employers and the Danish Confederation of Trade Unions) and their regulating institutions have a profound effect on vocational education systems, as we shall see in **PART III**.

Furthermore, processes of peripheralisation and centralisation should not be understood as simplified dichotomised processes, by which only large metropolitan growth centres and downward-spiralling rural peripheries exist. Not all urban centres experience growth and some European rural areas do experience population growth (Terluin 2003), just as there is research, which stresses the importance of small and medium-sized cities in non-metropolitan regions (Kühn, Milstrey 2015, Lorentzen, Heur 2012). A final point to make, which will be expanded upon in the section on governance below, is the approach to understanding rural (or any local) development as an interplay between endogenous and exogenous forces. Differentiated localities are thus the result of the interaction between overriding processes of peripheralisation and/or centralisation that interact with specific historical and context-based local responses (Bor et al, 1997 in Terluin 2003, Lorentzen 2016).

Education systems in shifting TEPs

Education systems play a pivotal role in the profound societal shifts that take place in connection with TEP shifts. New production forms and the economic systems, in which they are embedded, require new skills, qualifications and knowledges, leading to reform processes within and surrounding different education systems. Theoretically, the education systems that supply labour qualifications that are in fitting with the new TEP are changed first, driven by the demand for better qualified labour. In techno-economic revolutions, reforms would be expected, in time, to be diffused into both the content and the practises of learning at all levels of schooling, including the primary schooling system. Education forms that supply qualified labour for redundant production forms would need to be reformed most profoundly or become marginalised.

Applying the understanding that new techno-economic paradigms diffuse unevenly across space to education systems underlines the role of education location policies. By placing educational institutions that supply labour for the new TEP in regions that are diffusing the new paradigm the quickest, national education systems support processes of centralisation, whereby the most advantaged regions are strengthened in

their diffusion process. Correlatively, if education institutions that supply new knowledges and skills are not placed in more peripheral regions, processes of peripheralisation will expectedly be exacerbated and lead to polarised economic development, inter alia through outmigration processes. Research on the contribution of higher education institutions (HEIs) for regional development in different types of regions stress not only the role of locating HEIs in given localities, but the importance of developing local knowledge and innovation environments that enhance interaction between HEIs, firms and governance structures (Arbo, Benneworth 2007). Such research does not include the contribution of vocational colleges for the development of regional or territorial knowledge- and innovation environments. This is presumably due to the hitherto dominant theoretical stance that knowledge-based economies are reliant on intellectual and cognitive capacities more than on physical production forms (Powell, Snellman 2004), which is generally interpreted as the highly educated (Hansen, Winther 2012). Thus, the vocational education system is not interpreted as a central education system in supplying labour for the knowledge-based economy and thus holds a more marginal position in terms of developing regions that are able to compete on global knowledge and innovation-driven markets.

With the shift from an industrial production paradigm to a knowledge-driven production paradigm, each of the key education spaces I identified at the beginning of this chapter has undergone profound and pervasive changes. The **regional contexts** in which education is provided is affected, as workplaces that require highly educated labour agglomerate in urban spaces, centralizing the higher education system in the same process. Outside urban areas, the vocationally educated, who provide labour for industrial production labour markets as well as public and basic private service, are dominant. The content of the education system that is taught in each **education institution** is realigned to channel a majority of students toward the academic schooling track. It is also in this context, the proliferation of upper secondary academic institutions compared to vocational colleges can be conceived (see the introduction). Shifting TEPs may also change **student intake patterns**, as young people increasingly choose the academic track. Finally, mobility imperatives are affected as young people seek academic education and employment opportunities provided in urban areas. The spatialised structure of the dominant academic track, starting with proximate access to primary and lower secondary schooling (year 0-9), followed by semi-proximate access to academic upper secondary schooling (year 10-12), followed by outmigration toward an urban centre, which provides access to university (year 13-) has been termed a “conveyor belt of regional redistribution” (Smith, Sage 2014, p. 102).

3.2.2. GOVERNANCE

The second dimension of uneven development processes concerns governance. Governance is here understood as the structures, processes and practises of decision-making in public authority and government systems (Herrschel 2012).

Theories on processes of peripheralisation within governance primarily focus on lack of power, on domination of central levels of government over decentral levels and on exclusion from decision-making processes (Kühn 2015). Increasingly, theorising within the past 10-15 years have generally shifted away from perceptions, where the periphery is persistently and unilaterally referred to as lacking in power. Especially the work of Copus (2001) and Herrschel (2012) have focussed on more nuanced perceptions that recognise that peripheral regions have many resources including access to influence.

Copus (2001) has introduced the concept of aspatial peripheralisation, which focusses on the relational aspects of peripheralisation. The relational dimensions concern access to networks and to 'connectedness' to the actors and spaces where decisions take place. Copus' work relates directly to rural areas, his focus is a re-conceived version of Friedmann's local elites (Wei 2015), who have access to influence outside rural peripheries through networks and other spaces of influence.

Herrschel has focused specifically on the exclusion from networks in governance research, basing much of his work on marginalisation of different regions within the EU (Herrschel 2012). Herrschel argues that "*Peripherality maybe actively created – whether intentionally or not. This may occur in the form of exclusions and marginalisation of actors through the ways in which policies and power are implemented and defined*" (Herrschel 2012, p. 30).

In terms of national education governance systems and their policyming, Herrschel's argument that exclusion from power and influence may not be intentional, is highly relevant if we approach education governance from a multi-scalar perspective. As techno-economic paradigms shift, so do the political economies of education systems, affecting the scales of governance. At the beginning of the industrial revolution, education systems often consisted of highly local self-training systems. During the 19th and early 20th century education evolved into primarily national systems, whose greatest task was to support nation-state building and integrate otherwise disparate ethnic, denominational and other social groups (Anderson 1991, Hobsbawm, Ranger 1992). Toward the end of the 20th century, education has become a global commodity system, increasingly marketised and governed through neo-liberal management ideologies (Lingard 2006).

These shifts have changed not only which actors influence the system, but also at which scales shifting actors, in the form of dominant coalition partners and stakeholders, have access to influence policies. The dominant scale of decision-making in education policy has moved from a primarily local to a national scale, deeply entrenched in the makings of nation-states (Hobsbawm, Ranger 1992). Within the past 15-20 years national education policies have, however, increasingly sought to position nation states on global knowledge markets, and the EU as a common market has sought common education policies. These processes have fundamentally

realigned education systems throughout the EU (Robertson 2009, Ehlers 2013). There has thus been a series of power shifts from one scale to another and a process of policy centralisation has taken place. In these shifts, actors and institutions may find themselves outside the dense nodes of influence just as local and/or regional interests may be devalued vis-à-vis securing national competitiveness on global markets. In such processes, we may speak of peripheralisation of regional actors and their sphere of influence on national policies. As Herrschel has pointed out, the spatialised effects of globally-orientated policies on specific localities may be unintended (Herrschel 2012). Whether intended or not, spatially differentiated effects of education reforms on national, regional and local scales is important to understand, if we are to understand the relationship between education systems and the production of spaces.

Thus, a central analytical field when studying the VET system are the shifting scales of governance and how actors at different scales – institutional, regional, national – gain or are excluded from influence on education policies and provision planning. The central education spaces that are analysed are the educational institutions and their catchment areas, including apprenticeship markets.

Pertaining to the VET system and the analysis, which will be carried out in PART III, the following working questions arise: *What factors influence which VET programmes are provided in vocational schools, especially pertaining to vocational schools that are located outside expanding metropolitan areas? At what scales are these factors governed, and what actors have influence on such processes? What does this imply about localities' / local actors' influence on local development processes through VET education provision?*

A second analytical field in relation to governance dimensions is related to Herrschel's concept of 'in-betweenness', where actors find themselves between nodes of influence. A lack of governance and regulation of the undesirable effects of unequal market conditions may also be perceived to be a form of peripheralisation. The VET learning system is based on two different but simultaneous markets that are governed by two different regulatory principles. One concerns the location of schools and the provision of an array of VET programmes. The second concerns access to apprenticeship positions. This co-governance of two types of markets begs the following working questions that are specific to the VET system. *How are the school-based and the apprenticeship-based provision markets governed, at what scale(s), by whom? Is there a correspondence between the two markets and how is that correspondence governed? What does this imply about localities' influence on local development processes through influence on VET education provisions?*

3.2.3. SOCIO-SPATIAL STUDENT INTAKES

The third dimension of uneven development processes concerns socio-spatial inequalities. Within sociology, notions of marginality and social processes of marginalisation have been central in describing different social groups, who are on

the fringes of a society. Billson has introduced the term structural marginalisation to refer to the political, social and economic powerlessness of disadvantaged social segments within societies (Billson 1988). Structural marginalisation also figures prominently within the geography of education literature, particularly within urban education, where spatial planning of school districts and equal access to education opportunities across very economically, socially and ethnically diverse neighbourhoods is a central issue (Hamnett, Butler 2013). In the past decade, there has been a development within sociology to understand space as more than a mere geographical manifestation of social stratification structures, and view geographic space alongside race, class, gender, age and sexuality as an important source of differential access to resources and opportunities (Lobao, Hooks et al. 2007). Thus, spatial process are causally intertwined with processes of social inequalities. For example, forces of industrial restructuring and other broad societal shifts have an inherent spatial 'dynamic' incorporated in them, meaning that they influence different social groups unevenly across space.

Thus, shifts in dominant TEPS may also influence social hierarchies, whereby some social groups are marginalised while others gain status and influence. In relation to education systems, processes of peripheralisation and centralisation may be related to shifts in student flows through different education systems.

Hansen has argued that the expansion of education systems, which has taken place in most advanced capitalist societies since the 1960s is both a product of functionalist demands as well as indicative of social stratification processes (Hansen 2011). According to a functionalist understanding, the expansion of the education system is driven by societal demands. In this perception, the expansion of the education system is a function of society's increased need of highly qualified labour (Collins 1979). Hansen claims that the expansion of education systems must also be understood as a social stratification process, whereby the well-educated elites have successfully deemed formal education levels to be a salient social stratification measure (Hansen 2003).

Using this to understand shifts in education patterns on a national scale, we may understand these as the collective result of a series of individual decisions (Hansen 2011). This indicates that significant decisions are made at the micro level in the system by actors without coordination or planning on a superior level and without actors being able to gain insight into the collective results of their actions or decisions. In this case, the actors are not just youth themselves, but also the influence of parents, teachers, career counsellors etc. (Linde 1997).

Hansen argues that caution is necessary in discursive use of the term 'choice' suggesting that students make conscious decisions about particular education programmes based on all education programmes that exist (Hansen 2011). In reality, not all education programmes are available to all persons and not all persons make

conscious decisions on which vocation and/or education programme they actually pursue. As I have argued, education decisions are extremely socially situated, and education opportunities are structured unevenly across space. Thus, in analysing the socio-spatial dimensions of uneven development, a relevant educational space in which to observe shifts, concerns changes in socio-spatial characteristics of student intake. Thus, if the share of a youth cohort that seeks a particular education type changes and/or there are shifts in the share of young people in rural areas or particular neighbourhoods that seek a particular education type or level, such shifts might very likely be indicative of forces of peripheralisation or centralisation and need further investigation.

Relating socio-spatial and production paradigmatic dimensions of uneven development to each other and using Harvey's terminology, we may perceive the increase in youth cohort shares that seek higher education to be a form of knowledge accumulation in urban areas, while rural areas are dispossessed of an increasing share of their young generations. Again, previous research on the relationship between higher education systems and regional development has made us knowledgeable about such processes, but little is known about the role of the vocational education system in such processes. This raises the following working questions: *How has the socio-spatial intake of students into the VET system shifted over time and what VET endogenous and exogenous factors have influenced such shifts? In what ways does this challenge or perhaps support the provision of vocational education in challenged localities?*

3.2.4. MOBILITY IMPERATIVES AND OUTMIGRATION

A widely recognised effect of processes of uneven development is the outmigration of highly skilled labour from peripheralised localities toward centralised localities, often termed 'brain drain' (Smith, Rérat et al. 2014). Research on rural youth is rich with studies on education-work- and cultural amenities-induced outmigration patterns. See for example Rye (2006), Hamilton et al (2004), Lindgren and Lundahl (2010), Bjarnason (2006) and Walsh et al (2013) to name but a few of the many studies that map and study nuances of youth outmigration from (Nordic) rural areas. The studies focus on outmigration due to depletion of local resources and lack of local opportunities in challenged localities (push-factors) and access to jobs, cultural amenities and, not least, higher education opportunities in urban areas (pull-factors). Several studies also stress the role of symbolic mobility imperatives (Lindgren, Lundahl 2010), whereby some rural youths perceive the city to not only supply an abundance of structural opportunities, but also holds a high position within a symbolic hierarchy of "young people's aspirations and imagined future selves" (Farrugia 2015, p. 7). Another salient aspect of education-induced outmigration is the role of gender. Women from rural areas seem to be more socially and geographically mobile than men (Faber, Nielsen et al. 2015, Faber 2014, Lorentzen 2016). Collectively, outmigration is often framed as an effect of uneven development processes.

However, I find it pertinent to understand outmigration as not only an *effect* of disparate education, work and cultural opportunities between peripheralised and centralised localities. Instead, education induced mobility imperatives should be investigated as a *dimension* (the fourth) of processes of uneven development. This is because differently positioned social actors display different levels of mobility capacity (Kaufmann, Bergman et al. 2004) and the increased demand within education systems to be mobile produces spatialised social stratification patterns, which may in and of themselves exacerbate processes of uneven development.

Much of the research that has focussed on education-induced outmigration has focussed on a generic higher education level (Lindgren, Lundahl 2010, Bjarnason, T. & Thorlindsson, T. 2006, Farrugia 2015). Higher education systems and their location 'dynamics' are closely tied into the agglomeration of economic activities and the accumulation of knowledge, innovation and creative capital in urban areas (Harvey 2006). The simultaneous imperative for young people to obtain higher levels of education than their parent generation and to seek university educations in the urban areas, where they are provided, results in a double mobility imperative, which is simultaneously social and geographical. However, the location 'dynamics' of the vocational education system is not as clearly tied into accumulation processes. Instead, it represents the recessive TEP, i.e. the industrial production paradigm, and its mobility imperatives are less clear. The vocationally educated are in demand both on peripheralised and centralised labour markets. Thus, the patterns of social and geographical mobility imperatives are not clear. Therefore, research must pose open questions about the role of particular education systems in generating mobilities and immobilities through inclusionary and exclusionary functions. I wish to investigate if there is a nexus between the mobility imperatives posed by a particular education system, the ability of the system to include different groups of students and help them meet such imperatives and the resultant education and mobility outcomes. The following working questions can be posed: *To what extent do particular education systems (here the VET) impose mobility imperatives on its students, what are the effects of such mobility imperatives on different groups of students and what education attainment and mobility patterns do different groups of students display as a result of such mobility imperatives?*

3.2.5. ANALYTICAL FRAMEWORK 1: VET SPATIO-TEMPORAL DEVELOPMENT

In each of the sections above (3.2.1. – 3.2.4) I have theorised on how different dimensions of peripheralisation and centralisation are related to shifts in key education system spaces. Underway, I have posed a number of working questions, which are contained in the overall research questions that are presented in section 3.4. Here, I continue by presenting the analytical frame that I use to analyse the factors that determine the provisional structures of the VET system and how they have developed over time along the four dimensions treated above.

The VET system is, as are all institutions, the outcome of a historical development process that is path dependent. This means that the current structures, practises and functions of the system are a result of past conflicts, negotiations, institutionalised practises and policies, which are embedded in the system (Thelen 2004).

Major education reforms are expressions of the, in Perez' wording 'laggardly' reaction of public institutions and their governance structures, to major paradigmatic shifts within production and its economies. A method to understand the spatial structure of the VET system is to analyse major educational reforms as a response to such shifts and to consider what the spatial effects in terms of uneven development are.

Analytically, I have related the dimensions of uneven development processes to the key educational spaces, which have been defined based on a dialectical reading of existing geography of education literature, dimensions of uneven development and specifics of the vocational education system. A spatialised reading of existing research on major VET reforms, with an analytical point of departure in drawing out the economic, governance, socio-spatial and mobility dimensions of such reforms, would bring insight on two counts.

Firstly, it will bring insight into historical path-dependent structures and functions of the current VET system, shedding light on current challenges, including spatial imbalances and their causes.

Secondly, it will bring insight into the production, governance, social and mobility dimensions of uneven development which have shaped the VET system and which the VET is shaping, generating a knowledge base on which to discuss in which ways the VET system is contributing to processes of peripheralisation as well as centralisation of challenged localities.

3.3. TRANSITIONS AS KEY EDUCATION SPACES IN VOCATIONAL EDUCATION GEOGRAPHY

An important characteristic of the VET system is the internal transition from the Basic into the Main programme (Jørgensen 2005). This shift is gated by access to an apprenticeship position and it involves complex spatial patterns that VET students must handle in order to complete their education. In sections 3.1. and 3.2., I constructed an overview of the key spaces of edu-geographical analysis in relation to processes of peripheralisation and centralisation. When this is related specifically to the Danish Vocational Education and Training system it becomes clear that the spatialities of transitioning into and through the VET system is an important field of analysis that is not included in the theoretical frame so far.

I want to bring this key education space into my analysis, as my hypothesis is that it has a bearing on education and mobility outcomes and therefore on negative and positive development trajectories for challenged localities. In order to do so, I construct a theoretical understanding of spatial transitions in relation to education attainment. Within the field of youth sociology, a wide body of literature focusses on youth transitions, defined as the processes young people go through in order to become adults (Walther 2006). Education systems are major sites of such transition processes (Evans 2002).

Research on change in young people's transitions from youth to adulthood largely agrees that de-standardisation, individualisation and fragmentation of transitions are prevalent characteristics of current transition processes (Walther 2006). In late modernity due to processes of globalisation and individualisation, life course decisions, such as education paths are perceived to be more open, agent-defined and individualised, where youth navigate through a series of life choices based on a complex set of resources available to them. The fixities of previous conceptions on a determined life course based on standard socio-economic classifications have shifted to an understanding that life in late modernity is less determined (Evans, Furlong 1997, Furlong 2009).

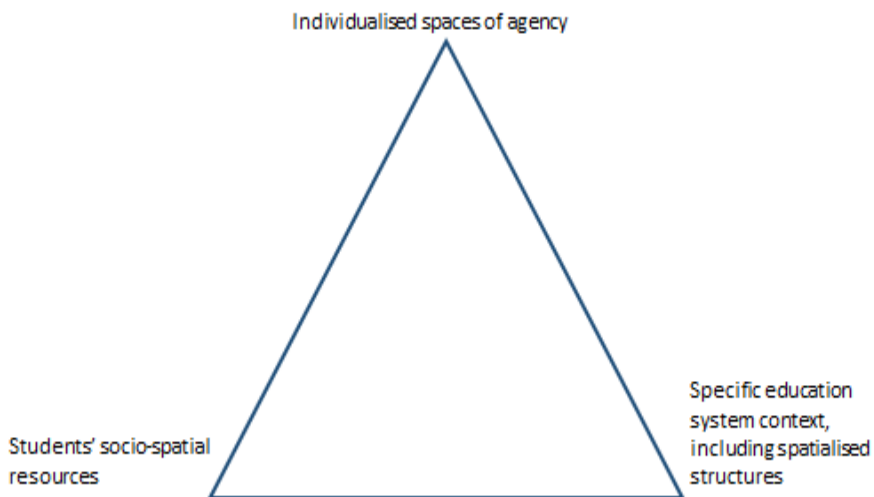
The relationship between structure and agency is wrought with shifting theoretical 'turns', which influence our perceptions of first more structurally determined outcomes, subsequently more individualised behaviour options, then swinging back again like a pendulum toward a more bounded perception of opportunity spaces.

This has also been the case within theoretical approaches to understanding youth transitions into adulthood, particularly the relationship between socioeconomic structures, institutional frames and education outcomes. (Evans, Furlong 1997). In the 1960s, young people were envisioned as following a limited number of paths to a limited number of hierarchized occupational outcomes. The job of each youngster was to complete a series of growth tasks, the successful completion of which led to the next level of development and finally, to the establishment of a vocational identity. In the 1970s, more emphasis was placed on opportunity structures and less on the more subjective aspects of transitions. This tendency was strengthened in the 1980s, and structuralist interpretations, which understood education outcomes to be the predicted trajectories of social class and cultural capital, were dominant. The context was one of increased youth unemployment, general economic recession as well as complex and protracted transition periods into adulthood. This all shifted in the 1990s with the epistemological and ontological onslaught of post-modernism within science, which was mirrored empirically by increasingly individualised transition outcomes. Furlong (Furlong 2009) has argued against overemphasising the effects of individualisation and concomitantly underestimating the continued effects of social class, gender or other structural variables. Empirically based studies point to more complex transition forms as well as a wider array of social, individual and cultural

outcomes. There is no linear relation between a specific vocation, a specific job and a specific transition `path` from youth to adulthood. This, argues Furlong, should not lead to perceptions that free agency has replaced previous social stratification structures (Furlong 2009).

A concept that captures this double recognition of structure and agency is Karen Evans' `bounded agency`. Bounded agency is defined as “*socially situated agency, influenced but not determined by environments and emphasizing internalized frames of reference as well as external actions*” (Evans 2007, p. 93). Although Evans' concept also involves psychological processes, in my research, I focus on the context, i.e. the vocational education and training system as it functions in peripheral labour markets. I recognise that both overriding social structures and individual biographies, based on processes of individualisation and reflexivity, produce or shape outcomes.

Figure 5: Bounded agency in education choice



Based on this abstraction, I have developed a frame of analysis, in the concept of spatial transitionality. Its purpose is to analyse the potential capacity of a young person to successfully transition into and through, in this case, the VET system, when there is an imperative to be spatially orientated.

With figure 5 above, I suggest that `spatial transitionality` involves three dimensions, represented by each angle.

1. **Specific education system context, including spatialised structures.** There is a concrete education policy context, in this case the VET system, which includes elements such as the location distribution of institutions and different education programmes. It also involves the planned transition of students through the system and the embedded spatial implications of this process. In this case, these are represented by students' transitions into the Basic Programme and the dual transition movement into a Main Programme, gated by access to an apprenticeship position.
2. **Students' socio-spatial stratification resources.** A second angle represents the dimension of students' stratified social positions, which influence education positioning, i.e. valorisation of obtaining a formal education, as well as the chances of actually completing and obtaining such formal education. Although I include it here as a single 'aggregated' dimension, it consists of many dimensions, including socioeconomic status, gender, age, the place of upbringing, the family's occupational orientation as well as vocational- and place-based relations and networks.
3. **Individualised spaces of agency.** The third angle represents the recognition of agency and the influence of individual formation and identity processes and the influence of biography (Evans 2007, Pless 2009). Methodologically, this entails taking very seriously young peoples' own biographical perspectives, i.e. their subjective 'appropriation'⁶ of their life courses and life transitions must be taken into consideration. The interrelatedness between individual biographical perceptions, social positioning and the concrete context of the opportunity structures of the VET system are embedded in my approach below, which take their point of departure in biographical narratives of vocational students.

Methodologically, this points to a need within education geographies to be extremely mindful of the particular location patterns of specific education systems and the space production patterns they simultaneously produce. This entails following the socio-spatial transition flows of students into and through the education systems that are housed in these institutions.

It also entails not being overly fixated by understanding spatial complexity as merely a question of mobility. In **PART IV** I elaborate on this grounded in findings which have come out of my qualitative interviews, which suggest that trying to understand how and on which conditions young students orientate themselves spatially within

⁶ The term 'appropriation' is based on its usage within theorising on motility (Kaufmann, Bergman et al. 2004). Appropriation is here understood as the resources that agents actively use in order to overcome barriers. Within motility research this concerns mobility barriers, here transition barriers. Appropriation differentiates itself from 'resources' by not being a passive resource. Rather, it is an active resource that the agent is willing to use or spend in order to achieve their goals. It relates to the agents' strategies, motives, values and habits.

education systems, is perhaps more relevant than automatically framing spatial complexity as a question of mobility.

In the following section, I present the analytical framework I have developed in order to analyse the how VET students negotiate the (spatial) transition imperatives of the VET system. The research questions that frame this work are presented in section 3.4.

3.3.1. ANALYTICAL FRAMEWORK 2: TRANSITION ORIENTATION PREFERENCES

The process of deciding which education to pursue is a temporally protracted, not necessarily very constant process. It takes place in a series of contexts involving school counselling, family-based values and expectations, peer-socialisation, individual identity processes, mediated vocational and occupational portraits as well as a number of less conscious influences (Kopoteva 2013, Yndigeegn 2003, Hansen 2011). We must therefore be careful about understanding the term `decision´ too stringently. Yet, there are key transition points, where concrete education decisions must be made and carried out in order to transition into specific education systems.

Much research within educational sociology tends to treat education systems as a `black box´ (Pless 2009, Furlong 2009, Lindgren, Lundahl 2010). Researchers have tended to focus on place-based and locality studies, improving our understanding of how the places young people have grown up matter for their education choices and education outcomes. In these studies, the concrete mobility or other demands made by particular education systems are not the object of study. The spatio-structural imperatives of education systems have not been unfolded, as limited attempt has been made to understand the interactive relationship between the education system, the agency of students and the more bounded social resources they activate. I want to examine the interaction that takes place between the spatio-vocational transition imperatives in the VET system and the students who seek vocational educations.

For my analysis, I have identified two key transition points in the VET system at which junction, VET students must make vocational as well as spatial decisions. The first is the initial transition into the system, where students must choose a Basic programme. At this junction, students must decide on a general vocational field, often based on an idea of which vocation they plan to train for, as they advance through the VET system. The second transition takes place at the junction between the Basic and Main programme, a transition that is gated by access to an apprenticeship position. Although the second transition takes place within the VET system, it is a substantial process, which can be compared to transitioning out of the education system and onto the labour market, as the transition is a shift from a state-based system into a market-based system (Jørgensen 2005).

I term the requirement to successfully transition through these two key points and the spatial elements involved in these decision processes, *the spatio-vocational transition imperatives of the VET system*.

At both key transitional points, students must make a series of decisions, which they display as transition behaviours. Evans has very broadly defined transition behaviours as “the patterns of activity people adopt in attempting to realize their personal interests and occupational goals within social requirements and structural opportunities” (Evans 2002) She differentiates between four types, ranging from active strategic behaviour to passive wait-and-see behaviour. My focus is inspired by Evans’ definition, but is concerned with discerning the role of access to local or supra-local education opportunities and thus has a spatio-vocational focus. Access should not be understood as limited to geographic accessibility, but also educational accessibility, in the sense of being able to gain (merit-based) entry permission. Finally, access can be understood as imaginatively accessible – is the student able to perceive that there is a vocational opportunity even if it is not available locally? In order to underline this aspect, I have used the term orientation rather than concepts relating to local and non-local accessibility.

Based on VET students’ descriptions of their VET transition processes, I have identified three broad orientation preferences. These are the vocationally, the locally and the mobility oriented. The three preference types can be defined as spatial transition behaviours. Their development is grounded in a typology of orientation preferences displayed by students at the two key transition points in the VET.

Transition trajectories

Education outcomes, however, do not depend solely on the students’ transition behaviours. They also rest on institutional structures, labour market conditions as well as on the level of social support available to different students. I would like to explore whether students’ differentiated transition orientation preferences have a consequence for the students’ further mobility trajectories in the VET system. I therefore analyse whether there is a relationship between the different types of spatialized transition behaviours (orientation preferences) and their trajectories, understood as 1) which types of VET programmes they choose and 2) whether it has bearing on the apprenticeship markets they enter.

Socio-vocational resources

One of the most persistent findings within education sociology is the continued influence of parents’ educational attainment and socio-economic standing on their children’s education outcomes (Munk, Ploug 2003). This stratification structure has persisted despite increasingly individualised and prolonged education sojourns, despite less linear relations between formal education merits and work opportunities

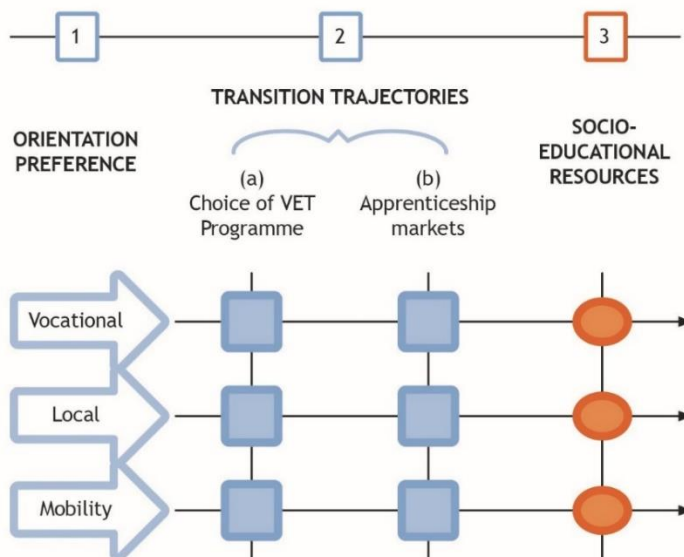
(Furlong 2009) and despite welfare state provision of free education (Jæger, Holm 2007). Increasingly, research has suggested that the interactions between various types of parental resources and their childrens' educational attainment has increased in complexity over time (Bakker, Denessen et al. 2007). Jæger has suggested that the persistency of social stratification within education outcomes, in spite of 'the Nordic welfare social mobility regime', is related to the replacement of financial capital stratification structures by cultural and social capital forms (Jæger, Holm 2007). His studies suggest that parents' social capital is especially important for the vocationally educated and speculates whether this may be related to their utilisation of social contacts and networks in connection with their children's search for apprenticeship positions. Taking these observations into account, the final analyses addresses whether there is a relation between VET students' orientation preferences and their parents' education backgrounds, including their relation to the labour market and to specific occupational fields.

Analytical model for the qualitative analysis

I have outlined my analytic approach in the following figure. It emphasises three central elements of my analysis using the concepts I have described above:

- 1) Transition orientation preferences
- 2) Transition trajectories
- 3) Socio-educational resources

Figure 6: Typology of students' transition orientation preferences



This figure is a model of the analytical approach I apply in **PART IV**. Based on an analysis of the empirical material from my interviews, the three primary orientation preferences, which have emerged are the vocational orientation, local orientation and mobility orientation. These are indicated in the arrows on the left.

The rest of the analysis takes its point of departure in this typology, examining whether there is a relationship between the students' vocational and spatial orientation preference and the types of programmes they elect as well as the conditions they are likely to meet on apprenticeship markets. I then analyse whether the students' orientation preference seems to be related to the social and vocational resources (or lack thereof) they have access to through their family. The blue squares therefore represent the behaviours and conditions the students' meet as they transition through the system, while the red circle represents the resources they bring with them into the transition process.

3.4. RESEARCH QUESTIONS

Based on the development problems presented in the introduction and the theoretical underpinnings that have been unfolded and structured in the previous sections, my research questions are:

1. The VET system
What are the factors that determine the provision structures of the Danish Vocational education and training system in challenged localities? How are these factors related to changing shifts in dominant production paradigms, the development of governance systems, student intake patterns and the develop of the system's mobility imperatives over time?
2. Young VET students
What mobility patterns and transition orientations do young VET students from challenged localities display? How are transition orientations related to students' perceptions of the VET system's opportunity structures on local and supra-local levels? What do students' transition orientations indicate about the effects of limited local vocational education provision for different groups of students?
3. Challenged localities
What do the findings on the VET system and young VET students indicate about the role of the VET system on processes of uneven development in challenged localities? In which ways does the 2015 VET Reform address these issues and what does this indicate about VET provision structures in challenged localities in the immediate future?

CHAPTER 4. METHODOLOGY

This chapter accounts for the scientific positioning of my work. It does so on three levels. First my methodological approach, which consists of a brief introduction to the primary motivations and inclinations, which I have brought into the research project, then followed by a presentation of my epistemic point of departure, which is primarily hermeneutical. The next level is theoretical, and while its framing is treated in Chapter 3, here I touch on my approach to selecting the theories I use. The last level is my empirical research practice, where I present the concrete methods I have used in order to construct and analyse my data and the many decisions I have made underway. I use three overall methods – a historical literature-based review, quantitative analysis of statistical data and a qualitative interview-based analysis. Finally, I provide an account of my delimitations and assess these in relation to the results of my work.

4.1. MY METHODOLOGICAL APPROACH

Motivations and inclinations

I bring two strong motivations with me into this project. I am concerned with the development imbalances that characterise Denmark and many other advanced capitalist countries in Europe, and am critical of dominant discourses that portray Denmark's ability to compete on global innovation markets as conditioned by the development of strong innovation and knowledge centres in only one or two main cities. The increasingly uneven development conditions across Denmark are legitimised by a shift from a long-standing policy focus on developing Denmark as a welfare state into an understanding that Denmark is a competition state (see for example, Pedersen 2011). In the welfare state, the state's job is to work for an even distribution of welfare to all citizens, thus alleviating the worst inequalities between different social groups, including social groups that reside in different geographical parts of Denmark. In the welfare state, education is considered a right, which is extended to all citizens. In the competitive state, the state's function is to work on behalf of its citizens to make the country competitive on global markets. I question whether the underdevelopment of certain, rather large areas of Denmark unintentionally have detrimental effects for the development of the country as a whole.

Secondly, through my previous work experience as a higher education development consultant for the Regional Municipality of Bornholm (2004-2008) and as researcher at the Centre for Regional and Tourism Research (CRT) (2008-), my attention was increasingly drawn toward the precarious provision of vocational education and training on the island of Bornholm. As I have outlined in the introduction, labour

market forecasts⁷ predict a shortage of vocationally educated labour, whilst the local vocational college of Bornholm in the last decade has closed approximately one VET programme every two-three years. CRTs mission is to support the positive development of challenged localities through analysis of local development conditions. This thesis is an example of such knowledge production and has an intention to provide new knowledge that may influence policy.

Finally, I bring to the table a personal inclination that I, epistemologically, would term hermeneutical, and which is the process that has dominated much of my work.

A hermeneutical approach

The hermeneutical approach stresses a focus on in-depth understanding or interpretation of a given phenomenon or problem in its own right, rather than a rational understanding of each separate part that is then added up (Thurén 2008). Thus, hermeneutics stress that a holistic understanding cannot be obtained prior to a comprehensive understanding of all parts in and of themselves in a relation to the whole. The analytical approach consists of attempting to create coherence between the parts and the whole by a processual and dynamic analytical cycle, called the hermeneutical circle. The process of interpretation is conditioned by the researcher's own pre-understandings and preconceptions. The hermeneutical circle is in many ways the core of the hermeneutical approach, and it stresses the reiterative process of posing questions, obtaining partial understandings or answers, followed by the posing of new, more informed, questions. Essentially, this process continues throughout the research. It is dynamic, because new findings continually challenge previous ones (Simonsen 2004).

A hermeneutical approach is suitable for studies that aim to understand how different actors understand their life-world and is mindful of not pressing pre-defined structural conceptions into such understandings. Thus, the world can only be comprehended through the constructions actors themselves understand and produce. The purpose of hermeneutic research is to uncover new aspects of the world by adding to the variance in understandings of a given research topic (Højberg 2007). This is sympathetic, but must be underpinned by situating it in a knowledge community and engaging in ongoing theoretical questions. It is through this last process that new knowledge engages in a timely fashion with current societal problems.

A hermeneutical approach has primarily guided me in the practise of my research process, i.e. by insisting on a reiterative process, I have worked simultaneously and consecutively on theoretical readings, empirical data construction, attempting to frame an analytical approach to understanding the VET system by repetitive re-visits,

⁷ See for example those provided by the Centre for Regional and Tourism Research's Regional Model for Industry and Employment SAM/K-LINE ®.

posing more precise questions and returning to new interpretations. It is only toward the end that I drew a temporary line, making a series of decisions on how to construct some central conceptual categories that are my point of departure in this study. I have engaged in discussions with others underway, but this process is by no means completed. I am certain a new series of understandings and interpretations will evolve, once this thesis in its current form is discussed with others in different research communities.

4.2. APPROACH TO USE OF THEORY

“Theory is not a tool for dismissing complexity but for making sense out of it”
(Smith 1989, p.157)

The second scientific level is the theoretical. The theoretical frame I have outlined in the previous chapter is underpinned by a basic understanding that:

- Current education systems - their structures, functions, and content – are a result of the societies in which they have evolved. Different social actors have affected their development at different times and each of these inputs and the historical conflicts and power struggles that may or may not have affected that input is embedded in some aspect of them as systems.
- Education systems and how they manifest themselves in institutions and through the contexts in which their content is being taught and learned, produce differential spatial opportunities for young people in different localities.
- The effects of the differentiated spatial opportunity structures for different young people depends on individual factors, on socially bounded behaviour opportunities and choices.
- Outcomes, in terms of education attainment, labour market transitions, mobility trajectories - or exclusion from any of these - for each young person, *collectively* affects development trajectories for challenged localities.
- Thus, toward the end of this research process, I find myself placing my work within a long line of critical geographers and focus my analysis on the imbalances, conflicts and inequalities in society and thus primarily lean toward conflict-oriented models of understanding.

I use a critical approach within geography as a basic conceptualisation of dominant processes of space production. As I mention in the introduction, my work has been influenced especially by Harvey’s and Massey’s critical approach to understanding geographical spaces to be constructed by sometimes conflicted, sometimes consensual actors, but also dominated by overriding capitalist forces (Harvey 2006, Harvey 2005, Massey 1993, Massey 2005).

Thus, an approach that looks for imbalances and inequalities as the points of investigative departure and that focusses on understanding processes of domination and of structures, which empower certain societal groups vis-à-vis others. Because capitalism takes place in capitalist societies, these processes do not function as determinist forces; there is room for individual, grouped and societal resistance and regulation. As Massey states:

“Conceptualising space as open, multiple and relational, unfinished and always becoming, is a prerequisite for history to be open and thus a prerequisite, too, for the possibility of politics” (Massey 2005, p. 59).

4.3. RESEARCH PRACTISES

The third level of scientific knowledge production is the practise of scientific methods. In this section, I account for the methods I have used, and how I have practised them. I have used three overall methods:

- Historical literature-based analysis. Based on a re-reading of existing research on the development of the VET system and by applying the analytical matrix developed in my theoretical framework, I analyse the spatialised development of the VET system.
- Statistical analysis. A case-based mapping of young VET students’ mobility patterns
- Interview based analysis. An explorative interview-based qualitative study of student perceptions of their opportunity structures within the VET system and their spatial orientations in relation to transition imperatives.

4.3.1. HISTORICAL LITERATURE-BASED ANALYSIS

In order to carry out my analysis of the historical development of the VET system I have developed an analytical frame that is presented in section 3.2.5. and carried out in chapter 5. The chapter examines the historical development of the system in order to understand its present structure and function, but also to understand the scope of conceivable policy and other changes that can be ‘imposed’ today. This calls for a diachronic approach. In order to make sense of the inter-dimensionality of the system, i.e. the interaction between dominant production paradigms, governance, social and mobility dimensions in each of the studied phases of the system – a synchronical analysis - will be carried out as well.

4.3.2. STATISTICAL INVESTIGATION USING QUANTITATIVE METHODS

In chapter 6, I analyse the transition geographies of VET students using quantitative methods. I have mapped the flows of students from three selected challenged localities through the education system. Although the geographical patterns of youth who

choose a higher education is well-researched, this is not the case for the vocationally educated. I have therefore constructed a statistical population consisting of youth from three selected peripheral municipalities, whom I follow from the year 2000, when they are 16-18 years old until the year 2012, when they are in their late 20s. I call this population Youth Cohort 2000.

The total Youth Cohort 2000 population consists of 156.180 persons. Each person is registered at a primo municipality of residence in the year 2000. The home municipality in 2000 follows the person through the study. I work with Youth Cohort 2000 at three aggregation levels: 1) youth cohort 2000 – Denmark, 2) youth cohort 2000 - rural and urban municipalities and 3) youth cohort 2000 Bornholm, Jammerbugt or Frederikshavn. Aggregated to the case municipal level the population becomes quite small and this is the reason I have grouped three consecutive youth cohorts into youth cohort 2000.

Register data originates from Statistics Denmark, but has been made available for this project through the Centre for Regional and Tourism Research (CRT)'s Regional model for industry and employment SAM/K-LINE⁸. Although I am responsible for data construction, I have received help from Irena Stefaniak (CRT), who has provided technical assistance and generated Youth Cohort 2000 through SAS programming and created a set of statistiscal tables in the ALFRED programme for me (used in section 6.1. – 6.4.). She has also generated the array analysis that is provided in section 6.5.

Frederikshavn, Jammerbugt and Bornholm as cases

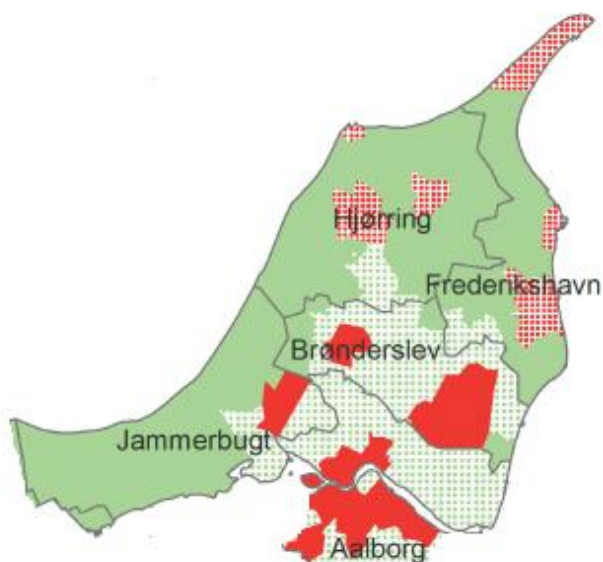
The three selected municipalities were chosen based on two parametres. Firstly, they should display the general characteristics of challenged localities, yet their economic and labour market structures should vary. Secondly, the three municipalities should display differing vocational education provision structures.

Frederikshavn has historically been industrialised with a substantial shipping industry. Jammerbugt is a typical rural municipality dominated by agricultural production. Bornholm is an island municipality, which is geographically isolated from the rest of Denmark. Commercial and technical vocational colleges are located in Frederikshavn and Bornholm, while this is not the case for Jammerbugt.

Frederikshavn and Jammerbugt municipalities are both part of the sub-region called Vendsyssel, which is the area of land at the northernmost tip of Jutland. Governmentally, Vendsyssel is a part of the North Denmark Region.

⁸ For more information on the register please see: www.crt.dk

Figure 7: Vendsyssel with Jammerbugt and Frederikshavn municipalities



Legend:

Red parishes: "Urban areas in or close to the 11 largest cities"

Red stippled parishes: "Urban areas further away from the 11 largest cities"

Green parishes: "Rural areas close to the 11 largest cities"

Green stippled parishes: "Rural areas further away from the 11 largest cities"

(Ministeriet for By, Bolig og Landdistrikter 2013).

The map of Vendsyssel indicates that the municipality of Frederikshavn entirely consists of areas that are 'further away' from Denmark's 11 largest urban areas, but has three smaller urban areas (Frederikshavn city, Skagen and Sæby). Jammerbugt municipality has one urban area (Aabybro) close to one of Denmark's 11 largest cities (Aalborg), but no other small urban areas.

The third municipality is the island of Bornholm. It is located in the Baltic Sea, but is judicially part of the Capital Region. Due to its geographically isolated location, it has been granted some regional privileges. As is indicated in figure 8, Bornholm consists of areas that are 'further away' from Denmark's 11 largest urban areas, and has two smaller urban areas (Rønne and Nexø).

Figure 8: Bornholm Regional Municipality

(Ministeriet for By, Bolig og Landdistrikter 2013).

Although all three municipalities are located outside urban growth areas, their labour market structures are disparate.

Figure 9: Basic facts about case municipalities per 1.1.2015

Municipality	Population	Number of employed	Largest urban area by number of residents	
Frederikshavn	60.377	27.752	23.345	Frederikshavn
Jammerbugt	38.293	14.074	5.681	Aabybro
Bornholm	39.828	16.707	13.579	Rønne

Source: Statistikbanken, Statistics Denmark

Table 1 indicates that although all three case municipalities are challenged, they display differentiated structures. The number of residents as well as employed in Frederikshavn is much larger than in the other two municipalities and the small city of Frederikshavn is substantially larger than Aabybro and Rønne. Jammerbugt is more decentrally structured with the population being more evenly distributed between four towns around the municipality, compared to Frederikshavn city and Rønne that both function as municipal 'capitals' in Frederikshavn and Bornholm.

Vendsyssel is a sub-regional labour market in the Northern Jutland Region. It consists of the municipalities Hjørring, **Frederikshavn**, Brønderslev, **Jammerbugt** and the island municipality Læsø. As such, two case municipalities in my study are part of the same labour market, yet have distinct municipal labour market conditions. In all Vendsyssel there are approximately 85.000 work places, of which the largest sectors are industrial food production, building and construction as well as healthcare and welfare. One of Denmark's largest poultry slaughterhouses is located in the region as

well as shipping companies and shipyards. Amongst the public workplaces, the five municipalities, a regional hospital and the vocational school, EUC Nord, jointly located in Hjørring and Frederikshavn, are the largest.

Between 2005-2014 the number of work places in Vendsyssel has been reduced by 8 %, a decline that covers all sectors except health care. Again, development has not been even, measured as shifts in jobs with specific education levels. The number of work places for labourers with a higher education degree has increased, while the number of work places for unskilled personal has decreased by almost 17 %. The number of work places for the vocationally educated have also decreased. The local employment structure in terms of education levels still, however, reflect a more traditional industrial production structure than a knowledge-based economy. In 2014 there were 35 % unskilled workers, 42 % vocationally educated, 4 % with an academy higher education (2 year higher education degree), 15 % bachelors' degree and 4 % with a masters' degree (COWI 2016).

Economic forecasts expect a stagnant number of work places until 2020, but this is uneven across sectors. Growth in terms of work places is expected within the food sector, building and construction as well as financial services and knowledge services. On the other hand, a decline is expected within all public sector jobs. This includes health and welfare, education and public service. Especially labour with short and long cycle higher educations are in demand, whilst the demand for unskilled labour will continue to drop. Among the vocationally educated, forecasts predict a lack of labour within iron and metal industries. Maritime industries and services have traditionally been a strong industry in Vendsyssel. In the 1990s, the sector almost collapsed and many work places were lost. In the past few years, the sector has been expanding again, particularly in Frederikshavn (COWI 2016).

Commuting plays an important role in labour and residence markets in Vendsyssel. Out commuting is much higher than in-commuting. Divided into education groups, the vocationally educated commute out much more than in. This is especially true for the commerce and administration vocations, where many jobs are in urban areas. The opposite is true of the child- and health care jobs that do not generate out-commuting (COWI 2016).

In **Jammerbugt**, the three largest economic sectors measured by number of employed are public administration, commerce and transportation, and agriculture⁹. Out-commuting from Jammerbugt is the highest in the North Denmark Region with 42 % of all employed who live in the municipality commuting to employment in other

⁹ Statistics Denmark, ERH23, PR. 1.1.2013.

municipalities (primarily Aalborg)¹⁰. This pattern is matched by students, as 72,8 % of those who start a vocational education directly after leaving compulsory schooling, study in Aalborg, followed by 7,1, % in Thisted (Lange, Johannesen et al. 2010).

In **Frederikshavn**, the three largest economic sectors are public administration, commerce and transportation and industry¹¹. Compared to Jammerbugt, the number of employed in Frederikshavn is double that of Jammerbugt and in- and out-commuting 'break even' with approximately 20 % commuting out and 23 % commuting in¹². Amongst those who start a vocational education directly after compulsory schooling, approximately 25 % study in Frederikshavn, 27 % commute to Aalborg and 33 % commute to Hjørring.

Frederikshavn has a number of local education institutions, while Jammerbugt has almost none, why young people must commute to either Aalborg or south toward the area of Thy in order to access education.

There is no vocational college in Jammerbugt municipality. SOSU Nord, which provides VET degrees within child- and healthcare have provided the Basic programme within Child- and Healthcare in both Fjerritslev in Jammerbugt and in Frederikshavn, although provision is temporary and may not be continued. There are two vocational colleges in Frederikshavn. EUC Nord is jointly located in Hjørring and Frederikshavn and divides its VET programmes between the campuses in each small city. In Frederikshavn there is primarily access to technical degrees. Frederikshavn Commercial College offers a number of VET degrees within commerce and administration.

The labour market on **Bornholm** is isolated from other regional and national labour markets due to it being an island.

If measured by the highest turnover, the largest business sectors are agriculture and tourism. Measured by number of employees, the largest economic sectors are Public administration, Education and health followed by Trade and transport and Industry (Hedetoft 2012).

The level of employment on Bornholm, measured as the development in the total number of paid employees, has been slowly decreasing during the past years. In the

¹⁰ CRTs Regional Model for Industry and Employment SAM-K/LINE®, Table A1BRAS, Modelversion 2015JAN.

¹¹ Statistics Denmark, ERH23, PR. 1.1.2013

¹² CRTs Regional Model for Industry and Employment SAM-K/LINE®, Table A1BRAS, Modelversion 2015JAN.

period from 2015 to 2016, however, this pattern may have started to change, as employment rates have increased slightly by 0,3 %. All regional labour markets in Denmark have experienced an increase in employment rates during the 2015-2016 interval, however, and the increase seen on Bornholm is much lower than the national average (AMK-ØST 2016).

In the first quarter of 2016, the majority of employees living on Bornholm are employed with the Public sector, Trade and transport and Industry. Within industry, employment has increase by 4,4% (AMK-ØST 2016). A number of other sectors have, however, experienced a decrease in employment rates. Businesses on Bornholm are typically small or medium-sized firms with less than 20 employees. The island's largest employer is the Regional Municipality of Bornholm with 3.800 employees. The largest private business, however, is Jensen Danmark, the world's leading manufacturer of washing machines for industrial use, with around 500 locally employed.

On Bornholm, the technical and commercial educations are provided by Campus Bornholm, while Bornholm's health- and nursing school provides Basic and Main programmes within the social- and healthcare educations. Finally, UCC (University College Copenhagen) provides Basic programmes and Main programmes for the pedagogical assistant education.

Due to its isolated location, students do not have access to a larger student catchment area. In order to combat this, Campus Bornholm is collaborating with CELF (Center for Vocational Educations Lolland-Falster) and other college concerning provision of Main programmes.

4.3.3. INTERVIEW-BASED INVESTIGATION USING QUALITATIVE METHODS

The main purpose of the interview-based investigation is to understand the young VET students' perceptions of the opportunity structures they encounter, and to understand how this shapes their choices within the VET programmes. Such an approach calls for qualitative methods, which are able to explore young students' own constructions of their opportunity structures. For this reason, I have conducted a small explorative interview-based investigation among young VET students in the three case municipalities.

Data collection process

The interview guide was developed and tested through pilot interviews, which were conducted in Copenhagen in September 2013, when I was invited by the Municipality of Bornholm to join a focus group interview about youth, who had moved away from Bornholm in relation to seeking vocational education¹³. Based on these interviews, I constructed a semi-structured interview guide, which was used for my interviews.

The 24 interviews were conducted between December 2014 to June 2015 and found through key informants at the vocational colleges, primarily EUC Nord and SOSU Nord in Vendsyssel and Campus Bornholm on Bornholm. I was also helped by UU Bornholm (a youth counselling centre) and UTA Bornholm, mentioned above, in order to locate young VET students who had out-migrated. In Jammerbugt, I found students through SOSU Nord, Fjerritslev and snowball-sampling from VET informants. I found the remainder of my informants with help from the Danish Metalworkers' Union in Frederikshavn, through my own education system networks and through Facebook-based network outreach activities. I continued the search for 24 interviewees until the four quota characteristics described above were fulfilled satisfactorily¹⁴. In the presentation below, informants' names have been changed in order to ensure their anonymity¹⁵.

The study comprises 23 VET student interviews. The 23 students were selected using a non-probability sampling using the following filters in the sampling design: 1) their progression through the VET system at the time of the interview; 2) their age; 3) the municipality, they have grown up in; and 4) their gender.

Ad 1: The VET students have been interviewed just as they were completing their Basic Programme and working to transition into their Main Programme or at the beginning of their Main programme. It was significant for selecting the interviewees, that they had already decided which Main Programme to study and also had some experience with searching for an apprenticeship position. On the other hand, I did not want to interview VET students, who had almost completed their VET programme,

¹³See UTA Bornholm. http://www.utabornholm.dk/uf/40000_49999/43778/7ad1f009a6e6ea998e51c5940f34390.pdf

¹⁴ I later deemed one interview irrelevant, as the informant was too old.

¹⁵ The informants have all given me their consent to use the interview-based data based on withholding their correct names. I have, however, informed them that if education authorities, school administrators, family and friends later read the published results, they may be able to ascertain some level of recognition. For this reason, I have generetised the place names. It does not make sense to generetise vocational programmes, nor schools, however in a few places I have felt this was necessary in order to protect the anonymity of an informant in a vulnerable situation.

as they perhaps had distanced themselves from and 'forgotten' previous uncertainties about their decision processes. This enabled an interview sample consistent with two significant parameters of 'good informants' (Spradley 1979). Firstly, they should be thoroughly enculturated into the VET system and, secondly, their biographical narratives would be a representation of their current involvement, not merely a memory of past engagements.

Ad 2: The interviewees were between the ages of 17 and 21 at the time of the interview, corresponding to the age of students in the youth education system. As I received help from vocational colleges in gaining access to students, I was not able to control the exact ages of the interviewees. One interview has been excluded from the analysis, as the informant was 24 years old and had completed an academic upper secondary degree before entering the VET system. However, I have included another interview in the sample, despite the informant being 22 years old. This was because the informant has spent the past 4 years in the VET system, switching from one Basic Programme to the next, a narrative I found highly relevant for my study.

Ad 3: The gender distribution amongst all VET students in 2015 is 52 % males and 48 % females. In 2005 and 2010, the gender distribution was 50/ 50¹⁶. I therefore aimed for a proximate 50/50 gender distribution, although this was the least important selection criteria, as their relevance on the other selection criteria was more important. I ended up with 12 males and 11 females in my interview sample, thus satisfying this aim.

Ad 4: All interviewees have grown up in either Jammerbugt, Frederikshavn or Bornholm municipalities. This corresponds to the case municipalities in my quantitative investigation. The qualitative analysis is not case-based, however as my interest was to focus on their transition orientations. With a small sample of 23 interviews this would be too limiting.

Initially I had planned to carry out and analyse them case-based, i.e. comparing municipal differences based on island status (Bornholm), commuter status (Jammerbugt) and traditional industrial production municipality (Frederikshavn). As the project progressed, its explorative and hermeneutic approach became more important. I wanted to give the understanding and interpretation of students' orientation processes precedence by using the entire interview sample and not break it down into many compartments. However, I do discuss whether there are place-based differences between the three municipalities in the discussion in section 7.3.4.

I have not used quota sampling to secure representation of specific vocational programmes, but rather I try to understand young VET students' orientations between

¹⁶ See: <http://statweb.uni-c.dk/Databanken/uvmdatabank/web/fullClient/Default.aspx?report=EAK-tilgang-erhudd&res=1600x694>

programmes in the VET system. I have striven for the interview sample to include students from both the technical, the healthcare and the business programme areas, but there has been no attempt to find interviewees in specific programmes, nor for an even distribution among programme types. As the programme typology developed in section 5.2.5. (i.e. the big 12, the regional, the semi-specialised and the small 44) was not developed until after the interviews had been conducted, this structure did not inform my interview selection.

Figure 10: List of Informants

Name	Age	BASIC + MAIN Programme	Apprenticeship	Municipality
Mads	18	Production/ Ships fitter	School-based	Jammerbugt
Jacob	19	Production/ Industrial technician	Yes	Jammerbugt
Sara	19	Commercial + Child care	No	Jammerbugt
Nicolaj	18	Child care/ Child care	No	Jammerbugt
Ida	21	Food/ Cook	Yes	Jammerbugt
Tobias	20	Construction/ Carpenter	Yes	Jammerbugt
Daniel	20	Carpenter/ Carpenter	Yes	Frederikshavn
Caroline	22	Comm./ animal keeper/ child care	No	Frederikshavn
Emil	19	Htx + Production/ Ships fitter	Yes	Frederikshavn
Cecilie	17	Health care/ Health care	No	Frederikshavn
Freja	18	Commercial	Yes	Frederikshavn
Magnus	19	Commercial + child care/Child care	No	Frederikshavn
Katrine	19	Hairdresser/ Hairdresser	No	Bornholm

Mathias	17	IT & electricity/ Electrician	Yes	Bornholm
Sofie	19	Food/ Cook	School-based	Bornholm
Oliver	21	IT & electricity/ Event technician	Yes	Bornholm
Emma	20	Commercial/ Administration	Yes	Bornholm
Mathilde	21	Agriculture/ commercial/ kitchen assistant	No	Bornholm
Frederik	19	It & electricity + Production/ Industrial technician	No	Bornholm
Emilie	18	Hairdresser/ Hairdresser	Yes	Bornholm
Andreas	19	Business/ Administration	Yes	Bornholm
Kasper	19	Mechanics/ Auto mechanic	School-based	Bornholm
Laura	21	Construction/ health care/ Health care	No	Bornholm

Interview content

The interviews were constructed as narrative interviews. A narrative interview centres around the stories the subjects tell about their lives (Kvale, Brinkmann 2009). The purpose of utilising this approach is to construct an understanding of the primary orientations, which have guided the youth during their transition process. As has been discussed in section 3.3. educational positioning in conjunction with youth transitioning may to some extent be guided or even driven by subconscious factors, which the youth themselves are only partially aware of. The narrative approach, however, takes seriously how the young person has perceived the processes they have undergone and are still undergoing. It takes its point of departure in how young people themselves have constructed their own understandings of their decision processes and lets this construction be re-told through the narrative interview. During interviews, my role was to guide the young informant through the narrative of their lives from the

period in their lives when they started contemplating their possible education and career paths, leading up to the time of the interview. The biographical narratives were in focus and thus guided by a certain temporal structure, with the central narrative focussing on different aspects of their orientation and decision process. The narratives were framed by concrete information on their places of residence and the education programmes they attended with names and places of institutions, including periods of work. In-depth focus on their decisions into and out of Basic programmes, thoughts and behaviour about their transition into the Main programme. Strategies for finding an apprenticeship position. In addition to this central narrative, I as interviewer introduced a set of themes that I asked them about. These were:

1. **Vocational orientation and identification proces:** process of selecting the chosen vocational field, de-selecting other fields, processes of identification, role models or inspirations, vocational counselling, hobbies that lead to the vocation. Talk about the vocational college they attend and their place of apprenticeship (if applicable)
2. **Family- and network-based resources in relation to vocations and the labour market:** concrete information about family members and closest friends. Considerations about the family's relation to formal education and the labour market. Questions about family structure and friends base.
3. **Attachment to place:** Narrative about the places the young informant has lived. Perceptions and feelings about the place(s) the informant has grown up. Information about different practices – hobbies, work, free time activities and where they take place.

Each interview took between 60 to 90 minutes.

Interview processing and analysis

In my approach to interview analysis, I understand a hermeneutical approach as exactly that – an approach. Hermeneutics is an ontological concept that says something about our ability and our processes as humans to understand the world around us. Gadamer argues that understanding is a fundamental mode of being for humans (in Højberg 2007). Thus, hermeneutics is not a concrete method, but a methodology. The reiterative analytical approach I have carried out in order to analyse my interviews is described below.

All interviews were recorded and transcribed and initially each narrative was constructed as an individual narrative frame describing each student's path into and through the VET system. This included the names of the particular vocational programmes, schools, each education switch was marked, and keys indicating whether events were local or non-local (i.e. did the student live at home during the event or did he/she did move). This left 23 individual stories with few discernible patterns. It was a type of result it itself, because it indicated that VET students' lives were

characterised by interruptions, filled with pauses and education switches. It made it clear that transitions by no means were smooth.

Next stage was an open coding that themed each interview into statements about each of the central themes: processes of vocational embedding, social situation, and attachment to place. For each theme, I then returned and attached keywords. For descriptions on **vocational embedding**, I marked if informants spoke about their (1) feelings about the vocation, (2) the materials or tools that define the vocation, (3) socialisation processes and functions in the work place or the field and/or (4) their own aptitudes in relation to the field. For descriptions on **home attachment**, I used five keys (1) general expressions of their feelings about the place (2) narratives about their practises in the place (play football with friends etc.), (3) attachments to people in the place (4) how mobile the informants and their families were. For descriptions on the students' **social conditions**, I duly recorded parents', siblings', and closest friends' education status and relation to the labour market.

I then revisited my narratives and attempted a series of categorisations in a reiterative dialogue between my readings on youth transitions (Evans, Furlong 1997, Walther 2006, Furlong 2009), youth mobilities (Kaufmann, Bergman et al. 2004, Lindgren, Lundahl 2010) and the narratives themselves. Through readings on the capacity to be mobile (motility), I determined such an approach would lead to an overemphasis on mobility. Not all students needed to be mobile. It was more a question of being able to orientate yourself beyond the local, i.e. supra-locally. Finally, a re-reading of Jørgensen's description of the internal transition in the VET system brought my attention to key transition points (Jørgensen 2005). Based on this process, I determined the following. (1) Rather than 23 individual narratives, the analysis should be categorised based on students' behaviour at two key transition points – the initial decision process leading to a specific vocational programme and the transition into the Main programme. (2) That categorisation could not be simply dichotomised into those that choose a local or a non-local vocational programme. Instead, categorisation should be based on the students' orientation behaviour – i.e. their self-defined perception of how they frame their vocational orientation process spatially. I constructed five overall categories that I have since narrowed down to three for analytical purposes. These are the mobility oriented, the vocationally oriented and the locally oriented (see chapter 7). As part of my categorisation of these, I also found I have to distinguish between informants who displayed 'passive' and 'active' transition behaviours. I based these on Evans's categorisations of young students' transition strategies (Evans 2002).

The interview-based analysis should be seen as complimentary and supplementary to the quantitative register data based analysis. The interview-based analysis is based on a non-probability sampling method, and does not claim to be representative of a certain or definable share of the relevant population (Shively 2011). Rather, it is

intended to add to our knowledge about how young people make decisions in complex multi-scalar systems.

4.4. DELIMITATIONS AND LIMITATIONS

My point of departure has been to understand the production of challenged localities outside large urban areas. My empirical studies are based in such settings and my reading on the historical development of the VET system is biased by this approach. There are challenged localities in urban settings as well, for example 25 designated 'ghetto areas' in Denmark¹⁷. They are not included in my study. This has two serious consequences. Firstly, this study cannot provide knowledge about whether my results, including the categorisation of VET students' orientation preferences, are applicable to other types of challenged localities than the ones I have studied here. Secondly, a very important group of students has been left out of my study – the students with ethnic minority backgrounds. I would hypothesise that processes of social marginalisation may play an important role in their transition trajectories. My research project cannot contribute to knowledge about this.

Secondly, my study has focused on the younger VET students. Just under 1/3 of all VET students are over the age of 24 years¹⁸ and are thus a significant share of the VET system, not least for institutional conditions, where students over 25 years old and lifelong learning courses are a significant business foundation.

Closely connected to this is my approach, which is primarily a geography of education. Had I taken a more economic geographic approach, I would have studied the knowledge and skills impact of VET graduates (and perhaps apprentices) for firms' innovative capacities. Thus in terms of a full analysis of the role of the vocational education system for challenged localities, this research project provides one of several pertinent research approaches.

Finally, as mentioned above, my interview-based study is explorative. Further studies, that either take their point of departure in one to two specific localities and/or in specific vocational programmes are needed in order to substantiate my findings.

¹⁷ See <https://www.trm.dk/da/publikationer/2016/liste-over-ghetoomraader>

¹⁸ See <http://statweb.uni-c.dk/Databanken/uvmdataweb/fullClient/Default.aspx?report=EAK-tilgang-erhudd&res=1600x694>

PART III: THE VOCATIONAL EDUCATION AND TRAINING SYSTEM

CHAPTER 5. THE GEOGRAPHY OF VOCATIONAL EDUCATION

The Danish Vocational Education and Training system has been the largest education system in Denmark during most of the 20th century. For many decades, it has educated and trained approximately 40 % of the Danish workforce (Nepper-Christensen 1998). The VET system is thoroughly integrated in the Danish labour market and vocational programme content is therefore closely aligned with labour market structures. The combination of school-based learning and firm-based vocational training and socialisation makes graduates highly employable and labour market transition processes relatively easy. This is one of the primary reasons the Danish VET system won the Bertelsmann Prize¹⁹ for innovation in VET in 2000 (Nelson 2012, Jørgensen 2008).

The system is, however, wrought with structural imbalances. As mentioned in the introduction, labour market forecasts predict a lack of vocationally educated labour by 2020, particularly on challenged labour markets outside urban areas (Kirk, Lichtenberg et al. 2016). At the same time, the VET system is failing to attract a sufficient number of young students and it continues to suffer from high dropout rates. Another major challenge is the lack of a sufficient number of apprenticeship positions as well as other structural imbalances pertaining to the miss-match between student VET programme demands and the supply of apprenticeships. These miss-matches pertain to types of vocational fields and geographical imbalances between VET students' places of residence and vacant apprenticeship positions. The VET Reform in 2015 attempts to address these imbalances.

Despite reforms, the Danish VET system, like other vocational education systems, is thoroughly embedded in the systems that forged it: the formation of modern nation states and the development of industrial production paradigms (Billett 2011, Thelen 2004). Both these systems are under pressure. Although the VET system continues to be embedded in a national education policy context, economic and demographic development trajectories across different regions in Denmark are becoming increasingly polarised. At the same time, the industrial production paradigm, which functioned as an integral frame around the VET system, has undergone and continues to undergo profound paradigmatic shifts.

¹⁹ The Bertelsmann Institute is a leading private foundation in Germany, whose purpose is to promote social responsibility in economic growth initiatives. They have a long-standing interest in promoting strong vocational education systems. <https://www.bertelsmann-stiftung.de>.

Chapter 5 is an analysis of the Danish Vocational Education and Training system and the interacting factors that shape its spatial structures and functions. It seeks to answer the following research question:

What are the factors that determine the provision structures of the Danish Vocational education and training system in challenged localities? How are these factors related to shifts in dominant production paradigms, governance systems, student intake and the system's mobility imperatives?

5.1. ANALYTICAL FRAME

The analysis is based on the approach I developed in my conceptual frame, which stresses the multidimensional character of processes of uneven development. I have identified four interrelated dimensions by which education systems are produced by and produce space. The dimensions and the questions they raise are:

Analytical dimensions	Working questions
Production paradigms and their spatialities	What is the relationship between the Vocational Education and Training system and shifting production paradigms and how have they developed over time? How have shifting production paradigms and their uneven diffusion across national spaces affected the distribution of vocational education? Has this been addressed by the system? If so, how?
Governance: scales of power and determinants of institutional location and provision patterns	What are the dominant scales of power within the VET system and how are they related to processes of uneven development across national spaces? To what degree are local actors able to affect the local VET programme provision patterns? Which actors and structures constrain or empower local actors to influence local VET programme provision in peripheral localities?
Socio-spatial student intake	How have general shifts in VET student intake vis-à-vis other education systems affected the provision of VET programmes in peripheral localities?
Mobility imperatives	How have VET students' mobility imperatives developed over time as the VET system has evolved? What are the factors that shape current student mobility imperatives?

As I have argued in chapter 3, a multi-dimensional approach provides a comprehensive understanding of the factors that shape education provision across space. However, these dimensions are embedded in temporal developments, which need to be understood both synchronically and diachronically. I analyse each dimension (production paradigm, governance, social composition and mobility imperatives) as they develop over time (diachronic approach), but in my analysis of each period, I synthesise the dynamic interrelationship between the dimensions for each period (synchronic approach).

The VET system is, as are all institutions, the outcome of a historical development process that is path dependent. This means that the current structures, practises and functions of the system are a result of past conflicts, negotiations, institutionalised practises and policies, which are embedded in the system (Thelen 2004). The chapter examines the historical development of the system in order to understand its present structure and function, but also to understand the scope of conceivable policy and other changes that can be 'imposed' today. This calls for a diachronic approach. In order to make sense of the inter-dimensionality of the system, the interaction between dominant production paradigms, governance, social and mobility dimensions in each of the studied phases of the system – i.e. a synchronically based analysis - will be carried out as well.

Departing in an overall structural frame based on shifting production paradigms, I have identified primary development phases in the VET system. These are:

Period	Characteristics
1400s-1889	The pre-capitalist vocational training system, which was developed and controlled by feudal guilds. This phase lasted from the 1400s until the breakdown of the system in the second half of the 19 th century.
1889-1945	Establishment of a national system of vocational education by the establishment through the central coalition patterns and the governance structures which are at the core of the system.
1945-1970s	The height of the system and the largest education system in Denmark. Characterised by its strong coalition partners at the national level and by the expansion of a centralised institutional framework.
1970s-1990s	Re-location of the industrial production system due to nascent industrial crises. Characterised by an emerging conflict between a

	labour market and a youth education regulatory principle, a conflict that has spatial implications for students.
1990s-2015	Shift from the industrial production paradigm to a knowledge-driven economy paradigm. State introduction of neo-liberal governance approaches into the management of VET institutions. The impact of globalisation on the Danish education system.

The sources used in the analysis are existing research on different production systems, governance structures and practices as well as social compositional aspects of the VET system. Take note that systems do not develop evenly over time, nor do the analytical dimensions I focus on figure evenly in different temporal phases. Therefore, the overview is thin in some dimensions during certain periods and richer in others. As my focus is on understanding the current system, the dimensions are explained more exhaustively in the latest phase, which started in the 1990s.

Many of these sources do not have a spatial approach, in fact most approach the VET system on a national scale. In some cases, especially pertaining to the later phases, I have not been able to find studies that involve or allow a spatial understanding. This is especially the case concerning studies on the geographical distribution of vocational institutions. In these cases, I have drawn on policy papers or analyses directly. The study is in no way exhaustive – the intent is not to provide a literary review of different perceptions of the evolvement of the VET system. My goal with this chapter is to create a basic understanding of the current challenges embedded in the vocational education system, which hinder the production of more vocationally educated students from areas of Denmark that lie outside the largest cities in Denmark.

I have not found studies on the geographical patterns of apprenticeship markets. This is indicative of a dominantly national approach to understanding the dominant production paradigms, governance and social dimensions of the VET system in previous research.

As is the case for the entire thesis, this chapter is written in the midst of a major policy innovation – VET Reform 2015. The reform is currently being implemented and a number of profound policy changes have been made to some parts of the system, whilst other parts of the system remain unchanged. The reform is briefly introduced at the end of this chapter, while the discussion and analysis of its possible effects will be carried out in the overall conclusion in chapter 8.

5.2. THE DEVELOPMENT OF THE VET SYSTEM'S CENTRAL SPATIAL STRUCTURES

5.2.1. 1400S – 1889

Vocation-based education and training has existed since the medieval period. A cornerstone in the VET system today is the practise-based learning that takes place in firms, whereby one generation of skilled craftsmen and workers pass on their knowledge, practical skills and tricks of the trade to the next generation of vocationally skilled workers.

Dominant production paradigm

From the 1400s until the Freedom of Trades Act in 1857, guilds in Denmark had a monopoly on trade and artisanship production and regulated all relations concerning skilled crafts work in royally approved boroughs. The monopoly included the reproduction of guild members through an internal education and training system. By controlling the number of journeymen and craft masters, the guild was a self-regulatory and self-reproducing system, lasting approximately 400 years. Medieval guilds were hierarchically organised with a craft master as the head of the guild in each royal borough, and included a number of journeymen who had previously been apprentices and had passed the 'journeyman's exam', a skilled workman's exam which still exists today. The master took in apprentices in order to secure the reproduction of local journeymen or to increase the local supply if needed.

In pre-industrial society, guild members were a relatively privileged social class and their presence, both as producers and consumers, had a local economic impact on the development of the royal boroughs as market towns. Their trade monopoly protected them from competition from craftsmen and traders outside the royal boroughs. The royal boroughs were the central commercial markets in Denmark. Thomsen presents their economic basis in a classic Christallerian central place understanding (see chapter 3), where the royal boroughs provided economic, administrative and cultural services to their catchment areas, just as they received and passed services on to other, larger cities, all under the jurisdiction of the king. In this way, cities were connected through a network of products and resources (Thomsen 2009).

The privileged position of the boroughs in comparison to the rural areas and surrounding towns was a contributing factor to the dismantling of the guilds' syndicated privileges in 1857. The guild system and its privileges broke down conclusively with the passing of the 1857 Freedom of Trades Act ('Næringsfrihedsloven'), which removed the monopoly on the guilds' right to produce crafted and traded goods, to set trade prices and to regulate the number of journeymen. During the nationalistic and democratic burgher movements of the mid-1800s, citizens outside the royal boroughs protested against the lack of free trade and

exclusion from setting up craft-based workshops in towns without royal borough status (Thomsen 2009).

The Freedom of Trades Act and the termination of guild privileges was the inevitable result of the development of industrialisation and industrialised production forms, which put pressure on trades and craftsmen. In light of pressure from shifting production forms, the guilds restructured their production, amongst other things by setting up shops with small stocks of ready-made products. This made entry costs into the field substantial and the self-regulatory guild reproduction system broke down. Combined with the growing dichotomy between towns and rural areas and growing protests against the unfair advantages of the guilds, the combined political pressure to abolish the guilds' monopoly on trade was great. Rasmussen interprets the transition from a pre-capitalist to a capitalist production system as a paradigmatic shift from a system where apprentices and masters had complementary interests, to a system characterised by antagonist interests. The passing of the 1857 Freedom of Trades Act marks the end of guild privileges and crafts- and tradesmen become workers in a capitalist market logic, whereby they are no longer privileged members of society. Instead, they become workers, selling their labour (Rasmussen 1996).

Governance

Apprentices signed contracts with the guild and moved in with the master in order to conduct their training. By becoming a part of the master's household, the apprentices received both a concrete trade education as well as completed a guild socialisation process and were taught the ways of life of a craftsman (Rasmussen 1996). Responsibility for carrying out the actual training lay with the guild master, whereas decisions concerning length of training, wages and the disciplines in which the apprentice received training lay with the entire guild. There was thus a close connection between trade, education, guild socialisation and identity (Louw 2013).

The breakdown of the guild-based apprenticeship system sparked a significant crisis, which lasted until 1880. During which time, apprenticeship contracts existed only as private contracts. There was no universally recognised training system. These reproductive problems had both a qualitative and a quantitative character, with poor craftsmanship and a lack of new apprentices (Juul, 2005). As there was no obligation to make up contracts, there was no system to control the journeyman's test and the new right to engage freely in trade no longer presumed that the master was a qualified craftsman. As far as apprentices and training were concerned, there was virtually no training of apprentices until 1889 when the first Apprenticeship Training Law was passed.

Concomitant with these developments, the Danish labour movement went through its initial establishment phase (1840s-1880), which was characterised by disputes and controversies about organisational and ideological directions (Christensen, Kolstrup

et al. 2007). Amongst employers, craftsman entrepreneurs, having lost their monopoly on trade, responded by establishing new trade-based employer associations across Denmark in order to defend the different craft and trade occupations. Many of these new local trade and industrial associations set up technical schools, starting in Copenhagen and spreading to the largest provincial cities. By 1870, there were approximately 50 technical schools in Denmark (Ministry of Education 1994).

Socio-spatial student intake

Guild members and masters principally took in apprentices from their own social class, thus limiting access to apprenticeship positions to a small number of boys whose families both socially and geographically lived in close proximity to a particular guild. A vocational education was not accessible to females, to people who lived outside the royal boroughs or to residents outside the privileged 'guilded' class. Once accepted as an apprentice, however, the VET students could assume a life where work, training, social life and place of residence took place at a single location.

Mobility imperatives

Upon completion of their education, journeymen often travelled to Germany and the Netherlands to expand their training, exchange knowledge and improve their skills. Journeymen were the guests of guilds in other boroughs and there was an extensive trade-based network amongst guilds in the three countries (Brøndergaard 2014). In other words, while life as an apprentice was local, life as a journeyman was mobile.

Summary

Vocational training in pre-capitalist society was situated in closed and privileged systems, governed by guilds in royal boroughs. The system was self-reproductive and skills were passed from one generation to the next, just as intake of new apprentices was strictly regulated by the guild, who often chose people from their own background. The system could only function as long as the guild was granted privileges in the form of trade monopolies. Within this frame, it functioned for more than 400 years, and its central learning form – that of practise-based situated learning - is still a cornerstone of the vocational education system today.

In terms of socio-spatial inequalities, the system favoured the children of the guild just as it favoured royal boroughs above towns without privileges and rural areas. It was its self-regulatory frame combined with the exclusivity of the system that in the end also made it stagnant. Its lack of dynamic potential eventually led to its collapse where it lost its privileged position and the rest of society moved on.

5.2.2. 1889-1945

The period from 1889 to 1945 is characterised by the forging of a national industrial production system. Three central laws on apprenticeship are passed, which collectively establish a national vocational education system within a capitalist production structure. The three primary coalition partners are the employers' associations, the labour unions and the state.

Dominant production paradigm

The beginning of the period is characterised by an emerging manufacturing sector and strong urbanisation. Many farmers abandoned a traditional self-sufficiency economy in favour of becoming wage earners. An emerging specialised, market-oriented commodity production catered to the growing population's need for food, clothing and housing, just as markets for tools, building materials and farm supplies grew rapidly. The need for modern agricultural machinery was the basis for the development of many local smithy workshops developing into small industrial manufacturing factories from the mid-1800s.

Around 1900, traditional craftwork and industrial production employed approximately 30% of the Danish labour force, although this was closer to 50 % in urban areas. Most of the employed worked in small master-run workshops with few employees. Out of 77,000 companies registered in the 1897 census, there were 170 companies with more than 100 workers (Strange Petersen 2016).

The building and construction sector expanded due to rapid urbanisation. New housing projects were instigated and the state invested in a series of large construction projects in urban and rural areas. The competition from industrial products made many traditional craftsman-based trades redundant. Weavers and basket makers disappeared, the numerous tailors were decimated, and shoemakers had to adapt to the repair of factory-made footwear. There was also an influx of new vocational groups such as electricians and bicycle mechanics (Strange Petersen 2016).

With the liberalisation of trades, the business sector expanded, and a strong middle class emerged. Modernisation brought a new elite of paid business leaders and managers, with major responsibilities within in the private sector, just as jobs for clerks, secretaries and administrative personnel expanded.

The emerging vocational education system provided skilled labour for manufacturing firms as well as for the relatively large number of small craftsmanship production firms. Most of the manufacturing took place in Copenhagen followed by other smaller cities (Strange Petersen 2016). As the table below indicates, most apprenticeship positions were located in cities. Copenhagen and its suburbs are the most dominant locations, but a substantial share of apprentices work in provincial cities. The table

also indicates that the commerce, retail and administration apprenticeships were almost exclusively located in provincial towns and small cities.

Figure 11: Number of commenced apprenticeship positions across Denmark, 1942

	Copenhagen and suburbs	Provincial cities	Rural municipalities	Total	Share of females
Craftsmanship and industry	2663	3525	1656	7844	7,6 %
Commerce & administration	113	1749	547	3426	27,4 %
Total	3793	5274	2203	11270	13,6 %
Percentage	33,7 %	46,8 %	19,5 %	100 %	

Source: Hvem, Hvad, Hvor, 1945, based on Statistics Denmark

Table 1 shows the distribution of apprentices in 1942 across three geographical areas - Copenhagen, provincial cities and rural areas. The table demonstrates the urban nature of the vocational education system, as Copenhagen and the provincial cities are the sites of more than 80 % of all apprenticeship placements. It is surprising that almost 50 % of all apprenticeship positions are in provincial cities, indicating a relative geographical dispersion across the country. This is especially the case for apprentices within commerce and administration, where more than 72 % are located in provincial cities and almost none in Copenhagen.

The largest category of apprentices were blacksmiths and machinists, which were useful within industrial manufacturing as well as craftsmanship-based production forms. The remaining apprenticeship types consist of 44 different vocational categories, many of them within the building and construction industry (Politikken 1945). This distribution reflects the specialised and flexible production structure in Denmark at the time.

Table 1 also indicates the gender distribution within the apprenticeship positions. Not surprisingly, less than 14 % of all apprentices were female. This reflects the dominance of the manufacturing, technical and construction vocations within the VET system at the time. Many of the later welfare state services such as childcare and care for the elderly, central vocational fields for women today did not exist during this period. Instead, many young women worked within housekeeping as unskilled workers. Less than 30 % of Commerce & administrative apprentices were women in

1945. This is indicative of the shift that was taking place within the field. Until the beginning of the 20th century, commerce was an almost exclusively male occupation. Women started entering the field in the first decades of the 20th century. Women worked within business and commerce as a respectable occupation from the time they finished school and until they married. Today, the distribution between men and women within these vocations is approximately 60 % women and 40 % men. This is related to a devaluation of the works of secretarial assistants as compared to the more prestigious clerk functions of earlier times (Juul 2012).

Governance

The 1889 Apprenticeship Law reinstated apprenticeship contracts in order to regulate the relationship between apprentice and master. By raising apprenticeship qualifications to national legislature, the most significant aspect of this law was the state establishing itself as a stakeholder in the VET field. Koudahl argues that the heart of the law was to ensure the masters' right of disposition over the labour of the apprentice (Koudahl 2007), and Rasmussen contends that the purpose of the law essentially was to assure that apprentices did not leave their training positions (Rasmussen 1996). Private contract breeches by apprentices were commonplace as apprentices could make more money by leaving the apprenticeship position and entering the labour market after a short training period, than if they stayed the full term (Juul, 2009).

In 1921, a new Apprenticeship Act was passed. Its primary stipulation was the re-establishment of journeyman's exams, the content of which was negotiated by the two central labour market partners: the employers' and the labourers' confederations. The period between the first and second apprenticeship acts was characterised by the consolidation of the Labour Movement and the development of the particular Danish labour market governance system known as 'The Danish Model' (Nelson 2012). As cooperation between labour market partners gradually developed, the first trade committees, where employers' associations and trade unions stipulated a series of vocation-based skill structures, were formed. In many cases, the vocational skill structures were based on the previous guild structures (Rasmussen 1996).

The 1937 Apprentice Law formally established vocation-based national trade committees where workers and employers were represented in parity with the right to negotiate the craft-based content of each trade vocation (Jørgensen 2008, Nelson 2012).

This development represents an important step in the construction of a corporatist decision-making structure, where employer and employee organisations were powerful actors that defined the vocation-based elements in education policies (Rasmussen 1996). The capitalist employer-apprenticeship relationship was wrought with opposing conflicts of interest. Employers were interested in as long an

apprenticeship period as possible at the lowest wage in order to exploit the apprentices' cheap labour for as long as possible and gain a return on their investment. Apprentices were interested in as short a training period as possible due to the low apprenticeship wages. Apprentices were also interested in being trained in a variety of skills within a trade in order to be employable within a relatively wide range of jobs. Employers were interested in limiting training to the skills, which were necessary in their own firm. These opposing interests were negotiated by the labour market partners in the emerging corporate labour market system. Labour market partners developed a system in which they could bargain and they gradually reached consensus concerning apprenticeship wages, skill formation, rights to journey degrees etc. (Rasmussen 1996).

Essentially, this means that the monopoly on trades, which belonged exclusively to the guilds in pre-capitalist Denmark, had been passed to the labour market partners by 1937. They now had the power to define and demarcate each trade and thereby monopolise it by excluding the unskilled (Juul 2010). The Danish industrial production system is characterised by developing later than in other European countries just as it was characterised by relatively many small- and medium sized firms. This meant that the master craftsmanship associations were relatively stronger than the industrial employers' associations. This was significant for the formation of a strong coalition between the craftsmanship associations, the industrial associations, skilled labour unions and the state. In countries like the USA and the UK, vocational training models have a weak state involvement, resulting in the lack of a uniformly and nationally recognised skill formation system (Thelen 2004). It was thus the strength of craftsmanship unions and craftsmanship employer associations during the formative years of the VET system that have created a strong corporatist VET model today.

During the 19th century, a large number of local commerce and technical schools were established. In most cases, local associations of commerce or employers' associations established these schools. At the turn of the century, the state entered the arena as a stakeholder through the provision of grants to build and establish more technical and commercial schools. Although the number of schools grew substantially during the 1800s, it was not until the third Apprenticeship Act of 1937 that schooling became mandatory. Schools were small and teaching was conducted as evening classes that apprentices could attend after a full day of labour. In small cities, where the number of students was limited, the vocational schools were often located at the local primary school. Courses and teaching was not trade-based, but primarily consisted of Danish, arithmetic and technical drawing, although in some cases very general technical theory was taught. Until 1937, quality control of teaching in the school was very local, usually under the auspices of the local employers' association and thus not under a nationally and lawfully approved system (Rasmussen 1969).

Although participation in a school was obligatory after 1937, this only applied if the most proximate school was within 7 km of the place of apprenticeship. The 1937 law led to the establishment of an increased number of schools resulting in a total of 370 technical schools and 200 business schools by 1945 (Betænkning 1987, Grünbaum).

Socio-spatial student intake

The vocational education system expanded throughout the period. By the Second World War, it attracted the largest share of a youth cohort (Nepper-Christensen 1998). There was a certain degree of social reproduction among the vocationally educated. Amongst vocationally skilled workers and master craftsmen, 45 % of their sons completed a vocational education, while only 25 % of the sons of unskilled labourers were able to obtain a vocational degree (Rasmussen 1969). Thus, a vocational education primarily targeted men in cities and small cities, most commonly the sons of the vocationally skilled.

Mobility imperatives

I have not been able to find research on the mobility trajectories of apprentices for this period. Based on the location of apprenticeship positions in table 3, I assume that the mobility imperatives of the vocationally trained were relatively limited during training, as apprenticeship positions presumably primarily were found through networking in local neighbourhoods or through occupation-based contacts. The location of vocational schools did not generate system-internal mobility imperatives, as schooling was expected to be within a 7 km radius of apprenticeship locations and was limited to 1-2 nights per week.

Summary

The foundations of the VET system that exist today are deeply entrenched in the forging of the Danish industrial production system and its nationally evolved corporatist model of labour market regulation. The so-called Danish model is based on strong labour market regulation through negotiations at the national level between labour market coalition partners - the employers and the employee representatives – in close interaction with the state. These are the same coalition partners that govern the VET system and occupational structures on the Danish labour market are the same that define the VET programme structure. Throughout the Danish Model formation period, skilled labour unions held a strong position in negotiations. Their membership numbers doubled during the first three decades of the 20th century and they won a series of rights through collective agreements, including the 8-hour workday and the right to 2-week holidays (Poulsen, 2015).

The special relationship between employers' associations, labour unions and the state was also forged due to the dominance of the Social Democratic party in politics from 1924 and until the 1980s (Nelson, 2012). Thus, 'the state' in Denmark has for most of the central decades of the 20th century been a Social Democratic government with close and formal affiliations to the Labour Movement. Another central aspect to understand is the national scale of the system and of the partnerships. Labour and employer sides were and are represented through their national confederations and the public coalition partner is the state, not municipalities or other sub-national government levels.

A vocational education was presumably a local education. The place of apprenticeship was the focal point of entry and learning and vocational night classes were a marginal aspect of a vocational degree. The spatial structure of the VET system thus corresponded to apprenticeship markets and fluctuated according to firms' economic abilities and willingness to hire apprentices.

Koudahl argues that the re-establishment of the apprenticeship contract as an individual contract between the apprentice and the employer is a critical policy development, which continues to have a decisive bearing on the system today (Koudahl 2007). He argues that many of the contemporary imbalances between student education demands and supply of apprenticeship positions are a direct result of individualised apprenticeship contracts between young students and firms. An alternative organisational form could be contracts between vocational colleges and groups of firms. Such organisational forms are not, however, economically interesting for apprenticeship firms. I find that this is an extremely interesting point to make about the contemporary system and will discuss it in the conclusion at the end of this chapter.

5.2.3. 1945-1970S

The period from the end of the Second World War until the end of the 1970s is characterised by centralisation, the implementation of a dual learning structure and of vocational specialisation. The VET system must react to rapid technical and industrial development and the establishment of semi-skilled vocational programmes. The other is the development of a dual-learning approach in the system. Compulsory daytime school-based learning in a centralized school system under the auspices of the state is introduced in the 1956 Apprenticeship Act.

Dominant production paradigm

After the Second World War and well into the 1950s, the Danish economy was in stagnation. Production machinery was worn out and antiquated and demanded large

investment sums in order to be renewed. Unemployment rates continued to be as high as in the 1930s until several years after the war ended (Rasmussen & Brunbech, 2015).

This was followed by a period of rapid industrialization, characterized by large industrial factories that required semi-skilled labour. Combined with very large youth cohorts stemming from the war years, the government stepped in and pushed for regulations. Through a series of Commission-based negotiations, labour market partners agreed to ease up on some of the heavy apprenticeship regulation of the 1930s with the purpose of expanding the number of apprenticeship positions. The 1956 law led to more specialized practical training, but also allowed training to lead to only semi-skilled levels. This was possible because large industrial organisations had gained more negotiative power due to an increase in jobs within the industrial sector.

From the 1937 Apprenticeship Act and well into the 1960s, the skill content in each vocation programme and the delimitations between them corresponded to occupational structures on the labour market. The labour market was segmented into vocational categories such that a specific education gave access to a number of functionally similar positions in a wide number of firms – i.e. the work that a person carried out in one firm was not so different from what he would be carrying out in another. Thus, labour market mobilities were related to wage advantages, not differentiated skill opportunities (Jensen 1987).

Firms were generally defined by their particular products, which were often produced very similarly across relatively long periods of production. Technological innovation paces were often relatively slow and could ensure homogeneity in firm organisation and structures across a particular industry (Jensen 1987). With rapid industrialisation, there was a call for a series of new skills - especially from the blacksmith and metalworking industries - and the number of vocational skills, which collectively made up an occupation, increased. This development was a central aspect of the establishment of more vocation-based schooling (Grünbaum 1987).

Toward the end of this period and well into the next, i.e. from the end of the 1960s and into the 1980s, increasing polarisation and de-qualification began to take place. This meant that the breadth of vocational skills, one of the cornerstones of a vocational education, started to hollow out. The more advanced functions were reorganised to be carried out by technicians, while the vocationally trained carried out jobs that had previously been designated as unskilled (Rasmussen 1996).

In short, this phase of the VET system started with a relatively traditional and rigid vocational structure and was followed by a shift toward increasingly technology-based production, resulting in a rapid increase in the pace of innovations. Toward the end of the period, the mass industrial manufacturing production paradigm was on the rise, characterised by de-skilling and a Fordist production system. Even though Denmark never developed full Fordist production systems like in the US and

Germany, companies such as Danfoss, Lego and B & O were flagships for this type of development. The undergrowth of small and medium enterprises continued to be typical of the Danish industrial structure (Rasmussen and Brunbech, 2015).

This was a spatialised development, meaning that the shifts in production forms corresponded to economic geographic shifts. At the beginning of the period, the centres of Copenhagen and other cities were also manufacturing centres with many work places. Toward the end of the 1960s, a conglomerate of location factors, including property prices in inner cities, access to larger, open spaces and cheap unskilled labour led to industrial relocation. While small and medium-sized firms continued to be relatively dispersed across Denmark's smaller cities, large industrial firms relocated to new industrial spaces in hitherto rural areas in Jutland and industrial districts on the periphery of urban centres (Maskell 1986).

Governance

Collectively, the period is characterised by shifting power struggles between the three central partners on a national scale. Firstly, the state has several agendas it wished to push. The state had to handle a large number of youths in a period of slow economic development. This pushed the state to involve itself in labour market regulation. The state was also rapidly developing its welfare state and pushing an agenda of heightening the formal education levels of the population, particularly the bid for the working classes to gain formal education beyond compulsory schooling. Thus, the state was interested in embedding the vocational training system into a broader education system where other, more general subjects were taught (Sørensen 1977).

This should be seen in the context of the dominance of the political system by the Social Democratic Party, which experienced a Golden Age from the 1940s to the 1970s. Welfare-based social equality was a dominant value and there was great faith in the social sciences as a tool toward promoting societal development. A strong and proactively planning state where the public sector played a decisive role in promoting collective values was the ideal. The education system was perceived to be a central welfare element in creating greater social equality (Raae 2012).

The development toward deskilling in the late 1960s put the trade unions in a difficult dilemma. They were pushed to accept an increasing number of specific vocations. Separate work functions were defining vocations, which ran against the grain of the vocationally flexible multi-qualified craftsman. If unions accepted this development, they could secure new branches of trade unions. Alternatively, they would have to accept that a particular function was removed from the occupation description and classified as unskilled, thus losing the union members to unions for the unskilled. Most trade unions opted for the first choice, putting themselves in a defensive position, but securing jobs and representation of their members (Rasmussen 1996).

There was shift of power, within the national Employers' Confederation whereby industrial manufacturing firms and their representatives gained greater influence while master craftsmanship associations lost power.

The contents of the 1956 Apprenticeship Act testifies to the fact that, despite these differences, there was general consensus between the coalition partners that the labour market partners had monopoly on defining vocational competence structures. This spilled over into the VET school system, and thus the Trade Committees consolidated their power. When mandatory day schools were established as a central part of the 1956 act, the Trade Committees were successful in defining the school subject structure to be based on the vocational demarcations forged by the Trade Committee system. Alternatively, school subjects could have been defined as general subjects such as reading, writing, arithmetic and technical drawing. This was not the case.

The 1956 Apprenticeship Act recognised the need for more specialised labour. With the transition to full-time day school, the different trade-based technical subjects were divided into specific vocational educations, the numbers of which were greatly increased. Within the iron- and metalwork sector, the number of vocation programmes increased from 12 to 32 (Grünbaum 1987).

The 1956 Apprenticeship Act had given national trade committees' more influence on the VET system than any corporatist partners in advanced capitalist production societies, including the German VET system. This is also indicative of the fact that the VET system was governed by the logic of labour market qualifications, not by youth education logics (Rasmussen 1996). Thus, the Danish vocational education system is not lodged within a welfare state model that perceives education to be a primary welfare right. Instead, the VET system is embedded in labour market governance structures. A demarcation line is decided, whereby the state governs the vocational institutions, while the management of the vocations themselves as well as the apprenticeship system is relegated to the trade committees.

Geographically, the large power base given to the central trade committees took place to the detriment of influence by interest groups at the local levels, both in municipalities and on local labour markets. This is a point I explore below.

The 1956 Apprenticeship act led to a complete restructuring of the school system. The number of technical schools was reduced from 370 to 50 and a corresponding development took place a few years later within the commerce and administration degrees, where the number of commercial schools was reduced from approximately 200 to 60 (Rasmussen 1969).

Vocational colleges were centralized and taken over by the state. Mandatory day school teaching was introduced. Hitherto, teaching had been very general, and different vocations and students at different progression stages had been taught

together. Now, curricula were developed for each specific vocation and vocation-based classes were established. The policy to switch from intermittent night classes to comprehensive periods of day-based schooling had far-reaching repercussions. It essentially introduced the dual-learning aspect of the vocational education system, whereby learning takes place based on theoretical and practical learning in school and on practical training and socialisation processes in the firms. The policy changes also had vast locational consequences, centralising the locations of vocational colleges. It was the demand for an increasing number of skilled labourers combined with the high annual birth rates of the 1940s, which drove the youth education and apprenticeship policies in the 1950s (Jørgensen 2008, Rasmussen 1996, Rasmussen 1969)

Many institutions were owned by local partnerships and had developed from privately owned employer association schools into local institutions, where municipalities, trade unions and business partners were represented. In the decade following the 1956 Apprenticeship Act, the Ministry of Education revoked all education provision rights and realigned the system. The Ministry then granted the schools the right to provide specific vocational education programmes based on a central planning scheme from the state. Their central planning took its point of departure in the current apprenticeship distribution patterns, not student residence patterns. Thus, the distribution of VET institutions and programmes was based on the demand market for apprentices, not on the supply market of potential students. This reflects the dominant labour market logic that dominated the system at the time (Rasmussen, 1968).

This development was wrought with conflict. Small cities and rural municipalities that had lost their local VET institution protested vehemently, but the system was not altered (Rasmussen 1969). The labour markets with the largest number of apprenticeship positions within specific vocations had won the right to offer the programs. Local branches of both employers' associations and trade unions were critical of the strength of the Trade Committees, who operated on a national scale and seemed oblivious to local interests. Despite all this, the system was not altered, and the school provision geography of the VET system was completely realigned over a ten-year period.

Socio-spatial student intake

Amongst youth cohorts from 1945 to 1955, 43 % of the men and 13 % of the women aged 16-19 had entered a vocational education. In total, 77 % of a youth female cohort were unskilled, whilst the corresponding percentage for men was 50 %. Approximately 5 % of a youth cohort entered the academic upper secondary education ('gymnasium'), an education track almost exclusive for the privileged classes, targeting the affluent middle and upper middle classes. Thus, for most young people in the 1950s, the alternative to gaining a vocational education was leaving school after seven basic years of schooling (Nepper-Christensen 1998).

Mobility imperatives

It was recognised that there was a large number of VET students who lived too far away to commute to school during school periods. This resulted in regional schools that were appointed with boarding school facilities (Rasmussen 1969). A certain amount of mobility capacity thus became a prerequisite for completing a vocational education. However, the entry point into a vocational education continued to be through the firm and the apprenticeship contract.

Summary

Synchronically, the socio-spatial inequalities that arose during this period pertained to the massive influence of the trade committees on the content and structure of the VET system. This was to the detriment of internal interest groups within the 'Danish Model' system as well as local and regional interest groups. Local employment associations, who had established and managed technical and commercial schools until this point, lost influence as the entire system was centralised. Municipal politicians also lost influence on the location of schools as central government took over vocational school planning on a national scale.

As the 1956 school and programme distribution structure was based on the spatial structure of apprenticeship markets, it was the production economic structure of the mid-1950s – and its spatialities – that lay the groundwork for the vocational college distribution structure. This is indicative of the labour-market logic that dominated the system so that institutions were located in connection to apprenticeship positions and not to students. It is remarkable that the central state, which was concerned with large youth cohorts and high youth unemployment should give precedence to the 'Danish Model'. In this way, the state decided to yield the otherwise dominant concept of education as a welfare state right given to all social classes in favour of the corporatist model of labour market regulation. This also meant that a double-tracked youth education system was forged. On the one hand, the welfare state right to education was expressed through the continued development of a comprehensive basic schooling system, by increased social mobility into academic education tracks, and by the expansion of an adult education system. On the other hand, the right of the labour market-governed VET system was upheld.

Diachronically, this period marked the establishment of a VET system based on dual-learning, and saw a consolidation of labour market partners' central power base within the system.

5.2.4. 1970S TO 1990

The next VET period is characterised by increased polarisation within the mode of production and by the introduction of the Basic programme. The number of jobs carried out by the vocationally educated is reduced due to a combination of skill specialisation and de-skilling. Technicians now carried out the job functions that had become highly specialised and advanced while other job functions were becoming Taylorised, i.e. broken down into simple, repetitive functions, which could be carried out by unskilled workers. Thus, the skill base for the vocationally trained was in danger of being greatly reduced.

Although the power struggles between coalition partners were not as exacerbated as during previous periods, differences of interest continued to appear and the trade committees continued to play a dominant role in VET policymaking.

Finally, the most persistent change was the implementation of a one-year Basic programme (EFG), the effect of which was a new mobility trajectory for VET students.

Dominant production paradigm

From the 1960s to the 1980s, production became more specialised and specific qualifications were demanded of the work force. Such specific qualifications were primarily useful in a particular firm, not across an entire industry. Although Denmark continued to be dominated by small- and medium-sized enterprises (SMEs) with specialist production capacities, more large-scale industrial production forms increased. In response, vocations had become more specialised. Continual changes in products and production techniques meant that the qualifications, which VET graduates possessed, no longer corresponded to specific qualification demands in firms. The result was a lack of flexibility across the labour market and high costs for firms to train their workers to their specific production needs. In other words, specialisation had become dominant to the detriment of broad vocation-based flexible qualifications. This development was especially marked within production industries. Within the building and construction sector as well as the business and administration sector, general competences, which could be used across the sectors, were still prevalent (Jensen 1987).

Toward the end of the 1970s, digitalisation started to change everything. Digitalisation, compared to other new automated technologies, not only changed production, but also transformed administration, communication, services etc. (Jensen 1987). Such pervasive transformations based on new technologies are indicative of emerging changes in the techno-economic paradigm (Perez 2010). For the vocationally educated, it meant a decisive shift away from working within a vocational core defined by the ability to handle, develop and service a given field of

materials and tools. Instead, employees worked within a vocational core defined by an ability to react to and interpret more broadly defined vocation-based information (Jensen 1987).

Geographically, the phase was characterised by the 'moving out' of industrial production from urban spaces to suburban and rural spaces. Crises in the 1970s and the long period of transformation and restructuring of the economy in the 1980s and early 1990s gave rise to several new industrialised spaces in Denmark, especially in small and medium sized cities outside the large urbanised areas, often located in peripheral regions of Jutland. Copenhagen was suffering severe job losses and high unemployment due to de-industrialisation processes in traditional manufacturing industries. Many of the manufacturing jobs moving out, however, were unskilled and provided jobs to the relatively high share of unskilled labourers who lived outside the largest urban centres (Hansen, Winther 2012). For the vocationally trained, the provincial towns and cities continued to be important labour market spaces.

Governance

During this period, apprentices and their organisations increasingly criticised the system. In a number of areas, they were supported by the trade unions and even the employers (Jørgensen 2008). They were dissatisfied with the VET system on many counts, including lacking correspondence between school curricula and practical training. The market supply of apprenticeships did not match students' demands; this applied both to geographical mismatches and vocational field mismatches. Apprentices were critical of the direct entry into the system through the apprenticeship position – often students had little prior vocational field knowledge (Rasmussen 1996).

The state had a general interest in providing a socially broader and more geographically fair access to education provision. Education was increasingly perceived to be a welfare good that citizens from all social classes and geographic spaces should have equal access to. Societal resources should provide a general heightened education level for all (Rasmussen 1996). In answer to this, a one-year Basic VET programme (the 'EFG') was introduced. Its purpose was to provide a broader general knowledge base as well as contribute to an improved vocational clarification process for young people unsure of which vocation suited their interests and aptitudes the best. The EFG consisted of one year of full-time school education followed by two to three years of practical training in a firm (Ministry of Education 1994). The basic year was constructed around eight basic subjects, which ideally was a heterogeneous collection of related trades and occupations, so called occupational families. The main programme structure remained much as it had been prior to the new construction (Rasmussen 1996).

The idea of the EFG and the Basic year was not a general success. Overall, the larger industrial manufacturing employers were positive because they saw it as a sorting mechanism by which less mature and otherwise 'unwanted' youth could either figure out what they wanted or leave the system. The smaller entrepreneurs, especially those from rural areas, were very critical, though. They valued the direct contact with potential students and often hired them as junior labourers before embarking on a full apprenticeship. In other words, the conflict was not between employer and employee, but between more traditional craft-based trades and industry. Small entrepreneurs tended to train many apprentices and large industrial corporations tended to hire them after graduation. Thus, the conflict of interest was related to supply and demand structures. Finally, it was between the small and medium sized enterprises located in the old centres of cities and provincial towns and the large industrial corporations that were relocating to industrial districts

With the introduction of the EFG model, it also became statistically possible to follow the number of apprentices who searched in vain for apprenticeship places. This brought attention to the high number of apprentices who dropped out of the VET system because they could not find apprenticeship positions. The VET system became an important item on the political agenda. From the late 1970s until the late 1980s, different schemes were introduced in an attempt to generate more apprenticeship positions. Despite these efforts, the number of apprenticeships remained insufficient compared to the number of students (Jørgensen 2008, Ministry of Education 1994).

Socio-spatial student intake

At the same time during the 1960s, there was a shift in student entry patterns. The number of youth who chose a traditional apprenticeship position declined radically, whilst the number of unskilled and semi-skilled increased. This was also the case for the share of youths, who entered youth education programmes targeting higher education.

During the period from 1960 to 1976, the number of unskilled who participate in adult vocational courses ('AMU') explodes from 2.000 to 42.000. Simultaneously, the number of students in upper secondary preparatory business programmes, that educate people for managerial jobs, increases from 6.000 to 45.000 in the same period. The higher business preparatory exam ('hbx') is established in 1972 and thus competes with the basic commerce degrees in the VET system (Hansen 2011). Meanwhile the number of students that enter the basic commercial degrees and the traditional technical and craftsmen educations declines by 41 % and 35 % respectively (Nepper-Christensen 1998, p. 11-12).

This development is related to several simultaneous societal shifts. Due to increased mass production methods within industry, there is an increase in unskilled jobs. This

meant that young people could enter the labour market directly after compulsory schooling and gain access to training in specific skills through the AMU system. Through the establishment of the higher business and technical degrees (hbx and htx) as well as the higher preparatory exam ('hf') which targeted adults, who had left the schooling system without formal skills, a greater share of young people gained access to higher education. The simultaneous increase in unskilled jobs and higher education access are functions of a polarisation of qualification needs due to increased specialisation and de-skilling on the labour market (Grünbaum 1987).

Mobility imperatives

The introduction of a school-based entry programme completely shifted the vocational and spatial transition path into the VET²⁰. Since the 1400s, commencing a vocational education took place in a firm and was instigated through direct contact between the potential apprentice and the firm. Now, the school system was introduced as an entry path and a basic vocational orientation process was a central aspect of the introduction to the world of work. A marked shift from a labour market logic to a youth education logic had taken place. Or rather, a youth education logic had been pushed in prior to the transition into the Main Programme, where a labour market logic continues to dominate.

For young people, this meant negotiating a new education space. Vocational colleges were no longer temporary sojourns that provided school-based teaching during relatively short intervals between the daily practical training in a firm. Now students started their Basic Programme as a fulltime full year school-based programme. What this meant in terms of commuting times for students, who lived in rural areas or for students, who were planning to study a Main programme, which was not provided by the local vocational college has not been researched.

The also meant a new transition geography – the transition from the Basic Programme into an apprenticeship position.

²⁰ Despite the profound shift in institutional structures, which the introduction of the EFG-programme must have meant, I have been unable to find research, which treats this. The planning of vocational college locations and their programmes was under the central control of the Ministry of Education during a period, when central planning tools were prevalent (REF). It remains to be researched what effects of the introduction of the EFG programme had on students' geographical apprenticeship patterns.

Summary

Synchronically, the period from the 1970s to the 1990s is characterised by economic crisis and an erosion of what had been at the core of the VET system – the craftsmanship based vocations, with a relatively broad definition of related skills. With the onslaught of digitalisation across all vocations, a new techno-economic paradigm was underway. Combined with high levels of youth unemployment and the introduction of the EFG Basic Programme, which illustrated apprenticeship market imbalances, the way was paved for increased state intervention in the VET system. Thus, on a backdrop of high unemployment rates and the need for new cross-vocational skills bases, the introduction of the EFG Basic Programme indicates that state-induced youth education logics had gained momentum. Geographically, the period experienced an out-migration from urban centres of industrial production firms and economic and demographic decline in the largest city centres, primarily Copenhagen (Hansen, Winther 2012). Further research on the spatial distribution of the VET system during this nascent TEP period is called for. This concerns the distribution of apprenticeship markets in connection with industrial re-location as well as the distribution of vocational college locations in connection with the introduction of the EFG Basic programme.

Diachronically, the introduction of a Basic Programme, which was governed by the state and solely served as a preparatory year before a specific vocation was chosen, is a policy innovation that continues to be in place today. It took many years to phase out the 'master's training programme', i.e. VET training that starts in the firm, with schooling at the Main Programme level in a purely intermittent position. The concept that young students need an introductory year before entering the market-based apprenticeship level is still in effect. Without proper research, it is difficult to assess what spatial distribution patterns evolved during the period when the Basic Programme structure was introduced for the first time, and whether this structure might have a bearing on Basic Programme distribution structures today. I expect industrial relocation, with industrial production moving out of city centres and relocating to relatively small industrial districts in Jutland, while Copenhagen went into decline, influenced apprenticeship structures profoundly.

5.2.5. 1990S-2015

This phase is dominated by a paradigmatic shift away from an industrial production economy toward an economy, which competes on its ability to produce economically valuable innovative knowledge. This phase is also characterised by the state's implementation of a neo-liberal management planning system, which completely realigned vocational institutions and the mechanisms that control them. Finally, the phase is characterised by a shift in student intake. While national goals that 95 % of a

youth cohort should complete a youth education are implemented, an increasing share of young people shift to more academically focussed education possibilities.

Dominant production paradigm

The period from the early 1990s until today is characterised by a profound economic shift away from industrial production forms toward a more service- and knowledge based economy. Digitalisation, which had already had an important impact during the previous phase, has permeated all production forms and altered all production processes.

Economic growth, measured in employment growth has primarily been within the Information communications technology (ICT) sector, private service industries, entertainment and cultural economies as well as the public sector. Meanwhile, employment within the manufacturing sector has declined by almost 20 % in the period between the early 1990s until 2006, mostly due to globalisation and outsourcing of manufacturing jobs (Hansen, Winther 2012). A mainstay of production economy in Denmark, the low- and medium-tech industries, still play an important economic role. However, there has been a shift away from functions carried out by the unskilled and the vocationally educated, toward use of more highly educated labour in the sector (Hansen 2010).

The field of vocationally educated labour continues to play an important role in the economy. The building and construction industry, which primarily employs vocationally educated labour, is significant, as is the retail and business sector. Finally, public services, including health care is expanding due to the aging of the population (Hansen, Winther 2012). However, the greatest economic growth rates are produced in sectors that primarily employ labour with higher educations.

These transformations have spatialised patterns. Much of the economic activities that are experiencing growth are located in Copenhagen or in Denmark's second-largest city, Aarhus. These are the centres of the service- and knowledge-based economy. What remains of the manufacturing industries as well as a large share of the low- and medium tech industries are located outside these city centres, in the largest provincial cities and industrial areas that were the heartland of the industrial production era.

However, this is not a merely national relocation and redistribution development. Globalised hierarchies of industrial production, whereby traditional mass industrial production has relocated to the Global South with easy access to cheap unskilled labour have developed. In some cases, production has been moved in its entirety. In others, a global distribution of labour has evolved whereby production facilities have been outsourced while innovative development and economic activities have been sustained in Denmark.

As the VET system provides vocationally educated labour for both private service sectors, public service sectors, the fisheries and agriculture sectors, commerce and retail sectors, building and construction as well as for the industrial production sector, the system does not have a straightforward geography that shows a clear pattern. However, for many of the technical vocational educations that work within industry and building and construction, provincial cities and industrial areas outside the largest cities, continue to be their economic heartlands.

Since the economic crises in 2008, there have been indications that a number of Danish firms perceive their separation of innovation and production activities to be unsustainable and hence are pulling back their outsourced activities. Instead, they are increasingly approaching their innovation needs from a more production-based learning perspective, also termed doing-using-interacting (Hansen 2010, Jensen, Johnson et al. 2007)²¹. The demand for vocationally embedded labour, which is able to perform advanced functions such as project management and other tasks that require independent and cognitive, but vocation-based qualifications, is on the rise (Kjeldsen, Bjerre 2010). Whether the new VET system innovation, a hybrid academic-vocational youth education (the EUX) can contribute to meeting this demand remains to be seen. The EUX has been under trial and development since 2010 and was fully implemented in the Vet Reform 2015. It contains both academic preparatory elements, which allow EUX graduates to seek access to higher education and vocation-based practical training, which give direct access to the labour market. If the VET system is able to realign itself to advanced skills demands based on vocationally framed skills structures, it may be able to innovate itself into becoming an important institution in the Danish service- and knowledge economy.

Governance

Since the 1990s, the institutional structure of the VET system, through a series of amalgamations has completely realigned the VET institution landscape. Vocational schools functioned as relatively stable institutions from the mid-1960s until the end of the 1980s. This was followed by a long unstable period characterised by numerous institutional changes (Egebjerg 2004). The 1991 vocational school reform completely changed the governance framework for vocational schools. Where vocational schools had increasingly come under the direct control of the state up to 1991, this law liberalised the vocational education market completely by making all vocational education institutions self-governed. This meant they were responsible for their own finances, the 'taximeter' financial structure was introduced, through which schools are funded primarily based on their number of students. The distribution of VET education programmes was liberalised after a period of strict centralised planning

²¹ For a US-based discussion on the relevance of reconnecting production-based learning and innovation in different economic sectors, see (Clark 2013).

from the Ministry of Education, although the state retains the final right of accreditation. In the 1990s, this liberalisation led to widespread amalgamations between vocational colleges. The resultant institutional structure happened, according to Egebjerg: “...without public awareness, and without a general ministerial plan The speed and breadth of vocational school amalgamations have surprised even the Ministry of Education” (Egebjerg 2004, p. 101, my translation). In the period from 1999 until 2005 more than 60 institutional amalgamations took place, primarily between different types of vocational colleges (agricultural colleges, commerce and business schools, technical schools and adult learning centres) took place. After 2007, when health- and childcare schools as well as academic youth education colleges (‘gymnasiums’) became independent and self-own another 27 institutional amalgamations took place (Undervisningsministeriet 2013). Egebjerg argues there are three central incentives for this development. Firstly, the new governance structure is based on free market condition, whereby vocational colleges compete for students. The larger the student base the most accumulated income with which to invest. Secondly, a classic Christallerian hierarchy of central places was taking place between a number of cities in Jutland, whereby cities were bidding for increased education and economic activities in each their towns (Christaller 1966). Thirdly, managerial institutional culture in the vocational colleges was dominated by a general “amalgamation frenzy” (Egebjerg 2004). Egebjerg (2004) argues that the amalgamation process is a result of a shift in governance thinking from the very centrally managed development of the welfare state of the late 1970s to the privatisation of welfare services in the 1990s. In this shift he sees the directors as well as the boards of the vocational education schools as central actors, who were already well entrenched in liberalistic management ideas.

This should not mistakenly be interpreted as a high level of local autonomy. As an integrated aspect of liberalising the management of vocational institutions to local interest groups, the state unfolded a strict control regime, which made high demands on schools to perform academically and to document its performance (Friche, Rasmussen 2008). Institutions thus do not have much room to manoeuvre in order to pursue own development aspirations.

The resultant institutional landscape is extremely varied. The series of amalgamations have not resulted in, as could be expected, the loss of local campuses and institutions in challenged localities. Instead, it seems the amalgamated vocational education schools as a rule have retained a number of local campuses. This is due to legislation from 2002, which gave economic incentives to retaining campuses in small towns. However, such amalgamations may lead to a reduction or dilution of the local education programme provision structure, centralising some programmes at the main campuses and retaining only a minimal provisional, very basic, provision structure in satellite campuses. Such patterns have not been studied.

Egebjerg's analysis of the period's institutional amalgamation processes leaves an impression of lacking state planning. Indeed, the state's primary planning tool is control of institutional quality regimes combined with VET programme provision rights, which is governed by the Ministry of Education for. In 2000, then Minister of Education, Vestager issued a policy statement on the institutional structures of the VET system, indicating that the students' distance to education on the one hand and sustainable professional learning environments on the other, are primary planning targets, when planning institutional programme structures. (Vestager 2000). According to the policy statement, three types of schools existed within the VET institutional system: local schools, regional schools and vocation-driven schools.

- The 'local vocational school' targets youth, who still live at home in a non-defined geographical area and who seek a VET programme. Focus is on a flexible Basic Programme assortment, followed by a choice of "several" main programme possibilities.
- The 'regional vocational school' provides a broader assortment of main programmes, and must also be able to provide firm-based lifelong learning programmes, that improves in-firm competence building. In other words, the specific vocation-based knowledge environments, which the regional schools develop, must match that of local firms' knowledge needs. Institutions may function as both local schools for some programmes, and regional schools for others. There is no definition of what size or scale 'regional' is.
- The third type of school is the 'vocation-based school', whose programme structure is extremely limited. Its primary purpose is to supply a specific vocational field or industry with highly specialised education at all levels and be leading within its field, for a specific part of the country or for the country as a whole. These schools were only expected to provide one to two vocational programmes (Vestager 2000).

I have not found any research on this policy and its effects. Based on a preliminary investigation of contemporary vocational colleges, I cannot find evidence of institutions that only function as either local, regional or vocation-based schools. Instead, schools provide an array of VET programmes, meaning that they simultaneously function as local, regional and vocation-based schools. I have carried out an analysis of current provision structures²² based on the distribution of Main programmes. I have found that the overall structure of Main Programmes, as described by Vestager (Vestager 2000), is more or less still in place, although I find it relevant to differentiate between semi-specialised programmes and highly specialised programmes. There are thus four over-all types of programmes. As I use these in my

²² As mentioned, provision rights are under revision and will be adjusted in August 2017. As provision rights often are given based on previous provision histories, Main Programme provision is not expected to change too much.

analysis of VET students' transition trajectories in Chapter 7, I provide an overview here.

Type 1: The big 12

The big 12 are the 12 most widely provided VET programmes that most vocational colleges offer, except for at specific child- and healthcare and agricultural colleges. They are provided at 17-27 locations across Denmark. They contain Main Programmes within commerce and retail, the largest iron and metalwork programmes, carpentry, stonemasonry and electrician as well as childcare and healthcare. In other words, they are the large traditional and broad vocations. They are provided in several locations in each region and constitute a cornerstone of the VET system.

Type 2: Regional programmes

Regional VET programmes are provided in at least 10 locations across Denmark and theoretically more than one location per region (Denmark has five regions). These vocations are entrenched in specific labour markets and may be clustered – either in urban areas or in specific economic sections. Examples are a large number of industrial specialised vocations such as cnc-technician, industrial technician, technical designer, data and communication, chef, hairdresser, commerce and trade assistant, financial assistant etc. In all, there are 19 regional programmes.

Type 3: Semi-specialised

These programmes are available in 3-9 locations across the country, some of which are related to specialised fields or clusters. Examples are windmill technician, theatre technician, ships fitter, digital media, web-integrator, baker, waiter, dental clinic assistant, and gardener. In all, there are 25 semi-specialised programmes.

Type 44: the small 44

These programmes are provided in 1-2 locations in Denmark. They have very limited labour markets and a small number of apprenticeship positions. Examples are forest and nature guide, animal keeper, watchmaker, ships mechanic, wood model maker, precision mechanic.

For a full list of programmes, see Appendix B.

It raises questions about potential imbalances between state education logics based on student-based catchment areas versus labour market logics of apprenticeship-based markets.

Each programme type has a given student catchment area, the size, density and composition of which depends on the location of the institution and distance to competing programmes. The big 12 programmes primarily attract the local population and function as entry points to the rest of the VET system, and thus function much like any school catchment area. Institutions that offer regional, semi-specialised and the small 44 programmes have student catchment territories rather than student catchment areas. The difference between a catchment territory and a catchment area is that student catchment territories are not geographically defined, but vocationally. Regional programmes attract students across regional territories, sometimes offering specialisations that attract students from other regions; the semi-specialised attract students from different areas of Denmark, while the small 44 programmes student catchment territories are national. It is the combination of local, regional, semi-specialised and highly specialised programmes that collectively determine a vocational colleges student catchment area and territory. Understood from a Christallerian understanding, the largest and most varied VET programme collection positions the vocational college at the top of the central place hierarchy.

Institutions that are located in 'shrinking' locations, and primarily provide the big 12 programmes are structurally challenged, as their student catchment area is shrinking along with the area they are located in while their student catch territory is limited. In order to survive they must attract non-local students by providing regional, semi-specialised and/or the small 44 programmes.

This is however, difficult; vocational colleges are rewarded the right to provide Main programmes based on double-headed criteria. On the one hand, the Ministry of Education wishes as broad a geographic distribution as possible. On the other, programme provision is conditioned by local/ regional access to apprenticeship markets as well as labour market demands. Again, vocational colleges that are located in challenged localities, where labour markets primarily consist of traditional production forms, basic private service and public service sectors, are greatly challenged to provide apprenticeship markets for most of the programmes that are not the big 12.

These challenges do not just have institutional repercussions; they also influence students' access to apprenticeships. Vocational colleges are responsible for generating apprenticeship markets for the Main programmes they provide. They do this through setting down local education committees, where local businesses are represented, just as they carry outreach work targeting local businesses. This means that vocational colleges generate apprenticeship markets within the programmes they provide, while all other programmes are 'unrepresented' in the local area. Students, who select a Main programme, which is not offered locally, but who wish to find a local apprenticeship, are very much on their own in such an endeavour.

In connection with VET reform 2015, all vocational institutions have had their VET programme provision rights revoked. By 2017, new programme provision rights will be granted. Even if provision rights favour vocational schools with a limited student catchment base, it is not sure programme provision will be sustainable for the smaller schools.

Socio-spatial student intake

The 1990-2015 period is characterised by a central policy dilemma within the VET system concerning the definition of what type of students it should take in. Should the VET system follow a state education logic and function as a 'sweeper' that takes in all youth, securing that every young person can complete at least a youth education? Or, should it follow a labour market logic and only take in other young people, who are highly desirable by firms, ensuring a highly skilful vocationally educated work force that is able to compete on globalised production markets?

Since 1993 when an active labour market policy was introduced, young people without jobs have increasingly been 'forced' into the youth education system as welfare state support systems increasingly required young people to improve their employability through education. This led to increasing numbers of academically challenged and unmotivated students, particularly in the VET system (Jørgensen 2014).

In spring 2005, a broadly based government council was convened. Its mandate was to draw up a national strategy for Denmark's competitive development in a globalising economy, hence the name, the Globalisation Council. Based on recommendations from the Globalisation Council, the government formed two committees, both of which were to focus on and bring forth recommendations for development of the Danish youth education system. One committee worked on recommendations that would achieve the state goal that 95 % of a youth cohort should obtain at least a youth education. The other committee focused on reforming the vocational education and training system, so it could contribute to Denmark's competitive advantage in a globalised economy (Koudahl 2008).

As Koudahl remarks, these two ambitions are not necessarily detrimental. However, both committees suggested the vocational education system was a central method in meeting both goals. The VET system was to be the primary youth education system, which should assure social mobility amongst the children of unskilled parents. At the same time, the VET system was to provide more advanced education programmes, which appealed to students, who would continue into higher education upon completion of their VET degree. Thus, the VET system was to implement a series of initiatives and measures, which supported academically, socially and personally challenged youth through a practical learning system. Whilst on the other hand, it

implemented measures, which support a more elitist, entrepreneurial approach to the vocationally trained. Throughout the years 2000, 2004 and 2007, the VET system was continually reformed, with a marked focus on bringing down dropout rates. Success has been limited (Koudahl 2008) and it is possible to interpret the VET reform 2015 as a concerted attempt to move the VET system toward a more elitist approach in the hope of attracting a study body, that is capable of either performing advanced vocationally-based function in a firm or of completing a higher education degree.

Mobility imperatives

No studies have been made of the consequences of institutional amalgamations for education programme provision structures or student mobility demands in the 1990-2015 period.

The DEA Think Tank has, however, made a regionalised analysis of the number of apprenticeship firms in different regions. This method does not differentiate between urban and rural areas within regions, but does provide some indication of the spatial distribution of apprentices:

Figure 12: The distribution of firms with apprentices, November 2010

	Born-holm	CPH & catchment	Rest of Zealand	Fynen	Southern Jutland	Central Jutland	Northern Jutland
Firms²³	264	4.971	6.501	2.974	4.877	7.974	4.160

Source: Statistics Denmark, UNI-C, compiled by DEA. Nov. 2010 (Ramsløv, Anthonen 2014)

Figure 12 indicates that, compared to the size of labour markets, Copenhagen should by far have be the largest number of active apprenticeship firms. The fact that the greatest number of firms with apprentices in 2010 were located on Zealand outside the Copenhagen area, in Southern and Central Jutland and that Northern Jutland has the same number of apprentices as they have in the Copenhagen Region is indicative that labour markets outside the very largest cities may be central places for apprentices. However, we cannot ascertain the distribution between urban and rural spaces within the regions. We can, however, ascertain that Copenhagen has very few apprenticeship firms compared to the population and youth, who live in Copenhagen and its catchment areas may need to be mobile in order to access apprenticeships. In Chapter 6 I provide empirical data on mobility demands facing VET students living in challenged localities.

²³ Defined as firms that have had an apprenticeship contract with a VET student during the past 2 years.

Diachronical summary and discussion

During the industrial production era, when industrial production forms, and in Denmark especially industrial flexible specialisation forms, which require craftsmanship, the vocationally educated constituted the most dominant group amongst the employed labour force. Schools were an important part of a VET degree, but did not wield any spatial influence, as the transition into the VET took place through an apprenticeship position. Schools and the particular programmes they provided had been located based on the spatial distribution of apprenticeships in 1956, when the dual based system was created. Students travelled to schools in between the dominant periods of firm-based learning. The spatial distribution of the VET system until the 1970s was primarily defined by the spatial distribution of apprenticeship positions. The schools were intermezzos, where students who lived too far away to commute, could utilise boarding facilities.

We may hypothesise a certain mobility imperative after completion of the degree, as graduated VET students transitioned into their first work places as journeymen. We may also hypothesise that entry into the VET system took place through networks and relations, which perhaps were family-based, although I have not found any research on this.

With the profound series of shifts, which characterise the transition from an industrial production paradigm to a knowledge-driven economy, the vocationally educated and the firms they work in, now have a less central position within national economic systems. The number of work places, which require vocationally educated labour, have been greatly reduced. This also means a reduction in the number of apprenticeship positions. Following Perez' perception that peripheralised labour markets are those, where former production paradigms still dominate, while the centres of economic development work on other paradigms, there are two points to be made. Firstly, labour markets that rely more heavily on vocationally educated or even unskilled labour are the central places of industrial production forms. Theoretically, then, the centres of the VET system, understood as the share of apprenticeship positions, are thus outside the largest urban centres, on peripheral labour markets. No studies have been made of this, and this study has not included the geography of apprenticeship markets.

One of the major changes in vocational education programmes today compared to the system until the 1970s, when the Basic Programme was introduced, is the increasing spatial complexity of the system. During the pre-capitalist VET system, apprentices entered the household of the Master apprentice and residence, socialisation and vocational training took place in one location. After the re-invention of apprenticeship-based education as part of the industrial production system, the primary site of learning was the firm, and school was a marginalised night-time non-mandatory system, whose main function was to teach young students to read, write,

do arithmetic and technical drawing. This shifted in the 1950s, when schooling not only became mandatory, but also was greatly increased in extent and structured around each vocation. The students' point of entry into the VET system was still through the firm and the specific vocation-based apprenticeship position; hence, vocational orientation took place directly between the potential apprentice and the firm, not in the school. With the implementation of the Basic programme in the 1970s, students were for the first time relegated to school-based vocational orientation, a process that was deemed to take place during the first school-based year. Since then, the VET system has repeatedly been changed, shifting the length and vocational content of the Basic programmes in an attempt to align the Basic Programme structures better with the transition into the Main Programme structures. As it has been argued, the school-based and labour market regulation systems are governed by different forces, logics, and interests and thus very difficult to align. Due to the governance structures of the VET, the imbalances that arise between the state-governed school system and the labour-market-governed apprenticeship system, and their inability and unwillingness to overrule these disparate jurisdictions, bridging imbalances is left up to VET students.

5.3. CHALLENGES TO VET PROGRAMME PROVISION

The point of departure for this chapter has been to understand how the VET system is organised and functions based on an understanding of its spatio-temporal development along four dimensions. In this section, I summarise those findings by focussing on the challenges the VET system faces today and how this effects local provision and access structures in challenged localities.

Shifts in dominant production paradigms

The VET system was developed as an integrated part of the expansion of a dominant industrial production paradigm across Denmark as part of the Danish industrial revolution toward the end of the 19th century and the beginning of the 20th century. As the industrial production paradigm was at its height in the decades after the Second World War, so the VET system evolved and became the largest education system, educating large shares of the working population. Starting in the 1970s and becoming more exacerbated in the 1980s, the VET system became increasingly challenged, as more knowledge-demanding production forms challenged the industrial production paradigm. By the 1990s, the VET system had shrunk in favour of an almost exponential increase in the academic education track.

In the process of switching from industrial to knowledge-based production forms since the end of the 1980s and until today, the number of work places that require vocationally educated labour are in decline. In the new economic growth centres the new types of workplaces expand, i.e. work places that require high cognitive-cultural skills (Scott 2014), often with an academic education (Hansen, Winther 2012). In

conjunction with processes of globalisation and agglomeration, metropolitan areas experience growth, while the areas, which are still dominated by the former TEP, shrink (Lorentzen 2009). At the same time, these peripheralised regions become the economic centres of production forms, which still adhere to previous production paradigms. Thus, although the number of work places in peripheralised labour markets shrink in number, they continue to be dominated by a vocationally educated work force. This means that a well—functioning VET system is relatively more important for labour markets in challenged localities than in urban centres.

For the vocational education system, this means that the demand for vocationally trained labour on a national level declines, there are fewer apprenticeship positions and fewer young people elect this track. The whole system shrinks via-a-vis the academic education systems.

Throughout the dominance of the industrial production paradigm, production forms shifted and the VET system proved to be a highly flexible education system that was able to incorporate semi-skilled vocations as well as highly specialised vocations. The system has been criticised for being slow to react to such shifts in demand. However, the basic structure of vocation-based governance, where national trade committees define, develop and negotiate the content of each vocation, combined with the continued recognition of the importance of firm-based learning is a generally recognised strength.

Governance dimensions

My analysis of the VET system and the development of its governance structures indicate two primary challenges. The first pertains to shifting scales of governance with a focus on the concept of decentralised centralisation and its effects on local development, including provision of VET programmes at the local level. The second pertains to inbetweenness in connection with governancing the dual-learning structure, by which I argue that the lack of governance between the school-based system and the labour-market-based system leaves unaddressed imbalances that must be traversed by young VET students.

The development of the Danish corporatist model of labour market regulation was primarily a national movement, where dominant partners, i.e. the state, employers and workers, forged and established coalition institutions at the national level. The VET system is regarded as primarily a national education system and the demand for vocationally educated labour continues to be assessed on a national scale by the Trade Committees annually. Although the school part of the VET system was decentral for the first half of the 20th century, a marked centralisation took place starting at the end of the 1950s, when vocational colleges came under the governance auspices of the state, which continues to be the case today.

During the 1970s, the state was a central planner in the distribution of education programmes across the country, but a decisive switch took place in 1989, when a new form of governance was introduced. This system is termed **centralised decentralisation**, and represents a form of governance, which has become dominant since the late 1980s across a wide number of previously state-planned institutions. The system distributes day-to-day and fiscal management power decentrally, i.e. to the boards of vocational schools. Simultaneously, there is an expansive centralised control system, which consists of a series of national quality indicators. Vocational schools must have quality systems implemented in order to receive funding (Friche, Rasmussen 2008).

Instead of centralised education programme planning, vocational colleges are encouraged to compete against each other, developing and accumulating an increasingly interesting set of vocational programmes, which attracts VET students. Such market conditions are explained in Christaller's central place theory, where there is a hierarchy of central places. The 'winners' are the 'central places of high order', i.e. those with the widest range of commodities, i.e. VET programme provision, while the 'losers' are the smaller towns with fewer commodities. This type of governance favours large institutions with a large number of students, as it is through continued processes of administrative and other optimising processes that school boards may accumulate funds in order to carry out strategic investments, which increase their range of commodities. This structurally challenges small vocational schools with a limited student catchment area. Although the regional governance level does have some influence on local development through their provision of funds for the development of new vocational programme offers, such funding cannot sustain programme provision in areas, where the local population base is in decline.

The problem with this governance form in relation to processes of uneven development is that it does not recognize that competition between vocational colleges does not take place on a white canvas. Instead, competition between colleges is conditioned by different demographic and economic conditions. It is difficult for a vocational college to affect the demographic student catchment area, which it covers at the Basic programme level, just as it is difficult for it to affect local labour market structures. Thus, a small vocational colleges, located in for example Bornholm or Vendsyssel cannot a) change the number of young people who live in the sub-region and cannot attract young people from other parts of Denmark; 2) they are located in labour markets that are structured very traditionally, i.e. the employment structure is dominated by traditional craftsmanship and industrial jobs combined with basic public services. Small cities like Frederikshavn that have a certain national position within the shipping industry have a slight advantage because they can provide apprenticeship positions within this economic sector, thus making it viable to provide Main Programmes that can attract students from outside Vendsyssel. Other areas in Vendsyssel and on Bornholm do not have labour market specialisations that they are able to utilise in order to attract students from outside the student catchment area.

Thus, colleges that primarily depend on providing The 12 big and 1-2 regional programmes have limited expansion possibilities and their development trajectory follows that of the location it is situated in.

The second governance dimension relates to the very core of the VET system: **governancing the dual learning structure**, by which more than 1/3 of a VET degree consists of school-based learning in vocational colleges and almost 2/3 takes place as firm-based practical learning in an apprenticeship position. While vocational college structures and functions are governed by the state, firm-based learning and the regulation of apprenticeship positions are governed by labour market coalition partners through the national Trade Committees. One system is thus governed by education system logics – and is spatially defined by the size and content of student catchment areas, while the other is governed by labour market logics, and is spatially defined by apprenticeship markets. Although both coalition partners have a common interest in a successful transition of students between school-based learning and firm-based learning there are a number of imbalances in the system.

Vocational colleges play a mediating role between students seeking an apprenticeship position and firms seeking apprentices through the establishment of Local Education Committees and outreach initiatives. The school-based training centres also play an important role in outreach initiatives between vocational colleges and local firms. However, these structures follow the Main programmes that the particular vocational college provides. If a college does not provide a particular programme, it is not represented in the structure. Although some Main programmes are related or grouped together and thereby indirectly represented, the particular vocational provision structure of a given college is represented in its mediating role. This has several effects:

- Students seeking other VET programmes than those provided by the local vocational college find themselves without mediation in relation to seeking an apprenticeship position on the local labour market. There is some incentives in the taximeter system for local vocational colleges to help their Basic Programme students obtain an apprenticeship position, but their primary responsibility lies with students, who have chosen locally provided Main programmes. Students are thus very much on their own in finding a vocational college that provides the attained vocational programme and a local apprenticeship position.
- Students seeking other VET programmes than those provided locally may transfer to a vocational college, which provides their desired programme and move to the school during the Basic programme, and the non-local college helps them find an apprenticeship position in their apprenticeship market, where they have a mediating role. This leads to education induced out-migration.

The causes behind these problematic structures pertain to the individual character of apprenticeship contracts. Koudahl has suggested that if firms were willing to draw contracts with the vocational college and left the provision of students to the college, this problem could in theory be solved. However, he also recognises that the logics of labour market systems go against this – no firm would be interested in binding itself to an apprenticeship contract without influence on who they take in.

A second cause is the inherent competition between colleges, which encourages them to retain as many students as possible. The Ministry of Education encourages cooperative contracts between colleges, by which they can ‘exchange’ students and provide reciprocal support. However, as pointed out by Kühn in relation to competing small cities in peripheralised regions, there is an uneasy relationship between competing positions (Kühn, Milstrey 2015).

A second governance problem pertaining to the dual-learning structure concerns the imbalance between the numbers taken in at the Basic Programme level compared to the *de facto* number of placements at the Main Programme level. It is in the interest of vocational institutions to take in as many students as possible at the basic programme level, as this generates state taximeter subsidies. The labour market, on the other hand, is interested in a ‘just right’ amount at the Main Programme level, so that the amount of apprentices corresponds to the demand for skilled labour within different vocations. Discrepancies between the two markets are invisible to students, meaning when they compete on apprenticeship markets for a placement they do not know exactly how many placements there are, and whether it is their own lacking competences or the lack of apprenticeship positions, that is a problem. As it is a market, the value of a particular student is not measured by whether they have successfully completed their exams at the Basic programme level, but by their ability to find an apprenticeship position. Students, who cannot gain an apprenticeship position, pay for imbalances by either continuing their education through school-based training or by not being able to complete their education and dropping out.

Such structural dropouts are caused by the lack of a governing body that assures balance between the number of students taken into the Basic programme and the number who are able to find an apprenticeship position and continue.

Socio-spatial challenges

The VET system is at a crossroads concerning the socio-spatial make up of its students. It is challenged by not providing access to higher education, a condition that makes it unattractive to otherwise practically and vocationally minded young people, who may have ambitions of continuing on to higher education. At the same time, it is challenged by its role in broader labour market and youth policies, through which young people who have not completed at least a young education and find themselves unemployed, are relegated into the VET system. This means that schools are partially

populated by a share of unmotivated and not particularly vocationally interested young people. Their presence has shown to have detrimental effects both to other VET students as well as to the reputation of the VET system. Finally, this group is not attractive to employers and therefore find themselves challenged in attaining apprenticeship positions (Jørgensen 2014).

Seen from the point of view of challenges localities these challenges are intertwined with the overall lack of students that select a vocational education, challenging the provision structures of small vocational colleges.

There has been no previous research on the challenges concerning the mobility imperatives of the VET system. It is the objective of this research project to provide such knowledge.

5.4. VET REFORM 2015

“Denmark needs talented people with a vocational education. We need people, who can use their heads and their hands within industrial production, in the office and within the service and care sectors. We are in need of talented young people, who are able to think creatively as well as work practically, so we can sustain and create new work places within industry, construction and the service sectors”.
(Regeringen 2014, p. 2)

This is the introduction to the 2014 Government’s policy agreement on a reform of the VET system. The Reform, which took effect in August 2015, can be interpreted as a call for a realignment of the vocational education level and the role of craftsmanship in a knowledge-based society that stresses the need to work cognitively as well as manually.

The main goals of the 2015 VET Reform are to attract more young people to the system and to increase completion rates. The methods to reach the goals are manifold as the reform contains more than 25 initiatives. The primary policy innovations aim to reduce the number of ‘academically challenged’ students in the system combined with attracting ‘academically strong’ students, who would otherwise choose an academic upper secondary track. In other words, the 2015 VET Reform aims to shift the social make up of student intake. This is done by a combination of initiatives.

Firstly, a new type of youth education, the EUX, has been developed. EUX is a hybrid education form that combines the well-renowned firm-based practical learning from the VET system with the school based academic levels of the upper secondary academic programmes (Jørgensen, 2015). The result is a vocationally-embedded upper secondary education that is simultaneously a vocational education in and of

itself, whilst it gives formal qualifications in preparation for higher education. The intent is twofold. To attract a group of young people who are practically minded, but would otherwise have chosen the academic track and who are expected to continue into higher education. To lighten the academic level of some of the vocationally educated in response to labour market demands for vocationally educated labour that is able to carry out advanced functions within their trade.

Secondly, the introduction of a combination of initiatives the goal of which is to limit the number of academically 'weak' students in the system. These are 1) formal entry demands based on exam grades from the compulsory schooling level. 2) The introduction of exams at the Basic Programme level in order to limit the number of Basic Programme level graduates, who are formally qualified to advance to the Main programme, but who may not be *de facto* employable as apprenticeships. 3) Limiting the number of Basic Programmes a student may enter as a response to the practise of completing a consecutive series of Basic programmes without advancing to the Main programme level, whilst receiving a student support grant. Collectively, the aim of these initiatives is to limit the number of students who have little chance of gaining an apprenticeship position, in the system. In response to the new VET policy, there has been some public debate on whether the dropout students in the VET also are the academically challenged students²⁴.

Thirdly, in response to the lack of a sufficient number of apprenticeship placements, school-based training centres have been introduced for almost all VET programmes. Their function is to ensure that all students who are actively seeking an apprenticeship position, may continue into the Main programme even though they do not have an apprenticeship contract.

Finally, the Basic programme has been restructured so it consists of two levels. The 12 Basic Programmes have been reduced to four Basic 1 entry programmes, which last 20 weeks and target young people straight from compulsory schooling. This is followed by the Basic 2 programme, which also lasts 20 weeks. The Basic 2 programme follows the Main programme structurally vocationally, hence there are more than 100 Basic 2 programmes. They function as entry programmes for everyone but the young students who come straight from compulsory schooling, who must successfully complete Basic 1 before they can advance to Basic 2 (Regeringen 2014).

Simultaneously, there have been two labour market partner agreements, through which incentive structures for providing more apprenticeship positions have been developed and agreed.

²⁴ See for example: <http://politiken.dk/debat/kroniken/article5582247.ece>,
<http://www.ugebreveta4.dk/kritik-regeringen-svifter-maalet-om-at-give-95-ud-af-19969.aspx>

Collectively, these initiatives aim to increase the attractiveness of the system, particularly to make it more attractive for young students, who would otherwise have chosen the academic upper secondary track. The expectancy is that the system will attract more academically strong students, gain a better reputation, leading to lower dropout levels and more attractive apprentices that the firms will more readily hire (Regeringen 2014). In the conclusion, section 8.3. I discuss what the repercussions of the VET Reform might be for challenged localities using the analytical dimensions I have used here:

PART IV: YOUNG VET STUDENTS

– VOCATIONAL TRANSITION AND MOBILITY PATTERNS

Introduction

“Societies need to ensure that the greatest demands to ‘take control of their lives’ do not fall on those who are the least powerfully placed in the social landscape they inhabit”. Karen Evans (Evans 2002, p.78)

The Danish Vocational Education and Training system has never been more spatially complex than it is today. VET students face a diverse and often confusing array of options, some of which pertain to questions of geographical access or lack thereof. Embarking on a vocational education, a 17 year old who wishes a vocational degree must select a Basic programme and a Main programme among more than 100 vocation programmes with 250 different specialisations. They must also find an apprenticeship position on fluctuating and perhaps elusive apprenticeship markets. Each of these options takes place in a location and the uneven provision of VET locations, especially outside urban centres, creates mobility imperatives for young VET students. These mobility imperatives not only encompass long daily commutes, but may also require living temporarily at a boarding school or moving away from home communities at a young age.

As we have seen in PART III, the spatial complexity of the VET system is the somewhat desultory result of continual shifts in the geographies of production paradigms, multi-scalar power struggles between VET governance partners and changes in the socio-spatial make-up of students. At the same time, there is nothing desultory about the purpose of the 2015 VET reform: increase the number of vocationally educated youth. A collection of more than 25 reform initiatives have been set in motion with the purpose of increasing the number of young people who apply for and successfully complete a VET degree (Regeringen 2014). Thus, we may expect that if a young person should fail to choose a vocational education or drop out because of the spatial complexity of the system; this would be unintentional and counterintuitive to education policy.

Yet the geographies of the VET system and its increasing spatial complexity has received only minor public and political attention with local and regional government institutions calling for an increase in programme provision in peripheral regions²⁵ on the one hand. Whilst, on the other hand, central government and the labour market social partners call for VET students to be more vocationally and geographically mobile if the VET system is to improve its output of vocationally educated persons (Beskæftigelsesministeriet 2016). Researchers have not focussed on the spatial effects of the VET reform (yet). We therefore know very little about whether the uneven spatial distribution of the VET system is in fact counteracting the policy goal to

²⁵ Danish Regions and Local Government Denmark attempted to bring it to the forefront of political debate in the spring of 2016, but momentum has run out of the debate (Sørensen 2015).

increase the number of vocationally educated. Such research is especially important for peripheralised regions and their labour markets, as they are highly dependent on vocationally educated labour.

PART IV takes its point of departure in young VET students – mapping and analysing their mobility patterns as well as their orientation behaviours as they transition through the VET system. By taking its point of departure in the students, it insists that if outcomes of systems are to change, i.e. if the number of VET students is to increase, the system must improve its understanding of its users and align itself to their resources, not the other way around.

This part contains the results of my empirical analyses and consists of two chapters.

Chapter 6 presents the results of my statistical analysis, which maps the mobility patterns of young people from my case areas. It is divided into six sections. The first two (sections 6.1. and 6.2.) present the overall findings, mapping the relationship between education attainment and mobility patterns. The next two (sections 6.3. and 6.4.) present more specific results concerning the relationship between vocational programmes and mobility patterns. Section 6.5. presents the results of my mapping of the young VET students transition through the VET system, depending on the location of their school. Section 6.6. is a summary and discussion of my findings in relation to previous research on education-induced mobility patterns.

Chapter 7 presents the results of my interview-based investigation, which analyses how young VET students negotiate the spatial complexities of the VET system based on their orientation preferences. Chapter 7 is divided into four sections. The first (section 7.1.) is a typology of the three different orientation patterns displayed by students at two key transition junctions in the VET system. As explained in my analytical framework (see section 3.3.1.) the typology is grounded in an interpretation of the spatialized transition behaviours displayed by the young VET persons in my sample and evolved in response to theorising on young peoples' transition behaviours (Evans 2002) and inspired by the concept of motility (Kaufmann, Bergman et al. 2004) and. Section 7.2. analyses the relationship between students' orientation preferences and their transition trajectories through the VET system, while section 7.3. analyses the relationship between orientation preference and the resources students have access to in their families. The section finishes with a broader discussion on other findings pertaining to gendered opportunity structures and the role of place attachment for mobility capacities. Section 7.4. completes **PART IV** with a summary and discussion of my findings in relation to previous research on mobility patterns and transition behaviours among VET students.

CHAPTER 6. VET STUDENT MOBILITY PATTERNS

In this chapter, I examine the education attainment and mobility patterns of the vocationally educated from Vendsyssel in Northern Jutland and the island of Bornholm in the Baltic Sea. As explained in my methodology, the statistical analysis is carried out at municipal level meaning that Vendsyssel is represented by two municipalities, Frederikshavn and Jammerbugt. See section 4.3.2. for more details, including a map.

The purpose of the analysis is to improve our understanding of the relationship between vocational education choices and student mobility patterns in rural settings. The mobility patterns of the highly educated are well documented, but research has not hitherto been interested in the mobility patterns of the vocationally educated. In order to analyse in what ways the VET system supports or works against processes of peripheralisation in challenged localities in Denmark, I have found it pertinent to analyse the relationship between vocational education choices and student mobility flows. The role of gender, vocational field and access to local education provision is also analysed, as these are important factors in mobility patterns.

The analysis uses a quantitative and explorative approach. It seeks to document the *de facto* mobility patterns amongst a group of VET students from three types of peripheral municipalities and discusses the factors driving these patterns. As there is no previous documentation of these patterns, it is too early to apply more closed analytical approaches, for example using linear regression models in order to determine the relevance of one specific mobility factor vis-à-vis another. The purpose here is to open questions, not shut them down. This corresponds to the approach in my qualitative analysis, where I investigate young VET students' own perceptions of their opportunity spaces during transitions through the VET system. The quantitative data cannot be validated through the qualitative data and vice-versa, but together with the analysis of the VET system's spatial structures, the three methods can shed light on three different aspects of the same phenomenon.

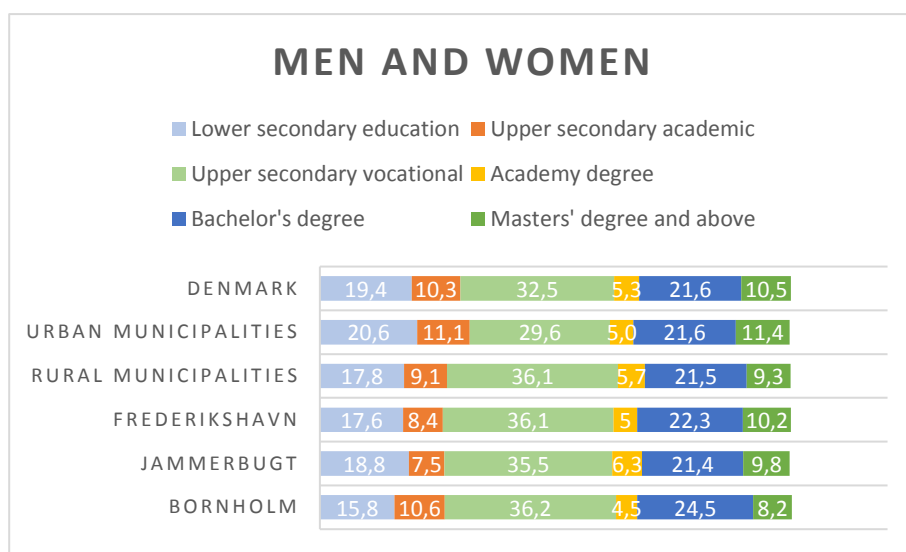
The analysis uses register based data from Statistics Denmark, provided through Centre for Regional- and Tourism Research's Regional Model for Industry and Employment SAM-K/LINE ©. I have generated a youth population which I call Youth Cohort 2000 and have followed from the year 2000 until 2011. Youth cohort 2000 consists of people aged 16, 17, and 18 years old in 2000, and respectively 27, 28 and 29 years old in 2011. Results displayed in sections 6.1., 6.2., 6.3. and 6.4. are based on a primo-ultimo analysis, which means that the population is described based on selected characteristics in the year 2000 and compared with the same population in the year 2011. I thus follow a youth cohort during the years they should be

completing their vocational or academic upper secondary schooling and entering the labour market or continuing on to higher education. The municipalities indicated in the figures in this chapter indicate the residence municipality for each person in Youth Cohort 2000 at the age of 15. For a full description of the method, please see section 4.7. The figures presented in chapter six have previously been published in a statistical brief (Larsen 2016). Appendix [A] includes a map of the municipalities in Denmark that are defined as urban and rural, a distinction which is used in the following three statistical figures.

6.1. EDUCATION ATTAINMENT

As a point of departure, I have compared education attainment levels between national, rural and urban municipality types and my three case municipalities. This does not include mobility patterns and merely seeks to provide basic knowledge on education attainment patterns.

Figure 13: Youth Cohort 2000, highest attained education in 2011



Source: Statistics Denmark, CRT programming²⁶. N for Denmark = 156.180 persons²⁷.

²⁶ Data set-up and computation was carried out by Irena Stefaniak, Centre for Regional and Tourism Research.

²⁷ Urban and rural municipalities are here defined based on xx See Appendix X/1

Figure 9 primarily shows that education attainment patterns across Denmark are relatively similar. There is, however, some variance between rural and urban education attainment patterns concerning lower and upper secondary education attainment. The lower secondary education level corresponds to completion of compulsory schooling. Figure 9 shows that the share of a youth cohort that does not obtain any formal education after the compulsory level is highest in urban municipalities. Thus, despite greater distance to upper secondary education in rural areas, education attainment levels are higher here than in urban municipalities. This suggests that distance to education provision is not a significant marker by itself in terms of education attainment. Moreover, as the general level of education among the whole population is higher in urban municipalities than in rural, we would expect that education levels of children from urban municipalities would be higher than amongst children from rural municipalities. This is not the case. The causalities of this go beyond the reach of this study.

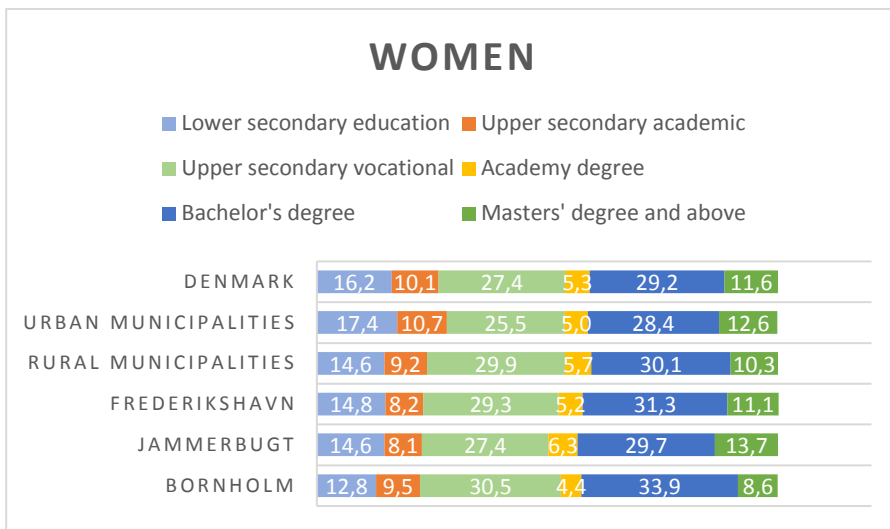
More pertinent are the comparative shares of attained vocational education amongst Youth Cohort 2000. Figure 9 shows a clear difference between the shares of a youth cohort that have attained a vocational education in rural municipalities compared to urban municipalities. The figure also shows that this is true for all three case municipalities. As there are more institutions that provide access to upper secondary academic education (‘gymnasium’) than there are vocational education institutions (Ministry of Education 2010), these data indicate that mere distance cannot explain differences in education attainment. Rather, we may hypothesise that vocation-based socialisation from one generation to the next play a role (Hansen 2014, Corbett 2007) just as attachment to place or resistance to out-migration may play a role in education choices (Lindgren, Lundahl 2010).

Some differences in education attainment at the higher education level are also noticeable. Youth Cohort 2000 was, however, designed primarily to analyse youth education levels and to differentiate between youth selecting an academic track and youth selecting a vocational track. Youth Cohort 2000 are only followed until they are 27, 28 and 29 years old. As many have not completed their higher education by their late 20s, this data set is not equipped to study higher education differences.

6.1.1. GENDERED DIFFERENCES

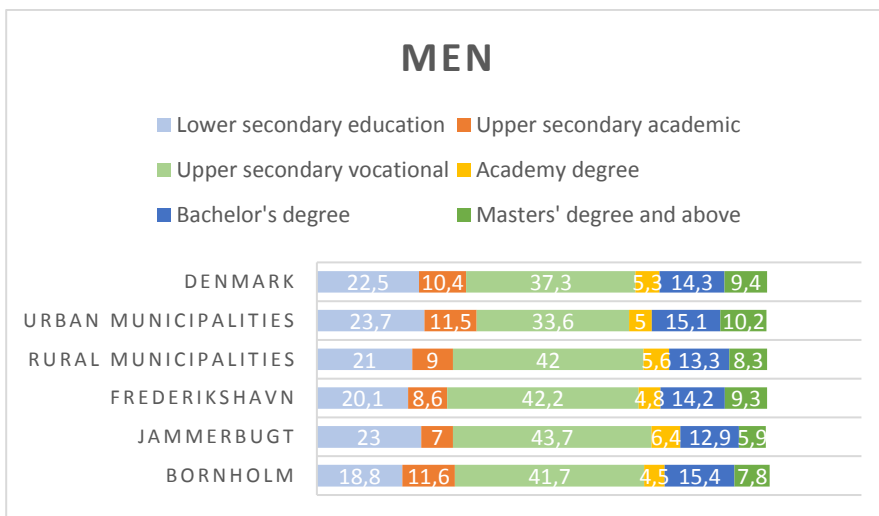
Figures 10 and 11 show that Youth Cohort 2000 displays gendered education attainment patterns.

Figure 14: Youth Cohort 2000, women, highest attained education in 2011



Source: Statistics Denmark, CRT programming . N for Denmark = 76.592 persons.

Figure 15: Youth Cohort 2000, men, highest attained education in 2011



Source: Statistics Denmark, CRT programming . N for Denmark = 79.588 persons

Figures 10 and 11 indicate that education attainment patterns differ between men and women. They also show that gender-based differences are greater than urban-rural municipal differences.

More men than women only attain a compulsory education. More men than women attain a vocational education. Almost 10 percentage points more men than women attain a vocational education. Among women with a vocational education, the difference between education attainment in urban and rural areas is not great, with only 4,5 percentage points more women gaining a vocational education in rural areas than in urban municipalities. Among men, the difference is much greater: 8,5 percentage points more men from rural areas gain a vocational education than men from urban areas. With upwards of 42 % of a male youth cohort from rural municipalities obtaining a VET education, the significance of the VET system for rural areas is marked.

Concerning the higher education levels, gendered differences are very clear. Women obtain higher education to a much greater degree than men do. At the ultimo year 2011, when Youth Cohort 2000 are in their late 20s, gendered differences are especially visible at the bachelor level.

6.1.2. COMPARING THE CASE MUNICIPALITIES

Education patterns amongst men from Jammerbugt differ from the general patterns amongst men from rural municipalities, including the other case municipalities. It is the case municipality with the highest share of men from Youth Cohort 2000 with only a compulsory school level. At the same time, it is the municipality with the highest share of vocationally educated men and the lowest share with a higher education. This pattern does not repeat itself amongst the women from the municipality, who more or less follow the patterns for all rural municipalities. Frederikshavn is a 'median' municipality with education attainment levels very close to those for all rural municipalities. Bornholm is the case municipality with the lowest share of Youth Cohort 2000 with only a compulsory education. This is the case for both men and women. At the same time, it is the municipality with the lowest share of men with a vocational education, while the opposite is the case for women.

Relating this to local education opportunities, Jammerbugt does not provide vocational education in the municipality. Yet this is the municipality with the highest share of vocationally educated young men. On the one hand, this would seem to suggest that there is no relationship between access and attainment patterns. On the other hand, this is also the municipality with the highest share of young men, who do not obtain education above compulsory schooling, which may be indicative of the opposite. Frederikshavn is the municipality with the largest and broadest provision of local vocational education. This has not resulted in relatively higher shares of vocationally educated. Bornholm has a limited provision of local vocational education programmes and the lowest share of both men and women with a vocational

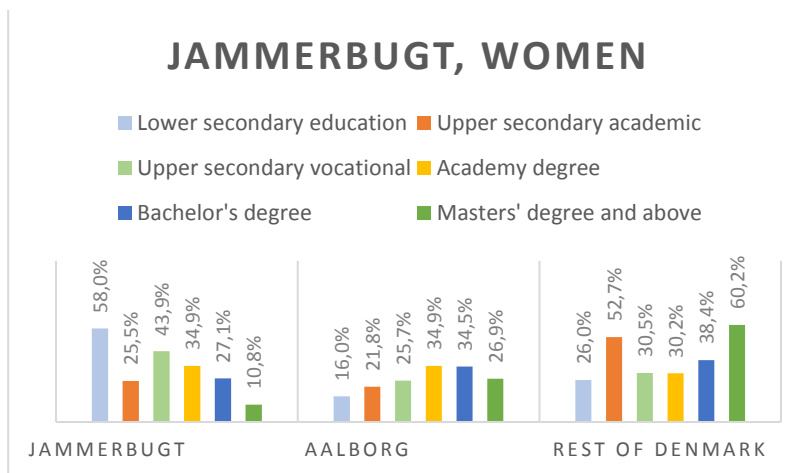
education. These results indicate that there is no simple or direct relation between local access to education and education attainment. In section 6.5, I investigate this relation more thoroughly.

Collectively, the education attainment analysis shows that the vocational education system is an important education option for youth who grow up in rural municipalities. Generally, women from rural municipalities display education attainment patterns that are similar to women's national education patterns. This is not the case for men, in that men from rural areas to a greater degree obtain a vocational education than men from urban municipalities. My selected case municipalities display some pattern variation, but overall follow the general patterns for rural municipalities. This raises questions about the role of education systems in different localities and their differentiated (read gendered) capacities or functions to disembed youth from their socio-spatial origins (Giddens 1991, Corbett 2009a). In other words, education institutions may function as differentiated institutions of disembedding, where young men display education patterns similar to their parents, while women to a greater extent display education patterns similar to national education levels.

6.2. EDUCATION AND MOBILITY PATTERNS

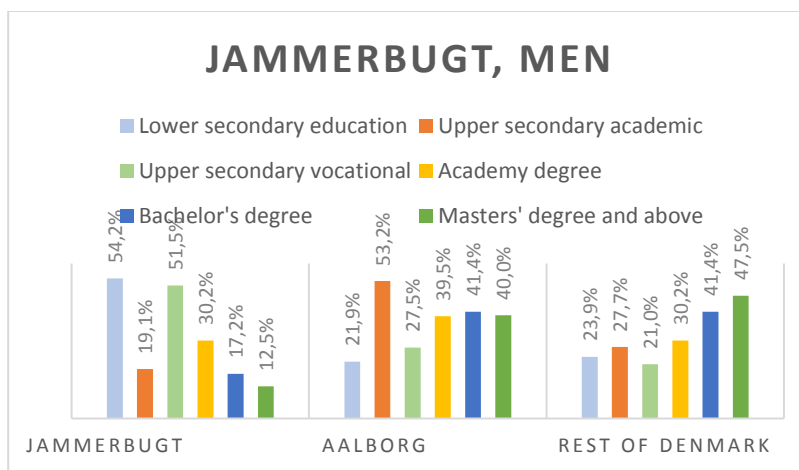
In this section, I analyse the mobility patterns of the young people in Youth Cohort 2000 from each of the three case municipalities. By mobility patterns, I mean the place of residence in the year 2011, depending on which municipality they grew up in and which education they have attained. In comparison to the findings I present here, previous studies have shown that youth from urban municipalities predominantly stay where they have grown up, regardless of which education they have completed (Hedetoft, Stefaniak 2014).

Figure 16: highest attained education after residence in 2011



Source: Statistics Denmark, CRT programming. N for Jammerbugt women = 696 persons²⁸

Figure 17: highest attained education after residence in 2011



Source: Statistics Denmark, CRT programming. N for Jammerbugt men = 700 persons

²⁸ Please note that the percentages should be read based on attained education by 2011. In other words, 58 % of those with only a lower secondary education (‘unskilled’) live in the Jammerbugt municipality, 16 % of the unskilled have moved to Aalborg, and 26 % have moved elsewhere in Denmark.

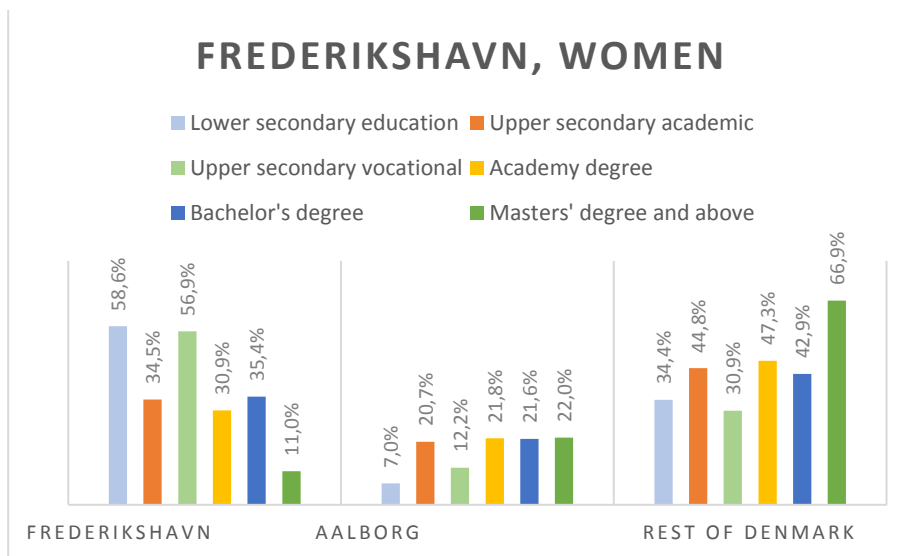
Overall, 41 % of men from Jammerbugt still live in Jammerbugt municipality in 2011 and 57 % have moved²⁹. Women from Jammerbugt have a higher out-migration percentage with 34 % still living in the municipality in 2011 and 65 % have moved.

Amongst those with only lower secondary schooling (the unskilled), more than 50 % still live in the municipality in 2011. This share is even higher amongst women, a pattern that goes against stereotypical discourse that represents women as more mobile than men *per se* (Faartoft 2013). Measured as the share of young people who have stayed in Jammerbugt, 28 % of the men and 22 % of the women are unskilled, and 54 % of the men and 35 % of the women have a vocational education. Amongst the women who have stayed, 23 % have a bachelor's degree, while the corresponding share is only 5 % of the men. In other words, due to out-migration patterns, the unskilled and the vocationally educated are overrepresented amongst those who still live in Jammerbugt, while those with a higher education are underrepresented compared to the youth cohort's overall education attainment patterns.

Amongst those with a vocational education, 50 % of the men still live in the municipality, while only 40 % of the women have stayed. Most of the out-migrated men with a vocational education have moved to Aalborg municipality, while the vocationally educated women from Jammerbugt have left Northern Jutland. These patterns are presumably related to labour market access.

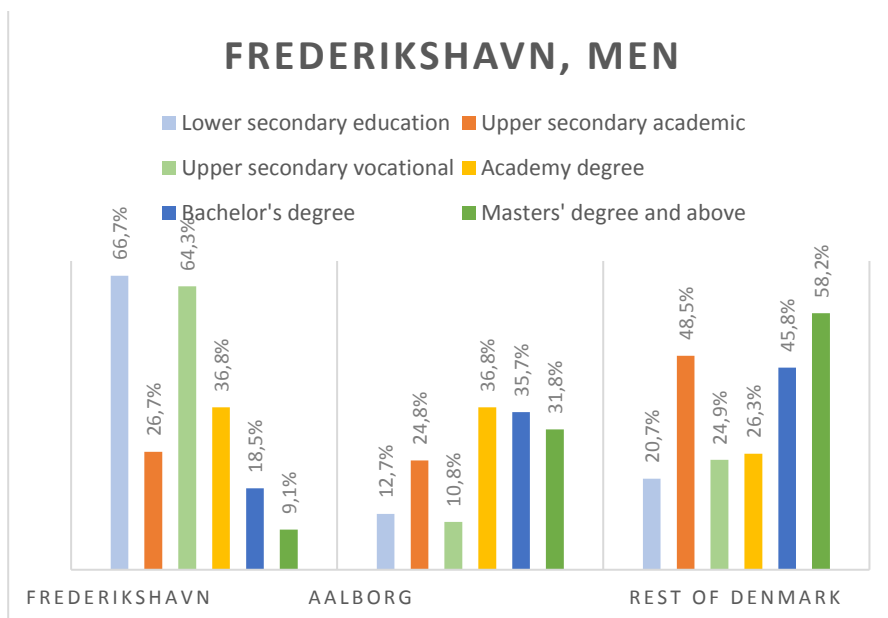
²⁹ The missing percent have 'unknown' residence municipality in 2011.

Figure 18: highest attained education and place of residence in 2011



Source: Statistics Denmark, CRT programming . N for Frederikshavn women = 1.090 persons

Figure 19: highest attained education and place of residence in 2011



Source: Statistics Denmark, CRT programming . N for Frederikshavn men = 1.225 persons

Irrespective of education, 48,5 % of the men and 42 % of the women from Youth Cohort 2000 who have grown up in Frederikshavn still live there in 2011. This is a much higher share than among youth from Jammerbugt.

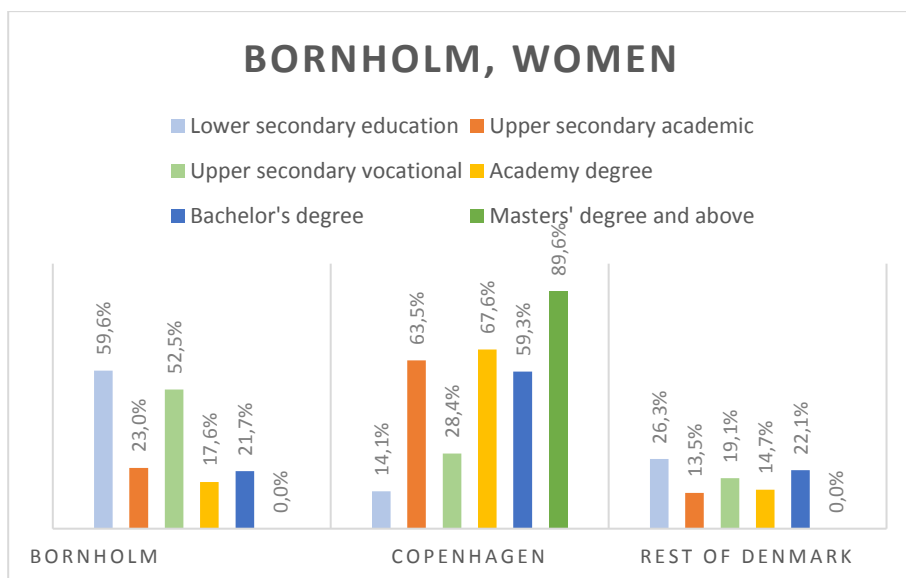
Figures 14 and 15 show that a majority of the unskilled have stayed in the municipality. This is especially the case for men, where almost 67 % of those without formal education have stayed. For those with a vocational education, 64 % of the men and 57 % of the women have stayed in the municipality. This is a much higher share than in Jammerbugt.

Measured as shares amongst those who have stayed in Frederikshavn, 56 % of the men and 39 % of the women have a vocational education. The vocationally educated who have grown up in Frederikshavn thereby make up a relatively large share of those that have stayed, a pattern which is good news for local labour markets.

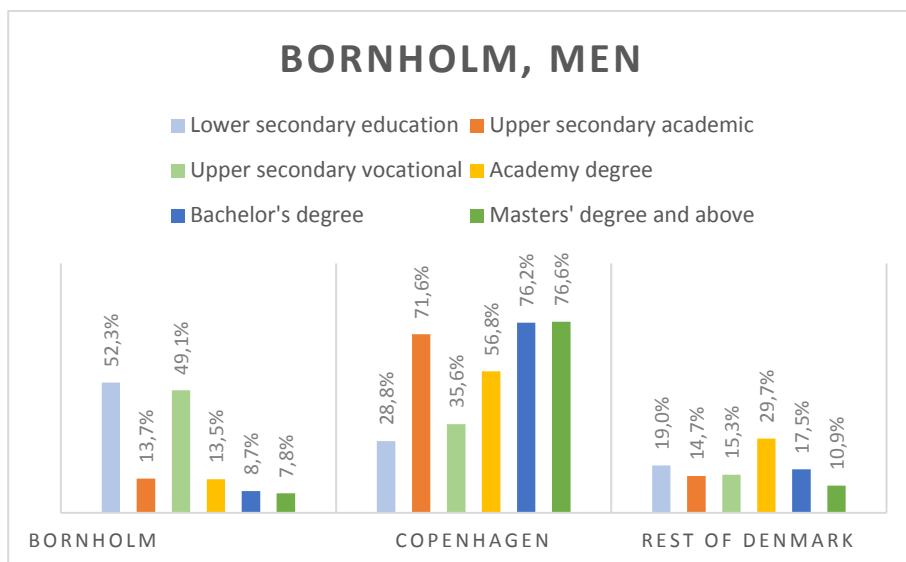
As with Jammerbugt municipality, a large share of young men and women from Frederikshavn with a higher education have moved away. However, amongst the young who have stayed in Frederikshavn, women with a bachelor's degree make up 26 % of the women who have stayed.

The men and women who have out-migrated primarily live elsewhere than Aalborg.

Figure 20: highest attained education and place of residence in 2011



Source: Statistics Denmark, CRT programming . N for Bornholm women = 791 persons

Figure 21: highest attained education and place of residence in 2011

Source: Statistics Denmark, CRT programming. N for Bornholm men = 840 persons

Irrespective of education, 66 % of the men and 66 % of the women from Youth Cohort 2000 have moved away from Bornholm in 2011. This is the highest rate of out-migration amongst the men from the three case municipalities, while the women's share corresponds to that of Jammerbugt.

Amongst those who have only completed compulsory schooling, a majority have stayed in their home municipality, as is the case in the other case municipalities. As in Jammerbugt, the share of unskilled women who have stayed in the home municipality is higher than amongst the men, questioning dominant perceptions that women are more mobile than men are *per se*. Amongst the young who have stayed on Bornholm, 28 % of the men and 22 % of the women are unskilled.

Amongst the vocationally educated, approximately 50 % of both the men and the women have stayed 50% have moved. In this sense, Jammerbugt and Bornholm have similar mobility patterns for men with a vocational education, but amongst the women outmigration is higher in Jammerbugt. In Frederikshavn, as mentioned before, out-migration rates for both men and women with a vocational education are lower. Amongst the young who have stayed on Bornholm, 59 % of the men and 47 % of the women have a vocational education. They are thus an important share of the skilled work force made up of young from Youth Cohort 2000.

Amongst the highly educated, a vast majority have out-migrated. Amongst those who have stayed, 22 % of the women and 4 % of the men have a bachelor's degree. The gendered differences are probably due to women holding profession-based bachelor's degrees such as those within nursing and teaching. Irrespective of education and gender, the majority of those who have out-migrated live in or near the capital of Copenhagen in 2011.

Collectively, the figures show the effects of out-migration among young people for local labour markets. Despite attaining education levels that correspond to or exceed national education attainment levels, the unskilled, i.e. those who did not complete an education above the lower secondary/ compulsory school level, are over-represented on local labour markets. The opposite is the case for those with a higher education. While 18-23 % of men from the case municipalities did not attain education above compulsory schooling, they make up 28-30% of Youth Cohort 2000 on local labour markets. The same pattern is seen with women, where 12-14 % of the women from Youth Cohort 2000 did not obtain formal schooling after compulsory education, and they make up 20-25 % of 'youth cohorts 2000' on local labour markets. The share of unskilled youth, who choose to stay in the home municipality, is important since this group to some extent consists of dropouts from the vocational education system.

The figures also show the high degrees of out-migration amongst the highly educated. While between 25-28 % of the men and 47-50 % of the women amongst the youth cohort obtain a higher education, the highly educated represent much smaller shares on labour markets in their home municipalities. Amongst the men from Youth Cohort 2000, they make up 8-12% on local labour markets. The rate is much higher for women, as they make up between 24 % (Bornholm) (and) 33 % (Jammerbugt and Frederikshavn) on local labour markets.

A reminder should be issued here – Youth Cohort 2000 is a little young to be representative of higher education attainment. This is why these figures are lower than usual education attainment figures, which are often based on the education attainment patterns of a population that is closer to 40 years old³⁰

Most importantly for my purposes are the results of the analyses of the vocationally educated. These graphs show that a high share of youths obtain a vocational education, and although a relatively high share out-migrate, the ones who stay make up a substantial share of local labour markets from Youth Cohort 2000. Amongst the men from Youth Cohort 2000 who stayed, 54-59 % are vocationally educated. The respective shares for women are 35-47%. 'Locally grown' youth are therefore an important source of human capital for vocational labour markets.

³⁰ See <https://www.uvm.dk/Service/Statistik/Tvaergaende-statistik/Andel-af-en-aargang-der-forventes-at-faa-en-uddannelse>

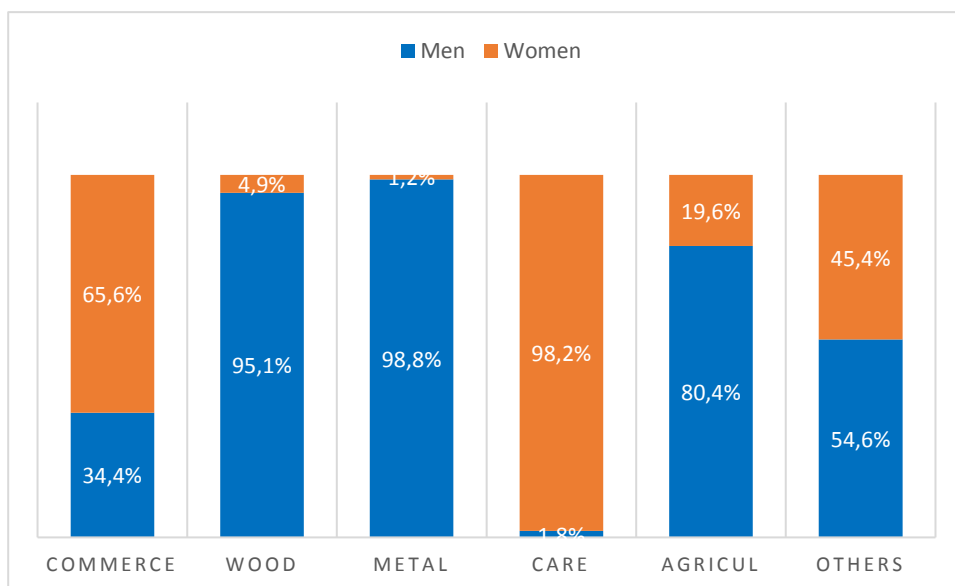
Collectively, the graphs also show that rural municipalities like the three case municipalities are a source of highly resourceful labour for national labour markets, particularly the vocationally educated and the highly educated who supply urban areas with labour resources. This contributes to the continued growth of urban areas vis-à-vis rural places.

Finally, this section underlines what other studies have shown previously, i.e. that it is primarily women who out-migrate to urban areas. However, my analysis stresses that it is not simply a gendered out-migration as it is invariably related to education attainment patterns. Amongst the unskilled and the vocationally educated, out-migration rates are not unilaterally higher for women than for men.

6.3. VOCATIONAL PROGRAMMES AND GENDER

Vocations and occupational structures are strongly gendered and show remarkable resilience to change irrespective of gender politics and shifts in women's education attainment patterns (Larsen, Thingstrup et al. 2014, Jørgensen 2013). The Danish VET system is no exception. In figure 18 below, the gender distribution for different vocational groups are shown, using the collected data for all case municipalities.

Figure 22: Gender distribution, Youth Cohort 2000, case municipalities



Source: Statistics Denmark, CRT programming. Commerce corresponds to the Main programmes within Commerce & administration before VET Reform 2015, Wood corresponds to the Main programmes within Building & construction, 'metal' to Iron & metalwork, 'care' corresponds to Health- & childcare, 'agricul' corresponds to Agriculture, which includes

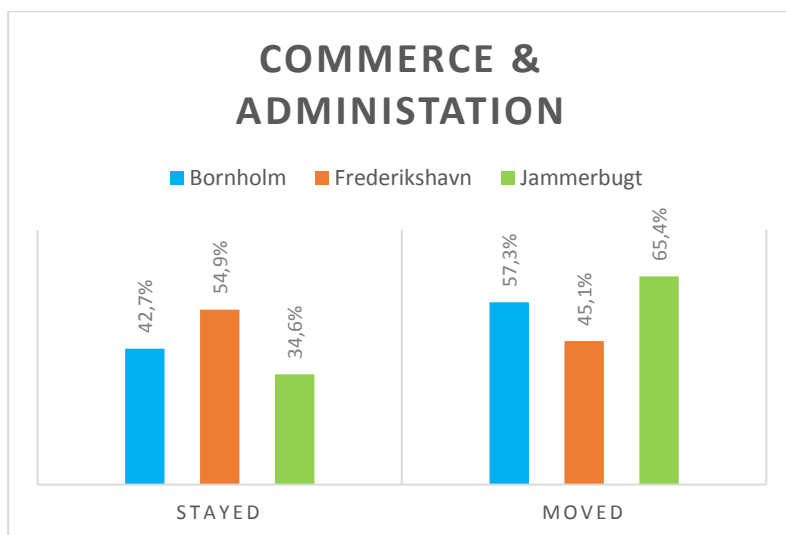
gardener and animal caretakers, and `others` are all other programmes, including transportation, mechanics, food preparation and cosmetics etc.

The figure shows how male dominated traditional craftsmanship trades and industrial vocations continue to be. The same is the case for traditional female dominated occupations like health- and childcare. The only vocational field showing some gender distribution is Commerce & administration. Juul has studied the development of this occupational field and followed a transformation of it from a predominantly upper and middle class male occupation in the 19th century to an occupational field, which attracted an increasing share of females with working class backgrounds in the 20th century (Juul 2012).

6.4. VOCATIONAL PROGRAMMES AND MOBILITY PATTERNS

In this section, I analyse the relationship between the attainment of specific vocational education programmes and mobility patterns. Each figure consists of data on both men and women, but given the gendered education structures documented in section 6.3., gender distribution patterns in the following figures are relatively clear.

Figure 23: Mobility patterns, Youth Cohort 2000 with a VET degree in 2011

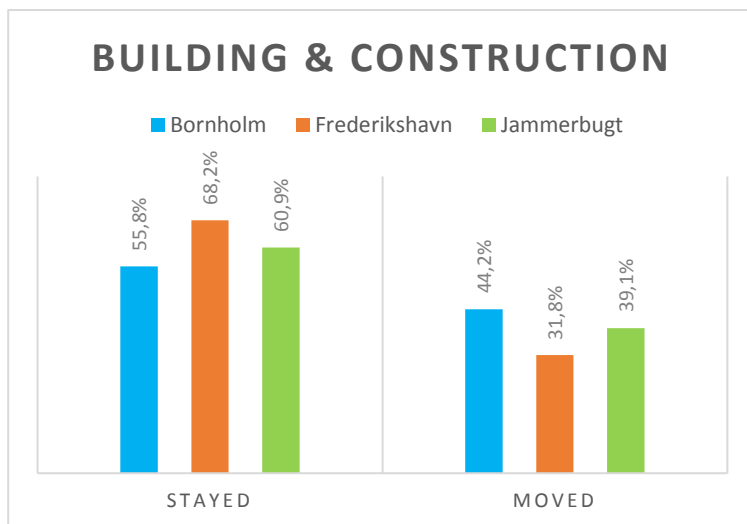


Source: Statistics Denmark, CRT programming.

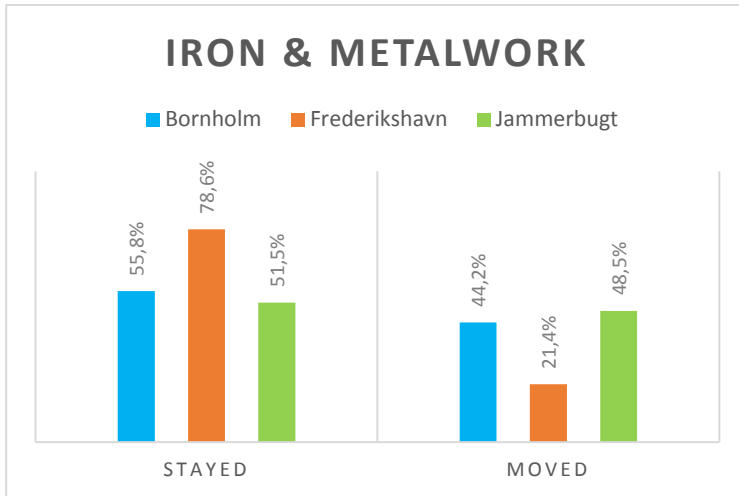
Figure 19 shows that persons who have completed a VET degree within Commerce & administration have relatively high levels of out-migration, particularly young people from Jammerbugt. In Frederikshavn, on the other hand, a relatively large share have stayed. This pattern can be interpreted as being related to both school programme

access as well as labour market structures. Frederikshavn has its own School of Commerce that provides programmes within several business sectors and the small city of Frederikshavn offers a local labour market for the commercially educated. This is not the case for Jammerbugt. On Bornholm, the local vocational school provides the administrative Main Programme, which primarily leads to employment within public services. Jobs within private commercial services are limited.

Figure 24: Mobility patterns, Youth Cohort 2000 with VET degree 2011

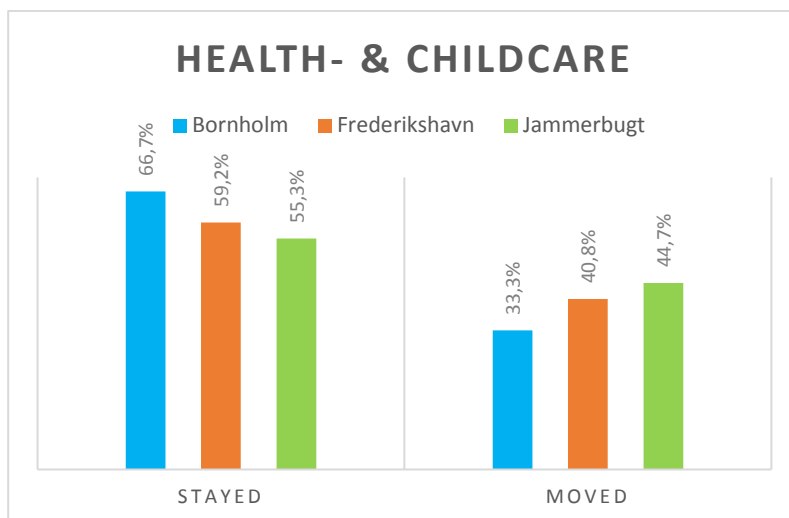


Source: Statistics Denmark, CRT programming. Based on the VET system structure until August 2015.

Figure 25: Mobility patterns, Youth Cohort 2000 with a VET degree 2011

Source: Statistics Denmark, CRT programming. Based on the VET system structure until August 2015

Figures 20 and 21 show that mobility patterns for youth who have been educated within Building & construction and Iron & metalwork are quite different from those with a degree in Commerce & administration. Here, a majority of the VET students stay in the municipality where they have grown up. This is especially the case for those from Frederikshavn. There are substantial industrial labour markets in and around the small city of Frederikshavn, which for many centuries has been the location of a large shipping, dry dock and marine industry. After the collapse of the shipbuilding industry in the 1980s, the city is now expanding its marine and shipping industry. The vocational college, EUD Nord, provides a wide array of Iron & metalwork vocational degrees, including ships fitter, ships mechanic, industrial technician and different blacksmith specialisations. Building & construction vocations can lead to employment within small entrepreneurial firms as well as large construction firms that compete on national labour markets. All in all these vocation types are suppliers of skilled labour for local labour markets.

Figure 26: Mobility patterns amongst Youth Cohort 2000 with a VET 2011

Source: Statistics Denmark, CRT programming.

The Health- and childcare vocation has the highest propensity of graduates that have remained in the municipality where they have grown up. This is the case for all three case municipalities, with Jammerbugt showing the highest levels of out-migration again. As this is a female dominated profession, figure 22 also reflects a gendered mobility pattern. Persons with a Health- or Childcare degree most often work for regions or municipalities and their labour market is thus more geographically dispersed than some of the private sector vocations.

Data from Bornholm indicate that there is a positive relation between access to local schooling and low out-migration. There is a local provision of Health- & childcare on Bornholm³¹. This is not the case for Frederikshavn or Jammerbugt. This is one of the few cases where Bornholm has the highest share of a youth cohort who remain in their home municipality, indicating this positive relation.

6.5. VOCATIONAL PROGRAMME ACCESS AND MOBILITY PATTERNS

This section shows the effects of local access to education programmes on mobility patterns. In the sections above, focus has been on the relationship between gaining a vocational education and mobility patterns, depending on gender and education programme. Here, the focus is more specifically on the difference between studying

³¹ Access to the Childcare programme may be closed in 2017.

at a local vocational college and studying at a non-local vocational college. The statistics still only concern the location of school-based learning, not the location of apprenticeships.

Jammerbugt municipality

There is no local vocational school in Jammerbugt. For this reason, figures 27 and 28 shows Jammerbugt as part of the Aalborg education system. I have termed this 'catchment area Jammerbugt', meaning that VET students commute to Aalborg for VET education. Although youth living in the Southern half of Jammerbugt often commute to the most proximate school in Thisted, the majority of youth in the municipality commute to Aalborg (Nielsen 2011). Therefore, Thisted is not considered to be part of 'catchment area Jammerbugt' in this study. In terms of commuting in general, Jammerbugt is considered to be a part of the Aalborg catchment area, so this is a fair representation. This also means, however, that some VET students have very long commutes, if they wish to study in Aalborg.

How to read figures 27 to 32:

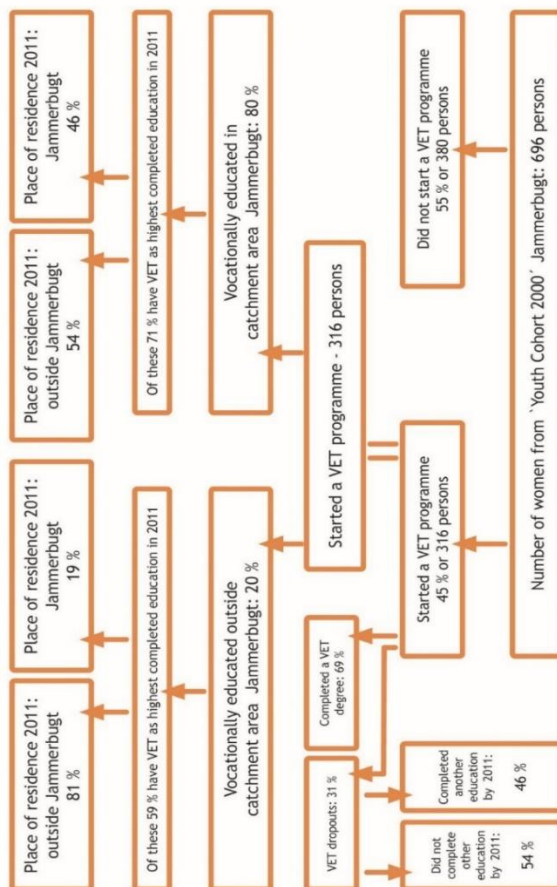
The wide bar at the bottom is the total population from Youth Cohort 2000 who were born in the case municipality. In figure 27, for instance, there are 696 women from Jammerbugt. Of these 696 women, 380 or 55 % have never entered the VET system in the period 2000-2011 (right hand bar at the bottom). This means that they studied an academic youth education - 'stx', 'htx', 'hhx' or 'hf' or that they never entered the youth education system.

The left hand bar shows that 316 or 45 % of the women from Jammerbugt Youth Cohort 2000 at one time or another during 2000-2011 have embarked on a vocational education (Basic Programme and/or Main programme, but not counting for example AMU adult education). Amongst these, 69 % completed a VET degree. Following the small bars toward the bottom left of the figure, we see that 31 % dropped out from the VET and that amongst this group, 54 % did not complete any education beyond compulsory schooling by 2011.

In the centre of the figure, we follow the 316 persons who embarked on a VET degree. As this figure is based on the 'ongoing education' register, the drop-outs are included in this number as well. The rest of the figure focusses on the relationship between the location of the vocational college and student mobility patterns. The figure shows that 80 % of the women who embarked on a VET degree did so in Aalborg, while 20 % did so elsewhere. Although it is not indicated in the figure, the vocational programmes studied most frequently in Aalborg by these women are Commerce & administration, 'other' VET programmes and Health- & childcare. The programmes studied most frequently by those who do not study in Aalborg are Commerce & administration and 'other' VET programmes. At the top of the figure, we see that, amongst those who

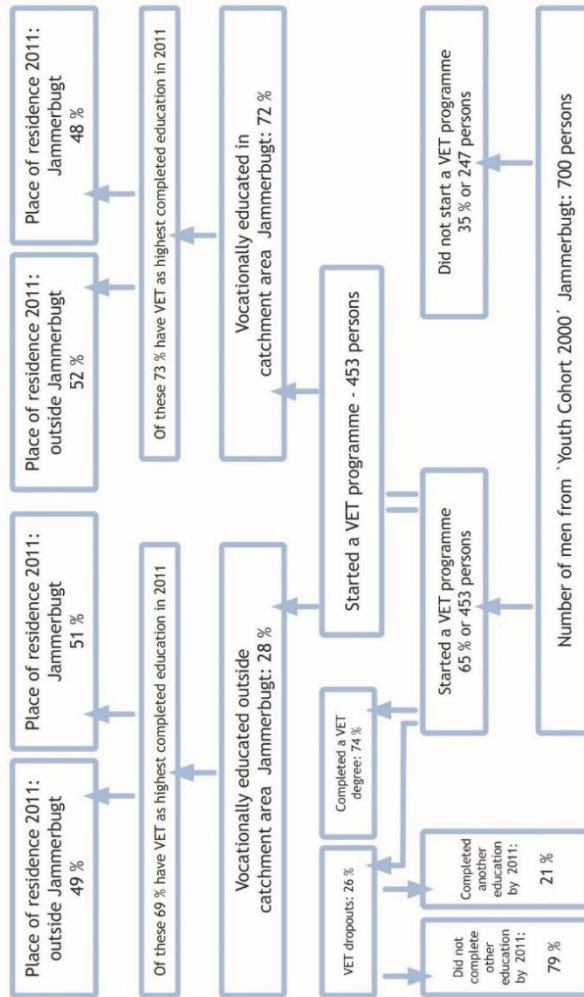
have studied their VET programme in Aalborg, just over 50 % have since moved, and just under 50 % have stayed. Amongst those who did not study in Aalborg, 80 % have moved and less than 20 % have stayed.

Figure 27: Mobility patterns, women from Jammerbugt, ongoing education 2000-2011



Source: Statistics Denmark, programmed by Irena Stefaniak, courtesy of The Centre for Regional and Tourism Research.

Figure 28: Mobility patterns, men from Jammerbugt, ongoing education 2000-2011



Source: Statistics Denmark, programmed by Irena Stefaniak, courtesy of The Centre for Regional and Tourism Research

Figure 24 indicates that 65 % of all men from Youth Cohort 2000-Jammerbugt started a VET degree in the period 2000-2011. Amongst these, 26 % never complete their degree, and amongst this group, 80 % do not complete any formal education by the time they are in their late 20s.

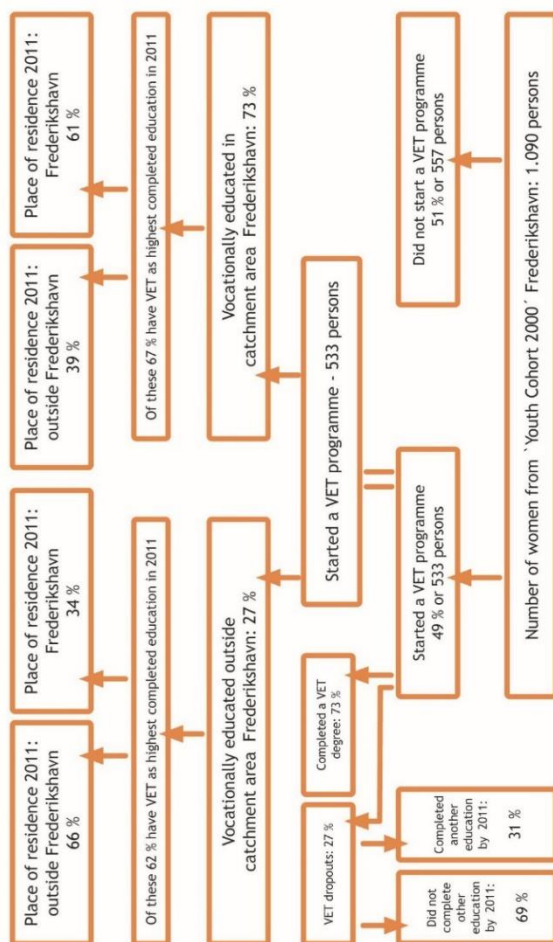
The figure shows that 72 % of the young men, who embarked on a VET degree, did so in Aalborg, while 28% studied elsewhere. Amongst those who studied in Aalborg, programmes within Iron & metalwork and Building & construction are dominant, followed by degrees within Commerce & administration. Amongst those who do not study in Aalborg, the technical degrees, 'other' VET programmes and agricultural degrees are the most dominant choices.

Amongst those educated in Aalborg, 48 % stayed in the municipality they grew up while 52 % have out-migrated. As the figures from the other case municipalities indicate, this is a relatively high out-migration rate and may be indicative of several interplaying factors, probably primarily concerning labour market structures. Compared to the other case municipalities, Jammerbugt displays the highest share of out-migrated amongst those who have studied at the most proximate vocational college. However, Jammerbugt has a high rate of inter-municipal commuting compared to other municipalities in Northern Jutland (COWI 2016). There is not a strong municipal labour market. Instead, Jammerbugt functions as catchment area to Aalborg's much larger labour market.

Frederikshavn municipality

Unlike Jammerbugt, there is local access to vocational education in Frederikshavn. Frederikshavn is, however, also part of an education catchment area that includes Hjørring, a neighbouring municipality, the head town of which houses EUC Nord Vocational college. EUC Nord is one institution, but is jointly located in Hjørring and Frederikshavn and programmes are distributed between the two locations. For this reason, 'catchment area Frederikshavn' used in the figures below includes VET provision in Hjørring (also including SOSU Nord's provision of the Health- & childcare programmes). Aalborg, although within commuting distance for some students, is not included in the catchment area.

Figure 29: Mobility patterns, women from Frederikshavn, ongoing education 2000-2011



Source: Statistics Denmark, programmed by Irena Stefaniak, courtesy of The Centre for Regional and Tourism Research

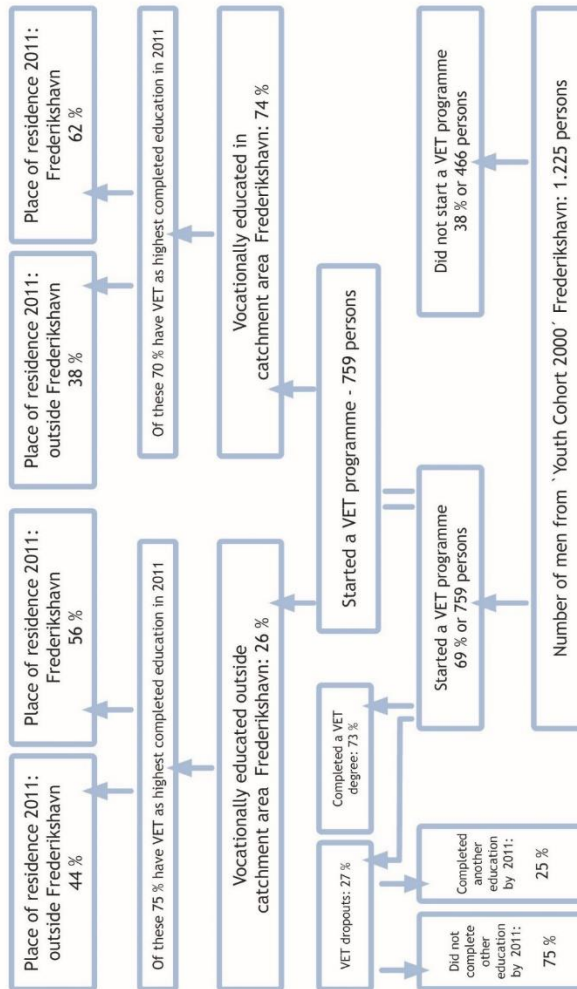
Figure 25 indicates that 49 % of all women from Youth Cohort 2000-Frederikshavn started a VET degree in the period 2000-2011. Amongst these, 27 % never completed

their degree, and amongst this group, 69 % do not complete any formal education by the time they are in their late 20s.

The figure shows that 67 % of the young women, who embarked on a VET degree, did so in Frederikshavn or Hjørring, while 27% studied elsewhere. Amongst those who studied in Frederikshavn, programmes within Commerce & administration and Child- and healthcare are dominant. Amongst those who did not study in Frederikshavn, 'Other' VET programmes are dominant.

Amongst those educated in Frederikshavn, 61 % stayed in the municipality they grew up in, and 39 % have out-migrated. Here, vocational programme choices become significant, as those who stay are primarily those with a Child- & healthcare degree, while those with Commerce & administrative degrees have moved. Thus, labour market structures seem to play an important role here.

Figure 30: Mobility patterns, men from Frederikshavn, ongoing education 2000-2011



Source: Statistics Denmark, programmed by Irena Stefaniak, courtesy of The Centre for Regional and Tourism Research

Figure 26 indicates that 69 % of all men from Youth cohort 2000-Frederikshavn started a VET degree in the period 2000-2011. This is the highest share among the three case municipalities and is perhaps an effect of the industrial history of the city of Frederikshavn and/ or of local labour market structures. Amongst those who start on a VET degree programme, 27 % never complete their degree, and amongst this group, 75 % do not complete any formal education by the time they are in their late 20s.

The figure shows that 74 % of the young men, who embarked on a VET degree, did so in Frederikshavn or Hjørring, while 26% studied elsewhere. This is similar to the patterns displayed by the women from Frederikshavn and by the men from Jammerbugt. Amongst those who studied in Frederikshavn and Hjørring, programmes within Iron & metalwork and Building & construction are dominant, followed by degrees within Commerce & administration. Amongst those who do not study in Frederikshavn, the technical degrees, 'other' VET programmes and agricultural degrees are dominant. This is very similar to the patterns displayed amongst the young men from Jammerbugt.

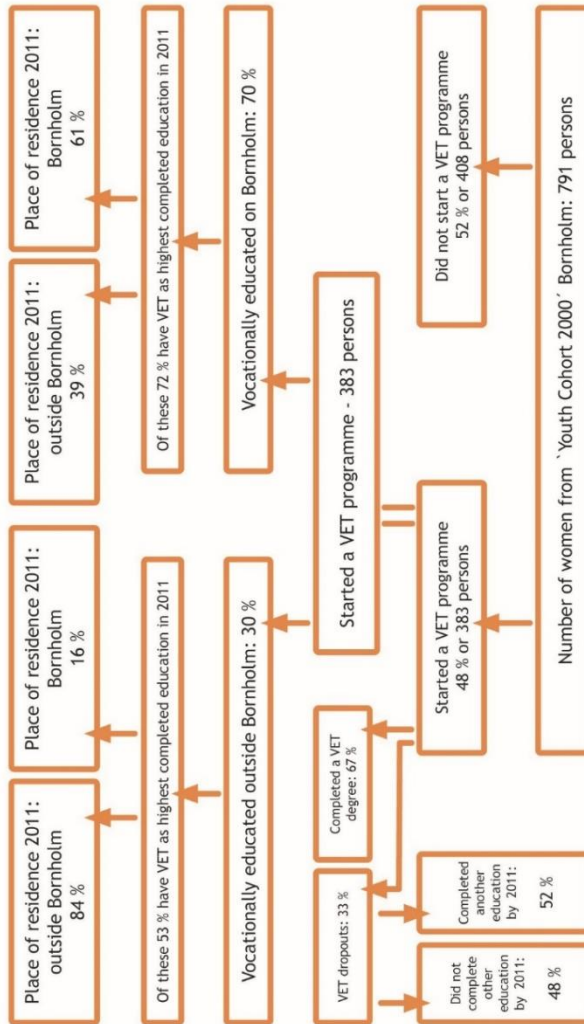
Amongst those educated in Frederikshavn or Hjørring, 62 % stayed in the municipality they grew up in and 38 % have out-migrated. A much higher share have stayed compared to Jammerbugt. Amongst those who were educated outside Vendsyssel, almost 56 % live in Frederikshavn in 2011. Again, this is a high share compared to the other municipalities, indicating that local labour market opportunities – and, related to this, apprenticeship opportunities - play an important role in mobility patterns.

Bornholm

Bornholm differentiates itself from the other case municipalities as it is not possible to commute between a home on Bornholm and schooling opportunities elsewhere. If a young VET student seeks an education programme that is not provided locally, he/she must either move in connection with education or live at a boarding school during school periods and attempt to find an apprenticeship position on Bornholm. There is a local vocational college, Campus Bornholm, which provides a limited number of technical and Commerce & administration programmes, while Bornholm's healthcare and nursing school provides the Healthcare degree and University College UCC provides the degree in Childcare³².

³² May be closed in 2017.

Figure 31: Mobility patterns, women from Bornholm, ongoing education 2000-2011



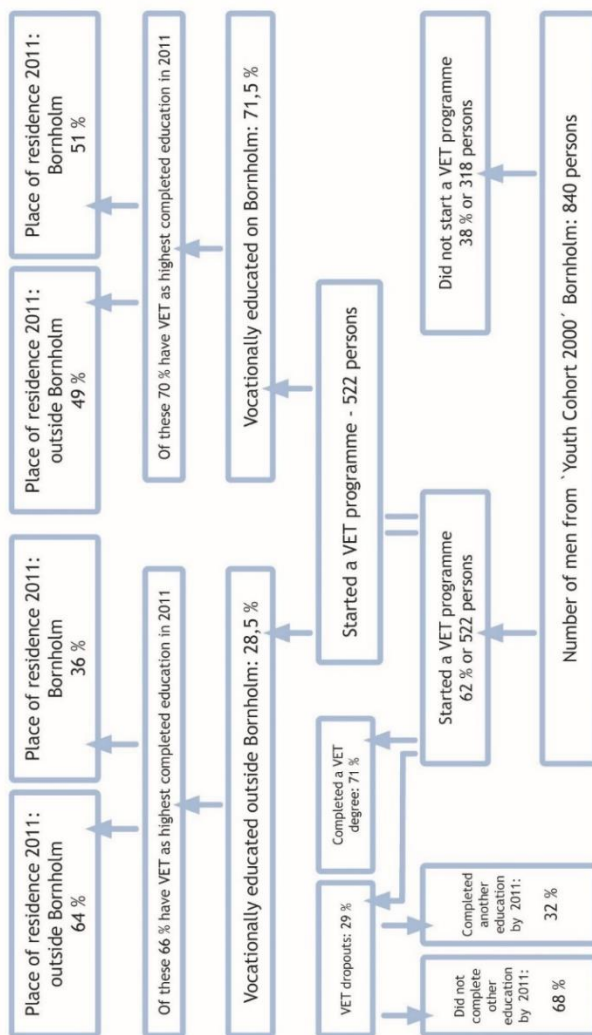
Source: Statistics Denmark, programmed by Irena Stefaniak, curtesy of The Centre for Regional and Tourism Research

Figure 27 indicates that 48 % of all women from Youth Cohort 2000- Bornholm started a VET degree in the period 2000-2011. This more or less corresponds to the share of women who have started a VET degree across the three case municipalities. Amongst those who start on a VET degree programme, 33 % never complete their degree, which is the highest share among the case municipalities irrespective of gender. Of these, 48 % do not complete any formal education by the time they are in their late 20s. This, on the other hand, is the lowest share across the case municipalities. This could indicate that local VET education access may be used as an interim steppingstone to later education choices.

The figure shows that 70 % of the young women who embarked on a VET degree did so on Bornholm, while 30% studied elsewhere. This is similar to the patterns displayed in the other municipalities, excepting women from Jammerbugt. Amongst those who studied on Bornholm, Commerce & administration and Child- & healthcare are dominant. Amongst those who do not study on Bornholm, Commerce & administration is still the most dominant, followed by 'Other' VET degrees.

Amongst those educated on Bornholm, 61 % stayed on the island and 39 % have out-migrated. This is comparable to the pattern in Frederikshavn, but much higher than among the men from Bornholm. Amongst those who were educated outside Bornholm, almost 84 % have out-migrated, indicating that moving away to complete an education often ends up becoming a long-term movement, or that education choices lead to the types of labour market opportunities that are not available on Bornholm.

Figure 32: Mobility patterns, men from Bornholm, ongoing education 2000-2011



Source: Statistics Denmark, programmed by Irena Stefaniak, curtesy of The Centre for Regional and Tourism Research

Figure 28 indicates that 62 % of all men from Youth Cohort 2000- Bornholm started a VET degree in the period 2000-2011. This is the lowest share amongst men across the three case municipalities and may reflect the limited local labour market opportunities and/or the limited provision of VET programmes. Amongst those who start a VET degree programme, 29 % never complete their degree, and amongst this group, 68 % do not complete any formal education by the time they are in their late 20s.

The figure shows that just over 71 % of the young men, who embarked on a VET degree, did so on Bornholm, while almost 29% studied elsewhere. As with the other case municipalities, programmes within Iron & metalwork and Building & construction are the most dominant programmes amongst those who studied locally. This group has to a large extent also stayed on the island. Amongst those who did not study on Bornholm, the technical degrees, 'other' VET programmes and agricultural degrees are dominant. Again, this is very similar to the patterns displayed amongst young men from the other case municipalities.

Amongst those educated on Bornholm, 51 % stayed in the municipality they grew up in and 64 % have out-migrated, which is higher than for the men from the other case municipalities. This is probably due to lack of local work opportunities in combination with Bornholm's isolated position, making it impossible to commute on a daily basis.

6.6. SUMMARY AND DISCUSSION

My analysis of the mobility patterns of young people who have grown up in challenged localities shows that the vocationally educated overall display very different mobility patterns compared to those who have chosen an academic track and those who have not obtained any formal education degrees beyond compulsory schooling. My study confirms previous research on youth out-migration patterns from rural areas and finds that young people, who have chosen an academic track, display much higher out-migration propensities than other education groups (Hedetoft, Stefaniak 2014). The study also confirms that young people, who have not attained any formal schooling after the compulsory level, display relatively low out-migration rates. In my case municipalities, out-migration rates amongst the academically educated are 70-80 % of a youth cohort, while the corresponding rate amongst those with a vocational education is 40-50 %. Amongst those with no education after the compulsory level, approximately 40 % out-migrate.

Depending on vocational fields (Iron & metalwork, Building & construction, Child- and healthcare, Commerce & administration, and 'others') the young VET educated display distinct migration patterns. Out-migration rates are higher as well as more urbanised amongst students with Commerce & administration and 'Other' VET

degrees. The VET-educated with Iron & metal, Building & construction and Child- & healthcare degrees display a higher propensity to remain in the municipality they have grown up. This is in keeping with differentiated labour market patterns, where the more traditional vocations and trades are employed on peripheral labour markets, while private service sector vocations are more prevalent on urban labour markets. This pattern suggests that youth migration patterns are related to structural differences on peripheral and central labour markets.

In terms of providing skilled labour on local labour markets, the data suggests that the vocationally educated are an important source of local labour. Not only do they tend to stay in the municipalities they have grown up in, they are also employed. An analysis of employment rates, which is provided in Appendix C, indicates that the vocationally educated have the same employment rate independent of whether they have stayed in their home municipality, moved to an urban municipality or to another rural municipality. In other words, the vocationally educated are an attractive source of labour, irrespective of where they live.

The analysis shows that a large proportion of VET students (approximately 70 %) enter the most proximate vocational college for their VET programme. This suggests that vocational colleges produce local student catchment areas even though students may choose any vocational college they like. This also means that the composition of programmes provided at the local vocational college does influence vocational choices. For 70 % of young VET students, their initial vocational orientation process takes place at the local vocational college. This is relevant, as the taximeter system, i.e. the state VET institutional funding system, is based on competition between vocational colleges. This in turn is based on a principle that competition increases the incentive to deliver high quality services (Undervisningsministeriet 2009). If local youth do not 'shop quality', but choose the most proximate college for other reasons, local vocational colleges end up functioning as introductory points of entry to the entire VET system.

Combined with the analysis on vocationally dependent mobility patterns there is a nexus between local access to vocational education programmes, the structure of local labour markets and youth migration patterns. This is displayed through the differences between the case municipalities. There is a higher propensity amongst the vocationally educated to remain in Frederikshavn compared to the two other cases from Bornholm and Jammerbugt. Frederikshavn municipality contains a small city with access to an array of education opportunities, just as there is a substantial shipping and marine industry in the area. Jammerbugt and Bornholm have smaller towns and very limited industry and rely more heavily on tourism and agriculture. Furthermore, access to vocational education on Bornholm is limited due to its small student catchment numbers and isolated position, while Jammerbugt does not have a vocational school and students must commute to either Aalborg or Thisted

municipality. There are thus both push and pull factors that influence migration outcomes.

The statistically based analysis shows that the vocationally educated are an important source of skilled labour for local labour markets in peripheral areas. Access to a wide range of vocational programmes at the most proximate vocational school increases the share of local youth cohorts that choose to remain in the municipality. Out-migration in order to access vocational education leads to more long-term or perhaps permanent out-migration similar to the out-migration patterns displayed by the academically educated. However, out-migration is also related to the type of vocation chosen. Youth, who choose vocational fields that lead to occupations within the private service sector, display urbanised migration patterns, while more traditional vocations within industry and craftsman-based trades as well as within public service, display more sedentary migration patterns. Statistical analysis cannot reveal what motivations lie behind these vocational decisions and more qualitative approaches are needed.

Finally, the analysis stresses that more than 25 % of young students who embark on a vocational education do not complete their degree. Amongst these, a majority do not complete any education beyond compulsory education. As upwards of 60 % of the men and 45 % of the women from Youth Cohort 2000 embark on a vocational education, most young unskilled people are in fact VET system dropouts. In other words, the VET system functions an exclusionary system. In the cases where this is caused by lack of apprenticeship positions and/or structural imbalances, these young people are the victims of 'structural dropout'. Structural imbalances are here understood as a lack of particular apprenticeship positions and a surplus of others compared to student demands or geographical imbalances.

CHAPTER 7. TRANSITION

BEHAVIOURS AND ORIENTATION

PREFERENCES

This chapter contains the results of my interview-based analysis of students' trajectories through the VET system. It aims to contribute to our understanding of the effects of the spatial complexity of the VET system on its students, particularly young students who live in localities, where local access to VET programmes is limited.

Section 7.1. characterises three overall types of orientation preferences amongst VET students who have grown up in challenged localities. The analysis is based on the concept of bounded agency as introduced in section 3.3. and operationalised in Section 4.2. Section 7.2. analyses what effects the students' orientation preferences have on their programme choices and trajectories through the system. Section 7.3. analyses possible relations between the students' orientation processes and their access to different types of resources. Finally, 7.4. discusses the analyses and relates it to existing research on youth transitions.

7.1. A TYPOLOGY OF EDUCATIONAL TRANSITION ORIENTATION PREFERENCES

In this chapter, I have typologised the transition behaviours of the interviewed VET students. It is based on how they orientate themselves in and around the Vocational Education and Training system at two central transition points: the initial entry into a specific Basic Programme and the transition into the Main Programme, which involves finding an apprenticeship position and thus being able to move and activate resources on apprenticeship markets.

In the table below, I have placed each of the interviewed persons according to their socio-vocational orientation preference during the two key transition points in a VET education³³.

³³ The education programme indicated is generalised in order to secure anonymity. I have indicated one of 12 entry programmes, which pertains to the VET structure until August 2015.

Figure 33: Interviewees distributed by their spatialised orientation preference

The vocationally oriented	The locally oriented	The mobility oriented
Rasmus, Electricity & IT	Emma, Commerce	Mathilde, Human Food
Mads, Production	Caroline, Health & child care	Katrine, Body & Style
Emil, Production	Jacob, Production	Emilie, Body & Style
Oliver, Media	Kasper, Transportation	Ida, Human Food
Sofie, Cook	Magnus, Health & child care	Freja, Business
Sara, Health & child care	Andreas, Commerce	
Frederik, Production	Laura, Health & child care	
Cecilie, Health & child care	Tobias, Production	
Nicolaj, Health & child care	Daniel, Construction	

The typology is grounded in the students' spatial transition narratives, discerning between a series of distinctive transition behaviour characteristics. In order to differentiate between them, I have posed the following questions to each student narrative:

- What are the vocational and geographic scales of their programme orientation processes, i.e. do they limit themselves geographically and/or vocationally when exploring which VET programmes are available to them?
- Are they able to describe clearly what the distinct characteristics of their chosen vocation are? For example, can they explain which skills they will be learning, what functions in a firm they expect to carry out? How do their own current interests and aptitudes fit with the characteristics defining their chosen vocation?
- What sort of transition behaviours do they exhibit during the Basic Programme? Do they treat the Basic Programme as an active transition period or is their approach passive, treating the Basic Programme period perhaps more as a type of 'storage container'? (Koudahl 2007)
- In recognition that educational transitions are processes, not (quick) decisions, how does the student describe their transition processes?

- What role does local access or lack of local access to specific vocational programmes play at the two key transition points?

As my research quest is to ascertain the role of VET programme access and uneven opportunity structures, the answer to the first question, i.e.: “What are the vocational and geographic scales of their programme orientation processes?” is pivotal in my distinction between the three orientation preference types.

The mobility oriented emerge as a distinct orientation type already during the first key transition point, i.e. as they enter the Basic Programme. This is because their transition preference is to choose a vocational programme, which will allow them to move away from home from the beginning of the Basic Programme. The locally and vocationally oriented are, however, only discernible when taking account of students’ combined transition behaviours during the first and second transition point.

7.1.1. GROUP 1: THE VOCATIONALLY ORIENTED

The young VET students in this category are primarily focussed on their vocational orientation process during transition points and this orientation process dominates over geographical provision concerns. The following statements characterise the vocationally oriented:

- They are able to orientate themselves amongst vocational programmes provided both locally and supra-locally, amongst related vocational fields.
- They have a relatively clear perception of the types of skills they will be learning and have a nuanced understanding of what differentiates one vocation from another within a field of related vocations.
- They have a relatively clear perception of their own personal competences and aptitudes and how they ‘measure up’ with the competences needed in their chosen vocation.
- They utilise the Basic Programme to refine their precise vocational programme choice before deciding on their Main Programme choice. If they switch VET programme, they do so during the Basic Programme, not after completion. This is an indication of pro-active transition behaviour.
- They are able to describe their decision processes toward their Main programme as well as the vocational and personal deliberations decisive for their process.

Once they have chosen a specific Main programme, they are willing to subordinate all other life plans, including where they live, in order to obtain the desired VET programme.

Their territories of apprenticeship markets vary and can be both local and supra-local. This entails that the group is mobile if need be in order to access an apprenticeship

position. Many of them would prefer to access apprenticeship positions within commuting distance of their homes.

If they have difficulty finding an apprenticeship position, they do not change vocational programme. Instead, they appropriate a diverse range of activities in order to improve their standing on apprenticeship markets. This may include school-based practical training (SKP) or to improve their vocational qualifications. This can for example be through working as a junior labourer or being constant in their outreach contact with firms they hope to gain an apprenticeship with.

They encounter a varied range of mobility imperatives in order to complete their degree. How mobile they must be depends on a range of factors that are related to their chosen education programme, not to their orientation preference. There is, however, a tendency not to choose education programmes among 'the big 12'³⁴.

In the following, I present a number of cases of young VET students who display a vocational orientation preference. The cases descriptions are based on segments of the narrative interviews I have conducted.

Oliver, 21, is studying a film and TV production degree and wants to work as a film editor or camera operator. He has grown up on Bornholm and has worked with filmmaking since he was 9 years old. He has also been an active member of the local film- and video club during his teens. Although his initial entry into the VET system was computing, within the first month, he realised he *“was in the wrong place. It wasn't what I was expecting at all”*. Not knowing what to do with himself, he spent the next 8 months in a Folk high school that specialises in filmmaking. He considered this to be a sabbatical year and not related to his vocational development. Upon return from the folk high school his career counsellor, however, suggested he should attempt to enter the TV- and film production vocational programme. This programme has a limited number of entry places at the Basic Programme level, requiring a signed apprenticeship contract or admittance through a quota system before acceptance into the Basic programme. Encouraged by his vocational counsellor, Oliver applied and was granted a quota position. *“I didn't really know what to do, so I thought I should choose something that I was good at.....and yeah, well, for me it's always been a hobby, but I didn't think I could make a living in film. But it's always nice when you do something that's your passion, only now it's also one's job”*. Oliver moved to Copenhagen to start the Basic Programme even though he would have preferred to stay on Bornholm. At the time of the interview, he had just signed an apprenticeship contract with a Copenhagen-based firm after a six-month period of applications.

³⁴ For a definition of this, see Section III. 'The general 12' are the VET programmes, which are offered at most vocational colleges, including colleges located in sparsely populated regions.

Oliver is an example of a vocationally oriented student who has been through a process of aligning his personal interests, hobby-based aptitudes and experiences with a concrete VET programme. It is important to him that his education should lead to favourable employment possibilities, an attitude which originally was a barrier to him even conceptualising that he could build a career within filmmaking. Without the help of his vocational guidance counsellor, he would not have oriented himself vocationally within this track.

Emil, 19, is studying to become a ships technician. Since he was a young boy, he has been interested in cars and known he wanted to work with mechanics. He has been fascinated by life in the harbour and has taken many walks in the harbour around his home town with his dad, talking about shipping and life in the marine industry. He started a technical upper secondary degree (htx) at the 'gymnasium' school in Frederikshavn, but after a year he lost all interest. *"I don't know, suddenly I just couldn't stand it anymore. I was so bored"*. He travelled for some weeks and came back knowing he should study a vocational degree instead: *"I needed to use my hands, I couldn't stand the thought of sitting down all day any more, I needed to move my body"*. He considered becoming a blacksmith, but found the types of jobs a ships technician perform, although based on welding and other smithy work, to be more varied and often more advanced. He is also fascinated by the thought of working on the sea and travelling the world whilst working within the shipping industry.

"I've always been interested in engines – mostly worked with cars. But I didn't want to be a mechanic all my life. My older brother is a blacksmith and my dad worked as a windmill technician for many years. So I found a bit of a mix in mechanics, smithy work and travel work in the ships technician vocation, because each of those things actually interest me, even though motors is probably the thing that I'm mostly interested in"

Emil has a strong capacity to orientate himself very specifically within a range of related vocational programmes. He is knowledgeable about nuances between these as well as the types of work places and work functions that they will lead to.

Sofie, 19, is studying to become a chef. She has always wanted to with food and has never considered any other education options. The only real decision she had to make was whether to choose the chef, the confectionary or the waiter programme. In the end, she chose the chef programme because it was the 'core' of her interest. She has always done a lot of cooking at home and her family have all worked within food preparation and hospitality sector, so she finds herself familiar with the types of work places she can expect to gain employment in. She is considering studying a waiters or a confectionary degree after completing the chef's degree. She loves what she is doing despite the fact that she has had difficulties finding an apprenticeship position and therefore, at the time of the interview, has spent most of her training in school-based practical training. *"I love the summertime the best, because of the tempo and*

adrenaline in the kitchen. A lot of people arrive at the same time. You get a high and your body is just pumping all day. In the winter you can work more deeply and plan menus and learn how to compose complete menus. It's great".

Sofie is vocationally oriented as she has identified herself with the food preparation sector for several years. She has been constant in her vocational orientation since she started to consider what to study after compulsory schooling. She is specific about different aspects of working within the cooking and catering sector and she has oriented herself amongst a cluster of related vocations and decided on the programme which suits her best at the moment. She thus exerts a strategic planning element, which bears witness to her capacity to orient herself based on her own capacities and her knowledge about her chosen vocational field.

Sara, 19, who is studying to become a childcare assistant. This has been a shift for her as she had been planning to study hairdressing since she was in grade 7. After she had completed grade 9 compulsory schooling, she entered grade 10 in a nearby 10th grade centre. She did this as she did not feel ready to start her vocational degree and many of her friends entered the 10th grade. During this year, she started feeling that she needed to remove herself from her group of friends. *"I was getting into some bad company, I wasn't acting very nice, having fights with my parents, and I felt I needed a change".* She decided she needed to move away from home and started at the Basic Business school programme in Thisted, where she could live at a boarding school. Because she was only 16 years old, and the hairdressing programme is difficult to gain entrance to, she felt she needed to gain a bit of general retail knowledge before applying for the hairdressing programme. After one year, however, she decided she did not want to become a hairdresser – and she also decided she did not want to continue on to find an apprenticeship position within retail. *"We were in this transition programme, and I starting thinking that when you are in a shop you don't build up the kind of relationship with customers like you do when you work long term with children. And I thought this is not the kind of contact I want with people. This is not the way I like to meet people, I mean, I want to be closer to the people I work with."*

She had been inspired to reconsider her vocational orientation through meeting other students living in the school dormitory. Many of the students she was in contact with here were studying the childcare assistant programme as well as the pedagogy bachelor's degree. This made Sara reconsider her vocational interests, as she had previously considered working with children, but thought it was mostly just looking after children. Through conversations with the other students, she realised that childcare assistants work with developmental psychology and are part of a pedagogical team. This led her to start the basic programme within childcare assistant. At the time of the interview, Sara has just completed 40 weeks of the Basic Programme, including two placements in preschools. Through the basic programme,

especially the practical placement, Sara is very convinced that working within child care is the right vocation for her.

Compared to the other case students, Sara has had a longer journey toward her vocational orientation. She has had social priorities and for a time been oriented toward moving away from home. Within the last 1-2 years, she has become more focussed on deeper aspects of the vocation she is seeking, moving from a superficial vocational orientation based on general vocational perceptions, to more profound considerations involving her own personality in relation to the vocation.

The vocationally oriented are vocationally 'literate', i.e. they are capable of orientating themselves within a related field of vocations and identifying which vocational programme most closely fits with their own interests and capabilities.

Although it is the content of the vocation, which is the primary driver of these students, the place where the education is offered is also significant for them. This includes deliberations about where they can expect to find an apprenticeship position, commuting times and even the need to move or live elsewhere for a period. Despite these concerns, they have prioritised the vocation and the culture surrounding the vocation as 'the place to embed themselves' more than the geography of the institutions, providing the education programmes. The vocation becomes a field of opportunity, which increases their resourcefulness and motility (Kaufmann, Bergman et al. 2004). It also gives their spatial trajectory a direction in the sense that they can envision themselves living in a particular locality for the duration of their apprenticeship and thus construct an everyday life.

The vocationally oriented, but strategically local

In the construction of three transition orientation preference types, a sub-group to the vocationally oriented has emerged. I have termed this sub-group the 'vocationally oriented, but strategically local'. This is to indicate that on the one hand, the interviewees in this group are capable of orientating themselves vocationally beyond the VET programmes provided locally. On the other hand, they limit their current VET choice to programmes that are provided locally whilst planning a specific non-local VET programme for later. They are planning to complete two consecutive VET degrees. The VET students I have placed in this category are characterised by the following statements:

- They have plans for a very specific vocational programme, which is not provided locally and has limited access, often gated by various entry

requirements. Often these programmes belong to ‘the semi-specialised’ or ‘the small 44’³⁵

- They recognize that they must improve themselves vocationally in preparation for the entry requirements by gaining a preparatory vocational degree as well as working experience within the field. They select among the locally provided VET education programmes to do so
- They recognize that they must develop themselves personally, in preparation for a vocational education that requires they move away from home. ‘The specialised’ VET programmes are not provided at peripherally located vocational colleges nor can the corresponding apprenticeship positions be accessed locally.
- They perceive themselves to be vocationally inexperienced and simultaneously not mature enough to move away from home and their home community. They therefore choose a local vocational programme, which will allow them to prepare for their preferred vocational degree.
- They encounter mobility imperatives connected to their longterm strategic vocational wish, but lead relatively local lives whilst completing the locally provided VET programme.

Cecilie, 17, wants to be a paramedic. The paramedics programme is taught in two locations in Denmark and access to an apprenticeship position is limited. At the time of the interview, she has almost completed the Basic Programme in Health, care and pedagogy in Frederikshavn and is planning to try to obtain an apprenticeship position near Aalborg, as this is where the Main programme is provided. She is aware that she will move in connection with obtaining the paramedics degree and is biding her time in a local education programme until she feels mature enough to move more permanently away from home. Deferring starting the paramedics degree is not just a question of its geographic mobility imperative, it also concerns vocational maturity. Entry into the paramedics degree is limited and there is a minimum age requirement of 21 years. Therefore, Cecilie is spending the intervening years preparing herself vocationally by gaining valuable experience within the health care field, hoping to improve her chances of admission into the paramedics programme.

Cecilie has developed her vocational orientation through two short term placements with a private ambulance company during her 8th and 9th grade school years. She is interested in the paramedic profession as she has always been interested in health care, but cannot see herself work in the same institution for a longer period – for example a hospital or a retirement home. She initially saw a series of televised documentaries about ambulance- and paramedic work, but her deeper conception of paramedic work has evolved through the short work placements during grade school. She is planning to complete the Main programme as health care assistant whilst gaining practical work

³⁵ For a definition, please see section III. ‘The small 44’ indicate a VET programme which is only provided for in 1-2 locations across Denmark, with a handful of apprenticeship positions.

experience. She is aware that being a paramedic requires psychological robustness as she has already tried to be in a situation with injured children and people in pain, and she therefore recognises that it is preferable to work within health care for a few years first.

Cecilie is very oriented toward a specific vocational degree and her present vocational choices are perceived by her to be `mere´ preparatory courses as her `real´ field of interest lies elsewhere. Cecilie has not considered any related vocational programmes as end goal alternatives, but has oriented herself toward a series of related vocational programmes that she perceives to be preparatory.

Frederik, 19 is training to become an industrial technician, but he has a long-term strategic plan to train as a weapons mechanic. After completing compulsory schooling, Frederik entered the Basic programme in Electricity, management and IT as he was planning to complete a degree in data communications. He quickly discovered that the programme primarily concerned servicing and supporting IT-users rather than designing his own programmes or even websites. He therefore decided to switch programme to the Production and development programme, initially thinking he would consider becoming a blacksmith like his father. As the Basic programme evolved, he was given a broad introduction to different vocations within industrial production, with a massive focus on the Main programme offered at the college, the blacksmith programme. Despite this bias, Frederik became more and more certain during the Basic Programme that industrial technician was his preferred vocational programme.

Frederik initially started the *Electricity, management and IT Basic Programme*, but after a few weeks, he realised the programme was not what he had expected. He therefore switched to the *Production and Development Basic Programme*, which encompasses the vocations within industrial production. Although it was important for him that both programmes were provided locally, Frederik’s priority was to choose the `right´ vocational course.

In order to train as a weapons’ mechanic, Frederik must complete a Main programme as well as gain an apprenticeship position away from his home community. As there are very few weapons’ mechanics apprenticeships in Denmark, this may be difficult to obtain, and Frederik is considering training to become a precision mechanic as a plan B. In the meantime, his plan is to complete the industrial technician programme on Bornholm where he has grown up, and when he has had some work experience and is ready to live away from home for a period, he will apply for the precision or weapons’ mechanics programme.

“When I tell people I am interested in weapons mechanics, they think I like guns. But, it has nothing to do with that. I like the design of mechanic processes; I like to figure out how to make something work through a good design. That’s why I’ve been working

with producing my own 3D printer, that's why I want to work as an industrial technician instead of as a blacksmith. There is too much straight precision welding in blacksmithing, not enough constructing of designs”.

Frederik's initial orientation seems to be local as he expresses a profound wish to continue to live at home, but he is primarily vocationally oriented due to his capacity to orientate himself between a number of related vocations and a willingness to compromise on location in order to pursue his vocational dream.

The vocationally oriented, but strategically local are vocationally ambitious and specific and are eager to advance their skills and careers. They are particular about their vocational interests, which has led them to elect one of 'the specialised' VET programmes. Simultaneously, they are young and inexperienced, and thus vulnerable to a VET system with diverse vocational and personal skill demands. The process of finding and selecting one of 'the specialised' programmes is an individualised process. Often, the counselling systems within vocational colleges tend to focus on the Main Programmes provided at the same college. Orientating yourself about where 'the specialised' are provided and the apprenticeship markets which surround them, thus takes place outside the nexus of institutionalised counselling. The current, locally provided VET programmes that this group is enrolled in is conceived to be a temporary compromise, the primary purpose of which is to enhance vocational skills in preparation for the 'real' educative choice. This does not infer that the current VET programme is selected indiscriminately. Rather, current VET programmes must fulfil several requirements: they must vocationally prepare the VET student for the strategically planned VET programme which will be studied later; they must be locally attainable; and they must 'fit in' with the interests and aptitudes of the VET student compared to related vocational fields.

The vocationally oriented, but strategically local are highly strategic in their approach to educational decisions and processes. They are able to orientate themselves on supra-local vocational territories. They are, however, not capable of functioning on such markets yet – both personally and vocationally. They acknowledge the need to develop their skills locally and make strategic personal and vocational plans to position themselves on their desired development trajectories.

In the meantime, they depend on local apprenticeship markets in order to advance their personal and vocational development, and this makes them vulnerable. It may be difficult to find a local apprenticeship amongst 'the big 12' VET programmes on a locally saturated market. This is because there are an insufficient number of apprenticeship compared to the number of successfully graduated Basic Programme students. See Section 5.3.

The vocational development trajectories of this group of students is threatened not by lack of supra-local vocational orientation capacity, not by limited apprenticeship

territories, nor by a lacking potential capacity to be mobile. They are bounded by the VET system itself and its lack of balance between the Basic and Main VET programmes.

In the VET Reform 2015, it was stressed that the VET should be a youth education system, encouraging more youth to transition directly from basic schooling levels 9 and 10 into the VET system, prolonging the Basic Programme to a full year for this group and creating youth environments in vocational colleges. Yet some vocations are not 'youth' vocations and this is exhibited by employers who for example gate apprenticeship contracts to those over 21 years old and with previous vocational experience. Other employers do not visibly gate their apprenticeship positions, but exhibit gated practises by only hiring adult apprentices. Young VET students are thus caught on vocational apprenticeship markets which may favour older and more experienced apprentices. In such market-based conditions, students do exhibit strategic education planning behaviour, but its outcomes are dependent on and bounded by fluctuating markets.

7.1.2. GROUP 2: THE LOCALLY ORIENTED

The young VET students in the locally oriented category limit their vocational orientation process to the VET programmes that are provided at the closest vocational college. The locally provided VET programmes define and limit this group's transition territories into the vocational education system. The following statements characterise the locally oriented VET students:

- They have chosen their VET programme among the locally offered programmes and do not seriously consider studying VET programmes which are not available within commuting distance at the Basic and Main level.
- Compared to the vocationally oriented, they are very general in describing their vocational interests and tend to describe aspects about their chosen trade which they have selected positively, but cannot describe what they have deselected from related vocational fields or programmes. This indicates a relatively unreflected decision process compared to the vocationally oriented.

In some cases, they have embarked on a Basic Programme which turned out not to suit them, despite clear convictions that the programme seemed appropriate. As a reaction, the locally oriented choose another local programme without much deliberation.

In other cases, they embark on and complete a Basic Programme. When they meet transition barriers, for example finding an apprenticeship position, they choose a new Basic Programme and start over. When asked to describe what they find appealing

with the second choice, they are vague in their descriptions. They are not very explicit about limiting their selection process to locally provided VET programmes.

In still other cases, the VET students consciously prioritise selecting locally provided Basic and Main Programmes and express that other life interests such as relations to their family, friends and/or their locally embedded social activities are just as or more important to them as their education.

They often elect 'the big 12' VET programmes, the exception being if the 'regional' programmes are provided at their most proximate vocational college.

Their apprenticeship territories are geographically identical with the apprenticeship markets, which the local vocational college has produced. This is due to the unilateral selection of locally provided vocational programmes.

Even though they study local VET programmes, they encounter mobility imperatives. This is because they operate on saturated apprenticeship markets, forcing them to submit to school-based apprenticeship contracts. These often involve long commutes to firms within a geographically extended apprenticeship catchment area.

In the following, I present a number of cases of young VET students who display a local orientation preference.

Magnus, 20, is studying to become a childcare assistant. At the time of the interview, he has almost completed the Basic programme in childcare in Frederikshavn. He has already completed the Basic Business Programme within retail, but could not advance to the Main programme level as he could not find an apprenticeship position. Instead, he entered the school-based practical training programme and was placed in three consecutive local supermarket chains for a few months at a time. As his retail interest was limited to sporting goods, he found supermarkets to be *“boring and leading nowhere”* and generally felt the situation was bleak. Without much deliberation, he instead applied for entry into the *Child care* Basic programme.

“So I finished the Basic retail programme during the summer. After 3 months, I took an exam and was supposed to get a full apprenticeship position. And then I couldn't find a place, and, well, I found out I could start here in child care – my sister is doing [a bachelor in] pedagogy, and I just thought – I'll apply. It just sort of happened”.

Magnus does not perceive himself to be *“the type that goes to 'gymnasium'”* and he has never considered training for a technical trade. He has always mostly been interested in sports, is very active in the local football club, and thus perceived that he had chosen the right vocation through sports retail. The possibilities of finding retail work in Frederikshavn are, however, very limited. Since grade 7, when he started orienting himself toward plans for post-compulsory schooling, Magnus envisioned

himself working in the private service sector within banking or retail. Finding himself without the possibility to work within sports retail therefore left Magnus without a plan. It is also difficult to find apprenticeship positions within child care and therefore it is not certain if Magnus can complete this degree either.

Magnus is not very specific about what he likes about retail or child care. His retail orientation is related to his friends, who have all studied retail degrees, combined with his interest in sports. His interest in child care is related to his sister's vocation. When asked, he says: *"I like children, I always have, and when I was doing my placement in [name of kindergarten, ed.], the best part was playing with the kids – it was fun. I guess that's what I like best about being a child assistant"*.

Magnus does not seem to be embedded in a vocational identity, he expresses a wish and a need to get an education in order to get a job and does not express an interest in acquiring specific personal or vocational skills.

Emma, 20, has completed the Basic Business programme at the local vocational college and has a local apprenticeship position within public administration, which is her Main programme. She is content with this education programme even though it was not planned.

When she initially chose her Basic VET Programme, she was an avid horseback rider, and it was important to her that she could continue to have access to her horse. It was also important to be near her mother, whom she has always been very close to. Her father is dead and she has no siblings, so staying on Bornholm was important for both parties. When she applied to the Basic programme, she had worked part time for three years in a local retail chain store within the textile department, and although she did not wish to continue to work within retail all her life, she felt familiar with the field. *"I just thought I wanted to stay on Bornholm and then I chose between the options that were there"*. At the start of the second year in the Basic programme, she was encouraged by college teachers to select the public administration main programme rather than the retail programme. Public administration is more academically demanding than the retail programme and Emma showed an aptitude for the academic work. The college has helped her find an apprenticeship position locally.

Emma is an example of a student who is vocationally embedded, who identifies with her chosen vocation, but who has achieved this through the course rather than having a strong vocational orientation at the outset. Instead, Emma has prioritised being able to study a locally-provided course more than a particular vocational field. During transition into the VET system, she had some experience within retail and this guided her into the Basic Business programme. It was, however, through progression of the education that she became vocationally embedded. This happened through the guidance of several teachers, who encouraged her to choose the administration programme rather than the retail programme, a choice which was confirmed, once she

started her apprenticeship position and found herself very interested in the judicial administration system.

Jacob, 21, is studying to become a ships technician and originates from a small town on the coast of Jammerbugt municipality. He initially started at the vocational college in Hjørring in the *Building and construction Basic Programme*, but was unable to find an apprenticeship position “...which was almost impossible”. He switched to *Production and Development* and decided he wanted to work as a ships technician. Jacob is not specific about the vocational skills or work functions that interest him, but he is very clarified about being fascinated by industrial work within the shipping industry. He differentiates between blacksmith work and ships technician work due to the offshore employment opportunities which give access to higher wages to ships technicians. Jacob’s father knows most of the workers within the shipping industry on the west coast of Northern Jutland. Through him, Jacob is knowledgeable about the shipping labour market and feels an affiliation to the workers within the field. At the time of the interview, Jacob has been looking for an apprenticeship position for more than 10 months, been hired briefly in a company that went bankrupt and has just found a new position. He has received help from some of the journeymen in his previous apprenticeship, who felt responsible for finding him a new position. Due to economic difficulties, he has had to wait 10 months for a new position. At the time of the interview, he is in his first period of school. During the 10 months of waiting, he has completed two other Basic Programmes within different industrial production programmes. He feels his life has been ‘on hold’ waiting for an apprenticeship position and not being able to advance toward a working life with a secure income. He has not considered moving as he considers himself to live very centrally located in relation to the shipping industry in Northern Jutland.

Jacob has many ‘things’ going on in his life, which have an effect on both the temporal and spatial aspects of his orientation processes. He has battled substance abuse and been in rehabilitation, he lives with a girlfriend in a flat, which means that he has responsibilities in terms of rent as well as a more fixed location, which is his centre in relation to apprenticeship catchment areas.

Jacob’s apprenticeship orientation has been relatively local, focusing on North-western Jutland. He has focussed on obtaining an apprenticeship position within ships fitting, but also tried as blacksmith. It is the ships fitting vocation that he identifies most strongly with and explains that the other three Basic Programmes were completed in order to secure an income, whilst searching for an apprenticeship position.

Compared to many of the other interviewees, he has transitioned into a young adult, who leads a relatively independent life away from his primary home. He has, however, never considered any other vocations, than those provided by the most proximate

vocational college and his occupational orientation is toward the industry that is most dominant in his local region.

A ships technician belongs to 'the semi-specialised' VET programmes and pertains to very specific production sectors. The sector is thus vulnerable to economic market fluctuations. When one firm goes bankrupt and must terminate its apprenticeship contracts, the other firms within the same sector and location also experience economic decline and the apprenticeship market contracts.

The locally oriented orientate themselves in a relatively bounded landscape of education provision within commuting distance of home. For this group, deciding on which vocational programme they seek is closely intertwined with a wish to keep living in their home community. They draw their identification, their strengths and their networks from this locality and they have difficulty perceiving that they can function without these bases. The group is heterogeneous in the sense that some are very conscious about electing the local community, as the location base of their education, while others do not seem to perceive that different locations have different opportunity structures. The first group, like Emma, are aware of supra-local education and life opportunities, but elect to prioritise proximity to family, friends or other interests. Others, like Jacob and Magnus, perceive their home locations to have many opportunities. The lack of apprenticeship opportunities they have personally experienced are not local phenomena, but local manifestations of nationally constrained apprenticeship markets, i.e. conditions, which are prevalent all over Denmark. Thus, lack of an apprenticeship position will not necessarily be solved by moving elsewhere. Given that there is a lack of apprenticeships on a national scale in the vicinity of 10.000 positions³⁶, this perception is not without merit.

7.1.3. GROUP 3: THE MOBILITY ORIENTED

The VET students in this category are primarily oriented toward moving geographically away from the localities they have grown up. I have placed interviewees within this category if they are characterised by one of the following:

- They wish to move away from the area or community they have grown up in and consider the commencement of education to be the right opportunity to do so.
- They are motivated by a wish to move out or move away from their home communities and/ or families more than they are motivated by a wish to move to another place, for instance an urban environment.

³⁶ <http://uvm.dk/Aktuelt/~UVM-DK/Content/News/Udd/Erhvervs/2016/Aug/160819-Trepartaftale-sikrer-unge-praktikpladser>. Accessed 23.8.2016.

Although the particular vocational degree they have chosen is very significant to them and they go through the same process as the vocationally oriented in order to identify their interests and aptitudes in relation to a particular vocation, it is important to them that the elected VET programme offers them a place to live during their studies.

They thus tend to choose programmes, which are provided in a limited number of locations so they have the right to live at a boarding school.

As they often wish to move away from home as they transition through the VET system (from the commencement of the Basic Programme), they sometimes elect VET programmes that have quota restrictions. Once admitted, this means they enter apprenticeship markets, which are more balanced than for example 'the big 12' apprenticeship markets.

Their territory of searching for an apprenticeship excludes the local area where they have grown up. As they are unfamiliar with the area they are living in presently, they are often quite dependant on their vocational school to help them find a placement. Their apprenticeship position territory therefore often corresponds to the vocational college's apprenticeship catchment area.

In the following, I present a number of cases of young VET students who display a local orientation preference.

Katrine, 18, is driven by a wish to move away from home. This has been her plan since she was 16 as she was *“sick and tired”* of life in her hometown in rural Jammerbugt. She particularly focuses on gaining a new group of friends as she and her sister, who is a year younger than herself, have a joint group of friends that Katrine is eager to change. She feels a little locked within the social confines of her social group. *“We always did the same things, went to the same places and I was bored. I wanted to be different. Sometimes people thought me and my sister were, like, the same person. I mean, not the same person, but they couldn't see I was another person, with other interests”*. At the time of the interview, Katrine has almost completed the Basic Programme in hairdressing in Aalborg, a vocation she has known for several years that she wanted to train for. She describes this as related to always wanting to fix peoples' hair and do their nails and putting on dresses in a time when all the other girls liked more outdoor play. For her, it has also meant a practical way to move away from home at a young age as she gains access to boarding school facilities through schooling. She started the 10th grade in a nearby small town, but was only doing it to get a little older, before applying for a position as au-pair in Aalborg. She stayed with the family for 6 months before applying for the hairdressing programme. This is a Basic programme gated by a quota system, meaning that successful applicants must either have an apprenticeship contract beforehand or apply for a limited number of quota positions. She was accepted as a quota student, a position she did not experience as difficult to achieve.

Katrine's *territory of orientation* is concurrently supra-local yet vocationally limited, meaning that although she does not limit herself to the local supply of education programmes, Katrine has not even briefly considered other vocations. The hairdressing profession is a well-known and distinct vocational field which might be termed a 'classic' vocational field for women. Katrine is driven by a concomitant wish to find a vocation which suits her and one, which will allow her to move away from her hometown on a more permanent basis.

Mathilde, 21, initially left home in order to finish her tenth level at a boarding school ('efterskole'). From here, her guidance councillor suggested she study an agricultural degree as this was the preferred choice of her classmates and Mathilde had no specific preferences. "*My dad used to work as an agricultural assistant, so I thought I know about farm work*". She had already planned to complete a vocational degree, and to do so outside of Bornholm, but she was vocationally undecided.

The agricultural degree brought her to an agricultural VET boarding school with many of the friends from her 'efterskole', a period she at the time of her interview describes as one of the happiest in her life. She completed the Basic Programme as well as two consecutive trial apprenticeship positions, one on Zealand, one on Bornholm. In both cases, the employers did not wish to keep her on after the trial period, and Mathilde was told that she did not have the necessary aptitude for work within agriculture. "*Everyone else studying agriculture already knew how to do everything. I thought you were supposed to learn stuff at school, but I was the only one who didn't know how beforehand.*" She moved back with her family on Bornholm. A few months later, she started a Basic Business Programme at the local vocational college, but she quickly felt stifled by her family and their demands on her as she ended up doing much of the transportation and cooking chores for family members. She decided she needed to move away from home and switched her Basic Business Programme to a college on Zealand. She had expected to move back into a boarding school, but boarding school is limited to students who cannot study the degree close to home. Mathilde describes this as a huge challenge as she did not feel ready to live on her own. She received help through the vocational counselling system and was granted a mentor to help her find local housing, establish a budget etc. Shortly after, however, Mathilde had to admit she was having difficulties doing her academic work in the Basic Business programme and decided she could not continue. Again, she spoke to her vocational counsellor, who helped her decide on a kitchen assistant programme based on an aptitude and interest test. She then switched education programme and school again. At the time of the interview, Mathilde is halfway through the Basic Programme, which she is very happy with. She has made new friends and feels she is well-qualified for the Basic Programme. She lives in the flat she obtained when she started the Basic Business Programme, which is proximate to her new Vocational college. She still feels it is challenging to be living on her own, and wishes it were possible to live at a boarding school like the first one.

As can be ascertained from the process described above, Mathilde has been on a vocational as well as geographical quest, driven by a search for a vocation for which she has an aptitude. At the same time, she has grappled with becoming independent, wishing to be relieved of the demands of her family life, but simultaneously without experience in living on her own. She describes herself as very mobile with a great curiosity for seeing and living in different places. Vocationally she describes herself as very “open”. When asked about her interests and fields of vocational orientation, she is, however, relatively passive, instead referring to the guidance of vocational counsellors more than to herself and her own interests. She exhibits a trial-and-error transition process into the VET system, which from the outside seems almost random, switching, not between related vocational fields, but from agriculture to retail to kitchen work. If she cannot complete the Basic Programme as kitchen assistant, it would be fair to understand her as ‘lost in transition’, collecting a string of personal defeats. Mathilde’s capacity to orientate herself on vocational territories is not very advanced and her capacity to be mobile does her no service in her search for a vocational identity.

Both Mathilde and Katrine express a need to move away from their hometown or area and have an opportunity to gain a measure of independence as well as a chance to reinvent themselves in a new social environment. They do not, as Farrugia has suggested with his term ‘symbolic mobility imperatives’, seek an urban lifestyle that is “more cool” than the place they have grown up (Farrugia 2015). Instead, they express a need and an urge to seek new social circles and friendships. In other words, the motion is primarily a movement away from an individually stagnant social role more than it is a movement toward a particular urban environment.

For the mobility oriented, the vocational education system may function as facilitator of out-migration from particular localities that not only lack access to vocational programmes and apprenticeship positions, but are experienced as sites of social stagnation and blockage (Dahlstrom 1996). To some extent, this function exacerbates processes of centralisation toward urban centres, primarily due to the location dynamics of apprenticeships and work places in the private service sector, such as those within hairdressing and retail. There is, however, also a redistribution pattern between different rural areas. Students seeking ‘regional’ programmes migrate to other rural regions rather than to urban areas.

Motility theorising stresses the importance of the resources of the actors who are able to be mobile (see for example (Kaufmann, Bergman et al. 2004). They have access to mobility means and resources, are competent in using their means of mobility and are able to appropriate the right resources in order to be mobile, collectively termed ‘motility’. However, focussing too unilaterally on the ability to be mobile overshadows the precariousness of movement without a set destination. The difference between Katrine and Mathilde is vocational ‘destination’ or lack thereof. Katrine is in a process of ‘embedding’ herself within a vocation and constructing a

vocational identity, while Mathilde has been ‘floating’ from one vocation to the next. Mathilde’s case shows that without embedding in a vocational identity process, motility is directionless. Mathilde is highly mobile and on the move, but is not really getting anywhere. In other words: being highly mobile is not an answer to all barriers within the VET system and should not be misinterpreted as being resourceful. The mobility oriented also face vocational orientation barriers and are challenged in their search for apprenticeship positions.

7.1.4. SUMMARY

By developing an analytical approach that focusses on differentiating between varying types of spatialised transition behaviours, I have been able to identify three different types of orientation preferences. Each has specific characteristics that distinguish them from the others.

- The **vocationally oriented** do not have a spatial preference, but are dominated by their focus on vocational characteristics and relating it to their own skills, aptitudes and interests.
- The **locally oriented** have their relationship to people and places in their home community at the forefront of their orientation process. Although they also orientate themselves vocationally, their dominant orientation frame is their local area.
- The **mobility oriented** are dominated by their imperative to move out of the community they have grown up in as the centre of their education transition. This has vocational as well as locational repercussions.

7.2. STUDENT TRANSITION TRAJECTORIES

The previous section focussed on the role of the students’ spatio-vocational orientation preferences for their transitions into the VET system. This chapter examines the consequences of their orientations for their further transition trajectories. As the students have been interviewed during their education, this chapter is not about education outcomes. Rather, it focuses on understanding possible relations between the students’ orientation preferences, the types of VET programmes they choose and the apprenticeship markets they must negotiate in order to transition successfully.

Firstly, I analyse how different initial orientation preferences have affected student VET programme choices. I have suggested above that there are discernible patterns between student orientation preferences and VET programme types. In this chapter, I explore this idea more fully. In continuation hereof, and in recognition that the VET system is a dual learning system taking place both in vocational colleges and in firms, I explore how differentiated programme choices are related to apprenticeship markets. The purpose is to understand more fully how differentiated programme choices, made

as a result of students' orientation preferences, also may affect not only their spatial trajectories on apprenticeship markets, but the conditions they meet there.

7.2.1. PROGRAMME CHOICES

As I have presented in Section 5.2.5., the spatial distribution of the VET system's Main programmes follows a pattern, by which there are four overriding types. Just to recap, these are 'the big 12', the regional programmes, the semi-special and 'the small 44'. The table below shows the distribution of students based on their orientation preference and the type of Main programme they are pursuing.

Figure 34: Distribution of orientation types by VET programme provision types

Orientation preference	The big 12	Regional	Semi-specialised	Small 44
Vocationally oriented	Mathias Sara Cecilie Nicolaj	Sofie Frederik	Mads Emil	Oliver
Locally oriented	Emma Caroline Magnus Andreas Laura Tobias Daniel Kasper		Jacob	
Mobility oriented	Mathilde		Katrine Emilie Ida Freja	

The table shows a visible distribution pattern between the students' orientation preference and their choice of VET programme based on its provision type. The vocationally oriented select from a wide range of programme types including both the most typical VET education programmes (= 'the big 12'), the regionally provided programmes, the semi-specific programmes and 'the small 44'. This bears testimony to their vocational orientation preference, i.e. that they truly choose their VET programme based on the content rather than its provision geography. The 'vocationally oriented, but locally strategic' would like to apply for 'the small 44' programmes in the long run, but are presently enrolled in 'the big 12' programmes as they have made strategic decisions to stay in their local community. The vocationally oriented select all types of programmes and can therefore be expected to meet very

varied mobility imperatives and trajectories. The locally oriented are on the other hand, not surprisingly almost all enrolled in 'the big 12' programmes and in programmes that are provided by the most proximate vocational college. The mobility oriented tend to study semi-specific programmes at vocational colleges that can provide boarding facilities from the beginning of the Basic programme.

Collectively, we can ascertain that students' differentiated orientation preferences are related to the provision geographies of the VET system. For some students, the local provision structures determine their vocational choices, while this is not the case for others. And for yet another group, the VET's differentiated spatial distribution patterns function as a mobility opportunity.

Hitherto in the analysis, the orientation preferences have been related to college locations and programme provisions. As the students transition from the Basic into the Main Programme, they must also consider the location of potential apprenticeship positions, in other words the geographies of apprenticeship markets. In the following section, I focus on the mobility imperatives of each orientation preference type and the geographies of their apprenticeship markets.

7.2.2. TRANSITIONS INTO APPRENTICESHIP POSITIONS

As I have argued in section 5.3., each VET programme type has a distinct apprenticeship market dynamic, meaning that institutionalised distribution structures create geographically distinct apprenticeship markets. 'The big 12' create apprenticeship markets which correspond with the vocational college's student catchment area. The 'regional' programmes create apprenticeship markets that correspond with regionalised territories. These may not correspond entirely with the Danish government units called regions as students may cross regional boundaries in order to access the vocational college, which is closest to them. However, in terms of geographical size, and hence the size of apprenticeship markets, they correspond to catchment areas the size of regions. 'The semi-specialised' programmes have national apprenticeship markets and positions are clustered in specific economic centres or thinly distributed. 'The small 44' have a handful of apprenticeship positions on a national scale.

The effects of such differentiated apprenticeship territories is investigated in this section. Based on the biographical narratives I analyse the relationship between the students' orientation preferences and their transition trajectories through the VET system, with a particular focus on apprenticeship markets. This is done by following the students apprenticeship market orientations and their experiences with transitioning from the Basic into the Main programme. I apply the concepts of access, competence and appropriation. Access concerns the students' own experience of whether they are able to access an apprenticeship position. Competence concerns whether students have the formal competences to access an apprenticeship. Appropriation concerns the behaviour and strategies the students display in searching

for an apprenticeship position (Kaufmann, Bergman et al. 2004). I analyse the transition behaviours of students in the passage from the Basic and into the Main Programme in relation to their orientation preferences.

7.2.3. THE VOCATIONALLY ORIENTED

Oliver is seeking one of 'the small 44' programmes and in order to do so, has been forced to move away from Bornholm. He has lived for 8 months at a boarding school in Copenhagen, which he did not like, as he found its rules very confining. Instead, he would have preferred to stay on Bornholm and therefore tried getting a local apprenticeship position, but unsuccessfully. At the time of the interview, Oliver has moved into his girlfriend's flat, but declares that the past 8 months have been a trial.

His apprenticeship territory has expanded from a purely local focus to an apprenticeship territory that consists of the Greater Copenhagen area. After a long unsuccessful apprenticeship application period, Oliver received help from a teacher, leading to an apprenticeship position with a firm in Copenhagen. *"I wish I had known sooner, to make sure I had a personal contact in the firm rather than just sending my application to the firm's address"*. At the time of the interview, Oliver has not started yet.

Oliver has met a mobility demand to move to a highly urbanised labour market with TV and film production companies as he cannot access his preferred programme or apprenticeship without moving from Bornholm. Oliver has shown an ability to move away from his home community, although this was not his personal preference, just as he has the competence to enter a quota-gated VET programme and find an apprenticeship position. He has appropriated endurance, willpower and a willingness to compromise all other interests in order to transition into his preferred programme.

Emil is completing a regional programme and has commuted 2 hours per day from the town he has grown up in to the vocational college in Frederikshavn. This is a trip he is used to, but he was planning to move if he got an apprenticeship in Frederikshavn. His search for an apprenticeship position has focussed on three firms he has always wanted to work in - one in his hometown, the other two in Frederikshavn. He rated them and prioritised his application. None of the firms could hire him at the time, but all expressed an interest in him. One firm, which was not at the top of his list, offered him a position as a junior labourer. After 4 months, he was offered an apprenticeship contract in this firm. *"I say, just go out there and show them who and what you are, and keep coming back until they either hire you or tell you to go away once and for all. What have you got to lose?"* It is in his hometown and he only commutes to school now.

Emil has access to both a Main programme and an apprenticeship position within commuting distance (2 hours by car or 3 hours by public transportation daily). He exerts a relatively local approach to his apprenticeship market. As he has grown up in

a town and a region, where the shipping industry is a dominant economic structure, this approach is tenable and his chances of obtaining an apprenticeship position would probably not have improved if he had moved. He has the vocational and personal skills to gain an apprenticeship position. The primary resources he has appropriated is an outward and active approach to seeking an apprenticeship position combined with a willingness to wait until a contract was made, including taking hire as a junior labourer on a trial basis as a method to show his potential employer, that he was reliable and skilful.

Sofie is completing one of 'the big 12' programmes and can thus access both the Basic and the Main programmes locally. It is, however, very difficult to get a local apprenticeship agreement for chefs on Bornholm, as many of the restaurants only open during the summer. The few restaurants that take in students year round receive a great number of apprenticeship applications from local students, thus saturating the local market. Chef students are told early in the programme about this condition, leading to an almost automatic enrolment in the local school-based practical training programme (SKP) directly after successful completion of the Basic programme. Sofie has been enrolled in the SKP programme for 6 months at the time of the interview. At the time of the interview, she had been placed with three employers for short periods as well as done practical training at the college. She is about to sign a full apprenticeship contract which will last the rest of her training period. She has been commuting all over Bornholm and has had to take her drivers' license and buy an old car, in order to access the restaurants' coastal positions for late hour shifts. She is happy that she has been able to live with her parents during this period and she will continue to do so until she has completed her degree.

Theoretically, Sofie has local access to both her selected Main programme and an apprenticeship position. In reality, the local market only takes in chef students directly after the Basic programme on rare occasions. She is not skilled at accessing non-local apprenticeship opportunities. Sofie exerts a relatively local approach to her apprenticeship market and has not considered expanding it to Copenhagen. Instead, her strategy has been to work hard and show her temporary employers that she is useful in a kitchen, hoping that they will offer her a more permanent apprenticeship contract. She has appropriated many resources into being mobile around Bornholm and making herself available to night- and evening shifts in remotely located restaurants despite not being paid for her work in the temporary practical placements.

These cases emphasise that access to vocational programmes depend entirely on which programme type the student has selected. As the **vocationally oriented** select from the full range of programme types, their access contexts and conditions are multifarious. They range from Oliver's imperative to move to Copenhagen at the commencement of the Basic programme to Sofie and Emil's relatively local scales of education access. The cases also show that most vocational degrees do involve some level of mobility. Some commute more than one hour each way to the nearest college.

Others commute to firm-based practical training, living in boarding facilities for several weeks at a time during school periods.

All students have the formal competence to transition into the Main programme in the sense that the Basic Programme is a formal preparation for the Main programme. However, accessing an apprenticeship position and being skilled enough to gain an apprenticeship position is not merely based on successful completion of the Basic programme. The valuation of the individual VET student takes place on a highly competitive market where the 'true value' of the VET student is assessed by firms offering apprenticeship positions. Whether the individual student actually is competent is not known until the student either gains an apprenticeship position ('competent') or gives up searching ('not competent').

The vocationally oriented students appropriate many types of resources in order to transition through the VET system. Their primary resource, however, is their personal will to obtain learning and training within a preferred vocational track. They are willing to compromise other life plans or, rather, appropriate their life plans into their transition process through the VET system.

The vocationally oriented but strategically local

The vocationally oriented, but strategically local group is conscious of their own preference for a locally-lead life until they feel more mature and better vocationally equipped to move away from home and seek more advanced and/or less accessible vocational degrees.

They therefore select locally-accessible programmes that they may have to commute to, but not leave their home communities in order to obtain. They are differentiated from 'the locally oriented' by perceiving their local preference to be a temporary condition. They have concrete plans to seek a second vocational degree, which will require a high level of mobility and presumably will lead to an apprenticeship position in a location, which requires them to move away from their home region.

Cecilie is seeking one of 'the big 12' (Health care), but is planning to pursue one of 'the small 44' programmes in the future. Cecilie has access to the Health Care programme within commuting distance in Aalborg (2,5 hours daily by public transport) and is seeking an apprenticeship position in the same municipality. She would prefer to live at home for now. For the long-term degree, the paramedics degree, she will have to board at the vocational college in Esbjerg. She would be willing to move "anywhere" within Northern Jutland for the paramedics apprenticeship.

She feels she is competent to gain an apprenticeship position. *"I have worked hard [during the Basic programme, ed.] and scored highly on all assignments, not had any*

sick leave, and I have shown a sincere interest in the field. This will be in my application for an apprenticeship position". She is worried that her youth (17 years old) will be a detriment to gaining a contract, but she cannot change or improve this competence requirement. Her youth and related lack of experience is also the barrier that limits her access to her preferred vocational programme, the paramedics degree. She appropriates a strategic plan to improve her personal and vocational skills, whilst waiting to gain formal access and competence to the paramedics degree. She does not want to think of herself as being 'in storage' until she is old enough to gain access to an apprenticeship position, so she appropriates all her resources into being a 'good' student who does her homework and is reliable.

Cecilie's case indicates that 'being too young' may be a deterrent in accessing a preferred vocational programme as well as an apprenticeship position. She and Frederik (see p. x] have both adopted long-term strategies in order to gain access to their preferred vocation, but both rely on access to an apprenticeship position in proximate distance to their home community in order to gain the experience necessary to embark on and gain access to their long term plans.

They are formally competent to enter their current VET programme, but lack either formal (minimum age requirement) or informal (vocational experience) competencies to enter their preferred VET programme. Whether they possess the competencies to gain an apprenticeship position within their current VET programme is, again, valuated by market conditions. As with the vocationally oriented, their primary appropriation resource is their will to obtain the necessary skills and training within their preferred vocation and their willingness to override other life plans.

7.2.4. THE LOCALLY ORIENTED

The locally oriented primarily choose one of 'the big 12' programmes as they are provided at most vocational colleges, including the smaller colleges located in rural and peripheral areas. Choosing a programme which at Main level is provided by the local vocational college has a series of advantages as well as disadvantages. On the one hand, the college has built up a relationship with local firms that offer the specific vocation-based apprenticeship positions within the college's catchment area. These firms are represented in the Local Education Committees and have associations with the college's Practical Training Centres. In other words, there is an institutionalised local structure, which supports student transitions from Basic to Main programmes within certain vocational programmes. This structure creates an apprenticeship catchment area with the vocational college in its centre. Depending on economic conditions and cycles as well as firm- and individual-based circumstances, this catchment area shapes a well-defined vocation-based apprenticeship catchment area.

On the other hand, apprenticeship markets for locally-provided vocational programmes tend to be saturated with would-be apprentices. Periodic graduation outputs from local Basic Programmes repeatedly pervade local apprenticeship

markets, making it structurally difficult to ensure all Basic Programme graduates an apprenticeship position.

In terms of access, the locally oriented make sure they have local access to both the Basic, Main and apprenticeship elements of their VET education. In terms of competence, they, like the other VET students, are formally competent to enter the main programme, but in reality this is determined by market mechanisms and localised balances between supply and demand of apprentices.

Magnus has shifted from the sports retailing track to the childcare programme because he could not find an apprenticeship education. Now he has completed a second basic programme and must again compete against his classmates for an apprenticeship position. His class consists of 21 students and there are five municipal apprenticeship positions. Asked about how he perceives his possibilities of getting one of the limited number of apprenticeship positions within childcare, Magnus says he “*crosses his fingers and hopes*”. He has heard that many municipal childcare institutions prefer men, but other than a perceived gender edge, he does not have a strategy for making himself attractive on a pressured apprenticeship market.

Other than his gender and an inclination to complete his education, he doesn’t feel he has many resources he can appropriate in order to transition into the main level of the VET system. He has been told during the Basic programme that he should be more active and ‘aggressive’ in his approach to obtaining his education, but Magnus is not sure how to do this.

VET students like Magnus, who have not developed a vocational identity, are thus in danger of drifting from one local VET programme to the next without developing a vocational identity nor transitioning into the Main Programme level of their chosen educations. They seem to be in danger of developing into ‘local drifters’ who have not fully entered a vocational field.

Jacob is doing a regional programme and lives at the boarding school at Frederikshavn during school periods. He has primarily applied for apprenticeship positions in two small shipping industry towns on the west coast of Northern Jutland, all within commuting distance of his home. In terms of access, he must be mobile in order to complete the school element of his education but he is located within commuting distance to a relatively large number of potential apprenticeship positions. Despite this, it has been challenging to find an apprenticeship position. Through a 10-month period, where Jacob has been searching for an apprenticeship position, he has been in contact with a number of firms in the area, returning repeatedly to apply for an apprenticeship position:

“It’s difficult; I had to completely overstep my own boundaries. It’s okay to go to a firm the first time and say: ‘I have an application, I would like to apply here’.”

However, when you are there for the 7th or 8th or even 9th time and you keep asking. It is embarrassing. And you don't know if they actually don't have any money or orders or if they just don't want you".

Jacob's experience draws into focus the insecurity of not knowing whether you have the 'real' competence to gain an apprenticeship position as a student. Is the barrier structural, i.e. economic challenges within the firm and thereby not related to Jacob, or do the firms find him lacking some unspoken personal or vocational competences? The valuation of student competences on market conditions makes it difficult for students to assess their own qualifications.

Jacob has appropriated several types of resources. He has a network through his father, making him knowledgeable about the different firms in the area. As his father does not work in one of the firms himself, the network is indirect and more related to hearsay than to direct contacts and specific knowledge about apprenticeship positions. Jacob also appropriates a constancy and a willpower to gain an apprenticeship and has been constant for 10 months while he was waiting for an apprenticeship position.

7.2.5. THE MOBILITY ORIENTED

As the mobility oriented seek VET programmes away from their home communities as soon as they start the Basic programme, this often means that the students are very young and they depend on the support of their vocational college, including access to boarding facilities. The mobility oriented in my sample have a tendency to pursue VET programmes that are gated by quota systems. This is the case for the hairdressing profession, for example. Gating a programme through limiting quotas ensures that market imbalances between supply and demand of specific apprentices is curbed. My sample does not contain students who have applied for a quota-limited programme and not been accepted. Once admitted into the programme, accessing an apprenticeship position after successful completion of the Basic programme seems to be relatively easier than in programmes that are not guarded by quotas.

Katrine is pursuing the hairdressing programme, which is a 'regional programme' that is provided in 1-2 locations in each region. Geographical access is limited and distribution of apprenticeship positions is uneven, most dense in urban areas. Thus, access to apprenticeship positions in peripheral municipalities like Jammerbugt and Bornholm is limited. Katrine is hoping to obtain an apprenticeship position within or in proximity to Aalborg. If this is not possible, she will need help from her vocational college in order to gain knowledge about other options.

The mobility oriented depend on their vocational colleges to access apprenticeship markets and they expect to gain apprenticeship positions within the catchment area of their vocational college. Due to Katrine's location in the city of Aalborg, she has easier access to a number of potential employers within proximate range of her new residence, whereas Emilie, who was 16 when she left home in order to study

hairdressing, needs to travel to other small towns in the region. They do not have access to a car and their mobility is relatively limited.

Despite deliberately choosing to move away from home, Katrine is nervous about moving out of the boarding school and having to find her own accommodation. She is not happy with all the curfew and canteen food rules, but also feels that it is a safe environment where she does not have to concern herself with cooking.

The wish to move away from home is not the same as having competence to set up a household, cook and control a budget. The wish to leave behind old social roles and make new friends does not secure against loneliness. And the wish to become more independent from your parents does not secure against still being dependent on them. These students are in need of many types of support, including support in setting up their own homes etc. As Emilie, who is a said: *“I had made an application for a shop in Slagelse. I had no idea where Slagelse was or how to get there. If I get it, [the apprenticeship, Ed.] I will have to find out what is there, where to live, are there busses? “.* The students who are younger than 18 years old don't have a drivers' license and they are unfamiliar with the geographical distribution of small towns in the regions they have moved to.

7.2.6. DISCUSSION

Access

The analysis above indicates that there is a discrepancy between the easy access to Basic programmes compared to the difficult and much gated access to Main programmes – not least, apprenticeship positions. This condition seems to be generally accepted as the Basic programmes are considered to be personal and vocational clarification courses and not solely vocational preparatory courses. However, one of the central initiatives in Reform 2015 was to implement gating at the Basic level. The fact that the number of education ‘places’ at the Basic Programme level is greater than the number of education ‘places’ at the Main programme level does, however, provide a highly competitive situation in order to access apprenticeship positions.

Competence

The narratives indicate that one of the greatest difficulties in the transition between the Basic and the Main programme, is that students move from a state-regulated, planned Basic programme to a market, which they have difficulties in understanding. This means that VET students, who are ‘stuck in transition’ between the Basic programme and the Main programme, i.e. they are waiting for an apprenticeship position and have been waiting for months, don’t know if they have the competences, the ‘transitionality’, to transition into an apprenticeship position. They have not been formally accepted or rejected as such. They have successfully completed the Basic Programme and as such, they have the competence to transition. Most of the respondents have experienced being rejected by firms in the period that they were searching for a contract. This includes the students who eventually did obtain an apprenticeship contract. None of the apprentices I have interviewed have been told, that they are not qualified to be on the apprenticeship market. Instead, they have been told that the firm is not hiring at the moment, that the firm already has an apprentice etc. As time passes, some of the students start in school-based practical training, others have elected to start another Basic programme or they drop out and try to find work, in some cases, working as a junior labourer, hoping to get an opportunity at a later date. However, it is a problem, that students do not know the markets they must negotiate. They don’t know how many firms that are actually willing to hire an apprenticeship.

The orientation preferences

The vocationally oriented have multifarious access conditions, depending on whether the individual student has chosen the ‘big 12’, regional, semi-specific or ‘small 44’ VET programme. Therefore, this orientation preference type does not exhibit common access conditions. The analysis does show, however, that the vocationally oriented as a group are very resourceful. They are competent and

appropriate many different types of resources in order to secure their transition into an apprenticeship position. Their common transition behaviour is their willingness to make compromises on other lifestyle choices in order to complete their preferred vocational degree. This means they are willing to move away from home, or stay in their home community even if this was not their desire. It is perhaps also their vocational dedication and personal tenacity, which seems to make them relatively successful in transitioning into an apprenticeship position.

The locally oriented have easy geographical access to both their Basic and Main programmes, as this is a defining premise of their orientation preference. However, staying on local apprenticeship markets with a group of Basic programme classmates, who are seeking an apprenticeship position within the same field, results in highly competitive markets. Indeed, this orientation preference type seems to have the greatest challenges in 'transitionality'. Access to local apprenticeship positions is fairly restricted, and as I have pointed to above, the locally oriented are unsure if they have the competences necessary to be hired as an apprentice. As some of the locally oriented lack an embedding into a vocation, i.e. has engaged themselves in a vocational identification process and are able to understand what the core of the trade is about, they are also unsure which resources to appropriate. This results in the locally oriented being the orientation group which faces the greatest challenges in transitioning into an apprenticeship.

The mobility oriented seem to have relatively easy access to their preferred vocational programmes. Many of these are gated by quota systems, and this study has not been able to explore whether lack of access to quotaed programmes detains some would-be mobility oriented at home. The mobility oriented also seem to have the competence to transition into the Main programme, and through the help and support of their vocational colleges, these students do not face serious barriers to finding apprenticeship positions. This may partially be due to the relatively favourable apprenticeship conditions on markets, where access to VET programmes are controlled by quota systems.

The mobility oriented do need support, however. Some of them are very young and find the transition from the Basic programme into the Main programme, where they lose their boarding house rights, is an especially vulnerable transitions period.

Collectively, the analysis of the transition trajectories of each orientation type, indicates that there indeed are spatialized effects of their differentiated orientation processes.

The vocationally oriented seem to have high levels of 'transitionality' and, although we don't know the final outcomes of their education process, seem to be able to transition successfully through both key transition points. Whether this leads to local or non-local lives and work lives seems to depend on whether they have chosen a 'big

12', regional, semi-specific or 'small 44' type programme. Semi-specific programmes and 'small 44' programmes tend to lead to outmigration, while 'the big 12' at least at the outset will lead to a local working life.

The locally oriented have low levels of 'transitionality' and as a group seem more challenged than the other two groups in carrying out successful transitions into apprenticeship positions. Those who are successful lead local lives, although several of the interview persons in this group did indicate they would consider outmigration when they were a bit older. Those who are challenged and cannot obtain an apprenticeship position will have to find other education opportunities. In time, as they mature and perhaps gain a better knowledge of themselves, their interests and competencies, they may have improved their aptitudes for orientating themselves vocationally. They may enter the VET system as young adults and try again. In the meantime, their lives will probably be lead locally.

The mobility oriented have high levels of 'transitionality' and seem capable of transitioning successfully into an apprenticeship position. As one case showed, it is not enough to be highly mobile. Moving from one vocational programme to the next and shifting places of residence is not a sign of strong transition resources and the interviewed VET student may find herself lost in transition.

7.3. STUDENT ORIENTATION PREFERENCES AND THEIR SOCIO-VOCATIONAL RESOURCES

As I have shown in the previous section, it is the vocationally oriented who seem best equipped at transitioning into and through the VET system by accessing supra-local education opportunities, enabling them to access less 'crowded' apprenticeship markets. I explore whether there is an intersection between the three orientation preference groups and their parents' resource bases. I have defined parents' resource bases primarily as the parents' formal educations and their current relation to the labour market as well as to specific occupational fields. I also include siblings and partners, if the VET students are living with a partner. This is based on empirically-grounded observations with theoretical underpinnings, that some informants seem to be surrounded by families and partners' that are vocationally and occupationally embedded, whilst other informants stand quite alone, without parents' or friends within the education system. I also define it as the parents' direct and indirect involvement in VET students' transition phases. This includes enquiring about their attitudes toward and valuation of education attainment generally and their ability to help their children find an apprenticeship position specifically.

In the following, I have analysed the relationship between the parents' vocational background and the youths' vocational orientation strategies through the cases. In each of the following sections, I have noted the parents' and older siblings' highest attained education and relationship to the labour market. If the VET student is living with a partner, I have also included their education level and relation to the labour market. The purpose is to analyse whether the VET students' orientation preference is related to the family's vocational background and relation to the labour market.

7.3.1. THE VOCATIONALLY ORIENTED

In this section, I have noted the parents' and older siblings' highest attained education and relationship to the labour market for the vocationally oriented.

Figure 35: Vocationally oriented and their families' education and labour market relations

Name and vocational field	Family's education and labour market relations
Mathias Technical	Both parents are VET trained, both in full employment. One older sister, who is studying a higher education degree (pedagogy).
Mads Technical	Father is VET trained. Mother's education is unknown. Both parents are in full employment. Parents are divorced. Father is involved in Mads' education choices. Has two younger siblings who are still in grade school.
Emil Technical	Both parents are VET trained, both are in full employment. Has an older brother who is VET trained. Father hoped Emil would do a higher education.
Oliver Technical	Father is VET trained. Mother's education is unknown. Parents are divorced and he has no contact with his mother. Father is in full employment. No siblings.
Sofie Cook	Both parents are unskilled but in employment, though father is on partial sick leave. Both work within the restaurant and catering/ fast food sector. Two older siblings: one is trained as a waiter, one works in food industry but is formally unskilled.
Sara Childcare	Both parents are unskilled, but in full employment. No special vocational field. Two brothers who are still in grade school. Partner is VET trained.
Frederik Technical	Both parents are VET trained, both parents in employment, though father is on partial sick leave. Has a younger sibling who is still in grade school.
Cecilie Healthcare	Father has a higher education, whilst mother is VET trained. Both are in full employment. Has two younger siblings who are still in grade school.
Nicolaj Childcare	Father is VET trained and is in employment, but not fulltime. Mother's occupation is unknown as she is not in contact with the family. Nicolaj has two younger brothers, who are still in grade school.

As can be seen from the above, the students who have a vocational orientation preference tend to have parents who are vocationally educated themselves. In most cases, both parents have a vocational education and both tend to be on the labour market. Younger siblings tend to attend an education corresponding to their age group, whilst older siblings also have a VET degree.

There are two students whose parents are formally unskilled. In Sofie's case, the family exhibits a vocational orientation within the cooking industry. Sofie's father has worked as a cook without formal training, while her mother works at a takeaway and a sister is a trained waiter. The family has a background as restaurant owners and in catering. Cooking is an important aspect of Sofie's family life and she has learned to cook at an early age. Sofie has thus been oriented toward her vocation through her family and is the informant who has most strongly been socialised into a specific vocation, despite the fact that her parents are without formal training and education.

Sara's parents both work as unskilled labourers at a local food production factory. There is no specific vocational or occupational orientation in her family. Sara moved away from home at a young age and was originally mobility oriented, but has since switched orientation preference. She now lives with her boyfriend, who is an apprentice. His father is vocationally trained and their close friends are in the VET system or have finished their vocational training. She has thus managed to embed herself in a social setting where her closest relations have vocations and/or are in vocational training.

The rest of the vocationally oriented have vocationally trained parents, where the fathers tend to have technical vocations, whilst the mothers have vocational degrees within private and public services. It is, however, the exception more than the rule that the children choose the same vocational fields as their parents. The exceptions are Frederik, who is training to become an industrial technician whilst his father is a blacksmith, and Cecilie, whose mother is a health care worker while Cecilie wants to be a paramedic but has started her training in health care. In both cases, Frederik and Cecilie have expressed that they did not want to pursue the same careers as their parents, but as both are pursuing locally provided VET degrees, and both planning strategically for more specialised VET programmes later, their current VET programme is a strategic compromise. They are both seeking individualised paths toward vocational careers that they identify with, which is a general characteristic of the vocationally oriented.

Their biographies underline that the (gendered) socialisation into a specific vocation, passed on from parent to child, that seemed prevalent some decades ago (Evans, Furlong 1997) is no longer in place. The vocationally oriented seek individualised paths that satisfy their field of interests and fit with their aptitudes and, if successful, lead to identification with a specific vocation. This does not mean, that parents do not socialise their children and position them toward a vocational education. The vocationally oriented relay stories about how their parents have augmented the children's interest fields in ways that either directly or indirectly helped develop their vocational orientation.

Emil and his brother have spent time with their father walking through the fishing fleet and docklands of their local town, and although their father does not work here,

both brothers found the harbour area to be a fascinating place that they would like to work in. Emil's brother is now a blacksmith in the harbour and through him, Emil knew that blacksmith work could be monotonous, which is why he chose ships fitting. Emil has a clear sense of the commonalities and differences between related vocational fields, a knowledge he has partially gained through his family.

Mathias has also looked up to his father's closest friend and, through him, became interested in electrics. The father's friend is a trained electrician and when Mathias was given an opportunity for a one week work placement during grade 8, Mathias' father used this contact to arrange it. This placement was a defining moment for Mathias in terms of deciding which vocational direction he would follow.

Oliver was determined to find a vocational programme very quickly and did not consider his hobby – films and film production – to be a field within which he could make a living. He had heard that it and computers were a vocation with many job opportunities, and therefore started the Basic Programme as an IT-supporter. Once he found this to be primarily a servicing function, he quit school. His 8 month sojourn at a folk high school and subsequent decision to move to Copenhagen to seek a TV- and film production assistant VET has been supported by his father.

The vocationally oriented indicate that their parents have expressed a general expectation to gain a formal education, but have not interfered with which specific vocations were pursued. In some cases, the parents have wanted their children to pursue an academic tract, i.e. 'gymnasium', but have respected their children's choices to pursue a vocational degree. Both Emil and Mads were encouraged by their fathers to pursue an academic tract. When asked what they thought their father's motive might be, they had very similar answers: "*I guess it was because I got good grades and the student councillor said I should go to 'gymnasium' and I think my dad thought I would have better work opportunities*" – Mads.

These findings substantiate the work done by Corbett (Corbett 2009b), Hansen (Hansen 2014) and Gravesen (Gravesen 2012) on intergenerational education positioning. Corbett and Hansen have advanced conceptualisations of the decision-making frames employed by families in remote fishing communities, while Gravesen's work has focussed on educational positioning among differently positioned social groups in three urban neighbourhoods. Corbett argues that the parents' basic understanding and valuation of gaining a formal education is pivotal in their children's educational decision-making. Hansen underlines that parents' decision-making frames are directly tied to their own positions within local occupation structures (Hansen 2014). Particularly relevant for my study, Corbett and Hansen's work refer to vocationally embedded families that stress the importance of their children gaining an education because it is important to be capable and knowledgeable within a range of vocational fields and skill areas. Amongst these families, it is deemed valuable to contribute to society (Gravesen 2012) by being

practically skilled, to be knowledgeable about society and to become economically independent. This type of positioning would support gaining a VET education as well as profession-based bachelor degrees such as nursing, teaching etc. Among these families, there is also an interest in vocational fields and identification structures related to specific occupational and vocational fields. In another group of families, their value systems stress the importance of gaining skills in order to get a job and make a living. Here, education is not a goal in itself, but a means to a secure income. The path to economic independence should therefore be as short as possible. Schooling is perceived to be 'a necessary evil' which must be traversed in order to access the labour market. There is not a clear demand to identify with a specific field, but to find labour market openings and train practically for these. This valuation system would lead to semi-skilled education paths or to work as an unskilled labourer.

Based on such an understanding of family and occupation based education positioning, the analysis of my sample, without being subjected to ethnographic observation methods, indicates that such positioning is taking place. A majority of the vocationally oriented stem from families that value formal education, have an occupation-based identity relation with the labour market and expect their children to gain skills and competences, which are socially 'useful'. The VET students are encouraged to orientate themselves amongst a wide field of vocations and to assess how different vocations involve different types of work places, tools and functions. They are also encouraged, through their apprenticeship positions, to orientate themselves on potential labour markets and to understand how firms function in local communities. They are quite discerning about which characteristics differentiate one vocation from a related vocation, to a degree where some students could be called opinionated about vocations they have not chosen. Thus, a specific orientation as well as differentiation process is taking place with this group.

The ability to give this form of vocational orientation process primacy during key transition points in the VET system is a strong resource which the children of vocationally and occupationally positioned parents are able to appropriate. They are capable of discerning different types of skills, tools, machinery, vocation-specific knowledges and functions from each other, just as they have an idea about potential work places and their cultures. This is the result of an interaction between many elements, which collectively can be termed a type of vocational literacy, i.e. an ability to 'read' a vocation. This can consist of the vocational orientation that takes place during the VET Basic programme. It can also consist of vocational counselling and other vocational knowledge absorbed during compulsory schooling. Finally, it can consist of vocational and occupational socialisation through family relations and friendships. Above all, vocational literacy is perhaps the ability to 'read' yourself in relation to a specific vocation, i.e. to assess own interests, aspirations and aptitudes in relation to the functions, work tasks and demands a specific vocational field entails. Growing up in a vocationally-embedded family seems to support the development of this type of literacy.

Once 'vocationally literate', the vocationally oriented are able to overcome mobility imperatives and 1) orientate themselves on supra-local vocational fields and 2) access non-local Main programmes through boarding school facilities combined with local apprenticeship or through outmigration to non-local, vocationally-defined labour markets, often located in urban regions.

7.3.2. THE LOCALLY ORIENTED

In this section, I have noted the parents' and older siblings' highest attained education and relationship to the labour market for the locally oriented.

Figure 36: The locally oriented and their families' education and labour market relations

Name and vocational field	Family's education and labour market relations
Emma Commercial	Mother is VET trained, but is physically handicapped due to an accident and is unemployed. The father was vocationally educated, but parents have been divorced and the father is dead. No siblings.
Caroline Child care	Both parents unskilled. Mother is in full employment. Father's employment status is unknown as the parents are divorced and the father is not in touch with the family. Two older brothers have no education and are still living at home. Is living with VET trained partner.
Jacob Technical	Mother is VET trained, father is unskilled. Both parents are in full employment. Older brother is VET trained, but there is not much contact.
Kasper Technical	Mother is VET trained, father is unskilled. Both are in full employment. They are divorced. Older sister is doing a higher education degree within pedagogy.
Magnus Child care	Both parents are unskilled, but in full employment (father is about to retire). Two older sisters, one with a higher education degree in pedagogy, another is doing a VET degree.
Andreas Commercial	Father is unskilled, mother is VET trained. Mother is in full employment. The father's situation is unknown. The parents are divorced. No siblings.
Laura Health care	Father is unskilled, mother is VET skilled. Father is outside labour market due to long-term illness, mother has a marginal position on labour market. Has one younger sibling who is still in grade school. Boyfriend is an apprentice.
Tobias Technical	Father and mother are both skilled and both are in employment. Has one sister in academic secondary tract.

Daniel Technical	Father and mother are both skilled and both are in employment. Has one younger sibling. Girlfriend is VET student.
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The locally orientated tend to have parents without formal skills and/or with marginalised positions on the labour market. In many of the families, at least one parent has left the labour market at a relatively young age due to illness or accidents. There are also several single mother families where the father is not in contact with the family. While parents of both the vocationally oriented and locally oriented may be divorced, it is among the locally oriented we find single parent families. This may be significant as there may be fewer resources in these families, including fewer economic resources. For example enough resources to give access to a car and get a driver's license. It may, however, also be significant concerning vocational socialisation. Vocational structures are highly gendered (see section 6.3) and the lack of a father figure in some family structures may influence the vocational socialisation processes of boys negatively.

The marginal relationship to the labour market is not limited to the parents, but also concerns older siblings who have not obtained an education and who are outside the labour market. However, in other cases, both parents are unskilled, employed and the siblings are within the education system. We may thus conclude that there is no determinacy about parents' education backgrounds, their relations to the labour market and the VET students' orientation preference. However, seen collectively as a group vis-a-vis the vocationally oriented, the locally oriented come from families where vocational orientation is less strong in the parent generation.

Among the locally oriented, some are vocationally uncertain and seem vocationally adrift, serially switching from one vocational programme to another due to transition barriers. These barriers may be structural and pertain to the opportunity structures of the VET, or they may be related to personal identity challenges where the chosen vocational programme does not suit their expectations or requires aptitudes they do not have.

Magnus comes from a family where both parents work as unskilled labourers. They have a refugee background and Magnus does not know if they had a formal education when they arrived in Denmark more than 20 years ago. There is a general expectation that he should complete an education, but his parents do not pressure him about which education to seek. He has two sisters that have moved away from home and are completing education programmes in Aarhus and Aalborg. Magnus only has his friends and sisters as education role models and does not have access to knowledge about a wide range of different vocations and occupational cultures. Most of his friends have retail degrees, which was Magnus's original VET choice. While he does not seem deeply committed to either a retail or a childcare degree, he simultaneously

seems to lack the ability to orientate himself amongst a wider and multifarious supply of VET programmes.

Not all of the locally oriented are as vocationally ‘adrift’ as Magnus. Some are vocationally embedded, but, due to other life preferences, seek locally lead lives. At the key transition points within the VET, they therefore limit their vocational orientation and selection to locally provided programmes.

Amongst the locally oriented, there are parents like Magnus’ who consider gaining an education as a valuable aspect of transitioning into adulthood and expect their children to gain an education. It also consists of parents like Caroline’s that believe being employed is a sign of reaching adulthood and perceiving education as a means to get a job.

Caroline: *“I guess my Mum has always said we should get a job. She has not spoken so much about an education”. And later Caroline says: “I think the most difficult for me has been to be able to find out what [education] I fitted with. I didn’t think it would be so hard. I thought you chose a programme that interested you and that was that”.*

The locally oriented thus consist of two types of local orientation. One group has difficulties orientating themselves vocationally because they are ill-equipped at assessing what aptitudes a particular vocation requires and assessing whether they have such aptitudes, just as they have difficulties conceptualising what the work they will be training for actually consists of. This is related to family frames that cannot support the development of such conceptualisations, as they have limited contact with the occupational structures of the labour market. This group is locally oriented because they lack vocational orientation resources, which they can appropriate at key transition points.

They are dependent on a school-based vocation-clarification process, where they are introduced to a vocational field through the Basic programme and through practical placements. They do not have the family frames, which support vocational clarification processes, like Morton and Mathias among the vocationally oriented, who are able to have conversations with their brother or father’s friend about what it is a blacksmith and an electrician does. In a sense, they are learning by doing and utilising the Basic Programme in order to do so. As their vocational orientation ‘literacy’ is rudimentary, this group may depend on longer sojourns within vocational clarification courses, before they are able to orientate themselves vocationally, and this may not take place before they have been exposed to a placement in a firm-based learning environment. Unfortunately, they are structurally challenged by the transition imperative within the VET system, dictating that transitioning into the Main programme is gated by access to an apprenticeship position. As the locally oriented are not strongly vocationally clarified and are competing on often saturated local

apprenticeship markets, the locally oriented are structurally challenged by not being able to access a wider and perhaps supra-locally accessible VET programme.

The second type of locally oriented seems to stem from families that do have connections to the occupation structures on labour markets and that theoretically could provide socialisation frames that include the development of what I have termed 'vocational literacy' above. Yet this group is not oriented toward education and therefore not toward vocational orientation preferences. They have negative experiences with their compulsory schooling, many of them are challenged by mild or grave forms of dyslexia, and their primary orientation preference is to their group of local friends. It goes beyond this study to provide a nuanced frame of understanding for the complexities of these challenges. Previous research has stressed lack of intellectual aptitudes (Tanggaard, Nielsen et al. 2015, Jensen, Larsen 2011), substance abuse problems, psychological development problems (Nielsen, Tanggaard 2015, Katznelson 2007) and problems related to gendered identity constructions (Jørgensen 2013, Faber 2014).

Both types of locally oriented rely on a locally provided vocational education offer or specific supportive measures to improve their vocational literacy before they are able to access the supra-local programmes offered in the VET system. The locally oriented are structurally challenged because vocational colleges are incited to utilise their Basic Programmes to introduce their own Main programmes and not those of competing colleges. They are also structurally challenged due to local apprenticeship market imbalances.

7.3.3. THE MOBILITY ORIENTED

In this section, I have mapped the parents' and older siblings' highest attained education and relationship to the labour market for the mobility oriented.

Figure 37: The mobility oriented and their families' education and labour market relations

Name and vocational field	Family's education and labour market relations
Mathilde Food	Both parents are unskilled, father is outside labour market due to illness. Mother is employed. Younger siblings are still in grade school.
Katrine Hairdresser	Both parents are VET skilled, both parents are fully employed. One sister is in the academic upper secondary tract.
Emilie Hairdresser	Both parents are unskilled, both are fully employed. Has one unskilled brother, who is a self-made entrepreneur.
Ida Food	Both parents are skilled, both parents are fully employed. No other siblings.
Freja Commercial	Father is VET skilled, mother is unskilled. Both parents are fully employed. Sister is in the academic upper secondary tract. Boyfriend is leaving upper academic secondary tract and planning higher education.

The group of mobility oriented students consists of a few young women whose vocational orientation process is deeply embedded in a wish to move away from home and a process whereby the youth seeks practical possibilities connected to living by themselves at a young age. Some of these students were younger than 18 when they moved. It was important for them that they had access to boarding schools where meals were served and the transition to becoming independent could take place gradually. They are not driven by the wish to move to large urban centres and a conceptualisation that urban living per se is 'more cool' or valuable than other places, as suggested by Farrugia with his concept of symbolic mobility imperatives (Farrugia 2015). The move, which is temporally interrelated to their vocational orientation process, is driven by personal motives to free themselves from family bonds. This concerns service and caring functions as well as fixed identity structures within their families. In terms of vocation choices, the mobility oriented I have interviewed tend to choose vocations within the private service sector, i.e. financial services, hairdressing and restaurant chef. In other words, they are also vocations, which target urban labour markets. Indeed, the two hairdressing students are sure that hairdressing

is a preferred vocational field for them, but they also both stress that their primary preference was to move away from their home region. Had they not been accepted into the hairdressing programme, they would not have chosen to stay in their home area. There is an exception from this pattern amongst the mobility oriented. Mathilde is studying for a degree, which is available in her home region (kitchen assistant). This degree is the result of two changes in education programme and indicates that this young woman has been very unclear about where her interests and aptitudes were. She has also moved back to Bornholm once during this process and subsequently left again after she realised that she did not wish to live there. She is not driven by symbolic or geographic mobility imperatives. I would venture to call it 'lost in transition', where the prerogatives of simultaneously finding a vocation and moving away from home for the first time, exceed the abilities of this young woman.

The parental backgrounds of this group of girls vary – the group consists of girls both from homes with two unskilled parents, who are both on the labour market and girls from families with two vocationally trained parents. Their mobility imperatives seem primarily to be driven by processes of individualisation whereby they wish to define themselves as separate from their families and the social structures from whence they were raised.

It is, of course, relevant to remark that the mobility oriented I have interviewed are all females. As my investigation is small and its approach explorative, it can at best suggest that the young women's orientation processes are an effect of or influenced by gendered identity, -mobility and -vocational processes. This indicates a need for further studies with an approach that to a greater degree focus more directly gendered outmigration patterns not related to social mobility.

7.3.4. DISCUSSION

Overall, the analysis shows that the VET students who are most vocationally assured when they originally choose a vocational programme come from families where the parents as well as other siblings have formal vocational training. This should not be confused with a direct occupational socialisation where children choose the same occupational field, and thereby vocational degree, as their parents.

It seems that the children of the vocationally skilled are better equipped at orientating themselves vocationally, also on supra-local vocational territories. They are better able to evaluate which competences a given vocation demands and to assess how their personal interests and aptitudes fit in with such demands. It seems some processes of vocational socialisation takes place in these families, resulting in transition appropriation resources, which I have termed 'vocational literacy'. The children are better able to orientate themselves vocationally on supra-local levels, an ability which increases their motility, resulting in an ability to overcome the mobility imperatives of the VET system. This differentiates them from the locally oriented.

The locally oriented are less able to assess what their aptitudes and interests are. They also seem less equipped at 'reading' what a vocation is, what functions they can expect to perform and what personal as well as vocational skills a certain trade will demand. They tend to come from families that are marginalised on the labour market and it is easy to hypothesise that there is limited vocational socialisation in home life, where the concept of identifying with a vocational culture or a trade-based identity is only rudimentarily developed. The analysis also shows that many of the locally oriented not only stem from unskilled parents, but also from broken homes that have been the responsibility of a single parent for many years. The resources and role models available to children in education transition phases are limited in this group.

Combined with the analysis of the limitations of seeking local apprenticeship positions within 'the big 12' vocation programmes, the locally oriented are indeed challenged. The uneven geographical distribution of VET education provision has socio-spatial ramifications, as children of unskilled parents are structurally disadvantaged because they are less able to orientate themselves vocationally and thus supra-locally.

7.4. OTHER FINDINGS AND SUMMARY

Other findings

Originally, it was my intent to intersect my analysis of student transition orientation preferences and trajectories with their attachment to place as well to discuss observed gendered opportunity structures. However, due to the complexity of the transition analysis, these other aspects have not been developed. I would like, however, to make some observations for further studies.

Mobility capacity building as a process

The young people I interviewed have all been asked about their emotions and practices in the place they have grown up as well as toward other places they feel attached to. Generally, except for the mobility oriented, all interviewed persons spoke very positively about their home communities. Although many recognised a lack of work opportunities almost all expressed positive sentiments in relation to the place they had grown up. There were no discernible differences between the vocationally oriented and the locally oriented. During the interview process, it became clear that the VET students who were most connected to their original home communities, where those, who were still living at home, and had not experienced living somewhere else. An obvious observation is that motility, i.e. the access to, competence in and appropriation of skills of individuals to be socially and geographically mobile increases with experience (Kaufmann, Bergman et al. 2004).

While focus throughout much of this chapter has been on the imperatives of mobility, understood as a negative aspects of local development conditions, there is an aspect of the VET as enabling mobility resources. The fact that many of the VET students I have interviewed have moved to boarding schools for shorter periods, raises their capacity to be mobile in general. The youth who have moved away from home to a city for the first time, to a much greater degree than those who had not moved at all, see themselves as mobile later in life. When asked about where they see themselves in 5 and 10 years, the VET students who have not moved, express that they see themselves, as perhaps moving away to try new work opportunities, but then see themselves, as moving back to their home community, often in conjunction with starting a family. For the students, who have moved away from home and are leading more or less independent lives in a small or a large city, envision a life trajectory, where 'serial movement' is possible. I.e. they envision themselves living for a while in for example Aalborg or Copenhagen, then perhaps moving abroad or working on a ship. There is a sense of very concrete original disembedding from the original home as a more profound process, than any moves, which may take place later.

Summary

The aim of this analysis has been to understand the effects of the spatial complexity of the vocational education and training system on its students and their education trajectories. Particularly, the aim was to improve our understanding of what role the system's spatial complexity might play in students' successful and failed education transitions.

With a concrete aim to focus on understanding how young people, who are entering the VET system, orientate themselves vocationally and spatially, I developed an analytical model based on my analysis of 23 qualitative interviews on VET students' transition narratives.

Orientation preferences

The VET students displayed three overall types of transition behaviours, operationalised as orientation preferences. These were the vocationally oriented, the locally oriented and the mobility oriented.

Each has a series of distinct characteristics, which discern them from the other orientation types. The vocationally oriented do not have a spatial preference, but are dominated by their focus on vocational characteristics and relating it to their own skills, aptitudes and interests.

The locally oriented have their relationship to people and places in their home community at the forefront of their orientation process. Although they also orientate themselves vocationally, their dominant orientation frame is their local area.

And finally, the mobility oriented, who are dominated by their individual imperative to move out of the community they have grown up in as the centre of their education transition. This has vocational as well as locational repercussions for them.

Transition trajectories

The next aim of the analysis was to analyse whether such transition behaviours or orientation preferences displayed a spatial effect by influencing the VET students' spatial and vocational trajectories through the VET system. I therefore analysed whether there were distinct patterns in VET programme type for each orientation type. I also analysed whether such patterns effected the types of apprenticeship markets, the different student types would have to negotiate on, in order to transition successfully through the VET system.

Collectively, the analysis of the transition trajectories of each orientation type indicated that there indeed are spatialized effects of the students' differentiated orientation processes.

The vocationally oriented seem to have high levels of 'transitionality' and they seem to be able to transition successfully through both key transition points. Whether this leads to local or non-local lives and work lives seems to depend on which VET programme they have chosen. Some of the smaller VET programmes tend to lead to outmigration, while the more generally provided programmes lead to local working lives.

The locally oriented have low levels of 'transitionality' and as a group seem more challenged than the other two groups in carrying out successful transitions into apprenticeship positions. Those who are successful lead local lives, although several of the interview persons in this group did indicate they would consider outmigration when they were a bit older. Those who are challenged and cannot obtain an apprenticeship position will have to find other education opportunities. In time, as they mature and perhaps gain a better knowledge of themselves, their interests and competencies, they may have improved their aptitudes for orientating themselves vocationally. They may enter the VET system as young adults and try again. In the meantime, their lives will probably be lead locally.

The mobility oriented have high levels of 'transitionality' and seem capable of transitioning successfully into an apprenticeship position. As one case showed, it is not enough to be highly mobile. Moving from one vocational programme to the next and shifting places of residence is not a sign of strong transition resources and the interviewed VET student may find herself lost in transition.

Students' resources

The final analysis concerned whether there is a relation between the socioeconomic, vocational and/or other resources connected to the students' socially stratified position in society and their orientation preferences.

The analysis has shown that there indeed is a relation between the family's socio-vocational resources and

The students' orientation preferences. The vocationally and mobility oriented tend to have vocationally educated parents, while the locally oriented tend to have unskilled parents. When this is connected with the transition trajectories of the locally oriented, it becomes clear that the uneven geographical distribution of VET education provision has socio-spatial ramifications. The children of unskilled parents are structurally disadvantaged because they are less able to orientate themselves vocationally and thus supra-locally.

We may thus conclude that the spatially complex and uneven provision structure of the VET system disadvantages the children of unskilled parents or parents who are outside the labour market.

The perspectives of this in relation to processes of social mobility seen from a peripheralisation perspective will be discussed in **PART V**.

For now, let it suffice to stress that by developing an approach which takes its point of departure in students' differentiated spatial transition behaviours, this study is able to show that there is a relation between different orientation preferences and the spatial education trajectories which they 'result' in.

PART V: CONCLUSIONS AND PERSPECTIVES

CHAPTER 8. CONCLUSIONS: THE HIGHWAY OR THE BYWAY

Young students, who complete their compulsory education at the age of 16, must choose between two basic types of upper secondary education: an academic track that leads to higher education or a vocational track, which predominately leads directly to the labour market. If you have grown up outside Denmark's 13 largest cities, this choice will also have repercussions for your geographical residential and labour market trajectories.

If you choose the academic track, you have chosen the highway. You spend the next three years in a proximate upper secondary academic institution, irrespective of whether you focus on the humanities, social or natural sciences. After completion, if you choose to continue your studies, and that is a definite expectation, you will have to move to a city that provides higher education.

If you choose the vocational track, you have chosen the byway system. There is no set plan. The exact path that you take is contingent on a series of decisions that you make at key transition points in the system. Which vocational college you attend, where there is an apprenticeship position and even whether there is an apprenticeship position, depends on your vocational choice – will it be within the industrial, construction, agricultural, food services, business, health care or a long range of other sectors? Depending on where you have grown up, the vocational offer may be limited.

Choosing between a highway and a byway is a metaphor for choosing between an education programme that educates students for the current dominant technological production paradigm (the academic track) – or the recessive technological production paradigm (the vocational track).

The point of departure for this research project was an observation that the provision of vocationally educated labour in different localities outside Denmark's largest cities was greatly challenged. At the same time, on a national level, education actors at all levels of governance, were also concerned about the Vocational Education and Training system (VET). They especially pointed to the high dropout rates, in some programmes upwards of 40 %, and pointed to the VET system as the Achilles heel in the Danish youth education system. A heel that would prevent education actors from fulfilling national education goals, that 95 % of youth cohorts should obtain at least a youth education. They interpreted the problem to be endogenous as well as exogenous to the VET system. Endogenously, there were concerns about the quality of teaching, but also about the lack of apprenticeship positions. Due to the dual-learning structure of the Danish VET system, students must attend vocational colleges for their Basic and Main VET programmes as well as complete about 2/3 of their degree through

practical training in a firm. Training is framed by individual apprenticeship contracts, and are thus based on market conditions rather than by education rights. Since the dual-based learning structure of the VET system has been highly praised, also outside Denmark, the structure was not questioned. Instead, questions were raised about VET students' abilities to conduct themselves on apprenticeship markets and how the Basic programme could improve the quality of potential apprentices. Exogenously, increasing shares of youth entered the academic track, reducing the number of students in the vocational system. This had the unfortunate effect that the academic track became a default system, whereby the VET system was accused of attracting – not the vocationally inclined – but those, who were unable to enter the academic track. These generally recognised problems were understood as pertaining to the education system and problems concerning lack of access to vocational labour were not a general concern on a national level.

On a more abstract level, my point of departure has been a desire to understand how education systems produce opportunities in space, just as the functions of education are a product of the spatialised development conditions in which they occur. By improving our understanding of this complex relationship, starting by defining which dimensions and elements must be involved in such an analysis, the study contributes to our understanding of how education systems influence the development trajectories of geographical areas that are challenged economically and demographically.

The conclusion follows the structure of the thesis as a whole, reviewing the results of my different analyses and then engaging in a broader cross-sectional discussion, the purpose of which is to answer my main research question. I consider how the analyses collectively can contribute to a broader understanding of how education systems interact with differentiated opportunity structures and development trajectories across space. I base my discussion on the concrete findings in chapters [3] and [4], but I will engage in a discussion with the key theoretical conceptions from chapter [2].

PART I introduced the problems that are the major concerns of this research project. I outlined a nexus between structural underdevelopment of large sub-regions in Denmark that are left out of the positive demographic and economic development trajectories, which characterise Denmark as a whole and are driven by the largest urban areas in the country. An integrated aspect of this nexus are young peoples' academic education choices and the education-induced migration patterns which 'feed' the urbanised knowledge economy with resourceful young people including those, who have grown up in challenged localities. Finally, I speculated what role the vocational education and training system had in such processes and formulated a research question about in which way the VET system supported negative and/ or positive development trajectories in challenged localities?

PART II provided a theoretical framework that frames my structural analysis of the VET system as well as my analysis of young people's own perceptions of their spaces

of opportunities within the VET system. The theoretical framework takes its point of departure in theories on processes of peripheralisation and centralisation interrelated with theories on the geographies of education systems. The aim of the theoretical framework was to structure a conceptualisation of how national education systems function in different localities and their impact on the positive and negative development trajectories of such localities.

In approaching the study of the VET system and how it simultaneously produces spatial opportunity structures and is an effect of differentiated opportunity structures, I have taken a point of departure in theories on uneven development. This literature has provided a set of dimensions through which to understand different and interrelated processes of uneven development. The dimensions I have used are: 1) Economic – understood as dominant centres of techno-economic production spaces and peripheralised areas that are residual production spaces, which adhere to former techno-economic paradigms. 2) Governance – understood as differential access to power and influence either scaled or in-between nodes of influence. 3) Socio-spatial dimensions – understood as processes of differentiation between different social groups as well as processes of marginalisation and social prestige. 4) Mobility, understood as imperatives to be mobile in order to access societal opportunities, which functions as a socially differentiating factor.

From literature within the geography of education, I have developed a basic spatial vocabulary, which I use in my understanding of the key spaces in which processes of centralisation and peripheralisation take place. These are socio-spatially positioned students, institutions as the sites of particular knowledge productions, student catchment areas and apprenticeship markets, local/regional labour market contexts as well as education-induced mobility patterns.

Methodologically, my point of departure has been – like a long line of critical geographers (Harvey 2005, Massey 1993, Smith 1989) - an understanding that capitalist society produces its own spaces and that this production process is driven by the logics of capital accumulation and framed by the built-in contradictions or problems of capitalism (Harvey 2006, Harvey 2005). An important point to make here is that “...the drive for capital accumulation takes place within capitalist *societies*. Hence, capitalist production should be analysed as a *socio-political* – as well as an economic – phenomenon” (Lier 2007, p. 815). This leads to a critical approach to education systems and their role in capitalist societies. On the one hand, education systems are deeply embedded in processes of societal reproduction; on the other hand, they are potential sites of resistance to or at least regulation of the worst effects of social inequality, including socio-spatial inequality.

The concrete methods I have chosen in order to answer my research questions are based on the positioning of this work in the research community. The geography of education is a relatively new field and the study of the geographical location patterns

of the vocational education system in relation to processes of peripheralisation is also new. The character of my work is therefore primarily exploratory. This calls for the use of multiple, interacting methods that can approach the area of study from several angles. Hence the focus on both the systemic and the agency perceptions. The quantitative and qualitative analyses I have conducted aim to shed light on two sides of the same question, namely how the current spatial structure of the VET system affects young VET students' educational and mobility patterns as they pass through the system. The quantitative analysis follows an entire cohort in three case municipalities, and although it cannot contribute to our knowledge about mobility patterns etc. in urban areas, the method does represent several types of challenged localities and entire cohorts from those areas. The qualitative analysis, with its limited sample, can only function as an exploratory study. Further qualitative studies that 1) use a larger sample, 2) study one or compare more than one specific vocational field (for example health- and childcare, business- and commerce or technical), and/or 3) that compare small cities and decidedly rural areas in challenged regions are called for as a logical next step of enquiry.

8.1. THE VET SYSTEM: HISTORICALLY EVOLVED DIMENSIONS OF UNEVEN DEVELOPMENT

PART III is based on an analysis of how the VET system has developed based on an **empirical reading of existing research supplemented by policy briefs** on the development of the VET system along the four analytical dimensions from my theoretical framework. The research question, which the analysis of the VET system answers, is:

What are the factors that determine the provision structures of the Danish Vocational education and training system in challenged localities? How are these factors related to shifts in dominant production paradigms, governance systems, student intake and the system's mobility imperatives?

Shifts in dominant production paradigms

The paradigmatic shift from the dominance of industrial-production based economies to knowledge-based economies starting with the industrial restructuring crises of the 1970s - but especially marked since the 1990s - has completely shifted the education attainment patterns of the Danish population. In response to the demand for highly educated labour, the shift has had two major education policy consequences. Firstly, education policies have focussed on ensuring that all young people obtain at least an upper secondary education, intending that the share of unskilled workers amongst the population should decline markedly. Secondly, the share of the population with a

higher education should increase³⁷. The result was an education system that from the first year of kindergarten and up to the masters' level was structured in favour of the academic track of schooling, while the VET system was 'the second-best' choice, the choice that was available if you were unable to complete an academic degree. This second-rate status is indicated by the development in student choice patterns: in 2016, more than 74% of compulsory school graduates select the academic track of upper secondary schooling, while less than 18 % select the vocational track. In 2001, the corresponding shares were 59% and 32%³⁸. Thus, shifts in dominant production paradigms, or TEP's in Perez' terminology, has left its footprints in young students' education choices. The result is an increase in the education attainment levels in the population, also amongst the population in challenged localities. With an increase in the share of the population with a higher education, higher outmigration rates have occurred, enhancing urbanisation processes.

However, the regional labour market structures in which education choices are made do have a localised effect. Amongst young people growing up in challenged localities where labour market structures continue to be dominated by the former TEP, i.e. industrial production forms, a greater share of young people select and obtain a vocational education than in urban areas. The local provision of vocational education is however, challenged by the predominance of the academic track, as can be witnessed by the much larger number of education institutions that provide academic programmes than vocational colleges (see p. x in the introduction). Thus, the educational institution infrastructure supports the development of a knowledge-based economy as dominant production paradigm.

Scales of governance and market imbalances

My analysis of the VET system and the development of its governance structures indicates two central governance dimensions that challenge the provision of vocational education in peripheralised locations. The first pertains to the dominant national scale of governance within the system with a focus on the concept of centralised decentralisation and its effects on vocational colleges located in sparsely populated areas. The second pertains to governancing the dual-learning structure of the VET system, which I argue leads to unaddressed system imbalances that VET students must bridge in order to complete their education.

³⁷ In 2006 the Globalisation Council set a goal that by 2015 at least 50 % of all youth should obtain a higher education. In 2011 the Government increased that share to 60 % (Regeringen 2006, Regeringen 2011)

³⁸ [http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Statistik-over-tilmelding-til-ungdomsuddannelserne-for-9,-d,-og-10,-d,-,klasse-\(FTU\)](http://www.uvm.dk/Service/Statistik/Statistik-om-folkeskolen-og-frie-skoler/Statistik-om-elever-i-folkeskolen-og-frie-skoler/Statistik-over-tilmelding-til-ungdomsuddannelserne-for-9,-d,-og-10,-d,-,klasse-(FTU))

Centralised decentralisation represents a form of governance, which has become dominant since the late 1980s across a wide number of previously state-planned institutions. The system distributes day-to-day and fiscal management power decentrally to the boards of vocational colleges. Boards make strategic decisions about the development of the vocational colleges as institutions, including programme provision structures. The state retains the right to grant education provision rights, based not on a central distribution key, but on applications from colleges, which the Ministry of Education then coordinates and regulates. Simultaneously, institution performance is regulated through an expansive centralised control system that consists of a series of national quality controls. According to Friche and Rasmussen these keep vocational colleges in a tight grip, by which they must implement a large number of centrally demanded activities, including documentation activities (Friche, Rasmussen 2008).

Centralised decentralisation encourages vocational colleges to compete against each other, developing and accumulating a set of vocational programmes that attract students. This type of governance favours institutions with a large number of students, as it is through continued processes of administrative and other optimising processes that school boards may accumulate funds in order to carry out strategic investments, which increase their range of commodities (VET programmes). This structurally challenges small vocational colleges with a limited student catchment area. As the statistical analysis of student mobility patterns (fully presented in section x) shows, approximately 70 % of students complete part of or their whole vocational education degree at the most proximate vocational college. This indicates that a majority of young VET students do not 'shop' for the most attractive vocational colleges. To a large extent, vocational colleges are therefore reliant on a local catchment area of students. At the Main programme level they may attract non-local students by providing specific programmes, for example regional programmes, semi-specific programmes or 'the small 44' programmes (see section x). Again, small institutions in challenged localities have difficulties in competing on such VET programme markets, as proximate access to a sufficient number of apprenticeship positions is challenged by limited or isolated local labour markets. This again may curb the Ministry of Education in granting programme provision rights.

Using Herrschel's indicators of influence in governance system (Herrschel 2012), the dominant scales of influence in centralised decentralisation are the national and the institutional scales. Although the Regional governance level does have some influence on local provision structures through access to regional development funds and European structural funds, such funding cannot sustain programme provision, which in the long run is dependent on the number of students seeking a specific education and access to apprenticeship positions. The provision of vocational education programmes in challenged localities is thus dominated by nationally-comprised governance systems based on a 'one-size-fits-all' discourse.

Governance structures of the dual learning system is the second challenge to the local provision of vocational education in challenged localities. Approximately 1/3 of a VET degree consists of school-based learning in vocational colleges and 2/3 takes places as firm-based practical learning in an apprenticeship position. While vocational college structures and functions are governed by the state, firm-based learning and the regulation of apprenticeship positions are governed by labour market coalition partners through the national Trade Committees. One system is thus governed by education system logics, while the other is governed by labour market logics. Although both coalition partners have a common interest in a successful transition of students between school-based learning and firm-based learning, there are imbalances in the system. These concern the imbalance between the number of students taken in at the Basic Programme level compared to the *de facto* number of placements at the Main Programme level. It is in the interest of vocational institutions to take in as many students as possible at the basic programme level, as this generates state taximeter subsidies. The labour market, on the other hand, is interested in a 'just right' amount at the Main Programme level, so that the amount of apprentices corresponds with fluctuating demands for skilled labour within different vocations. Students, who cannot gain an apprenticeship position, pay for imbalances by either continuing their education through school-based training or by not being able to complete their education and dropping out. Such structural dropouts are caused by the lack of a governing body that assures balance between the number of students taken into the Basic programme and the number who are able to find an apprenticeship position and complete the degree. The lack of a governing body to bridge the gap between the school-based governance systems and labour-market based governance systems corresponds to Copus' notion of being inbetween the nodes of influence (Copus 2001). With apprenticeship contracts being made on an individual basis between young people and the firms that hire them as apprentices, this 'no man's land' is governed by the transition practises displayed by each individual young VET student. The result is that the actors with the least access to influence and resource networks, namely the young VET students, must bridge systemic transition gaps and imbalances between the Basic and the Main programme levels.

Shifts in student intakes

As techno-economic paradigms shifted from industrial to knowledge-based production paradigms, the VET system has lost its position as the largest upper secondary education system. It has traditionally primarily attracted the children of the vocationally educated, but increasingly the children of the unskilled have entered the system. With the increasing dominance of the academic education track, the children of the vocationally educated increasingly seek academic education tracks. This tendency has been strengthened since the adoption of the '95 % youth education

policy³⁹, whereby all youth should obtain a youth education/ upper secondary education. This effectively meant that all students, who for academic reasons were not able to enter the academic education track, were placed in the VET system. This policy has greatly challenged the prestige and popularity of the VET system, and has also bestowed a vast socio-education responsibility upon the VET institutions. The 2015 VET Reform, which is treated in research question 3, is a break with such policymaking.

Mobility imperatives and spatial complexity within the vet system

The VET system has become increasingly complex – evolving from a unitary firm-based learning system into a dual-learning system with both school- and firm-based learning sites. Since the 1970s, the system has expanded further with the introduction of school-based Basic programmes, a shift that completely changed the entry path into the VET system. Previously, VET students' entry paths took place by finding a firm-based apprenticeship position, meaning that vocational orientation processes took place outside the VET system, presumably within the auspices of family-related vocational socialisation processes. With the introduction of the Basic programme, the school-based system took on the responsibility of framing young VET students' vocational orientation processes.

Due to the incentive structures of the 'taximeter' driven schools, school-based vocational orientation processes do not take place in a neutral environment. Vocational colleges are interested in attracting local students to the Main programmes that the school provides and are not interested in a broad vocational orientation process that will project local students into Main programmes provided by competing schools. Although some vocational colleges do have cooperative agreements with other schools, students who choose vocational programmes that are not provided locally must traverse complex provision structures individually.

Apprenticeship markets are also becoming more complex and increasingly the school-based apprenticeship centres are beginning to function as coordination units and 'holding tanks' of VET students, as they wait to be hired into regular apprenticeship positions. VET students must be vocationally and geographically mobile in order to be hired by the school-based apprenticeship programme. School-based apprenticeship centres are only allowed to provide (temporary) apprenticeship positions within the Main programme vocations that the college provides. This exacerbates already-existing provision patterns by strengthening networks between vocational colleges and local firms that provide the same type of apprenticeships as the college offers. It also means that there are no formal ties between proximate firms and vocational

³⁹ The 95 % youth education policy was originally adopted in 1993 and received wide political focus after the Globalisation Council adopted it into their Globalisation strategy in 2006. http://www.kl.dk/ImageVault/Images/id_39259/ImageVaultHandler.aspx

colleges, if the firm provides an apprenticeship within a vocation that is not provided at the local vocational college.

The overall effect of these developments is that VET students must be able to orientate themselves vocationally (i.e. the content of a given vocation programme), provision-structurally (i.e. where are the programmes provided) and apprenticeship market-wise (i.e. where is it possible to find an apprenticeship position). In larger VET colleges that provide a wide array of VET Main programmes these complexities are part of the institution and students' trajectories through the VET system take place within an institutional frame. In smaller VET colleges, fewer programmes are provided and students will more readily find themselves in need of orientating themselves beyond the vocational programmes provided by the local college. This also means they more readily will need to orientate themselves supra-locally and be mobile.

These complexities do not limit local provision structures, but are an effect of them. In the next section, I discuss the consequences of this for student mobility patterns and education trajectories.

8.2. YOUNG VET STUDENTS: EFFECTS OF LIMITED AND SPATIALLY DISPERSED VET PROGRAMME PROVISION

PART IV is empirically based and answers my second research question. It focuses on the young VET students, their mobility patterns and their perceived opportunity spaces in the VET system.

What mobility patterns and transition orientations do young VET students from challenged localities display? How are transition orientations related to students' perceptions of the VET system's opportunity structures on local and supra-local levels? What do students' transition orientations indicate about the effects of limited local vocational education provision for different groups of students?

As little is known about the *de facto* mobility trajectories in terms of outmigration patterns in relation to VET education attainment amongst young VET students, I elected a mixed method approach, whereby I combined a case based statistical analysis with a narrative interview-based analysis.

The statistical analysis followed an entire youth cohort from three selected case municipalities in two challenged sub-regions. The sub-regions are Vendsyssel in the North Denmark Region (the case municipalities are Jammerbugt and Frederikshavn), and the Regional Municipality of Bornholm, which has some regional status privileges, whilst in others, is a part of the Capital Region of Denmark. The statistical analysis followed youth cohorts from their 16-18th year in the year 2000 and 11 years forward, tracking their education attainment and residence patterns in the year 2011.

The analysis indicates that the vocationally educated are an important source of qualified labour for labour markets in challenged localities. While 65- 80 % of the academically educated amongst the studied youth cohort have out-migrated from the municipalities they have grown up in by the time they are in their late 20s, this is only the case for 40-50 % of those with a vocational education. Combined with data on their employment rates, this indicates that the vocationally educated indeed supply local labour markets.

A second statistical analysis, which followed students through the VET system based on the location of their institution, shows that a large proportion of VET students (approximately 70 %) enter the most proximate vocational school for their VET programme. This indicates that vocational colleges do produce local student catchment areas and function as points of entry to the VET system, and that 'shopping around' for other vocational programmes and colleges, is less prevalent. Those who stay and study tend to select technical and building & construction programmes as well as child- and health programmes. Those who study and move or move and then study, tend to select commerce and administrative programmes as well as a wide selection of 'other' programmes. This suggests that there is a relationship between selecting vocational programmes that aim at relatively traditional production and service jobs and staying in the local area on the one hand – and between selecting vocations that lead to urban service functions and studying outside the local area on the other hand. As a large share of the VET students select the more traditional vocational programmes and stay in the municipality they have grown up, local vocational colleges are an important source of the types of labour that are prevalent in challenged localities.

Finally, the statistical analysis shows that a very high share of young people from the studied youth cohorts, who have not attained any formal education above compulsory schooling, have been VET students, but have dropped out. This is the case for upwards of 15 % of a youth cohort. This is an indication that the VET system has an exclusionary function for some groups of students. Drop out is a complex process with many interplaying factors, and has not been the subject of this study. Some of these dropouts can be termed structural dropouts, i.e. caused not by the personal problems or learning disabilities on behalf of the student, but drop out due to structural problems such as lack of apprenticeship positions or access to vocational programmes. In these cases, the VET system functions as a barrier to producing more vocational labour for local labour markets.

The statistical analysis was carried out in combination with an interview-based analysis. The purpose of this analysis is to understand how young VET students themselves perceive their structures of opportunity within the local and non-local VET system. It also aims to improve our understanding of how young VET students orientate themselves in spatially complex opportunity structures and how this affects their transition behaviours, i.e. movements into and through the VET system. My

analysis is based on 23 narrative interviews with VET students between the ages of 17 and 22, who have grown up in one of the three case municipalities, which I also used in my statistical study.

Overall, the results of my qualitative analysis supports the suggestion that there are exclusionary measures within the VET system, including mobility imperatives, which challenge certain types of young people in completing their VET degrees.

Based on how VET students behave during two key transition junctions in the VET system – entering the Basic programme and transitioning into a Main programme – I have typologised three overall all transition types, which I have termed **orientation preferences**. These are the vocationally oriented, the locally oriented and the mobility oriented. Each has a series of distinct characteristics, which discern them from the other orientation types.

The vocationally oriented do not have a spatial preference. They are predominantly characterised by their focus on identifying with a vocation and embedding themselves into and learning vocationally defined skills. They are also adept at relating their personal skills, aptitudes and interests to a vocational field. They are skilful at discerning one vocational education programme from another and are able to nuance and be specific in their descriptions of what functions, materials and tools they enjoy working with and engaging in. They are therefore able to utilise the local vocational school as a point of departure for vocational clarification. Once they are on their way to identifying themselves with a vocation, they are able to access supra-local vocational programmes and the VET system functions as a local disembedding system by embedding them in a vocational identification process. For this group, the local vocational education institution functions as a vocational point of entry to a wider, national, system. This group displays very active strategies in transitioning into apprenticeship markets and they are able to access non-local apprenticeships as well as non-local Main Programmes.

The locally oriented display a primarily local orientation and limit their education choice to locally provided vocational programmes. At the Basic Programme level, they display the same attempts to orientate themselves vocationally as the other two groups, but when they reach the transition into the Main programme, their self-limitation to locally provided programmes, becomes evident. On closer inspection into the motivations behind this behaviour, two sub-groups appear. One group is motivated by relationships to people and places in their home community, and these relations stand at the forefront of their orientation process. The other group is locally oriented by default so to speak, they do not choose the local, but fail to choose the vocational. Through lack of a capacity to engage in an education programme clarification and vocational identity process, they lapse into a passive position. They are not skilful at discerning the markers of a vocation, nor to discern the personal skills they will need in interaction with the vocation's skills demands. As this group is not

able to orientate themselves vocationally, they cannot utilise the local vocational college to orientate themselves supra-locally. They are therefore very dependent on the local provision of vocational education programmes. The group of locally oriented due to personal ties, varies in their strategies to finding an apprenticeship position. The group, which is 'local by default' displays very passive strategies to finding apprenticeship positions and are not able to access non-local apprenticeship markets not Main Programmes.

Finally, **the mobility oriented** display a vocational orientation that is bounded by the students' wish to move out of the community, where they have grown up. They display the same vocational identification process as the vocationally oriented, but they are primarily motivated by a wish to re-locate in connection with transitioning into the VET programme. If they are able to engage in a vocational identification process whereby they interact positively with their chosen vocation, the vocational school they have moved to functions as geographical point of departure for the apprenticeship positions they seek. The group displays active strategies to finding non-local apprenticeship positions, but are very dependent on their vocational college to help them find a position, as they have no knowledge or resources in the new locality to draw on. The youngest are 16-17 years old. The capacity to be geographically mobile is not a stand-alone guarantee that education transitions are vocationally oriented, though. As one interview revealed, a concomitant lack of vocational embeddedness, may lead to a 'lost in transition' process, whereby the student is driven by a wish to move away from home and embed him- or herself in a vocation, but lacks the capacity identify his/ her own interests, capacities and aptitudes in relation to a concrete vocational programme.

I have analysed the relationship between students' access to socio-vocational resources, operationalised as whether they come from family backgrounds where parents, siblings, friends and boyfriends/ girlfriends are either vocationally educated themselves, or occupationally engaged on the labour market. The analysis shows that the mobility oriented and the vocationally oriented more often than not come from family backgrounds, where they have access to knowledge about socialisation processes into a vocation or into occupation structures. Their parents tend to be vocationally educated. This is not the case among the locally oriented, whose parents tend to be without formal education above compulsory schooling and/or they are long term unemployed. Moreover, many of the families consist of single parents without contact to the other parent, often the father. This indicates that they do not have access to family-based socialisation processes in terms of vocational identification processes and occupational identities. Due to the explorative nature of the study, this finding needs to be qualified through further studies.

The locally oriented are very vulnerable in their transition from the Basic into the Main programme. They depend on (sometimes) limited local apprenticeship markets and they display passive transition strategies. They are dependent on support from

outside the home and they are structurally disadvantaged by the limited access to a wider array of vocational programmes because they are less able to orientate themselves vocationally and thus supra-locally.

By developing an approach that takes its point of departure in students' differentiated spatial transition behaviours, this study is able to show that there is a relation between different orientation preferences and the spatial education trajectories, which they result in. For those students who are vocationally embedded or on a positive trajectory toward such a process, the vocational education system functions as a positive opportunity structure, which increases the mobility capacity of young students. For those students who are not vocationally embedded, and these tend to be from families with unskilled single-parent households without contact to the labour market, exclusionary processes take place.

Other findings

As part of my analyses of the factors that influence VET students transition orientations, questions about the significance of place attachment as a barrier to supra-local orientations are relevant. These have not been unfolded in the analysis, but are relevant for further investigations. This is also the case for gendered transition patterns.

The interview-based study indicates that **place attachment to the home community** does not function as a hindrance to vocational identification processes. Instead, except for the mobility oriented, most of the interviewed VET students display positive relations to the places they have grown up. Embedding themselves in a vocational is an identification process that, when successful, takes prevalence over local embedding processes.

There are **gendered mobility structures** within the VET system, which relate to the continuation of strongly gendered vocational patterns and limited local access to many of the small vocation programmes that target jobs within the private service sector in urban areas, for example media-, it-, finance- and cosmetics/hairdressing sectors. This is a structural challenge for women, who do not find child- and healthcare or public administration interesting. It is also a challenge for men, who are not interested in traditional technical vocations, nor wish to pursue an education within retail. The young people who are interested in these types of vocations must either display the types of mobility patterns that the academically educated do, and move to urban areas, or drop out of the education system.

Challenged localities – differences and likenesses

Finally, I questioned whether there were differences between the three case municipalities. In the approach to my analysis of my interview-based data, I vacillated

between comparing the three cases as ‘representative’ of three different types of challenged localities – Jammerbugt, the commuting municipality, Frederikshavn the small traditional industrial city and Bornholm the island periphery. Alternatively, I could compare ‘grades’ of rurality, i.e. comparing interviews between those who had grown up in small cities, in towns and in ‘deep rural’ communities, irrespective of which municipality they had grown up in. I decided to let the data speak and then try to determine where there were differences. In doing so, I am challenged by the explorative nature of the qualitative study.

Quantitatively, **the case municipalities** display some variance in student mobility patterns. Frederikshavn, the small industrial city, retains a larger share of the vocationally educated than the other case municipalities, implying that local labour market opportunities for those with traditional technical vocational degrees is an important factor in migration patterns. Local access to the types of vocational degrees that are in local demand, support these patterns. Qualitatively, the case municipalities do not display variance in student transition orientations. The only discernible difference in responses pertains, not to the municipal level, but to students, who have grown up in the small city of Frederikshavn compared to all other respondents. Those who have grown up in Frederikshavn perceive local education opportunities and to some extent job opportunities to be sufficient for their needs and they do not necessarily expect to move in order to access more opportunities. In all other locations, whether they are in the small town of Rønne on Bornholm or in the countryside, the students expect to move or be highly mobile in order to access education and job opportunities. Mobility imperatives are very much a part of their expected life trajectories and as such function as exclusionary mechanisms for young people – and the localities in which they have grown up.

Finally, both the qualitative and quantitative studies carried out here indicate that limited local access to vocation programmes and to apprenticeship positions is not a question of **distance** per se. As indicated by the statistical analysis, young people who grow up in localities with limited access to education in general do not obtain lower education levels than the population as a whole. The narrative interviews also show that many of the VET students are very mobile on a day-to-day bases and commute long distances in order to gain access to their preferred education programmes.

8.3. THE VET SYSTEM AND PROCESSES OF UNEVEN DEVELOPMENT

The third research question concerns challenged localities and the collective effects of the structures and functions of the VET system for local development in regions and sub-regions that are experiencing negative development trajectories.

What do the findings concerning the VET system and young VET students’ transition patterns indicate about the role of the VET system on processes of peripheralisation

and centralisation in challenged localities? In which ways does the 2015 VET Reform address these issues, and what does this indicate about VET provision structures in challenged localities in the immediate future?

The Danish Vocational Education and Training system provides opportunities for young people, who have grown up in challenged localities, to gain an education that gives access to local as well as supra-local labour markets. The content of what is taught within the VET system suits labour markets outside urban centres well – it is here that the heartland of what is left of industrial production forms is located.

When transitioning through the system is successful, the VET system provides access to a vocation, develops a vocation-based identity and through vocational embedding increases mobility capacities amongst the vocational students. Seen from a local development point of view, the VET system provides a positive opportunity structure in otherwise challenged localities.

However, the system also contains exclusionary functions that make it difficult for some groups of students to transition successfully through the system. Such exclusionary processes are detrimental to local development as they simultaneously hinder the ‘production’ of qualified labour, but also supply local labour markets with unwanted and unskilled labour. To say nothing of the personal costs of such processes of social marginalisation. Education policymaking that has inclusionary and exclusionary effects can therefore be conceptualised as regional development policymaking.

Thus, VET programme restructuring processes, which never intended to play a role in local and regional development, have spatial repercussions. When the Basic Programme level was added to the VET degree, a policy measure that was implemented in the late 1970s, it influenced student vocational orientation processes as well as their mobility patterns. It also realigned the role of vocational colleges in their geographical catchment areas. The most proximate vocational colleges – and its particular vocational programme provision structure – became the point of departure for a majority of young local students. Ten years later (1990), the management systems of the schools were changed to adhere with then current management ideologies and local provision conditions came to rely on local demographic contexts. Ten years later (2000s), urbanisation forces became exacerbated, partially due to processes of globalisation. The collective effect of accumulated policy measures is challenged provision structures in localities with shrinking populations.

Vocational colleges have become part of place-based competitive strategies that seek to attract students to the cities where vocational colleges are located. On such market-based conditions a hierarchy of central places develops. Using Christaller’s terms, the winners are the ‘central places of high order’, i.e. those with the widest range of commodities (i.e. VET programme provisions), while the losers are the smaller towns with fewer commodities.

The problem with this governance form in relation to processes of uneven development is that it does not recognize that competition between vocational colleges does not take place on a white canvas. Instead, competition between colleges is conditioned by different demographic and economic conditions. It is difficult for a vocational college to change or influence the demographic student catchment area, just as it is difficult to influence local labour market structures. Thus, a small vocational college, located in for example Bornholm or Vendsyssel cannot a) change the number of young people who live in the sub-region and cannot attract young people from other parts of Denmark; 2) they are located in labour markets that are structured very traditionally, i.e. the employment structure is dominated by traditional craftsmanship and industrial jobs combined with basic public services. Small cities like Frederikshavn that have a certain national position within the shipping industry have a slight advantage because they can provide apprenticeship positions within this economic sector, thus making it viable to provide Main Programmes that can attract students from outside Vendsyssel. Other areas in Vendsyssel and on Bornholm do not have labour market specialisations that they are able to utilise in order to attract students from outside the student catchment area. Thus, colleges that primarily depend on providing The 12 big and 1-2 regional programmes have limited expansion possibilities and their development trajectory follows that of the location it is situated in.

A second cause is the inherent competition between colleges, which encourages them to retain as many of their own students as possible. The Ministry of Education encourages cooperative contracts between colleges, by which they can 'exchange' students and provide reciprocal support. But, as pointed out by Kühn in relation to competing small cities in peripheralised regions, there is an uneasy relationship between competing and cooperating positions (Kühn, Milstrey 2015). Thus, the lack of influence on the regional development level, pits competing institutions against each other rather than allows for coordinated regional development actions.

Finally, a central point made by this study, is the transition imbalances between the school-based Basic programme and the labour-market based Main programme, a transition, which is left at the hands of those with least influence in the VET system – the young VET students. This is not a localised challenge – it pertains to the entire system. However, in locations outside urban centres, the transition challenge has spatial implications. As this study has shown, this key transition point functions as a socially exclusionary junction. As mentioned above, the exclusion of some social groups from the VET system has negative development repercussions.

Vet reform 2015

When I started this research project in 2012, the problems facing the VET system were mainly perceived to be its declining intake numbers and high dropout rates. The Ministry of Education and other education governance actors were concerned about

the number of students, who could not obtain a youth education, as they were unable to complete their VET education and training. Research activities at the time focussed on the capacity of vocational colleges to stop drop out, on the capacity of students to gain any form of education and on the lack of apprenticeship positions in lieu of, what was described as “weak” students entering the system. Due to the financial crisis in 2008/9 there was not much discourse on the lack of vocationally educated labour. During the past 3-4 years that has changed completely. Newspaper headlines about firms that cannot meet production demands or expand due to the lack of qualified labour are prevalent. Labour market partners are now willing to commit themselves to take in more apprentices and work toward better regulation between labour market demands and apprenticeship positions. The problems challenged localities were experiencing in gaining access to vocationally educated labour, were understood as local problems. Almost four years later, using a good Danish proverb, I find myself ‘kicking in open doors’. What used to be a local problem is now recognised to be a national challenge.

In this respect, the 2015 VET Reform can be perceived as an indication that the dominant **techno-economic paradigm** may be shifting. Thus, the marginalisation of the VET system, which has been underway for the last 30 years, is perhaps being challenged. Increasingly, discourse about a vocational education is positive. As this conclusion is being written, a psychologist is on the front page of a Danish newspaper, suggestion that 2017 should be “the year of craftsmanship”⁴⁰, indicating that it is psychologically healthy to be able to work with your hands. Production firms are demanding vocationally educated labour. The question is, whether this is a long term shift and what its spatial repercussions might be. Will the VET system, with the introduction of the EUX programme, which is the new hybrid upper secondary vocational-academic programme will inpass and be provided equally in both urban and rural areas? Will the VET system consists of an ‘A’ team (those with an EUX) and a ‘B’ team (those without) and will there be spatial inequalities between them?

One of the major policy initiatives in the 2015 VET Reform is a **shift in student intake** patterns. It is a break with previous youth education policying, by which 95 % of all young people should obtain minimum a youth education. The role of the VET system during this policy period was to take in all students that did not choose or were unable to complete the upper secondary academic youth educations. In others words, it had a ‘sweeper’ function that also made great demands on its ability to motivate young people, you more or less willingly had been placed within the system, just as it made demands on its ability to provide social mobility for the children of unskilled parents. Especially the housing of unmotivated students gave the VET system a poor reputation. With the 2015 VET Reform, this is no longer the case. The VET system now has academic entry demands that will exclude a number of students. Although

⁴⁰ <http://www.kristeligt-dagblad.dk/debat/professor-maaske-skulle-vi-goere-2017-til-haandvaerkets-aar>

policies intend that this group should enter preparatory programmes provided by municipalities, it is unknown what the effects of such exclusionary measures will be. If they do not enter the VET system later in life, this group of young people as well as those who drop out underway will be left without any formal education above compulsory schooling. My study indicates that before the VET Reform approximately 15-18 % of a youth cohort from outside urban areas did not gain an education and that a majority of this group had embarked on a vocational education, but dropped out. As the demand for unskilled labour has decreased drastically exclusion from the VET system is not only a personal challenge, but also a local development challenge. The group of VET system dropouts are marginalised on the labour market. If they are excluded from the VET system, what other options are open for them?

CHAPTER 9. PERSPECTIVES

In this final chapter, I consider what the implications of my work are in terms of education policymaking and I discuss what my work indicates that could be of interest to research communities within spatialised education and regional development.

9.1. POLICY PERSPECTIVES

The spatial illiteracy of national education policies

This study sheds light on the differing effects of national education policies, depending on whether they are studied from the national or the regional/local scale. The primary policy implication that comes out of this work is the argument that education policies function simultaneously as national as well as local and regional development policies. Education reform and policy changes are designed to develop national goals and/or alleviate national challenges, but have disparate effects as they interact with resources, structures, relations and path dependent conditions in different localities. National policy makers may be aware of this, but may prioritise national development needs over local/regional interests. Within the sphere of education policies, it is also arguable that the majority of young people live in urban areas and that policymaking must take its point of departure in the majority, only secondarily considering whether the adoption of practices that alleviate the worst adverse effects are necessary. However, given that national policies aim to generate more vocationally educated, negative effects in certain challenged localities may be unintended. This may sound banal, but is not. When a major VET Reform such as the one put into effect in August 2015 is launched, its progression and effects are followed, measured, evaluated and researched closely⁴¹. Its disparate effects for different localities and different vocational colleges are not monitored, however, as they are not deemed to be a challenge on a national scale. Thus, the primary policy implication of this research project is that education policies, particularly larger policy reforms such as the 2015 VET Reform, should be monitored in terms of their disparate spatial effects.

Vocational socialisation and distance

This study also indicates that understanding the challenged provision of vocational education in peripheralised areas of Denmark as merely a question of distance, is overly simplified. Previous studies that have focussed on mobility imperatives in connection with education attainment have indicated that distance in itself is not a

⁴¹ The 2015 VET Reform is being evaluated until 2020 by a consortium of research centres and evaluation institutes. See <https://www.eva.dk/projekter/2015/virkning-af-reformen-af-erhvervsuddannelserne/>

barrier (i.e. it is not everyone from localities that are geographically isolated that have lower education attainment levels than the national average). It is the intersection between lack of social resources and the demand to be mobile in order to obtain an education, that reinforces socially differentiated education attainment patterns. My study partly substantiates such studies, and partly indicates that other initiatives than mere distance-alleviating policies are needed. In November 2015, the Government launched a set of initiatives in recognition of the increasingly unequal growth conditions across Denmark (Regeringen 2016). Although most of the 125 initiatives concern agricultural production and better opportunities for businesses in rural areas of Denmark, two initiatives concern better access to vocational education. The first concerns temporary funding to experiment with the setting up of satellite campuses that provide Basic programmes in areas with “weak education provision” (Regeringen 2016, p. 34). The second concerns temporary financial support toward covering boarding facilities for VET students who gain apprenticeship positions in sparsely populated areas, but who are in need of housing. Both these initiatives can be interpreted as supportive measures targeting VET students in order to gain easier access to VET programmes in sparsely populated areas. While the first directly targets young VET students, who have grown up in isolated localities, the second improves access to apprenticeships in isolated localities. In both cases, the underlying understanding is that distance is the primary barrier to education access. Although the initiatives indicate that policymakers are aware of education provision challenges, the initiatives do not address any of the challenges I have indicated.

My study indicates that it is the lack of a vocational identity process that is impeding some of the VET students’ progression through the system, not distance in itself. To what extent this is related to the lack of access to a broader range of vocational programmes than are available in many challenged localities and/or to what degree this relates to more personal development challenges, is an issue in need of further studies. At the policy level, however, my findings indicate the need for focus on the vocational socialisation process and on initiatives that focus on students who come from homes and social environments that do not enhance vocational socialisation. In the 2015 VET Reform focus has been on students’ academic capacities. My study points to further studies on the role of vocational socialisation – both in the home as well as through compulsory schooling.

Challenged local provision structures

Lack of access to apprenticeship positions is an exclusionary measure that impedes vocational socialisation before it has truly begun. My study shows a marked difference in vocational socialisation between those who had an apprenticeship position and those who did not, and interviewees with an apprenticeship position indicated that their vocational identity process truly took place after working in a firm. This points to the value of school-based training centres, which may give VET students an opportunity to more fully understand their chosen trade. It is through firm-based

learning that students gain valuable insights into their own person, their strengths, aptitudes as well as weaknesses and challenges in relation to their vocation. However, the provision of training centres is organised to mirror the programme provision structures of the vocational college at which they are located, i.e. the school-based training centre may only provide training within the vocations that are provided as Main programmes in the college. This limits the reach of school-based training centres in challenged localities, where small colleges provide a relatively limited number of Main programmes. If school-based training centres were not conceptualised only as an 'education guarantee' to individual students, but conceptualised as the vocational college's platform to interact with all firms in its catchment area, they could potentially function as general regional network platforms for a broad range of vocations, including vocations they do not provide at the college. This may aid students in finding a local apprenticeship position and indirectly retain them in their home communities, if that is their wish.

Filling the gap between student catchment areas and apprenticeship markets

Such a conceptualisation of the vocational college and how it is related to the places in which it is located, challenges current institutional structures. Currently at the Basic programme level, provision structures tend to create geographically 'determined' student catchment areas, while colleges compete against each other at the Main programme level, seeking to attract non-local students through the provision of specific Main programmes. My study indicates that there is a need for vocational colleges to play a local/regional role in bridging the gap between students who enter the system at the Basic programme level and all the available apprenticeship positions within a given geographical area, irrespective of whether the vocational college provides it at the Main programme level. This would expand the role of the School-based training centres to become local hubs for firm-based apprenticeship contracts within a wider range of vocations than is the case today. It would also alleviate some of the spatial complexity that characterises the existing system, removing some of the responsibility for bridging spatial gaps between the Basic and the Main programme levels from the young VET students, and placing it within the VET system itself.

A second policy implication that arises from this finding is the continued need for vocational counselling and support that is able to aid young people independent of the interests of vocational colleges and constraints of municipal borders in situations, where the young students must choose a vocational programme and/or be mobile on supra-local levels. The interview-based study indicates that even the vocationally embedded young people, who wish to move away from home, find the transition from the boarding school based life of the Basic programme into the independent life of the Main programme to be challenging and are in need of support. The study also indicates that students are in need of vocational clarification conversations that may lead to non-locally provided vocation programmes. This is not in the interest of the local vocational college and access to independent counselling must be assured.

9.2. RESEARCH PERSPECTIVES – TOWARDS A GEOGRAPHY OF VOCATIONAL EDUCATION

This thesis is embedded in the research fields of the geography of education and rural education through its subject – the provision of education to people who live outside the expanding urban systems that dominate the way we structure, organise and govern our societies. It takes its point of departure in Thiem's theorem: that the study of education systems and the changes they undergo in connection with wide societal shifts not only teach us 'something' about the education system and how it functions, but helps us understand the nature of the societal shifts in question – be they globalisation, neo-liberalism or uneven development (Thiem 2009).

Empirically, this project has taken up an area of study that has gone under the research radar within the geography of education as well as within rural education – the vocational education and training system. The focus within these research fields has primarily been on the compulsory schooling system as well as higher education. It seems the VET systems marginalised position within the economy has also marginalised it within research.

VET systems are by nature very nationally specific, as their current structures are a result of very specific historical and political paths (Thelen 2004). Yet this study, in looking for policy suggestions and contextual understandings, calls for comparative education research on VET provision in challenged localities. Recently, a pan-Nordic research project has compared the VET systems in the Nordic countries⁴², but there is a need to go beyond the national scale and to study local provision structures and development of challenged localities in a period with rapid urbanisation in Scandinavia. It is through comparison that the idiosyncrasies of national education and regional/ local policies become visible.

Theoretically, this project contributes to the geography of education and rural education by focussing on transition geographies and going beyond theorising on mobility imperatives by focussing on multilocational orientation processes. By focussing on orientation preferences and the education system contexts that instigate such processes, we can move beyond the labelling binary of mobile and immobile youth.

⁴² See: <http://nord-vet.dk/>

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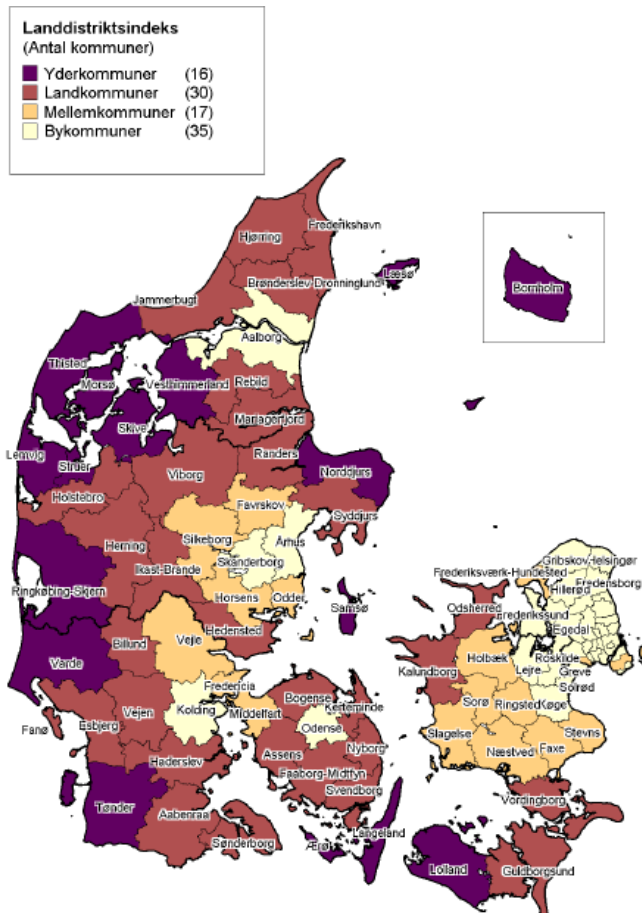
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APPENDIX

Appendix A. Rural and urban municipalities

This map shows which municipalities are considered rural and urban in the statistical tables in section 6.1. and 6.2. `Yderkommuner` and `Landkommuner` are rural municipalities, while `Mellemkommuner` and `Bykommuner` are urban municipalities⁴³.



⁴³Source:

http://naturerhverv.dk/fileadmin/user_upload/NaturErhverv/Filer/Tilskud/Projekttilskud/Landdistrikter/Landdistriktsprogram_2007-2013.pdf

Appendix B. VET programmes and the number of places they are provided

The big 12

(Number of places where they are provided on a national level is indicated in parentheses):

- Kontoruddannelse med specialer (27 places)
- Industrioperatør (26)
- Smedeuddannelsen (26)
- Personvognsmekaniker (25)
- Træfagenes byggeuddannelser (24)
- Detailhandel med specialer (21)
- Landbrugsuddannelsen (19)
- Murer (18)
- Elektriker (18)
- Pædagogisk assistentuddannelse (18)
- Social- og sundhedsuddannelserne (18)
- Ernæringsassistent (17)

The regional

- Cnc-teknikuddannelsen (10)
- Industriteknikeruddannelsen (12)
- Teknisk designer (14)
- Data- og kommunikationsuddannelsen (10)
- Anlægsstuktør, bygningsstuktør og brolægger (13)
- Byggemontagetekniker (12)
- Bygningsmaler (12)
- Maskinsnedker (12)
- VVS-uddannelsen (12)
- Buschauffør (14)
- Chauffør (14)
- Lageruddannelsen (13)
- Vejgodstransport (14)
- Kranfører (14)
- Finansuddannelsen (10)
- Handelsuddannelse med specialer (10)
- Gastronom (13)
- Frisør (10)

- Serviceassistent (13)

Semi-specialised

- Gartner (3)
- Anlægsgartner (5)
- Beklædningshåndværker (3)
- Elektronikoperatør (3)
- Forsyningsoperatør 83)
- Produktør (8)
- Procesoperatør (3)
- Skibsmontør (3)
- Vindmølletekniker (4)
- Automatik- og procesuddannelsen (7)
- Elektronik- og svagstrømsuddannelsen (6)
- Teatertekniker (3)
- Cykel- og motorcykeluddannelsen
- Lastvognsmekaniker (4)
- Snedkeruddannelsen (9)
- Digital media (5)
- Mediegrafiker (7)
- Web-integrator (5)
- Bager- og konditor (5)
- Detailslagter (6)
- Tjener (7)
- Hospitalsteknisk assistent (6)
- Tandklinikassistent (9)
- Kosmetiker (3)
- Ejendomsservice (4)

The small 44

- Skov- og naturtekniker
- Veterinærsygeplejerske
- Dyrepasser
- Greenkeeperassistent
- Beslagsmed
- Finmekanikeruddannelsen
- Køleteknikeruddannelsen
- Laboratorietandtekniker
- Maritime håndværksfag
- Metalsmed

- Modelsnedker
- Støberitekniker
- Ortopædist
- Overfladebehandler
- Plastmager
- Skibsmekaniker
- Urmager
- Værktøjsuddannelsen
- Guld- og sølvsmed
- Frontline PC-supporter
- Frontline radio/tv supporter
- Entreprenør- og landbrugsuddannelsen
- Bådmekaniker
- Flymekaniker
- Autolakerer
- Boligmonteringsuddannelsen
- Glarmester
- Skorstensfejer
- Stenhugger
- Stukkatør
- Tagdækker
- Teknisk isolatør
- Lufthavnsoperatør
- Redder
- Togklargører
- Havne- og terminaluddannelsen
- Film- og tv-produktionsuddannelsen
- Fotograf
- Skiltetekniker
- Industrislagter
- Mejerist
- Receptionist
- Tarmrenser
- Sikkerhedsvagt

Appendix C. Employment status, Youth Cohort 2000

Figure 38: Youth Cohort 2000: Employment rates and place of residence 2011, the vocationally educated

	Reside in home municipality 2011	Have out-migrated from home municipality 2011
Jammerbugt	88,0%	83,5 %
Frederikshavn	84,3%	84,9 %
Bornholm	84,9 %	86,5 %

Figure 39: Youth Cohort 2000: Employment rates and place of residence 2011, the unskilled

	Reside in home municipality 2011	Have out-migrated from home municipality 2011
Jammerbugt	60,6	47,8
Frederikshavn	47,6	41
Bornholm	45,3	57,5

Source: Statistics Denmark,



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