



AALBORG UNIVERSITET

**Companies' perspectives on highly skilled and educated foreign workers:
Addressing labor shortages in North Jutland**

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Abstract

This research paper contributes to the literature regarding labor shortages in North Jutland and how local companies respond to the growing lack of highly skilled and educated workers. Due to changes in demographics such as emigration of young people, an aging population, and an overall mismatch between labor demand and supply, the region faces issues with labor shortages of highly skilled and educated workers. This research paper will focus on sectors that are already facing issues with labor supply, including renewable energy, consulting and engineering, and IT software.

This research paper investigates how companies in North Jutland experience and respond to the issue of growing labor shortages, particularly of highly educated workers, and the potential solution of a foreign labor force. This research paper combines qualitative interviews with company representatives from marine engineering, renewable energy, IT and software, and construction engineering with quantitative survey data in order to explore experiences and perceptions of local companies. Moreover, the background section of the paper provides insightful information about the Danish labor market, foreign workers, and relevant policies, as well as information about the regional North Jutland labor market. These interviews were thematically and later comparatively analyzed in order to reveal not only shared but also different experiences and opinions in relation to labor shortages and foreign workers as a possible solution to local labor supply. Additionally, to support the analysis section, relevant survey results were implemented.

These findings were implemented throughout Human Capital Theory, which aligns with the idea that companies benefit from investing in their human capital, including foreign workers. Most of the interviewed companies invest in upskilling their foreign workers in terms of Danish language courses. Moreover, all four companies offer professional upskilling programs, which are beneficial for both parties, especially for companies, as they are investing in the improvement of their human capital. Many businesses recognize foreign workers as a valuable asset to their team productivity and offer additional help with integration, including network, accommodation, or relocation support.

This research paper summarizes that recruitment of foreign workers will likely increase in the future due to a mismatch between labor demand and supply in North Jutland. Moreover, as already mentioned, demographic changes will have a negative impact on local companies as well. Findings of this research paper offer insights into perceptions and experiences of local businesses and address imbalance of labor market.

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1. Introduction

In many developed countries, including Denmark, labor shortages have become an issue (OECD, 2024). Shortages of labor may cause serious consequences for both public and private businesses, ordinary citizens, and customers (Jalette, 2023). Skilled labor is a crucial input for the innovation processes (Horbach & Rammer, 2022). Moreover, nearly one in four businesses is experiencing difficulties in recruiting employees (OECD, 2024). These shortages have significant influence across diverse sectors, including construction, healthcare, biotech, pharmaceuticals, IT, and engineering (Eures, 2023). At the same time, the available labor supply does not meet the demand of the market (Concito, 2021).

On top of that, Denmark, especially the North Jutland region, faces demographic changes, such as an aging population and emigration of young people, which intensifies challenges of the local labor market (Region Nordjylland, 2023). In 2022, there were 64 000 attempts for recruitment by local businesses in North Jutland; however, 11% of the recruitment has been unsuccessful (Eures, 2023). The region faces significant mismatches which arises from a vast pool of low and middle skilled workers and a decline in the number of highly qualified workers (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). As a result, international recruitment of foreign workers may become even more important for the Danish labor market (Borgensgaard, 2022).

This thesis aims to investigate labor shortages in the North Jutland region with a focus on the role of the highly skilled and educated international workforce as a potential solution. This problem area seeks to understand the issue of regional labor demands and the international workforce in the region of North Jutland. Specifically, the research will address the following research question: *How do companies in North Jutland perceive the role of highly skilled and educated foreign workers in addressing labor shortages?* The study will also investigate how companies in North Jutland perceive international workers and if companies are currently employing immigrants or have considered this as an opportunity for their businesses. Furthermore, the study will investigate contributions and challenges that companies associate with hiring international workers, including factors such as language barriers, knowledge of foreign languages, organizational barriers, or cultural differences. Therefore, this thesis contributes to understanding labor market dynamics and possible connections between workforce demand and supply through employing foreign workers.

2. Literature Review

In this chapter, I will provide a literature review of labor shortages and the role of foreign workers as a potential solution. The literature review examines main factors influencing labor market demands, strategies of companies when addressing shortages, and challenges related to foreign workers recruitment.

2.1 Foreign workers and labor shortages

One of the most significant and controversial public policies issues in high-income nations is the restriction of labor immigration (Ruhs & Anderson, 2010). Many countries, including European countries, have recorded increased labor immigration in the last two decades (Ruhs & Anderson, 2010). In fact, this has been characterized by the high mobility of skilled people from developing to developed nations who perceive migration as an intentional tactic to refine their lives (Chwialkowska, 2020). A focus in debates about labor immigration policies is how to connect the admission of foreign workers to the specific needs of the domestic labor market and its economy (Ruhs & Anderson, 2010). The labor shortages can be relatively easy to define as the economic concept of labor demand and offer, which means the employer's demand for labor exceeds the supply (Jalette, 2023). However, there is no official standardized definition of a labor shortages (Handel, 2024). At the same time, the unemployment rate can be used as one of the factors to assess the level of the shortage (Jalette, 2023).

Skilled migration has grown for countries impacted by macroeconomic developments related to significant demographic shifts, globalized economies and supply chains, trends in international migration, and increasing shortages of qualified labor (Cameron & Harrison, 2013). According to Jalette, it is crucial to acknowledge a mismatch between the required local skills and available labor supply as another determining factor (Jalette, 2023). However, labor shortages may occur across a whole national labor market as well as only in specific regions of the country (Wright & Constantin, 2021). When it comes to long-term shortages, these may result from demographic changes, increased emigration, and unwillingness to participate in the local labor market (Horbach & Rammer, 2022). In other words, a local shortage of workers with hard skills, such as qualifications and experiences required by potential employers, is one of the major reasons why employers focus on hiring foreign labor (Wright & Constantin, 2021). The contribution that foreign workers can or should have in addressing skill needs and labor shortages in specific industries of the local market is a topic of intense debate (Ruhs & Anderson, 2010). The prospect of higher

wages is attractive for the potential worker, whereas immigration is attractive for the open economies and inexpensive labor (Kozák & Krajcsák, 2018).

Ruhs & Anderson in their research take into consideration the national labor market and its economy when analyzing the nature of employer demand for labor (Ruhs & Anderson, 2010). Several factors, such as the increase of wages and job vacancies, are empirical evidence of growth in labor demand (Handel, 2024). However, the overall wage increase cannot be sufficient enough in order to overcome labor shortage if the absolute supply of workers with specific qualifications and education is lower than demand (Horbach & Rammer, 2022).

Therefore, employers might take other actions into consideration when facing shortages, including increase of overtime, reduce of minimum qualifications for the position, restructure of the organization, possible substitute machinery and equipment for labor, train already existing workers for the job, offer bonuses to new workers or improvement of working conditions (Barnow , Trutko , & Piatak , 2013). Nevertheless, the core point of the economic approach is that the cost of labor has a significant impact on the presence and size of shortages (Ruhs & Anderson, 2010). Additionally, the demand for skills may exceed the supply of workers with particular qualifications due to demand for new products and technologies (Horbach & Rammer, 2022).

Therefore, a lack of qualified and highly skilled workers can negatively affect innovation in companies by limiting the area and scope of their innovation endeavor (Horbach & Rammer, 2022). Another significant innovation-related factor that has been identified is the motivation of local companies to foster culturally diverse workplaces (Wright & Constantin, 2021). Accordingly, employee skills are arguably the most important component of the innovation process for the business (Horbach & Rammer, 2022). Moreover, studies have proven that workplace diversity can have a positive impact on organizational performance (Wright & Constantin, 2021). However, to a certain extent, too much diversity may lead to forming sub-groups and subsequently more difficult communication (Wright & Constantin, 2021).

Employers frequently claim that there is a need for foreign workers in order to address labor and skill shortages and perform those jobs that locals will not or cannot perform, especially during periods of economic growth (Ruhs & Anderson, 2010). However, in contrast, some trade unions and other skeptics argue that these needs for foreign labor reflect employers' motivation for hiring cheaper and exploitative labor rather than enhancing and improving working conditions and wages (Ruhs & Anderson, 2010). Others argue that the need for foreign workers, especially in certain occupations, may be critical for economic recovery (Ruhs & Anderson, 2010).

However, when it comes to the suitability of workers, sometimes, rather than considering each applicant's qualifications individually, the appropriateness of workers for positions is assessed categorically, depending on factors such as gender, age, race, or nationality (Ruhs & Anderson, 2010). As a result, employers may draw on social stereotypes or their own experiences of certain nationalities (Ruhs & Anderson, 2010). According to research, immigrant workers with higher level of education should have an easier time adjusting to the challenges and integrating into the local job market (Chiswick & Miller, 2008). However, a negative example could be the analysis from 2003 by Waldinger and Lichter, which has shown that recruiters in California have a cognitive map that represents a variable hiring queue for workers by racial and ethnic background (Ruhs & Anderson, 2010). This type of marginalization makes it difficult for the immigrant to adapt to the local environment (Chwialkowska, 2020). However, it is important to note that the importance of these factors will differ depending on the job and its requirements (Ruhs & Anderson, 2010).

It is essential to acknowledge that many highly skilled immigrants with higher education completed in a different country with a different educational system encounter issues with acknowledgment (Chwialkowska, 2020). Challenges immigrants experience in the recognition of their foreign credentials can be understood as a methodical process of domestic labor market exclusion (Bauder, 2003). Therefore, the nationality of workers can be a significant category and criterion for employment (Ruhs & Anderson, 2010).

This literature review emphasizes labor shortages and foreign workers as a complex issue. This chapter reveals that although companies frequently mention foreign workers when it comes to labor shortages, issues such as nationality, possible biases in relation to ethnicity, or acknowledgement of foreign education are common. At the same time, the literature review also points out advantages of hiring foreign labor, such as a diverse workplace and support of productivity and innovation. Moreover, the literature review explains how labor shortages are shifted by demographic changes and skill mismatches. Therefore, these findings provide valuable insights into how local companies in North Jutland may perceive and approach foreign workers.

3. Theory

This section provides a review of the theory guiding my thesis. As per my theoretical lens, I will employ Human Capital Theory in order to uncover how companies in North Jutland perceive and evaluate foreign workers as a potential solution to labor shortages. By applying Human Capital Theory, the study aims to reveal the rationale behind hiring decisions and highlight benefits and limitations when it comes to employing international workers.

3.1 Human Capital Theory

Human Capital Theory has constituted a thriving research area in the economics of education since its contemporary beginnings at the turn of the 1960s (Mincer 1958; Schultz 1959, 1960, 1961) and its more extensive development by Gary Becker (1964) (Marginson, 2019). It is important to acknowledge that Human Capital Theory has a profound impact on a wide range of disciplines ranging from education to sociology and economics (Tan, 2014). As a result, it is linked to thousands of empirical studies (Marginson, 2019). The theory is a thorough method for examining a broad range of human issues from a certain perspective and suggesting appropriate strategies (Tan, 2014).

According to Human Capital Theory, investing in people has a positive economic impact on both individuals and society (Sweetland, 1996). An individual's embodied skills, abilities, knowledge, and other relevant traits that a business may utilize effectively for its operations are referred to as human capital (Mackey, Molloy, & Morris, 2014). The fundamental narrative of the theory suggests that earnings are driven by marginal productivity, which in turn is driven by education (Marginson, 2019). Essentially, the theory contends education raises people's incomes and productivity and therefore it is an investment (Tan, 2014). However, in fact, this investment is essential for both individual and nation's economic development (Tan, 2014). Accordingly, the value of investment in education is determined by the earnings of educated workforce (Marginson, 2019). At the same time, according to this perspective, economic progress originates from education, which is positioned at its core (Tan, 2014). In fact, it has been argued that the knowledge base and learning capabilities of the OECD nations are becoming increasingly more important in determining their overall economic performance (Almendarez, 2013). Therefore, linear continuum is used to represent education, employment, productivity, and wages (Marginson, 2019). As a result, graduate wages follow the acquisition of the employable human capital by educated students (Marginson, 2019). However, this economic rationality suggests that investments in human capital may result in higher performance in the short term and higher compensation in the long

term, but it does not take into consideration the institutional, sociocultural, and political context in which these investments are made (Hayek, Thomas, Novicevic, & Montalvo, 2016). Therefore, the theory focuses on the significance of education and training as essential factors for engaging in the new global economy (Almendarez, 2013).

It is crucial to acknowledge that companies are naturally influenced by their own attributes and available resources (Backman, 2012). Therefore, from a company's perspective, addressing human capital supply challenges is the first thing that encourages companies to hire competent foreign labor (Wright & Constantin, 2021). This has been identified by numerous studies where firms hire immigrants as a response to a lack of hard skills in the local market (Wright & Constantin, 2021). In order to fill skilled open positions, companies may look for employees with certain skills and talents that link to current competitive advantages (Wright & Constantin, 2021). In fact, it is a crucial factor for companies to source needed competencies, knowledge, and skills in order to maintain productivity (Backman, 2012). Additionally, a company's human capital enhances its capacity for learning (Backman, 2012). When it comes to organizational innovation, it is primarily a human concern (Seclen-Luna, Opazo-Basaez, Narvaiza, & Fernandez, 2020). Therefore, another factor has to do with innovation within business when companies may search for new skills, capabilities, or ideas that are not already there but could provide them with a competitive edge in human capital (Wright & Constantin, 2021). Talented immigrant workers may play a pivotal role in knowledge acquisition for local businesses seeking organizational learning, which aligns with human capital perspectives that sourcing outstanding people is a precondition for innovation (Wright & Constantin, 2021). Therefore, skilled immigrants, are today regarded as a significant component of the global talent pool at the organizational level, helping to achieve a competitive advantage both locally and globally (Guo & Ariss, 2015). Cost-effectiveness is another factor that many businesses consider and therefore recruit and keep human capital at an economic discount compared to competitors (Wright & Constantin, 2021). However, external factors like a company's location and economic environment are equally important as internal challenges, as businesses both shape and are shaped by the surroundings (Backman, 2012). Lastly, human capital in a country is heavily influenced by the characteristics of the country, such as population, labor force, structure, the condition of its economy, and more (Tur-Sinai & Averbach, 2018).

Despite being the target of the criticism from the start, the theory has expanded its influence over other research disciplines (Tan, 2014). When it comes to methodological criticism, the theory relies heavily on rational choice and methodological individualism (Tan, 2014). Empirically, the theory has been criticized for stating that education does not necessarily lead to higher

productivity or economic growth (Tan, 2014). In other words, it rules out other possible reasons or explanations for receiving education (Marginson, 2019). Furthermore, when it comes to practical criticism, the theory has been criticized for reducing education to a tool, rather than focusing on broader advantages such as personal growth (Tan, 2014).

This research will utilize Human Capital Theory to analyze how companies in North Jutland perceive highly skilled and educated foreign workers as a solution to labor shortages. This includes how local companies evaluate highly educated foreign workers based on their skills, knowledge, productivity, and overall suitability. According to the theory, educated and highly skilled workers represent an asset to local companies as well as the economy. At the same time, the literature review points out the increasing need for foreign workers as a strategic response to innovation and addressing labor shortages. Therefore, by applying this theoretical lens, this research aims to explore how companies in North Jutland perceive foreign workers as potential human capital for their businesses.

4. Background information

In this section, I will provide key background information for a deeper understanding of labor shortages, the Danish labor market in general, as well as North Denmark region, and foreign workers. I will examine Denmark's labor market, including shortages across different sectors, demographic changes in the country, and future development of high-skilled sectors. Finally, I will provide an overview of foreign workers in Denmark, immigration policies, and recruitment challenges.

4.1 Labor market in Denmark

Denmark faces shortages of labor in several sectors (Eures, 2023). Approximately one in four businesses in Denmark has reported troubles with hiring new employees between September 2022 and February 2023 (OECD, 2024). Overall, 42% of Danish businesses reported labor shortages in the first quarter of 2022, and as a result 21,2% of employers have identified the lack of workers as the primary reason for limited production in the fourth quarter of 2022 (OECD, 2024). According to a report from Concito 2021, the Danish labor market is facing an acute labor shortage where the demand cannot be covered by the existing supply (Concito, 2021). Labor shortages are present among multiple sectors, including biotech, pharmaceuticals, financial sectors, doctors, nurses, IT, construction, and engineers (Eures, 2023). For instance, the need for housing and governmental support for energy-efficient renovations has resulted in a severe talent shortage in the construction sector since the COVID-19 pandemic (Klein & Smith, 2024). The public sector represents approximately 30% of the total employment in the country (OECD, 2024). Therefore, it is crucial to acknowledge that shortages in certain sectors, such as long-term care, can have a negative impact on the living standards of citizens (Klein & Smith, 2024).

At the same time, Denmark's progressive climate goals, green transitions, and overall digitalization are altering the skill demands for labor (OECD, 2024). In fact, the analysis by Fremtidens Grønne Arbejdsmarked from 2021 predicted that by 2023 the expected job demand will rise from 30 000 to 50 000 new jobs annually as a result of investments in green technologies and CO2 tax (Concito, 2021). As the population ages, the growth of the labor force is slowed while creating new pressures (OECD, 2024). By 2030 the number of citizens over the age of 80 in Denmark will increase by 40% (Kommunernes Landsforening, 2024). As working lives are extended due to improved longevity and future rises in the effective retirement age, it is expected to continue rising to about 26% by 2050 and to stay high (Klein & Smith, 2024). Therefore, labor

shortages are a significant barrier to businesses and their dynamics, which can affect economic growth (OECD, 2024).

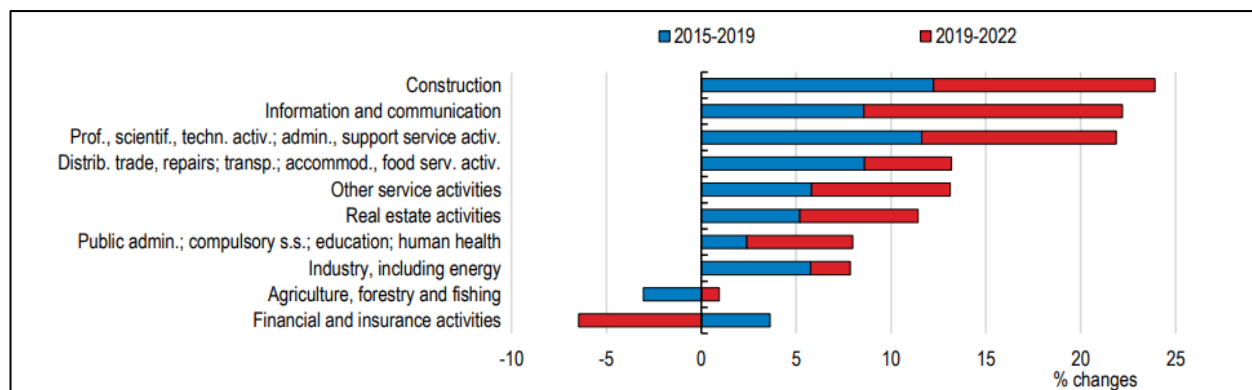


Figure 1: Employment growth by sector in Denmark (OECD, 2024)

The unemployment rate in the country depends on several factors, including level of education and seniority (Eures, 2023). The most common group with unemployment are people with a low education together with young people without education or recent graduates who have not had their first job (Eures, 2023). When it comes to working conditions, Denmark is favorable, with flexible working arrangements and workplace stress in comparison to global standards (OECD, 2024). The income inequality in Nordic countries is lower in comparison to other countries with other social models (Olsen, Schwartz, Warming, & Klarskov, 2024). An expat survey proves the satisfaction of international workers with the work-life balance, flat hierarchies, transport infrastructure, and security (Kommunernes Landsforening, 2024). Together with other Nordic countries, Denmark has the highest standard of living for ordinary wage earners in the world (Olsen, Schwartz, Warming, & Klarskov, 2024). Along with the Netherlands and Germany, Denmark has some of the lowest average working hours (OECD, 2024). At the same time, salaries are often higher compared to other European countries, which is creating attractiveness for foreign workers (Borgensgaard, 2022). Except for working hours, Denmark performs well in various measures of health, security, and happiness, making the living standard high (Olsen, Schwartz, Warming, & Klarskov, 2024). Therefore, working conditions are considered to be good by international standards, with low job strain and gender gaps (Klein & Smith, 2024).

4.2 Foreign workers in Denmark

In recent years, the pool of candidates for employment has grown beyond the domestic labor supply (Borgensgaard, 2022). Compared to the majority of OECD nations, Denmark has a relatively small proportion of foreign-born people, despite the increase in immigration over the past ten years (OECD, 2024). In 2024 the number of immigrated foreign citizens was 83 216 (Statistics Denmark, n.d.). The immigration statistics from 2024 show the largest groups of immigrants to be from Ukraine (8942), Romania (5395), Germany (5081), the USA (4555), and Poland (38720) (Statistics Denmark, u.d.). The most foreign workers are from other EU countries, as they are allowed to live and work in Denmark under EU law (Klein & Smith, 2024). This indicates the easier access to the Danish labor market for EU citizens (Borgensgaard, 2022). Prior to the pandemic of Covid-19, the employment rate of foreign-born citizens was approximately 66% which has increased by 3% in 2022 (OECD, 2024). After the Russian invasion of Ukraine, the number of Ukrainian employed immigrants in Denmark has increased significantly (Klein & Smith, 2024). However, many of these immigrants are eligible for a temporary residency visa under the Special Act (OECD, 2024).

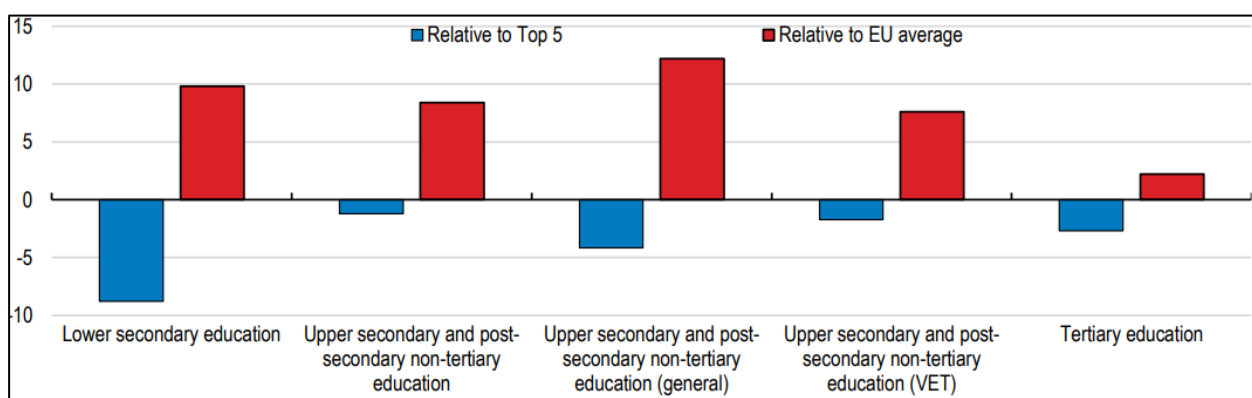


Figure 2: Differences in employment rate in accordance with education (OECD, 2024)

When it comes to third-country foreign workers, they must adhere to severe employment, income, or profession-specific requirements in order to enter the country (OECD, 2024). Furthermore, in contrast to EU citizens, those coming from third countries must apply for residency documents and work permits after securing a job in Denmark (Borgensgaard, 2022). Until recently, the minimum annual pay to recruit a non-EU resident was 465 000 DKK, which is around 87% of the wage, which hinders the recruitment of newly trained and medium-skilled employees (Klein & Smith, 2024). However, since 2023, when the register-based unemployment rate is less than 3.75%, the salary cap has been lowered to 375 000 DKK (OECD, 2024).

Denmark has a positive list scheme for skilled workers in highly educated fields, which allows non-EU applicants to apply for residency and work permits in those fields (Klein & Smith, 2024). However, this list does not include all professions that are under the pressure of shortages (OECD, 2024). The positive list in 2023 included 30 job titles for people with higher education, and 36 titles for skilled workers (Klein & Smith, 2024).

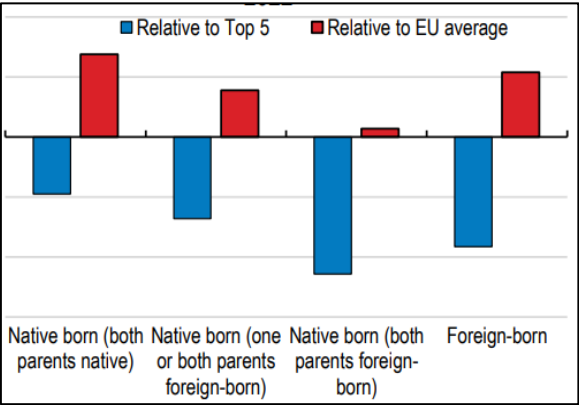


Figure 3: Difference in employment rate by citizen status (OECD, 2024)

The ability to respond to rising labor demand by mobilizing the domestic workforce and expanding the international recruitment process likely contributes to maintaining labor costs under control (OECD, 2024). In fact, the number of employments of foreign workers has grown by approx. 160 000 since 2013 (Borgensgaard, 2022). However, several international comparisons propose Denmark has a gap for increasing employment rates as, despite large improvements over the past years (OECD, 2024). To address skills shortages, more could be done to make international hiring easier (OECD, 2024). The country has a comprehensive integration policy; however, the implementation is delegated to municipalities across the country, which permits different interpretations (Klein & Smith, 2024). Furthermore, according to municipalities, one of the largest obstacles for immigrants is a lack of proficiency in the Danish language (OECD, 2024). Although many companies have English as the main corporate language, there are still many organizations where proficiency in Danish is an advantage, both professionally and socially (Kommunernes Landsforening, 2024). Language proficiency is the most significant factor influencing labor market integration and a requirement for integrating into the local society and workplace (OECD, 2024). However, it is important to acknowledge the difficulty of language; in fact, 70% of expats find the language hard to learn (Kommunernes Landsforening, 2024). Research has proved that language understanding is essential for improving employment prospects, especially over the longer period of time (Klein & Smith, 2024).

The pay limit is still considerably high, at approximately 70% of the average salary, and it should not be so closely related to the state of demand as a whole (Klein & Smith, 2024). Furthermore, a limit on the number of permits will be set annually, but the government intends to launch a new

program with lower limits for qualified businesses (OECD, 2024). Moreover, other wage benefits, such as employee share options, which are frequently utilized by start-ups, should also be included in the pay limit (Klein & Smith, 2024). Another suggestion is adding experience-based knowledge in areas of shortages to the positive list for highly qualified personnel (OECD, 2024). Lastly, recognition of foreign educational systems may have an impact on the validation of credentials obtained overseas (OECD, 2024).

A great example for Denmark could be Germany, where they introduced the Skilled Workers Immigration Act, referred to as Fachkräfteeinwanderungsgesetz, in order to allow medium-skilled immigrants to be hired outside of the EU in specific fields, including facilitating their access to training and lowering visa processing times (Klein & Smith, 2024). Given the increasing rivalry from other European countries that are also experiencing labor shortages, Denmark should focus on incentives to attract and target foreign workers (Kommunernes Landsforening, 2024). It is crucial to acknowledge that for immigrant the frequent rule changes with often increasingly difficult residency rules create uncertainty, which is a major issue in attracting highly trained workers to the country (Klein & Smith, 2024). In fact, the immigration law has undergone 135 amendments between 2002 and 2019, creating legal ambiguity and uncertainty for immigrants (OECD, 2024). Denmark has been placed in the 11th spot in terms of overall attraction to highly skilled immigrants (Klein & Smith, 2024).

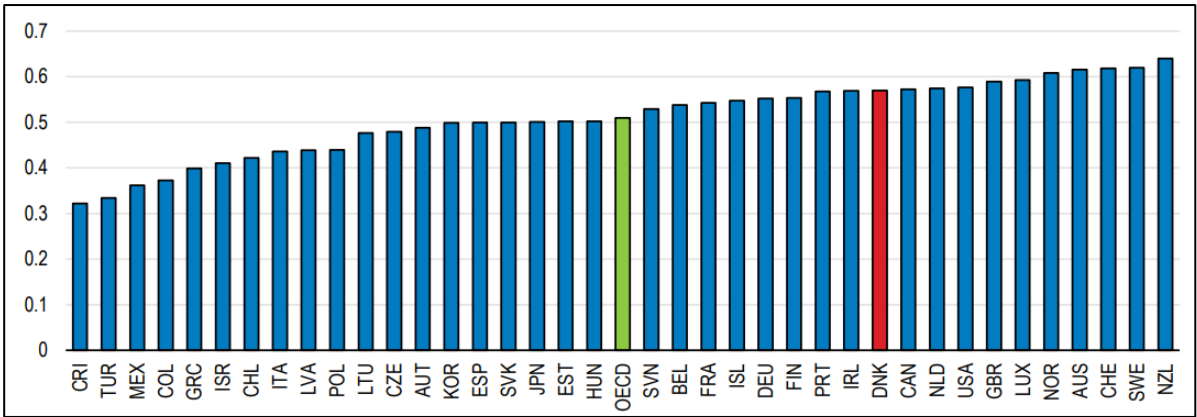


Figure 4: An index of talent attraction for highly educated professionals (OECD, 2024)

4.3 North Jutland Region

The region consists of 11 municipalities (Region Nordjylland, 2015). Latest data from 2024 show the region has 593 135 inhabitants, of which 346 182 are of working age (between the ages of 18-64) (Brinkhoff, 2024). In 2022, there were 376 700 people of active working age in the region (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). However, almost 50% of these workers are over 50 years old (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). Therefore, the demographic changes of the region suggest that in 2030 almost every third person in North Jutland will be over 65 years old (Region Nordjylland, 2023).

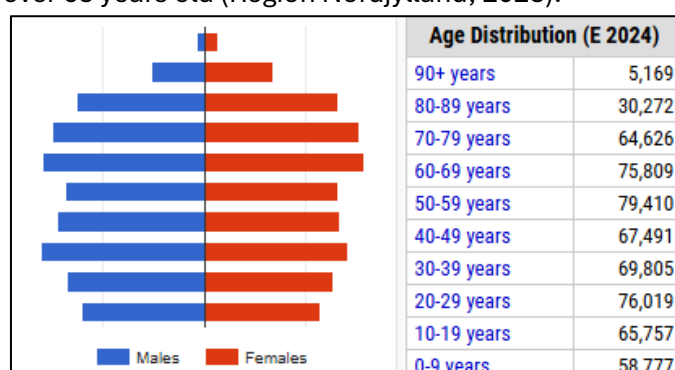


Figure 5: Age distribution in North Jutland (Eures, 2023)

As a result, the aging population and lower education in the region lead to notable labor shortages, particularly in high-skilled occupations (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). This challenge is further intensified by the large number of young people leaving the region during or after completing their education, and it is expected that by 2030 there will be 6% fewer young people between 16 and 24 years of age as of today (Region Nordjylland, 2023). Furthermore, another challenge is the mismatch in the labor market, which arises from a vast pool of low and middle skilled workers and a decline in amount of highly qualified workers (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023).

Between August 2022 and July 2023, there were 31 733 open positions posted on Jobnet (Eures, 2023). The most advertised positions were healthcare (4 941), educational; social; and church work (3 565), academic work (2 300), construction (2 116), and cleaning and renovation (2 098) (Eures, 2023). At the same time, the employment in high-tech industries is lagging the EU average (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). In fact, a major analysis revealed the region will lack up to 5 000 skilled workers and 3 500 technical specialists by 2026 (Region Nordjylland, 2022).

Date	Municipality	Number of positions	Date	Municipality	Number of positions	Date	Municipality	Number of positions
Jan-feb 23	Brønderslev	389	Jan-feb 24	Brønderslev	300	Jan-feb 25	Brønderslev	323
	Frederikshavn	923		Frederikshavn	1,155		Frederikshavn	454
	Hjørring	835		Hjørring	616		Hjørring	595
	Jammerbugt	350		Jammerbugt	374		Jammerbugt	287
	Mariagerfjord	565		Mariagerfjord	436		Mariagerfjord	412
	Morsø	133		Morsø	145		Morsø	112
	Rebild	264		Rebild	225		Rebild	206
	Thisted	507		Thisted	366		Thisted	396
	Vesthimmerlands	406		Vesthimmerlands	247		Vesthimmerlands	196
	Aalborg	3,759		Aalborg	2,460		Aalborg	2,237

Figure 6: Number of vacancies on Jobnet (Jobindsats, n.d.)

The most significant challenges are in relation to the recruitment of skilled labor, where 25% foresee challenges and another 30% expect to be able to recruit sufficient workers to some extent (FremKom, 2022). Companies located in the region, especially in the high-tech industries, which represent a sector with growth potential, are in competition with companies in the rest of the country and abroad for highly skilled engineers (FremKom, 2022). In fact, the skilled workforce in the region fell by 5,7% between 2008 and 2020 (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). This affects the ability of companies to innovate and to maintain high productivity (Region Nordjylland, 2023). This is the reflection of young population reluctance to pursue a higher education, together with the higher attractiveness of other regions (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). 40,3% of the local residents have accomplished a tertiary education, which compared to the EU average of 41,5% is lower (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). Approximately 8,8% of employees in the region have other than Danish citizenship (Eures, 2023).

Due to unfilled job openings in North Jutland, many companies focus on investing in and reskilling of already existing workforce and attracting a foreign labor force (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). Nationally, there is a discussion about initiatives to strengthen the labor supply and open the country to foreign labor (FremKom, 2022). Nevertheless, according to specialists, the region has trouble attracting foreign workers as the region is considered a periphery of Denmark with less employment and entertainment options (Guznajeve, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023).

Date	Municipality	Number of employed foreign citizens	Date	Municipality	Number of employed foreign citizens	Date	Municipality	Number of employed foreign citizens
Jan-dec 22	Brønderslev	1,276	Jan-dec 23	Brønderslev	1,251	Jan-dec 24	Brønderslev	1,309
	Frederikshavn	4,689		Frederikshavn	5,010		Frederikshavn	4,820
	Hjørring	4,432		Hjørring	4,558		Hjørring	4,588
	Jammerbugt	2,509		Jammerbugt	2,364		Jammerbugt	2,389
	Mariagerfjord	2,750		Mariagerfjord	3,091		Mariagerfjord	3,196
	Morsø	855		Morsø	792		Morsø	832
	Rebild	1,578		Rebild	1,620		Rebild	1,750
	Thisted	2,754		Thisted	2,699		Thisted	2,807
	Vesthimmerlands	2,906		Vesthimmerlands	2,782		Vesthimmerlands	2,815
	Aalborg	15,883		Aalborg	16,048		Aalborg	16,783

Figure 7: Foreign labor in North Denmark (Jobindsats, n.d.)

The region indicates a relatively large number of jobs in public administration, education, health, industry, trade, construction, civil engineering, travel agencies, cleaning, and other operational services (Eures, 2023). Approximately 36% of employment in the region is in the public sector, including healthcare, education, and other public services (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). Except for that, the following sectors drive the region's economy: 19% represents trade and transport, 17% mining and quarrying, 8% business services, and 8% building and construction (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023).

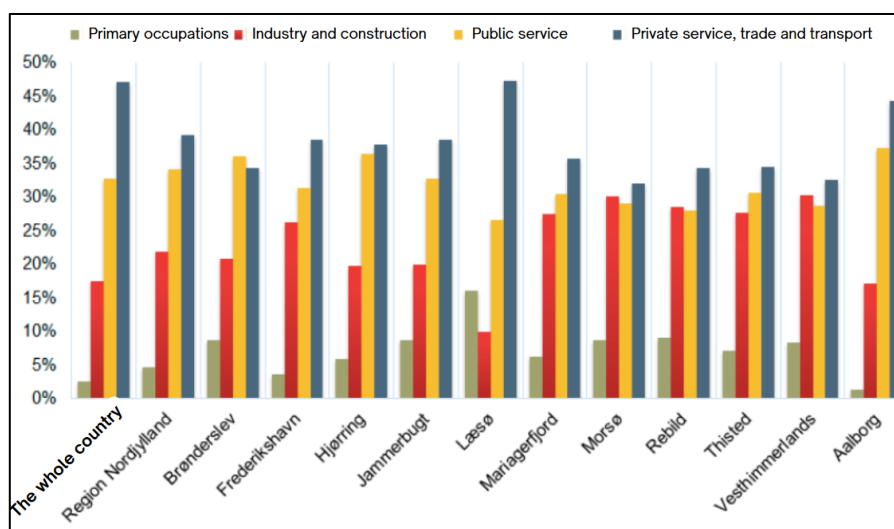


Figure 8: Employment structure by sector and workplace in 2019 (Region Nordjylland, 2023)

According to the regional strategy, North Jutland must be self-sufficient in renewable energy by 2040 (Region Nordjylland, 2023). Due to the region's strong emphasis on sustainability and the green transition, the energy sector is highly innovative and expanding quickly (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). As a result, North Jutland has high expertise in the areas of biomass, hydrogen fuel cells, sustainable architecture, wind energy, energy optimization, and more (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). However, it is crucial to consider conventional primary sectors as well, which include agriculture, forestry, and fisheries, that still employ a comparatively high percentage of the labor force (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023).

Most open positions in North Jutland are targeted at those with completed tertiary education (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). Every year, the region needs more specialists in the fields of healthcare, business, and IT (Guznajeva, Gutierrez, Oliveira, Ploeg, & Nieuwenhuizen, 2023). The demand for high-tech workers is increasing, as up to 70% of the sector expects to hire more workers within the niche (FremKom, 2022). Furthermore, the green transition agenda will have an impact on automation and digitalization, which in return will have a deeper

impact on job functions and other sectors (FremKom, 2022). Therefore, access to relevant, educated labor is crucial for the region (FremKom, 2022).

5. Methodology

In this section, I will outline the methodological considerations guiding this thesis and provide a concise and systematic overview of the processes involved during the research writing. I will present the research design, data collection, chosen method of analysis, ethical considerations, limitations, and delimitations of the research.

5.1 Philosophy of Science

For the ontological perspective employed in this research, I will lean towards critical realism. Critical realism acknowledges the existence of natural order as well as the events and discourses of the social world (Bryman, *Social Research Methods*, 2016). Therefore, the understanding of the social world and bringing change can only be achieved by identifying the structures that give rise to these events and discourses (Bryman, *Social Research Methods*, 2016). Critical realism offers an alternative to positivism and constructivism (Fletcher, 2017). The study of the social world should relate to the identification of the structures that generate that world, according to critical realist epistemology (Bryman, *Social Research Methods*, 2012). Therefore, by adopting this perspective, this research aims to understand factors influencing labor shortages and international recruitment of qualified workers and possible opportunities for improvements. The study adopts a critical realist epistemology, which acknowledges that all knowledge is changeable over time (Albert, Brundage, Sweet, & Vandenberghe, 2020). Therefore, this perspective will be suitable for examination of labor shortages and migration of qualified workers while recognizing factors such as policies, personal experiences, and more.

5.2 Research Design

Research design offers a framework for the collection and analysis of collected data (Flick, 2022). This research will employ qualitative research design. Qualitative research emphasizes words rather than quantitative data (Bryman, *Social Research Methods*, 2012). However, to provide additional and more in-depth context, I will employ a few quantitative aspects from survey results and background information.

The goal of qualitative research is to produce knowledge based on human experience (Nowell, Norris, White, & Moules, 2017). One way to characterize the process of designing qualitative research is as a series of choices (Flick, 2022). The first step is to determine the objectives of the study, such as developing a theory, assessing an intervention or issue, and more broadly influence on a field or problem (Flick, 2022). The objective of this research is to explore how local companies

in North Jutland perceive and evaluate highly skilled and educated foreign workers as a potential solution to labor shortages. Secondly, the research question of the study is one of the most crucial elements, as its formulation has a significant influence on the design of the study (Flick, 2022). As a result, the research question was formulated to guide this research paper in order to explore local employers' perspectives, experiences, and overall perception of the foreign labor force. Thirdly, Miles and Huberman (1994) describe two types of research designs: loose and tight (Flick, 2022). The tight research design is characterized by restricted questions and circumstances, whereas loose design is characterized by more broadly defined concepts and flexibility (Flick, 2022). Due to the exploratory nature of this research, a loose design will be employed.

Lastly, the decision about selecting and sampling participants in accordance with the study's objectives and research question while considering practical factors such as time, resources, and experience (Flick, 2022). For this research, the sampling strategy will be focused on selecting participants who are directly involved in hiring and managing employees within industries where labor shortages of highly skilled and educated workers are the most significant. Therefore, as the literature review and background information for this research suggest, the sampling of participants will be from the IT, engineering, and green transitions sectors. In this research, I have collected interviews not only with companies located in Aalborg municipality but also with companies in Frederikshavn and Mariagerfjord municipalities. I have decided for this broader approach because municipalities outside of Aalborg may face greater challenges in attracting and retaining well-educated and skilled workers. Unlike Aalborg, which benefits from a more international environment and the presence of a university.

These interviews will be held in the form of semi-structured interviews in order to gain a better understanding of international hiring practices, challenges of companies located in North Jutland, opinions on labor shortages, and perspectives on international labor as a solution to these shortages. Lastly, I will collect a survey in order to receive insights from companies located in North Jutland in relation to employing foreign workers, perceived advantages, and disadvantages. The survey was semi-structured with close ended questions, open-ended questions, and multiple answers questions. The survey will provide this research with data for both thematic and comparative analyses that will be provided further in the research. The goal of the survey was to reach a larger number of companies in the region and gain experience and understanding with recruitment, workforce availability, employment of international workers, possible perceived advantages and disadvantages of foreign workers, and workplace corporate language.

5.2.1 Data Collection

The practice of gathering data in order to obtain understanding and information about the subject is known as data collection (Taherdoost, 2021). In this project I have collected both primary and secondary data, with the main focus on qualitative data. However, as mentioned previously, I will employ a few quantitative data from survey responses and secondary data in order to provide a deeper understanding of the problem area. The secondary data collected for this research include academic literature, journal articles, government reports, industry publications, and regional development strategies from the Aalborg municipality of North Jutland. Collected secondary data helped to shape and provide more in-depth literature reviews and background information in relation to labor shortages in general as well as in North Jutland, foreign workers, and recruitment.

The primary data collected for this research include online surveys and semi-structured interviews, which allowed me to gain insights into already pre-defined questions as well as new information. Therefore, hiring and managing employees within industries where labor shortages of highly skilled and educated workers are currently under pressure were interviewed. When preparing and collecting interviews, I focused on the main seven stages of an interview inquiry by Brinkmann & Kvale, 2018. This includes the following: thematizing, designing, interviewing, transcribing, analyzing, verifying, and reporting (Brinkmann & Kvale, 2018).

Therefore, firstly I have focused on developing the goal of the study and the idea of the topic to be examined, which is represented in the problem formulation: *How do companies in North Jutland perceive the role of highly skilled and educated foreign workers in addressing labor shortages?* This includes how local businesses address possible labor shortages and the perception of foreign workers as a possible solution.

Secondly, when designing interview questions, I focused on semi-structured questions, which allowed me to receive all necessary information while giving an opportunity to the interviewee to follow up with their own thoughts. All questions were focused on the main elements of this research, such as general questions regarding labor shortages, foreign workforce as a solution, challenges and advantages when hiring and retaining foreign workers, company perception, and future plans regarding labor shortages.

The interview phase was conducted online via Microsoft Teams. Prior to each interview, participants were informed about the purpose of the study. Before the interview started, each participant provided their full consent for the interview to be recorded and transcribed. Except for that, all interviewees have been granted anonymity and possibility to avoid answering any question.

Next, I have focused on transcribing each interview from the audio recording, which was stored securely. This allowed me to prepare all key information for the analysis stage.

The analysis of each interview was done separately through the thematic analysis method. This includes coding and identifying key themes. After all, four interviews were analyzed by themes, I proceeded to compare the findings of each interview throughout the comparative analysis. This allowed me to compare patterns and find similarities and differences between findings.

When it comes to verifying stage, I focused on consistency between the interview data and cross-checking of information. During the interview stage, I have made sure I can ask questions as a follow-up in case of needed clarification.

Lastly, I will present findings into consideration with the analysis method and ethical considerations. I will present the findings of this research grounded in the results of collected and analyzed interviews and survey results, with consideration to the literature review and background information.

Alongside interviews, I also collected a survey in order to obtain quantitative and qualitative data from local companies. The survey was distributed with the help of the International House North Denmark among companies in North Jutland through an online link. This survey was designed in a combined structure where a combination of close-ended, multiple-choice, and open-ended questions were asked.

The aim of the survey was to provide research with data regarding difficulties in finding a relevant and qualified workforce, corporate language, whether local companies already employ foreign workers, and subsequently advantages and disadvantages perceived by local companies when it comes to international hiring and foreign workers. The survey allowed us to get insights from a larger number of companies and subsequently use the collected data in the analysis section.

Lastly, the results of both primary data will be combined with secondary data from the literature review and background information. This will provide the research with the necessary credibility, critical reflection, and a more comprehensive understanding of companies' perspectives on labor shortages and foreign workers in North Jutland.

5.3 Method of Analysis

5.3.1.1 *Thematic analysis*

The most intricate stage of qualitative research is data analysis (Nowell, Norris, White, & Moules, 2017). Therefore, in order to analyze each interview separately, I will utilize thematic analysis.

Thematic analysis is a strong and adaptable technique for examining qualitative data (Kiger & Varpio, 2020). In its way, the thematic analysis offers a systematic approach for generating codes and themes (Clarke & Braun, 2017). At the same time, thematic analysis is a suitable method for approaching and analyzing larger sets of qualitative data (Nowell, Norris, White, & Moules, 2017). The smallest units of thematic analysis, which are referred to as codes, can identify intriguing features that may be potentially pertinent to the research area (Clarke & Braun, 2017). These codes serve as the fundamental unit of themes, which are greater patterns in the analysis (Clarke & Braun, 2017). Furthermore, it is a suitable analytical technique for attempting to comprehend ideas, behaviors, or experiences throughout a data set (Kiger & Varpio, 2020). Therefore, observations from the analysis can be arranged and reported in themes (Clarke & Braun, 2017). When approaching thematic analysis, the most used framework includes six steps: familiarizing yourself with collected data, creating preliminary codes, looking for themes, reviewing themes, defining and labeling these themes, and finally reporting (Kiger & Varpio, 2020). While using the research question as a guide, the thematic analysis seeks to find, identify, and interpret crucial features of the data rather than just summarizing its content (Clarke & Braun, 2017).

In the first step of thematic analysis, I familiarized myself with transcribed interviews one by one. This involved a thorough review of each material while paying close attention to repeated information in order to gain an understanding of the interviews collected. Afterwards, I focused on creating preliminary codes throughout color-coding methods. These codes captured the main ideas behind collected data while relating to the research area. In the next step, I took these codes as the building blocks for searching for themes. After identifying main themes, I focused on reviewing the data in order to assure accuracy and alignment with the research area. The next step was to focus on labeling themes based on their content and capturing definitions. Lastly, I have created a presentation of the findings with analyzed themes supported by direct quotes from corresponding interviews.

5.3.1.2 Comparative analysis

Findings, trends, or values can be compared and contrasted using comparative analysis (Pickvance, 2001). This analysis is used for analyzing both similarities and differences across cases (Rantala & Hellström, 2001). In order to execute a proper comparative analysis, the researcher must have two or more cases and a goal of explaining rather than describing the data (Pickvance, 2001). At the same time, comparative analysis allows researcher to create connections between already defined categories (Rantala & Hellström, 2001).

Given the nature of this research and the interviews I collected, I believe that thematic analysis would help uncover patterns in perceptions of foreign workers, as well as the labor shortages

faced by local businesses. After analyzing each interview, I identified and summarized key themes, which were then compared through comparative analysis. The aim was to provide a reader with similarities and differences across the collected data. These findings were further supported by the results of the survey. I believe this approach allowed me to draw more comprehensive conclusions and gain deeper insights into the research area.

5.4 Ethical Considerations

During the process of writing a thesis and collecting primary data, I took into consideration ethical integrity. This includes informed consent for all interview participants and agreement with voluntary participation. Except for that, all participants in interviews have been granted anonymity and the possibility to skip or not answer questions. Furthermore, interviewees were informed about the purpose of the interview as well as about the possible outcome of the interviews. Lastly, all interviews were recorded and stored securely on an external device for pure transcription purposes. After transcription of each interview, recordings were deleted.

5.5 Limitations

It is essential to recognize this paper's limitations to maintain the thesis transparency. First of all, the research relies on limited sample sizes for the survey and interviews, which may not fully represent the perspectives and experiences of every local company. Both primary data collections will be influenced by subjective perception of respondents to some extent. It is also crucial to acknowledge that findings may not be applicable to other regions of Denmark, as the main focus is on North Jutland. Lastly, the data for this research paper are collected within a limited timeframe, and therefore it may influence the depth of the research.

6. Analysis

In this section, I will analyze all interviews collected between the 26th of March and the 29th of April 2025. All companies interviewed are located in North Jutland, specifically Aalborg municipality, Frederikshavn municipality, and Mariagerfjord municipality. Firstly, the thematic analysis of each interview is performed separately. Then, these findings are compared in comparative analysis in order to reveal similarities and differences between experiences of interviewed companies. The thematic analysis is separated into three main categories: initial codes, theme, and relevant examples from the specific interview. As presented in the methodology section, the initial elements of the thematic analysis are referred to as codes. This is the first phase in identifying the main themes of the interview that will provide an overview of the experiences and perceptions on labor shortages and foreign workers as a potential solution. The first step was to familiarize and thoroughly read through the collected and transcribed interviews separately. Subsequently, I have noted down repeating keywords in order to discover patterns across the transcript. For an easier and more understandable overview, I have conducted findings of codes relevant to the research area of this paper from each interview separately into a coding table. After determining relevant initial codes, I have refined them into main themes. These main themes will provide insights into the experience of each company in relation to labor shortages and perception of foreign workers.

6.1 Thematic analysis of Interview A from Marine Engineering and Energy Technology company

In this section, I will provide initial codes from the interview collected with the Senior Recruitment partner of the Marine Engineering and Energy Technology company located in North Jutland. These initial codes are directly related to the problem area of this research paper. Each of these codes are marked with numbers and represents a certain aspect of the problem area. Below, in the table I provide initial codes from interview A:

	Code Name	Description
Code 1	Labor shortages and skill mismatch	Company experiences at the moment a few issues with insufficient labor supply. The company expects these issues to grow in upcoming years.

Code 2	Foreign workers are necessity	Hiring foreign workers is needed to fill in gaps in relation to labor shortages, specifically highly educated foreign workers.
Code 3	International recruitment targeting strategy	Targeting certain countries for specific skillsets is used by the company.
Code 4	Use of third part service in order to get foreign workers	Use of Alpha Mobility for logistics and relocation of the person.
Code 5	Advantages of foreign workers	Foreign employees show strong motivation, commitment, and work ethics.
Code 6	Integration challenges	Minor difficulties in informal integration (e.g., language barrier during the lunch break).
Code 7	Cultural inclusion and English language	The company is hosting cultural events (Diwali, Ramadan) to build inclusion and more open space for foreign workers. The English language is used as corporate language.
Code 8	Concerns with foreign education	Sometimes the company faces issues in evaluating education from other countries.
Code 9	Municipal resources are available only in Danish	Lack of resources in terms of relocation and living in the municipality in English language.
Code 10	Need for workforce-driven policies	Danish policy must adapt to labor shortages.
Code 11	Investments in upskilling workers	Company provides Danish courses and professional trainings.

Table 1: Generated codes and description of interview A

6.1.1 Identification of themes in interview A

Below, I provide an overview of six analyzed themes, relevant codes, and quoted examples from interview A.

6.1.1.1 Labor shortages and skill mismatch

The main motivation behind the company's focus on foreign workers is the shortage of qualified labor in North Jutland. The interviewee clearly states that at the moment they do not face serious issues with shortages, but they do expect problems in upcoming years. Except for that, the interviewee states that the domestic talent pipeline cannot meet the growing need for a highly qualified workforce, especially in engineering. Therefore, the company is actively searching for the right talents not only on the domestic market but also abroad. Subsequently, the interviewee mentions that a deficiency of qualified labor may have a negative impact on the company but also on the local economy as a result of forced relocation due to labor shortages.

Code	Relevant quote from interview A
C1	<i>"We cannot and we do not foster all that we need in Denmark alone ..."</i>
C2	<i>"... we are forced into having these challenges because we are not, ... getting enough children into the food chain. We are behind so we need to be open, and I think that it gets a little bit into politics. "</i>

Table 2: Relevant codes and quotations from interview A

6.1.1.2 International recruitment

The interviewee from company A revealed that international recruitment is a necessity for the company. The respondent emphasized that the Danish labor market is lacking the supply of needed workforce, especially when it comes to professionals and highly skilled workforce such as maritime and engineering. Therefore, the company focuses on attracting foreign talent on the domestic market as well as abroad. When it comes to international recruitment, the company collaborates with a third-party agency called Alpha Mobility, which help them to relocate the person to North Jutland and help them with initial formalities. Except for that, the HR team of the company communicates with International House North Denmark as well. During the international recruitment, countries are occasionally targeted based on what expertise does the company need e.g.: Turkey, Germany, or India. These steps help the company to get a qualified workforce and subsequently keep the production and innovation in the company going in a positive direction.

Code	Relevant quote from interview A
C2	<p><i>“... they come with skills, knowledge, and inspiration from across the globe and we are an international company.”</i></p> <p><i>“... we are hiring internationals especially in the engineering and sales sector, and it is also for another reason as it is good to have an international network in these jobs.”</i></p> <p><i>“We have a big program together with a company called Alpha Mobility where we help them to relocate...”</i></p> <p><i>“... but we also have I think 55 or 56 different nationalities already in the company in Denmark alone.”</i></p>
C3	
C4	

Table 3: Relevant codes and quotations from interview A

6.1.1.3 Advantages of foreign employees

According to the interview, international employees are highly valued for their technical proficiency, commitment, cultural background, and work ethic. At the moment, the company faces issues with covering positions that are so-called hardcore positions. The company is aware of the labor shortages and expects to see larger issues with filling up highly skilled vacant positions in the future. On the contrary, the company is providing active possibilities for upskilling knowledge and skills through our specialized courses and Danish language course.

Code	Relevant quote from interview A
C5	<p><i>“Usually, these are very skilled, educated and hardworking people.”</i></p> <p><i>“... they come with skills, knowledge, and inspiration from across the globe and we are an international company.”</i></p> <p><i>“...it’s a valuable asset to put into the workforce and only helps us be more productive.”</i></p>
C11	

Table 4: Relevant codes and quotations from interview A

6.1.1.4 Integration challenges of foreign workers

During the interview, the respondent acknowledged that social and cultural integration of foreign employees is a challenge to a certain extent. Informal exclusion can happen, particularly in social situations like lunch breaks where non-Danish speakers are sometimes isolated from Danish coworkers. The hiring process is further complicated by the difficulty of evaluating the legitimacy of foreign credentials such as diplomas and prior experience. Lastly, the interviewee has expressed dissatisfaction navigating municipal services and information about life in the municipality due to the absence of English language.

Code	Relevant quote from interview A
C6	<i>"...they maybe feel a little bit left out on the chit chat in the lunchroom."</i>
C8	<i>"...it is hard for us to completely understand whether or not the quality of the</i>
C9	<i>papers and the diploma is what we are in need of ..."</i>
	<i>"...if I need to do some employer branding or branding of my local area, I actually need to use tourist sites. That is a little bit dumb..."</i>

Table 5: Relevant codes and quotations from interview A

6.1.1.5 Inclusion and cultural sensitivity

The business has made efforts when it comes to cultural inclusion. The company promotes a more hospitable and inclusive atmosphere by combining traditional Danish celebrations e.g.: Julefrokost with religious and cultural festivals such as Ramadan or Diwali. This makes foreign workers feel valued and acknowledged while joining these events with their families. At the same time, the company is in close touch with International House North Denmark about events in surrounding areas. Lastly, the company uses English as a corporate language.

Code	Relevant quote from interview A
C7	<i>"...they maybe feel a little bit left out on the chit chat in the lunchroom."</i>
	<i>"...we try to help and tell them for example to go to International House North Denmark and try to talk to other internationals."</i>

Table 6: Relevant codes and quotations from interview A

6.1.1.6 Policy gaps

The interviewee points out issues that make it more difficult to attract and retain qualified people from around the world, particularly in North Jutland. The interviewee perceives the absence of an English-language municipality website as a significant issue since it does not provide information to foreign citizens regarding relocation and life in the municipality. This makes it harder for the recruitment of the company among potential employees, as the tourist website has to be used. The respondent has also emphasized how national labor laws must be changed to encourage hiring from abroad, as it might have a negative impact on the local economy.

Code	Relevant quote from interview A
C9	<i>"...if I need to do some employer branding or branding of my local area, I actually</i>
C10	<i>need to use tourist sites. That is a little bit dumb..."</i>

	<p><i>“...if we won’t be able to cover our company with international then we will be forced to move our production somewhere else and that is a big threat to the Danish government.”</i></p> <p><i>“...we also need to have a government that understands the political environment and the need and the necessity for getting many international people coming to our country...”</i></p>
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Table 7: Relevant codes and quotations from interview A

To summarize, the thematic analysis of interview A highlights the importance of foreign workers and international recruitment when addressing labor shortages. The company presented an active and positive approach towards international workers. This includes investment in relocation, training, and overall positive perceptions. The company is planning to expand its efforts in international recruitment in the future in order to address labor shortages.

6.2 Thematic analysis of Interview B from IT and Software company

In this section, I will provide initial codes from the interview collected with Solution Architect and Department Manager of a company located in North Jutland. These initial codes are directly related to the problem area of this research paper. Each of these codes are marked with numbers and represents a certain aspect of the problem area. Below, in the table, I provide initial codes from interview B:

	Code Name	Description
Code 1	Labor shortages in software and IT	The interviewee acknowledge shortage of skilled software and IT developers in Denmark.
Code 2	Financial limitations	Competitive recruiting for this company is limited due to smaller budgets.
Code 3	Specialized skill mismatch	Difficulty in finding and hiring developers who match technical requirements of the company.
Code 4	International team and English language	High ratio of international employees in the company. Company corporate language is English; no language barriers were reported.
Code 5	Negative outsourcing experiences	The company faced challenges with third-party consultants abroad (e.g., India, Philippines).

Code 6	Domestic recruitment focus	The company focuses solely on people who are already residing in Denmark.
Code 7	Benefits of cultural diversity	Positive impacts of international employees on productivity and creativity within the company.
Code 8	Integration challenges	The company had one experience where an international employee struggled to adapt.
Code 9	Openness to international hiring	Although the company focuses on domestic hiring, they have expressed a willingness to look abroad if local talent is not available.
Code 10	Investments in upskilling workers	The company offers investment in professional development such as conferences. This does not include Danish language course.
Code 11	Lack of HR infrastructure	Due to the size of the company there is no formal HR department which may result in issues with hiring strategies.

Table 8: Generated codes and description of interview B

6.2.1 Identification of themes in interview B

Below, I provide an overview of five analyzed themes, relevant codes, and quoted examples from interview B.

6.2.1.1 Labor shortages and skill mismatch

The respondent highlights the ongoing issue with finding a relevant workforce within the computer industry, especially highly qualified software developers. The interviewee also mentioned the issue of finding a qualified workforce as a small company where larger competition can offer significantly higher salaries for the same job and therefore, they are at a competitive disadvantage.

Code	Relevant quote from interview B
C1	<i>"I know that there are labor shortages in software development in general."</i>
C2	<i>"...we always need more developers..."</i>
C3	<i>"...the supply of skilled software developers at least in Denmark and the demand are simply not at the same level..."</i>
	<i>"...they require typically a high salary for good reasons."</i>
	<i>"...there is a large multinational corporation that is looking like Microsoft or Google for the same skill sets they'll be able to provide a higher salary."</i>

Table 9: Relevant codes and quotations from interview B

6.2.1.2 Advantages of foreign employees

The respondent perceives foreign workers as an asset to the company and its productivity. Hiring an international workforce that is located in North Jutland has proven to be an efficient solution for them. However, the interviewee still acknowledges issues in finding a relevant, qualified workforce. The corporate language for the company is English and does not pose any issues for the team.

Code	Relevant quote from interview B
C4	“...we have 4 Danes, and the rest is international, several Bulgarians, a Latvian, a
C7	Russian, and Sri Lankan.”
C3	“...it is entirely and fully positive...”
	“You get different points of view that you have might not expect to have.”
	“I can see definitely an advantage to have an international team and people who speak different languages...”

Table 10: Relevant codes and quotations from interview B

6.2.1.3 Challenges and domestic preference

The company faced challenges with third-party consultants abroad e.g.: in the Philippines. This type of collaboration has proven to be insufficient for them. Therefore, the company chooses to hire people currently in Denmark, rather than actively seeking international recruitment due to the complicated process. The respondent did not recall any negative challenges or experiences with foreign workers except for one foreign employee that struggled to integrate into the workplace. Other than that, the experiences with international employees were positive.

Code	Relevant quote from interview B
C5	“...we have tried to recruit once internationally, but to be honest it was quite
C6	complicated.”
C8	“...focus solely on the domestic market and most of the employees that we have now been also educated in Denmark.”
	“...as I said I did not encounter any negative and serious problems.” (with foreign workers)
	“We also dabbled in, third party company that has consultants that sits in Philippines or wherever and that for us has worked less well.”
	“...everyone hates and have negative experiences with SKAT for very good reasons.”

Table 11: Relevant codes and quotations from interview B

6.2.1.4 Flexible recruitment

The company does not have an HR department due to its size. This may have a negative impact on clear goals when it comes to covering labor shortages. However, they state to keep an open-minded approach towards the future of recruiting international workers in order to fill in gaps. This includes the possibility of recruiting workers outside of Denmark.

Code	Relevant quote from interview B
C9	<i>"We tend to be open-minded, and I think we always try to find the right match</i>
C11	<i>and if it isn't possible on the domestic market then we will look abroad."</i> <i>"... we are a small company, and we do not have an HR department, I am not fully</i> <i>sure if there is a written strategy ..."</i>

Table 12: Relevant codes and quotations from interview B

6.2.1.5 Upskilling workers

All staff members are given opportunities for technical and professional development in their roles. The respondent mentions there are also possibilities for Danish language assistance; however, that is provided by an outside party, which in this case is the municipality "Sprogscole".

Code	Relevant quote from interview B
C10	<i>"...yes, we do a lot."</i> <i>"When it comes to Danish language, we do not have any courses because that is</i> <i>subsidized by government."</i> <i>"But in every contract, I believe we have attendance in conferences ..."</i> <i>"So far, it has been beneficial for both parties..."</i>

Table 13: Relevant codes and quotations from interview B

To summarize, the thematic analysis of interview B highlights how the small software development and IT company in Aalborg municipality navigates labor shortages when it comes to larger competitors on the local market. The company cannot afford to offer as high salaries as larger local competitors, which, on the market where demand is higher than supply, poses challenges for this company. The company hires many foreign workers and has positive experiences with having an international team. The main focus of the company is hiring those that are located in Denmark. As the interviewee mentioned, most of the workers even finished their higher education in Denmark, which is an advantage for the company, as they are familiar with the education system in the country, and therefore there is a better understanding of the skills and knowledge of newly graduated people.

6.3 Thematic analysis of Interview C from Renewable Energy

company

In this section, I will provide initial codes from the interview collected with the HR consultant of a company located in North Jutland. These initial codes are directly related to the problem area of this research paper. Each of these codes are marked with numbers and represents a certain factor of the problem area. Below, in the table, I provide initial codes from interview C:

	Code Name	Description
Code 1	Labor shortages and skill mismatch	Labor shortages are present across departments, especially for engineering, IT, project management, and finance department.
Code 2	International skill hubs	Skills are sourced from the company's hubs in Germany, Portugal, Romania due to local shortages.
Code 3	International recruitment	The company is open to and actively recruits from abroad as especially from their skills hubs. Recruitment focus is domestic market and EU due to easier processes. The company has also a headhunter.
Code 4	Job posting	Jobs are often posted in English language.
Code 5	Assistance to foreign workers	The company offers assistance with visa and housing.
Code 6	Delays with hiring relevant workforce	The process often takes six months or more.
Code 7	Advantages of foreign workers	Foreign employees are perceived as motivated and hard-working.
Code 8	Challenges of foreign education	Challenges in full understanding of foreign education and skills.
Code 9	Integration challenge	Foreign employees tend to have challenges when starting the first job in Denmark due to different working environment and norms.
Code 10	Language barrier	Not all positions are suitable for internationals as some departments speak pre-dominantly Danish.

Code 11	Investments in upskilling workers	Danish, English, and German language courses are provided to improve integration. The company offers also upskills through conferences and workshops and is expanding language access.
Code 12	Policies and bureaucracy	Visa categorization can be tricky for employees outside of the EU with specific high-skills and education background. Other than that, closure of English-language programs may harm long-term to needed talent supply.
Code 13	Selective hiring process	The company is open to foreign workers, however, there is a lack of strategy. Except for that, EU citizens are prioritized during the application process.
Code 14	Needed help from municipalities or educational institution	Suggestions for external help to local companies with hiring foreign students.

Table 14: Generated codes and description of interview C

6.3.1 Identification of themes in interview C

Below, I provide an overview of seven analyzed themes, relevant codes, and quoted examples from interview C.

6.3.1.1 Labor shortages

The respondent has been open about their experience with labor shortages, particularly in areas such as engineering, IT, project management, and finance. These shortages subsequently led to a prolonged recruitment process, which according to respondents takes approximately six months or longer.

Code	Relevant quote from interview C
C1 C6	<p><i>"I would say there is an ongoing problem when you are recruiting for role, especially specialist roles ..."</i></p> <p><i>"...it's difficult to find almost anyone."</i></p> <p><i>"...usually, it takes half a year to fill a lot of positions or even longer."</i></p>

Table 15: Relevant codes and quotations from interview C

6.3.1.2 International recruitment

As a result of labor shortages, the company has developed a specific approach to accessing skilled talents. These include their own skill hubs in Germany, Portugal, and Romania, where they

can find the needed workforce. Additionally, the company has its own headhunter, which focuses on senior roles. Lastly, when it comes to international recruitment, according to respondent citizens from the European Union will have a higher priority in accessing open positions. Lastly, to reach a larger pool of talents the company posts vacant positions in English across different platforms.

Code	Relevant quote from interview C
C2	<i>“We have created what we call competence...”</i>
C3	<i>“...for example, for solar energy we have a competence center in Portugal.”</i>
C4	<i>“We are also looking at international recruitment and share our positions on Job</i>
C5	<i>Index, LinkedIn, and International House North Denmark. “</i>
C13	<i>“...we do help out if we can with, for example, authorities, who to talk to about accommodation, important contacts, and so on.”</i>
	<i>“The one from the European Union will have a higher priority...”</i>

Table 16: Relevant codes and quotations from interview C

6.3.1.3 Advantages of foreign workers

According to the respondent from company C, foreign workers are valued for motivation, work ethics, and relevant technical skills. The respondent mentioned that foreign workers are highly driven and hard-working especially because many of them do not speak Danish and have to prove themselves to be an asset.

Code	Relevant quote from interview C
C7	<i>“From my personal view, I think that international candidates are highly motivated.”</i>
	<i>“They have a lot at stake and especially up here it is more difficult for them to find a job where they do not need to speak Danish.”</i>

Table 17: Relevant codes and quotations from interview C

6.3.1.4 Integration and language challenges

Integration of foreign workers represents minor challenges when it comes to a few points. Firstly, evaluating foreign education and credentials might be problematic for the Danish company. Language also represents a barrier to a certain extent; although there are departments that speak fully English, the company acknowledges that there are also those which are Danish speaking. Therefore, in many cases the company states that knowledge of Danish to some extent is a plus and offers Danish courses to foreign workers. Lastly, foreign workers, especially those newly graduated need more re-assurance and assistance at the beginning compared to Danish norms.

Code	Relevant quote from interview C
C8	<p><i>“...when international candidates have been educated outside of Denmark it can be a bit difficult for us to identify exactly what they can do.”</i></p> <p><i>“...I think there is an internal challenge of hiring an international candidate to an all-Danish team because we need to consider how they fit in culturally, language wise.”</i></p> <p><i>“...but still emphasizing that Danish knowledge, at least to some extent is a plus.”</i></p>
C9	
C10	

Table 18: Relevant codes and quotations from interview C

6.3.1.5 Upskilling and training of employees

According to a responder, the company supports an upskilling effort in order to increase performance and integration. This includes language courses such as Danish, English, and German, as well as professional development training of employees. Except for that, the interviewee has mentioned that language courses will be available in the future across their other locations as well.

Code	Relevant quote from interview C
C11	<p><i>“We have offered language courses in English and German...”</i></p> <p><i>“... to our international employees we are offering a Danish course...”</i></p> <p><i>“... we would like to expand this offer to all our colleagues in all of Europe to learn whatever language is necessary for them to perform in their position.”</i></p>
C16	

Table 19: Relevant codes and quotations from interview C

6.3.1.6 Policies and bureaucracy

The company finds the immigration system manageable; however, they had one particular issue in relation to a non-EU worker and visa application, where they could not find a precisely fitting position for the person.

Code	Relevant quote from interview C
C12	<p><i>“...we had to reapply for a visa for a non-European employee.”</i></p> <p><i>“...the problem was that we couldn’t find anything that would suit it properly, so we just had to go with our best guess.”</i></p> <p><i>“...they do have a fast-track scheme for us to use as a company for hiring. I think that is helpful...”</i></p> <p><i>“... offer more studies in English. I know they have been closing down some and that's a political decision... that will impact the region North Jutland.”</i></p>

Table 20: Relevant codes and quotations from interview C

6.3.1.7 Support of local institutions

Lastly, the interviewee highlights the need for help when it comes to employing foreign workers. They suggest help from municipalities and educational institutions, which could collaborate with local companies. This way local companies could get experience with foreign workers as a potential solution for their labor shortages while foreign students would get hands-on experience. This includes internship positions, part time jobs, and student assistants.

Code	Relevant quote from interview C
C14	<i>“Maybe the companies shouldn't do this themselves and if there could be some kind of municipal actor or someone from the educational institutions helping companies to accommodate international students that could be helpful.”</i>

Table 21: Relevant codes and quotations from interview C

To summarize, the thematic analysis of interview C highlights the proactive approach of the company to address issues with finding a qualified workforce through international recruitment. Foreign workers are recognized in a positive light, although some challenges connected to employing foreign workers are acknowledged. The company has mostly positive experiences with the Danish immigration system and processes. Lastly, there is a gap between the company's internal initiatives and external support from municipalities and educational institutions. The interview reveals a need for much tighter collaboration between local companies and external institutions in order to address local labor shortages.

6.4 Thematic analysis of Interview D from Consultant and Engineering company

In this section, I will provide initial codes from the interview collected with the Department Manager of a company located in North Jutland. These initial codes are directly related to the problem area of this research paper. Each of these codes are marked with numbers and represents a certain factor of the problem area. Below, in the table, I provide initial codes from interview D:

	Code Name	Description
Code 1	Labor shortages	Shortage of skilled and experienced labor.
Code 2	Niche expertise demand	The company has a demand for niche specialists within engineering and technical fields.

Code 3	Impact of labor shortages	As a result, the company faced project delays.
Code 4	Domestic recruitment	The company focuses on domestic recruitment of local talents with Danish language proficiency.
Code 5	Danish language proficiency	Danish language proficiency is important for the company due to client interactions and internal communication.
Code 6	Negative experience with cultural integration	The company had experience with a non-speaker however, the person felt isolated, and integration was challenging. As a result, the person left the company.
Code 7	Staff resistance to globalization changes	The company staff finds it difficult to adapt to English or multilingual approach when it comes to professional settings.
Code 8	Possible advantages of foreign workers	The company acknowledges the possible advantages of employing foreigners e.g: new perspectives and higher chances to fill in vacant positions.
Code 9	Possible investments in upskilling workers	Workers may receive courses and workshops; however, it is a question of internal funding and employee commitment.
Code 10	No strategy for international recruitment	The company acknowledges issues with labor shortages and the possibility for future shifting into international hiring. However, now it is not approached.
Code 11	Education as a solution to labor shortages	The national education system should focus on attracting young people to take higher education specifically in those fields that are under the pressure of labor shortages.

Table 22: Generated codes and description of interview D

6.4.1 Identification of themes in interview D

Below, I provide an overview of five analyzed themes, relevant codes, and quoted examples from interview D.

6.4.1.1 Labor shortages and skill mismatch

The respondent from company D has clearly identified the need for a highly skilled and educated labor force. As a result, of these shortages, delays in project executions are accruing, and new projects are harder to approach. The interviewee emphasized they are open to foreign workers; however, the Danish language requirement is crucial to fulfill. Except for that, the interviewee suggests as a solution to focus on the national education system and attracting young people to take education in those fields that are influenced by lack of labor.

Code	Relevant quote from interview D
C1	“...it is not only about the quantity of workers on the local market but also
C2	quality.”
C3	“...experts in niche fields working with complex topics such as carbon capturing,
C11	large civil engineering projects and similar.”
	“...definitely people with higher education and skills.”
	“...delays on multiple projects.”
	“As a result, then we might have issues taking on new contracts...”
	“...we need to invest more in education, especially attracting young people to take education where shortages are visible.”

Table 23: Relevant codes and quotations from interview D

6.4.1.2 Focus on local recruitment

As mentioned previously, the company focuses on Danish speaking labor, and therefore the recruitment focus is on the local market. The requirement for Danish proficiency is due to client interactions and internal communication, including senior staff.

Code	Relevant quote from interview D
C4	“...we need Danish speaking people.”
C5	“...we have the requirements of Danish language.”
	“...we do have employees who do not have Danish citizenship however they are living in Denmark for some time, and they are fluent in Danish.”

Table 24: Relevant codes and quotations from interview D

6.4.1.3 Experience with integration challenges

According to the respondent, the company has previously experienced one particular issue with integrating English speaking employee. As many senior employees have been working in the company for 10-15 years and are used to working in their native language, it was challenging for both parties to collaborate.

Code	Relevant quote from interview D
C6	<p>"I can recall one experience where we had an employee who actually did not speak Danish, and the person felt left out and did not get included into conversations and daily work life."</p> <p>"...many of the employees are older and they either do not speak English or at least not on the professional level."</p> <p>"...it was just not a good solution..."</p>
C7	

Table 25: Relevant codes and quotations from interview D

6.4.1.4 Possible future for employing foreign workers

The respondent has acknowledged that with current labor shortages and the need of a globalized world, the company will need to consider hiring foreign workers who are not proficient in English.

Code	Relevant quote from interview D
C8	<p>"...we are more likely to invest in their upskilling."</p> <p>"...motivation, energy, and good working morals." (Danish speaking foreign workers)</p>
C9	

Table 26: Relevant codes and quotations from interview D

6.4.1.5 Lack of focus on international hiring

The respondent has not mentioned any specific approach to fill in gaps for the qualified workforce needed. At the same time, despite the acknowledgement of the international workforce, there is no strategy that could help the company to navigate and address these issues.

Code	Relevant quote from interview D
C10	<p>"...far we have not found maybe the best model for recruiting talents..."</p> <p>"...at some point we will need to adjust ourselves to globalized world to get the supply of skilled workers but to also meet requirements of globalized world."</p> <p>"...I think it is something we will need to look into at some point."</p>

Table 27: Relevant codes and quotations from interview D

To summarize, the thematic analysis of interview D highlights the issue of labor shortages in the region. At the same time, the company respondent did not mention any specific steps the company takes to address these workforce challenges. The company is open to foreign workers; however, the requirement is to have a full proficiency in the Danish language. This is due to multiple reasons; including client communication, internal communications, and integration at the workplace. Therefore, the language barrier remains to be the most significant barrier for company D. While the company does not approach any specific steps in addressing these issues,

they are aware that in the future this might escalate, and consideration of English-speaking employees will have to be made. The interviewee recognized the education system as a potential solution to future labor shortages.

6.5 Comparative Analysis

The purpose of the comparative analysis is to compare results and find similarities and differences in experiences of companies from North Jutland in relation to problem formulation. These findings will be further supported by survey results. Although these interviews are across four different industries; renewable energy, consulting and engineering, marine engineering and technology, and software, one common challenge across all sectors is the lack of highly educated and skilled labor. As already provided in the background section of this research, these industries face a growing demand for skilled labor, which at the moment outgrows the supply in North Jutland.

6.5.1 Comparison of Experiences

As the main shared experience between all interviewed companies is the **growing labor shortage** and **need for highly skilled and educated workers**. Each of the interviewees has emphasized difficulties in finding relevant labor in the local market. It is also crucial to acknowledge that this issue is not only connected to the amount of labor but to quality and niche expertise as well. Except for that, 50% of respondents from the survey stated they have issues in finding the relevant workforce needed.

As a response to labor shortages, **recruitment of foreign labor** has been acknowledged by all companies as either current practice (A, B, C) or a possible solution for the future (D). Meanwhile, 90,6% of survey respondents stated they employ international employees in their companies. Companies A, B, and C are actively focusing on international workers; however, while company A states that every time the open position is given to the best candidate, companies B and C focus rather on the local market or citizens from the European Union. Meanwhile, company D focuses on the local labor supply, including foreigners that are proficient in the Danish language. At the same time, the company recognized the necessity for foreign labor due to globalization and a growing labor shortage.

Thirdly, companies A, B, and C have suited the working environment to foreign labor by adopting English as a **corporate language**. At the same time, 51,4% of survey respondents have stated that English is a primary language used at the workplace. As mentioned previously, company D focuses on local workers with proficiency in the Danish language due to client communication

and internal communication. At the same time, 40,7% of survey respondents stated lack of Danish language understanding as a disadvantage of employing international workers.

When it comes to employing foreign workers, companies A and C are the most **active at handling assistance** in terms of relocation, accommodation, and other formalities. In these terms, the company A collaborates with a third party “Alpha Mobility” that serves initially to the foreigner. Meanwhile, company C handles these steps internally. Company B acknowledges help to foreign colleagues; however, there is no specific strategy and active involvement as in companies A and C. At the same time, 37,9% of survey respondents stated they offer assistance with finding accommodation to foreign workers. Company D focuses only on the local labor force; therefore, there is no relevancy for active support in these terms. Lastly, 37,9% of survey respondents do not provide any specific support to international workers.

Recognition of foreign education remains to be a challenge for companies A, B, and C. All three companies stated there are challenges in fully understanding what a person can do and has knowledge about when the education was taken outside of Denmark. Furthermore, 7,4% of survey respondents stated they have issues in understanding the competences and qualifications of foreign workers. On the other hand, 67,9% of survey respondents have stated that foreign employees have the best qualifications to solve work tasks relevantly. Company D has not stated any issues, which may be directly influenced by the focus on local labor supply.

Every company interviewed has acknowledged the **positive perception of foreign workers**. In particular, the most mentioned advantages were strong work ethics, new ideas, and ways of thinking, and overall approach to work. These statements are supported by the survey respondents who perceive the work ethic of international workers as a strong advantage, representing 46,4% of respondents. Except for that, 25% of survey respondents have stated language skills of other than Danish to be an advantage for their workplace. Furthermore, 21,4% perceived knowledge of a particular market as an advantage. Lastly, cultural knowledge has been acknowledged by respondents as well, representing 32,1% of answers.

As of next, every company has a positive approach **to upskilling skills and knowledge** for their workers. Company A states that upskilling and training of their workers is necessary, especially for their industry. At the same time, the company offers an **additional upskilling program** for the **Danish language** in order to increase chances for **integration**. Company B offers a lot of professional courses and conferences where employees can develop. As the company mentions, this has been beneficial for both parties. Company B does not focus on Danish language courses, as these are subsidized by the government. Company C offers conferences and workshops to

their employees as well. Additionally, company C offers multiple language courses, including English, German, and Danish.

Theme	Company A	Company B	Company C	Company D	Survey results
Identified labor shortages	Yes	Yes	Yes	Yes	50%
Active recruitment of foreign workers	Yes	Yes	Yes	No	90.6%
English as corporate language	Yes	Yes	Yes	No	51,4%
Integration support	Yes	Limited	Yes	Not applicable	13.8% mentoring 17.2% spouse employment help 37.9% social support and network 37.9% help with accomodation
Danish language requirements	No	No	No	Yes	40.7% consider Inproficiency of Danish lanaguage as an Issue
Recognition of foreign education and skills	Yes	Yes	Yes	Not applicable	7.4%
Positive perception of foreign workers	Yes	Yes	Yes	Yes	67.9% best qualification to solve tasks 25% language skills (other than Danish) 21.4% foreign market knowledge 32.1% cultural knowledge 46.4% good work ethic 100% satisfied with International workers
Upskilling programs	Yes	Yes	Yes	Yes	20.7% of upskilling Danish language proficiency
Additional upskilling Danish language program	Yes	No	Yes	No	20.7%
Has strategy for international hiring	Yes	No	Yes	Not applicable	x%
Future interest in foreign labor	Yes	Yes	Yes	Yes	93.1%

Figure 9: Comparative analysis of main themes

The reason behind these courses is that the company has multiple locations across Europe, and therefore it is beneficial for both the company and the employee to offer language courses. Lastly, company D is open to investing in training and upskilling workers; however, the company acknowledges the question of internal funding and commitment of an employee as a requirement. This does not concern upskilling of the Danish language, as the company employs workers who are already proficient in the language. At the same time, 20.7% of survey respondents offer Danish language education to their foreign employees in order to increase chances for integration.

Strategy for international hiring and the future of foreign workers. While each company varies in their approaches, each of them acknowledges the need for foreign workers in the future. Company A is not cutting down on international recruitment, as they do not see the Danish domestic market to be sufficient for their needs. Company B has a plan to grow and have more people working for their software and IT department. However, they do not have a clear strategy, which was acknowledged by the interviewee. Company C is aware of the need to be open to all sorts of candidates; but at the same time, there is no special effort in recruitment strategy. Next, company D has significant issues in finding relevant labor; however, the requirement for Danish language proficiency is slimming down the pool of relevant talents. However, they stated it is a factor they will need to consider. Furthermore, 93,1% of survey respondents consider hiring more foreign workers in the future compared to only 6,9% who do not see this as an option. Lastly, 64,3% of survey respondents stated that international workers are part of their company's long-term strategy.

6.5.2 Main Findings

To summarize, the comparative analysis between experiences of labor shortages and perceptions of foreign workers and a potential solution for companies A, B, C, and D revealed several shared experiences. The most common challenge across all local companies is the growing labor shortage, particularly in fields where highly educated and skilled workers are needed. Each company has emphasized the increasing issue with finding a relevant employee on the domestic market. This also aligns with survey findings where 50% of respondents confirmed similar issues.

The focus on needed recruitment of foreigners has been in practice for companies A, B, and C, while company D has recognized this as a possibility for the future. At the same time, although companies A, B, and C employ international employees, their approaches vary from selecting the best candidate regardless of other factors (A) to favoring local or EU workers (B and C). Due to a strong focus on Danish proficiency, company D acknowledges the need to adapt to new circumstances. Furthermore, in order to accommodate their foreign employees, companies A, B, and C have adopted English as a corporate language. In contrast, company D does not consider this an option due to client and internal communication. Moreover, companies A, B, and C offer possibilities for upskilling and language courses. Company D also offers professional upskilling and trainings, excluding Danish language courses; however internal funding and employee commitment were mentioned as important factors when upskilling their employees.

In relation to the support of foreign hires, companies A and C offer relocation and integration support, while company B provides more informal assistance. Due to the focus on local labor,

company D does not provide such services. Next, recognition of foreign education presents a challenge for companies A, B, and C who recognize issues with evaluating foreign qualifications and competences. This on the other hand, company D did not report, likely due to its local recruitment focus. However, all companies perceive foreign workers positively and highlight strong work ethic and new perspectives they bring to the Danish workplace. Lastly, each company agrees that foreign workers will be essential in addressing labor shortages in the future.

6.6 Findings in Relation to Theory

After analysis of each interview and comparison of findings, I will now focus on applying these findings to Human Capital Theory. The findings of this research paper align with the principles of Human Capital Theory, which focuses on the importance of investing in employees' knowledge and skills, as it is an asset for the specific company's productivity and performance. Each company interviewed is aware of the need for highly educated and skilled workers, which is an essential concept of the theory.

Based on the literature review, background information, and analysis of this research paper, the companies in North Jutland face ongoing labor shortages in the domestic market, and therefore the need for qualified labor increases. Regardless of the industry each company works in, the emphasis is on skills and education that foreign workers can bring to the local companies. This also indicates that local companies view foreign employees as an important source of knowledge and skills in order to maintain productivity and innovation. Therefore, this supports the core aim of the theory, as employees' capabilities and skills contribute directly to the success of the company.

Moreover, companies A, B, and C focus on supporting international employees through Danish language courses, relocation assistance, and overall upskilling opportunities. This reflects the active interest of the company in foreign workers, but at the same time it is an active investment in increasing the value of human capital. This indicates that companies A, B, and C understand that by upskilling their workers and helping them to better integrate in both social and professional matters they are enhancing their potential and effectiveness. This has also been acknowledged by survey respondents, where 20% of companies provide Danish language courses to their foreign workers, which is a direct investment in human capital. On the other hand, although company D focuses only on local labor, they also acknowledge the need to adapt and employ foreign workers in the future. This is due to increasing labor shortages, which indicates the recognition of the need to develop and adjust in order to manage human capital more effectively.

The positive perception of foreign workers, especially when it comes to strong work ethic, knowledge, and new perspectives, supports the idea that foreign employees bring valuable human capital to business. At the same time, as mentioned previously in this research paper, there are several challenges when it comes to employing foreign workers. This includes examples such as language barriers and recognition of foreign qualifications. These are areas where companies may need to focus on developing clearer strategies in order to maximize the potential for human capital.

Human Capital Area	Company A	Company B	Company C	Company D	Survey results
Active international recruitment	Yes: global focused Best candidate selected	Yes: local focused	Yes: local and EU focused	No: however, considering for the future	90.6%
Danish language courses	Yes: internal programme	No: relies on state-funded courses	Yes: multiple language courses	No: not applicable	20.7%
Professional upskilling	Yes: industry focused and language	Yes: industry focused	Yes: industry focused and language	Yes: industry focused	20.7% for Danish courses
Relocation and integration support	Yes: full-support via Alpha Mobility	Yes: informal support	Yes: full-support support	No: not applicable	13.8% mentoring 17.2% spouse employment help 37.9% social support and network 37.9% help with accommodation
English as corporate language	Yes	Yes	Yes	No: Danish language mandatory	51.4%
Recognition issues of foreign education	Yes: challenge	Yes: challenge	Yes: challenge	No: focuses on locals	7.4%
Perceived value of foreign labor	Yes: positive	Yes: positive	Yes: positive	Yes: positive	67.9% best qualification to solve tasks 25% language skills (other than Danish) 21.4% foreign market knowledge 32.1% cultural knowledge 46.4% good work ethic 100% satisfied with international workers
Strategic focus on foreign labor	Yes: long-term necessity	Growth plan for the future but no specific strategy	Opened but no specific strategy	Recognized as a need but language barriers is a challenge	XX%

Figure 10: Implementation of Human Capital Theory

To summarize, the findings of this research paper align with Human Capital Theory by analyzing and proving that companies in North Jutland recognize the value of highly educated and skilled foreign employees. As a result, companies are willing to invest in the development of their knowledge and skills as a way to address labor shortages. At the same time, by utilizing foreign workers and supporting the development of employees, these companies are in the strength of their human capital. Table 29, illustrates that while each company values foreign workers as a solution to labor shortages, their practical application of Human Capital Theory differs depending on multiple factors, including language proficiency, industry labor shortage, internal funding, and more.

7. Discussion

The rationale for this research paper was to investigate and recognize issues that companies in North Jutland encounter when it comes to highly qualified workforce supply in the region. The aim was to contribute to knowledge of labor shortages and recruitment of foreign workers as a potential solution specifically in the North Jutland region. This has been investigated across several industries that are exposed to a lack of highly qualified workforce supply, including renewable energy, marine engineering and technology, IT and software, and lastly consulting and engineering companies.

Following on thematic analysis and comparative analysis in the sections above, I will now utilize the foundation from both analyses and connect findings in relation to literature review and background information. In the first part of the analysis, I have identified reoccurring themes such as lack of labor, advantages and recruitment of foreign workers, integration support, recognition of foreign qualifications, upskilling including Danish language courses for foreign workers, and English language to be a corporate language as a response to the need for foreign labor. These main themes I have identified throughout the separate thematic analysis of each interview. Additionally, I supported statements with relevant survey data. This research paper has uncovered experiences and perceptions of companies that are in need of highly educated and skilled workers located in North Jutland.

As of next, comparative analysis has built on main findings from the thematic section analysis and examined how companies from industries that are facing issues with labor supply respond to these challenges. It is crucial to mention that, according to FremKom from 2022, companies located in the region, especially those from high-tech industries, are competing for highly skilled engineers with the rest of the country. Moreover, according to the same source, the demand for high-tech workers is increasing due to the fact that up to 70% of the sector expects to hire more workers in high-tech industry-related positions. Although each of the companies interviewed for this research paper operates in different sectors, they have similar experiences and perceptions when it comes to the issue of the labor supply of highly educated workers in the local market. As already mentioned in the background information of this paper, these industries are important for Denmark and at the same time are impacted by a lack of skilled workforce. To be specific, according to Eures from 2023 labor shortages touch upon biotech, pharmaceuticals, finance, healthcare, IT, construction, and engineering. Moreover, according to Concito from 2021, the national labor market is experiencing a severe labor shortage where current supply does not meet demand. Furthermore, as presented in the background section, demographic changes, upcoming

CO2 tax legislation, and regional strategy in renewable energy will have an influence on the local lack of qualified labor. Also, according to FremKom from 2022, the green transition agenda will have an impact on automation and digitalization. Therefore, it is important to acknowledge new positions may arise from these changes. Consequently, it is safe to assume that the demand will continue to exceed the local supply as there will be a higher need for environmental specialists, engineers, and more. As a result, companies may feel pressured to consider foreign talents, in order to keep innovation, operations, and possible growth of their businesses.

These facts are also aligned with the literature review, specifically with how globalization, changes in demographics, and overall technological advancement change and intensify shortages for skilled labor across industries. As mentioned in the literature review, according to Cameron & Harrison from 2013, skilled migration has grown, especially for those countries where macroeconomic developments related to demographic changes are present. According to Kommunernes Landsforening from 2024, citizens over 80 years of age by 2030 will increase to approx. 40%. Moreover, the growing need for international recruitment was supported by the literature review as well as the responses of companies A, B, and C. Additionally, according to Horbach & Rammer from 2022, the lack of highly skilled and qualified workers can have a negative impact on innovation within businesses. Therefore, it is important to acknowledge the positive effect foreign employees may have on local companies. Another positive factor, according to Wright & Constantin from 2021 is the culturally diverse workplace, which has proven to have a positive impact on organizational performance. However, to bring dimension, it is also equally crucial to acknowledge that according to Chwialkowska from 2020 many highly skilled foreign workers encounter issues with acknowledgement of their education. Another issue is local language proficiency. For instance, interviewed company D focuses only on labor that is proficient in the Danish language, and additionally 40,7% of survey respondents consider unproficiency in the Danish language to be an obstacle. At the same time, as previously mentioned in the background section, according to Kommunernes Landsforening from 2024, 70% of expats find the language hard to learn. However, Klein & Smith from 2024, state that, according to the research, language understanding is essential in employment prospects.

This research paper contributes to the discourse on foreign labor and its role in North Jutland regional economic development by investigating how foreign employees are more than just a necessity but a possible strategy. Furthermore, the paper also highlights the practical challenges of companies when employing foreign workers. This includes recognition of foreign education and possible language barriers. At the same time, the paper reveals a gap between positive perception of foreign employees and actual strategies for attracting and retaining them. It is important to

acknowledge that each company does perceive international labor in a positive way. However, only some have developed concrete plans for employing foreign labor. Subsequently, this suggests a need for a more structured approach for companies and possibly policies that could continue to shape the local labor market in a positive direction.

8. Conclusion

This research paper researched: *How do companies in North Jutland perceive the role of highly skilled and educated foreign workers in addressing labor shortages?* The study has also focused on investigating how companies in North Jutland perceive international workers. Moreover, if companies are currently employing immigrants or have considered this as an opportunity for their business in order to address labor demand for their business. Furthermore, the study has focused on investigating contributions and challenges that companies associate with hiring international workers. Additionally, the paper builds on previous research on labor market integration, labor mobility, the role of language, and cultural inclusion in the workplace. Therefore, this thesis contributes to understanding labor market dynamics and possible connections between workforce demand and supply through employing foreign workers.

Therefore, this research focuses on ongoing challenges faced by local companies in North Jutland, such as an increasing shortage of highly skilled and educated workers. As highlighted in the background section of this paper, specialized sectors such as renewable energy, software, and engineering are those facing challenges in finding a relevant labor force. These sectors are also crucial for Denmark, especially when it comes to climate policies and economic development of the country. Therefore, it is possible to expect future issues is mismatch between labor supply and demand.

The aim of this paper was to investigate how local companies experience these labor shortages, how they address them, especially through the recruitment of foreign workers, and their perception of advantages and challenges when employing international workers. In order to achieve this, four local companies that operate in sectors with labor supply issues were interviewed, and a survey was conducted from employers in the region. This has provided paper with an understanding of individual company experiences and broader trends in the domestic labor market. The thematic analysis has identified key themes: need for highly educated and skilled workers, labor shortages, increasing interest in need for international recruitment, importance of integration, advantages and challenges of foreign workers, language training, challenges related to recognition of foreign education and Danish language proficiency. These themes were strengthened by survey data, which revealed that 90.6% of respondents already employ international employees, and over 93% are open to hiring more in the future. This indicates a clear and growing dependence on international labor across sectors different sectors in the region.

The comparative analysis in this paper further enhances these insights by examining how businesses from different sectors experience and respond to these labor challenges. Although the approaches of each company vary, each of them has acknowledged the issue of finding relevant and suitable talent for their company. These findings, are also aligned with the background section of this paper, highlighting the mismatch between the labor market in North Jutland and the supply of workers, particularly in high-skill and technical positions. At the same time, it is important to acknowledge the issue is not only quantitative, but rather also qualitative as employers struggle to find relevant candidates with niche expertise required for evolving and innovating their company needs.

Interviewed companies A, B, and C have implemented to varying degrees support for foreign workers such as Danish language courses, accommodation help, providing relocation support, and investment training. This clearly proves an active interest in integrating and retaining foreign employees to maximize their contribution, which is the principle of Human Capital Theory. The theory perceives skills and knowledge of human capital to be assets to each organization and its performance. Meanwhile, company D does not employ foreign workers except of those who speak the Danish language and are already well-integrated. Companies recognize the limitation when it comes to employing foreign workers who are not proficient in the language as an issue for customer support and internal communications. However, at the same time, the company acknowledges the issue of labor supply and states the possible need for shifting their strategy to foreigners in the future in order to address labor demand.

The results demonstrate how investment in training, language, and integration can improve labor productivity and overall performance of the company, which aligns with the Human Capital Theory and literature review in this research paper. Additionally, when it comes to challenges of employing foreign workers, the recognition of qualifications from countries other than Denmark were recognized. This is also consistent with earlier studies that credential recognition and skills validation remain to be barrier to an effective recruitment process.

To summarize, this research paper demonstrates that the challenges of labor shortages in North Jutland are complex and structural issues. The findings of this paper highlight the importance of proactive and well-thought through strategy to company development and possible solutions for addressing shortages in local businesses. While international employees bring many advantages, such as knowledge of other cultures, languages, and niche expertise, challenges have to be addressed as well. Due to the domestic regional market, companies may struggle to find relevant talent across international workers due to foreign education or insufficient proficiency in the

Danish language. However, at the same time, many companies offer language courses to their workers in order to improve and increase their integration in society and retain them for a longer period of time. This investment in human capital, particularly through training, integration support, and language courses, are possible strategies for companies seeking niche experts. By embracing advantages and challenges, both companies can turn labor market challenges into positive opportunities for their businesses.

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10. Use of AI

In this research paper, I have utilized AI (artificial intelligence) tools, including ChatGPT, AAU Library Research Assistant, and QuillBot, in order to secure the learning process and quality of this research paper. These tools were used in order to locate relevant sources and academic articles to support the research area of this paper while effectively managing time. Moreover, I have utilized artificial intelligence in order to provide clarity of the language and check grammar. To summarize, the aim of AI usage in this paper, was to support the writing process of this research paper in an ethical manner without generating content or visual material.

11. Bibliography

- Albert, K., Brundage, J. S., Sweet, P., & Vandenberghe, F. (2020). Towards a critical realist epistemology? *Journal for the theory of social behaviour*, 50(3), 357-372. doi:<https://doi.org/10.1111/jtsb.12248>
- Almendarez, L. (2013). Human Capital Theory: Implications for Educational Development in Belize and the Caribbean. *Routledge*, 59(3-4), 21-33. doi: 10.1080/00086495.2013.11672495
- Backman, M. (2012). Human capital in firms and regions: Impact on firm productivity. *Papers in regional science*, 93(3), 557-575. doi:10.1111/pirs.12005
- Barnow, B. S., Trutko, J., & Piatak, J. S. (1. April 2013). How Do We Know Occupational Labor Shortages Exist? *Employment Research*, 20(2), 4-6. doi:[https://doi.org/10.17848/1075-8445.20\(2\)-2](https://doi.org/10.17848/1075-8445.20(2)-2)
- Bauder, H. (14. November 2003). "Brain Abuse", or the Devaluation of Immigrant Labour in Canada. *Antipode*, 35(4), 699-717. doi:10.1046/j.1467-8330.2003.00346.x
- Borgensgaard, P. V. (2022). *Labour scarcity in Denmark: What role do foreign recruitments play?* Danmarks Nationalbank. Hentet 15. March 2025 fra <https://www.nationalbanken.dk/media/vcap3vuk/economic-memo-no12-2022-labour-scarcity-in-denmark-what-role-do-foreign-recruitments-play.pdf>
- Brinkhoff, T. (15. February 2024). *City Population*. Hentet 02. March 2025 fra Nordjylland: https://www.citypopulation.de/en/denmark/admin/NJL__nordjylland/
- Brinkmann, S., & Kvale, S. (2018). *Doing Interviews*. London: SAGE Publications, Limited. Hentet 20. March 2025 fra <https://methods-sagepub-com.zorac.aub.aau.dk/book/mono/doing-interviews-2e/toc>
- Bryman, A. (2012). *Social Research Methods* (4th udg.). Oxford University Press. Hentet 20. March 2025
- Bryman, A. (2016). *Social Research Methods* (5th udg.). Oxford University Press. Hentet 20. March 2025
- Cameron, R., & Harrison, J. L. (2013). The use of temporary skilled migration in Australian organisations. *International journal of organizational analysis*, 21(2), 104-123. doi:10.1108/IJOA-10-2011-0517
- Castelli, F. (20. July 2018). Drivers of migration: Why do people move? *Journal of Travel Medicine*, 25(1), 1-7. doi:<https://doi-org.zorac.aub.aau.dk/10.1093/jtm/tay040>
- Chiswick, B. R., & Miller, P. W. (September 2008). Occupational Attainment and Immigrant Economic Progress in Australia. *The Economic Record*, 84, 45-56. doi:10.1111/j.1475-4932.2008.00482.x

- Chwialkowska, A. (06. October 2020). Underemployment of skilled self-initiated expatriates – a skill mismatch or categorisation? *Journal of education and work*, 33(5-6), 375-391. doi:<https://doi.org/10.1080/13639080.2020.1820963>
- Clarke, A., Healy, K., & Featherstone, G. (29. June 2023). The Use of a Constructivist Grounded Theory Method - A Good Fit for Social Work Research. *International Journal of Qualitative Methods*, 22, 1-10. doi:<https://doi.org/10.1177/16094069231186257>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297-298. doi:<https://www.tandfonline.com/action/showCitFormats?doi=10.1080/17439760.2016.1262613>
- Concito. (2021). *Manglen på arbejdskraft risikerer at blive en hindring for den grønne omstilling*. Concito. Hentet 11. March 2025 fra <https://concito.dk/files/media/document/Ny%20analyse.pdf>
- Eures. (17. November 2023). *Eures Europa*. Hentet 02. March 2024 fra Arbejdsmarkedet oplysninger: Danmark: https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-denmark_da
- Fletcher, A. J. (2017). Applying critical realism in qualitative research: methodology meets method. *International journal of social research methodology*, 20(2), 181-194. doi:<https://doi.org/10.1080/13645579.2016.1144401>
- Flick, U. (2022). *The SAGE Handbook of Qualitative Research Design*. London: SAGE Publications Ltd. doi:10.4135/9781529770278
- FremKom. (2022). *NORDJYLLANDS KOMPETENCEDAGSORDEN - FremKom4-analyse om kompetence og arbejdskraftsbehovene i Nordjylland*. Aalborg: Fremtidens kompetencer i Nordjylland. Hentet 18. March 2025 fra https://rn.dk/-/media/Rn_dk/Regional-Udvikling/Analyser-og-rapporter/Befolkning-arbejdskraft/FremKom4_Hovedrapport_tilgaengeligg.pdf
- Guo, C., & Ariss, A. A. (4. March 2015). Human resource management of international migrants: current theories and future research. *The International Journal of Human Resource Management*, 26(10), 1287–1297. doi:<http://dx.doi.org/10.1080/09585192.2015.1011844>
- Guznajeveva, T., Gutierrez, J. G., Oliveira, A., Ploeg, M., & Nieuwenhuizen, Q. v. (2023). *PILLARS – Pathways to Inclusive Labour Markets: The case study of the North Jutland (Nordjylland) region*. H2020 PILLARS. Hentet 8. March 2025 fra <https://www.h2020-pillars.eu/sites/default/files/toolkit/North%20Jutland%20Region%20-%20Case%20Study.pdf>
- Handel, M. J. (10. Jun 2024). Labor Shortages: What Is the Problem? *Intereconomics*, 59(3), 136-142. doi:10.2478/ie-2024-0029
- Hayek, M., Thomas, C. H., Novicevic, M. M., & Montalvo, D. (February 2016). Contextualizing human capital theory in a non-Western setting: Testing the pay-for-performance

- assumption. *Journal of Business Research*, 69(2), 928-935.
doi:<https://doi.org/10.1016/j.jbusres.2015.06.039>
- Hear, N. V., Bakewell, O., & Long, K. (2018). Push-pull plus: reconsidering the drivers of migration. *Journal of Ethnic and Migration Studies*, 44(6), 927-944.
doi:<https://doi.org/10.1080/1369183X.2017.1384135>
- Horbach, J., & Rammer, C. (2022). Skills shortage and innovation. *Taylor & Francis Group*, 29(6), 734-759. doi:10.1080/13662716.2021.1990021
- Jalette, P. (18. July 2023). Labor shortages: a game changer for industrial relations? *Taylor & Francis*, 34(1), 11-25. doi:10.1080/10301763.2023.2230953
- Jobindsats. (u.d.). *Databank*. Hentet 18. March 2025 fra Jobindsats - Styrelsen for Arbejdsmarked og Rekruttering: <https://www.jobindsats.dk/databank/>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical teacher*, 42(8), 846-854. doi:10.1080/0142159X.2020.1755030
- Kim, B. (2001). Social Constructivism From Emerging Perspectives on Learning, Teaching and Technology. Hentet fra <https://cmapspublic2.ihmc.us/rid=1N5PWL1K5-24DX4GM-380D/Kim%20Social%20constructi>
- Klein, C., & Smith, J. (2024). *Addressing labour and skills shortages in a fast-changing economy*. Paris: OECD Publishing. doi:<https://dx.doi.org/10.1787/757311cb-en>
- Kommunernes Landsforening. (2024). *INTERNATIONAL ARBEJDSKRAFT*. Copenhagen: KL - Kommunernes Landsforening. Hentet 15. March 2025 fra <https://www.kl.dk/media/p1pn3v10/kl-udspil-international-arbejdskraft.pdf>
- Kozák, A., & Krajcsák, Z. (26. September 2018). The impact of labor shortage on the employee commitment. *Journal of Human Behavior in the Social Environment*, 28(8), 1060-1067. doi:<https://doi-org.zorac.aub.aau.dk/10.1080/10911359.2018.1496865>
- Kumpikaite, V., & Zickute, I. (2012). Synergy of Migration Theories: Theoretical Insights. *Inžinerinė Ekonomika*, 23(4), 387-394. doi:<http://dx.doi.org/10.5755/j01.ee.23.4.1240>
- Lee, E. S. (1966). A Theory of Migration. *JSTOR*, 3(1), 47-57. doi:<https://doi.org/10.2307/2060063>
- Mackey, A., Molloy, J. C., & Morris, S. S. (February 2014). Scarce Human Capital in Managerial Labor Markets. *Journal of management*, 40(2), 399-421. doi:10.1177/0149206313517265
- Marginson, S. (2019). Limitations of human capital theory. *Routledge*, 44(2), 287-301. doi:<https://doi.org/10.1080/03075079.2017.1359823>
- Mohamed, M.-A., & Abdul-Talib, A.-N. (18. April 2020). Push-pull factors influencing international return migration intentions: a systematic literature review. *Emerald insight*, 14(2), 231-246. doi:<http://dx.doi.org/10.1108/JEC-01-2020-0004>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 1-13. doi:10.1177/1609406917733847

- OECD. (2024). *OECD Economic Surveys DENMARK*. Paris: OECD Publishing.
doi:<https://doi.org/10.1787/d5c6f307-en>
- Olsen, F., Schwartz, S., Warming, N., & Klarskov, E. D. (2024). *Den danske model sikrer almindelige lønmodtagere en høj levestandard*. Copenhagen: Arbejderbevægelsens Erhvervsråd. Hentet 15. March 2025 fra https://www.ae.dk/files/media/document/TEMA_AE_Den%20danske%20model%20sikker%20hoej%20Levestandard.pdf
- Pickvance, C. G. (2001). Four varieties of comparative analysis. *Journal of housing and the built environment*, 16(1), 7-28. doi:10.1023/A:1011533211521
- Rantala, K., & Hellström, E. (2001). Qualitative comparative analysis and a hermeneutic approach to interview data. *International journal of social research methodology*, 4(2), 87-100. doi:10.1080/13645570118545
- Region Nordjylland. (2015). *The North Denmark of Opportunities - Strategy for Regional Growth and Development*. Aalborg: Region Nordjylland. Hentet 15. March 2025 fra https://rn.dk/-/media/Rn_dk/Regional-Udvikling/REVUS/RegionNordjylland_REVUS_2015_2018_engelsk.pdf
- Region Nordjylland. (29. April 2022). *Nordjylland mangler fremtidens arbejdskraft*. Hentet 15. March 2025 fra Region Nordjylland: <https://rn.dk/service/nyhedsbase-rn/2022/04/fremkom4-nordjylland-mangler-fremtidens-arbejdskraft>
- Region Nordjylland. (26. September 2023). *Erhverv og beskæftigelse*. Hentet 18. March 2025 fra Region Nordjylland: <https://rn.dk/Regional-Udvikling/Fakta-og-statistik/Erhverv-og-beskaeftigelse>
- Region Nordjylland. (2023). *REGIONAL UDVIKLINGSSTRATEGI 2024 -2027*. Region Nordjylland. Hentet 18. March 2025 fra https://rn.dk/-/media/Rn_dk/Regional-Udvikling/RUS/RUS_2024_2027_tilgaengeligg.pdf
- Ruhs , M., & Anderson, B. (2010). *Who Needs Migrant Workers? Labour shortages, immigration, and public policy*. Oxford : Oxford University Press. doi:<https://doi-org.zorac.aub.aau.dk/10.1093/acprof:oso/9780199580590.001.0001>
- Seclen-Luna, J. P., Opazo-Basaez, M., Narvaiza, L., & Fernandez, P. J. (2020). Assessing the effects of human capital composition, innovation portfolio and size on manufacturing firm performance. *Competitiveness review: An International Business Journal*, 31(3), 625-644. doi:10.1108/CR-01-2020-0021
- Statistics Denmark. (u.d.). *Immigration and emigration*. Hentet 15. March 2025 fra Statistics Danmark: <https://www.dst.dk/en/Statistik/emner/borgere/flytninger/ind-og-udvandring>
- Sweetland, S. R. (1996). Human Capital Theory: Foundations of a Field of Inquiry. *JSTOR*, 66(3), 341-359. doi:<https://doi-org.zorac.aub.aau.dk/10.2307/1170527>
- Taherdoost, H. (2021). *ata Collection Methods and Tools for Research; A Step-by-Step Guide to Choose Data Collection Technique for Academic and Business Research Projects*.

International Journal of Academic Research in, 10-38. Hentet 20. March 2025 fra
file:///C:/Users/angel/Downloads/DataCollectionMethodsandToolsforResearch.pdf

Tan, E. (2014). Human Capital Theory: A Holistic Criticism. *Sage Journals*, 84(3), 411-445.
doi:10.3102/0034654314532696

Tur-Sinai, A., & Averbach, E. (2018). The visible and the hidden behind migrants' human capital.
Applied economics, 51(23), 2522-2533.
doi:https://doi.org/10.1080/00036846.2018.1546954

Urbański, M. (10. January 2022). Comparing Push and Pull Factors Affecting Migration. *MDPI*,
10(1), 1-15. doi:https://doi.org/10.3390/economies10010021

Wright, C. F., & Constantin, A. (2021). Why recruit temporary sponsored skilled migrants? A
human capital theory analysis of employer motivations in Australia. *Australian Journal of
Management*, 46(1), 151-173. doi:https://doi.org/10.1177/0312896219895061