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How do digital labour platforms fit into the Nordic model?

A Multiple-Case Study

Master's thesis in Computer Science

Supervisor: Babak Farshchian

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Abstract

Over the last decade have new digital labour platforms emerged and caused a disruptive change in different industries and markets all around the world. These platforms are rapidly changing and expanding into new markets. Common for most of these platforms is the loosely coupled employment form of workers on the platforms. This is something that doesn't go to well with the Nordic model. The thesis, therefore, presents the research question; "How do digital labour platforms fit into the Nordic model?" along with three sub-questions.

The thesis presents the results using a systematic literature review and a multiple-case study, starting with a thorough background theory on digital labour platforms and the Nordic model, as well as the relevant literature as state of the art. The three platforms Foodora, Wolt and Vaskehjelp.no, were chosen for the case study. The findings of the case study highlight the different technological affordances each platform use, as well as detailing the employment form and salaries of the workers on the platform. The author of this thesis argues that none of the platforms in the case study fit entirely into the Nordic model, but there are possibilities for the Foodora platform to achieve this.

Keywords: Digital labour platforms, gig platform, platform economy, gig economy, Foodora, Wolt, Vaskehjelp.no, multiple-case study, Technological affordance, algorithmic management, Nordic model, Nordic labour market model

Sammendrag

I løpet av det siste tiåret har nye digitale arbeidsplattformer dukket opp og forårsaket disruptive endringer forskjellige industrier og markeder jorden rundt. Disse plattformene endrer seg stadig vekk og ekspanderer kjapt til nye markeder. Felles for de fleste av disse plattformene er ansettelsesformen med løst tilknyttede arbeidere på plattformen. Dette er noe som ikke går helt hånd i hanske med den nordiske modellen. Denne studien presenterer derfor forskningsspørsmålet, «hvordan passer digitale arbeidsplattformer inn i den nordiske modellen?» sammen med tre del-spørsmål.

Masteroppgaven presenterer resultatene ved hjelp av en systematisk litteraturgjennomgang og en case studie med flere firmaer. Studien starter med en grundig gjennomgang av nødvendig teori om digitale arbeidsplattformer og den nordiske modellen. Studien presenterer også en state of the art av den relevante litteraturen for teamet i oppgaven. De tre plattformene som inngår i case studien er Foodora, Wolt og Vaskehjelp.no. Funnene i case studien belyser de forskjellige teknologiske verktøyene hver plattform bruker, samt ansettelsesformen og lønnen til arbeiderne på plattformen. Forfatteren av denne oppgaven hevder avslutningsvis at ingen av plattformene i casestudien passer helt inn i den nordiske modellen, men det er muligheter for Foodora-plattformen kan oppnå det på sikt.

Preface

This paper is submitted to the Norwegian University of Science and Technology (NTNU) as part of the course TDT4900 - Computer Science, Master's Thesis.

The work has been performed at the Department of Computer Science NTNU, Trondheim, during spring 2020, under the supervision of Associate Professor Babak Farshchian.

I want to thank Associate Professor Babak Farshchian for the help and support throughout this project, and for giving me the freedom in the choice of research theme and implementation. I would also extend my sincere gratitude to all of the couriers, persons and companies who have taken the time to participate in this study, without your response would this thesis not been possible.

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Abbreviations

ENK = Enkeltpersonforetak, a type of sole proprietorship

NOK = Norwegian Kroner

RQ = Research question

SER = Standard employment relationship

VAT = Value Added Tax

Chapter 1

Introduction

This chapter presents the author's motivation and the background behind the choice of themes covered in the research. It then goes onto describing the project context and give a description of the project and the research questions. The contribution of knowledge follows before a brief outline of the report closes the chapter.

1.1 Background and motivation

Over the last decade have new digital labour platforms emerged and caused a disruptive change in different markets all around the world. Examples of such platforms are Uber and Lyft in the transportation sector, Airbnb in accommodation, Foodora and Deliveroo in delivery, Amazon MTurk in micro tasks and Taskrabbit and Upwork in the freelance on-demand sector. These platforms and many more, are often referred to as being part of the "digital economy", "platform economy", "sharing economy", "gig economy", "on-demand economy" or the "peer-to-peer economy". The terms listed are often used interchangeably about the platforms, but typical for them all is a business model building upon creating disruptive alternatives to existing companies or traditional service providers in markets all around the world. Another common feature of these platforms is the loosely coupled employment form the workers on the platforms have. This feature is also what has sparked controversy among workers in many markets and the media around the world. There have also been strikes and boycotts among workers and users on particular platforms and accusations of discrimination and differentiation in pricing by the platforms algorithmic management. After having read several different news articles over the last couple of years about these type of platforms, the controversy around them and how they are introducing new business models and technologies did some questions come to mind about digital labour platforms. These questions were mostly in the span of workers rights

and how platforms follow the rules and regulations, as well as the differences compared to more traditional companies. Having grown up in a society with relatively regulated and robust labour market with a generous welfare state did a notion that these platforms may contradict some parts of the labour market models used in the Nordic countries appear. Even though these platforms are relatively new with relatively few people working on these platforms, especially in the Nordics, was the initial thought that these platforms could have a significant impact on societies and workers, causing substantial changes both now and in the future.

This was the background for my motivation as a researcher and why I decided to delve deeper into the theme of digital labour platforms in the Nordics. As a person who will be a part of the labour market and a potential user of the new digital labour platforms, both as a consumer and a worker, is this theme something that highly motivates me and something I want to look into. This is to get a better understanding both for me and others. And as a citizen living in the Nordics is it fascinating to look at how these platforms fit into the model used in the Nordic countries known as the Nordic model and in particular the Nordic labour market model, which is explained in section 2.2. Since digital labour platforms are relatively new and only primarily emerging over the last decade, is it not done any extensive research on these platforms. The number of articles has, however increased over the couple of last years as the platforms popularity and prevalence also have increased. There are, however, little research available on these platforms in the Nordics, and particular with a focus on technological aspects of the platforms. Looking closer at some of the platforms operating in the Nordics would, therefore, be interesting both for me and hopefully others also.

1.2 Project Description and Context

This is a Master's thesis in Computer Science at the Norwegian University of Science and Technology (NTNU). This paper is a continuation of a specialization project done by the author fall 2019. The headline of the projects task description was "Design and evaluation of digital platforms", which in itself is a relatively broad topic. The scope of the project was, therefore, quickly narrowed down in the specialization project with the help from the projects supervisor Associate Professor Babak Farshchian at NTNU. This resulted in the scope to be narrowed down to digital labour platforms, with a focus on evaluating these types of platforms. Later on, was the more specific topics like affordances, workers rights and trade unions decided. After reading some of the relevant literature and discussing the topic with the supervisor was an initial set of research questions made, which was later changed and refined. The result of this was the following research questions:

RQ 1: How do digital labour platforms fit into the Nordic model?

RQ 1.1: What studies has been done in the field of digital labour platforms?

RQ 1.2: Which technological affordances do digital labour platforms use, and how do they affect the workers?

RQ 1.3: What impacts do these platforms have on unionizing through traditional trade unions?

There is one main research question, RQ 1, which are followed by three sub-questions which together will help with answering the main research question. RQ 1.1 is covered in chapter 4 by doing a literature review, which also gives a theoretical background for the main research question and the other sub-questions. RQ 1.2 and RQ 1.3 are covered by doing a case study on multiple of the digital labour platforms operating in the Nordic countries found in chapter 5.

1.3 Scope and Limitations

As already briefly described in 1.2 were there some adjustments to the scope of the project based on the initial task description. The term digital platforms consist of many different types of platforms, and even digital labour platforms consist of many different types. The scope of the project was consequently limited to digital labour platforms, in particular the ones who use technology to mediate work between consumers and workers. Section 2.1 delves deeper into explaining this. Naturally would also the scope of the platforms examined in the case study be geographically limited to be operating in the Nordic countries. This was further limited to mainly focus on the Norwegian market as this eased the collection of data during the Covid-19 pandemic, in particular interviews. Another cause for the choice of limiting the scope is because of the rapid changes in the platform economy. New platforms are emerging and disappearing, changes to the technology and rules as well as new controversies appearing in the news, and covering this all around the world are difficult in regards to the time and resources available.

The thesis also had a time constraint of twenty weeks. This is probably the most significant limiting factor of this thesis. The consequence of this time limit is both the number of cases examined in the case study but also how comprehensive each case have been studied. More time and/or more resources in the form of more researchers/ authors would have probably resulted in more extensive research of each case. An example would have been to get more responses/ interviews with workers on each platform in the case study, which would have increased the reliability of the overall answers used and the results presented in this study.

1.4 Contribution

This thesis will contribute in the field of digital labour platforms, where the project aims to provide an analysis that could be used to better understand the current situation of digital

labour platforms, how they operate and the consequences it has on workers and trade unions in the Nordics. As already mentioned in section 1.1 there is a limited number of research articles on digital labour platforms in the Nordics. In particular with regards to the technological aspects of these platforms and the technological affordances available on the platforms. Internationally there has been a decent amount of research regarding workers rights on digital labour platforms. But most of the studies in my findings are lacking research on trade unions and unionization among the workers. Since trade unions are an essential part of the Nordic model, which are described more in section 2.2, and have a huge impact on the labour market in these countries, it is one of the goals for the study to provide insightful research on this topic. Hopefully, the research would be useful for both governments and trade unions in getting more knowledge about the platform economy. Another contribution is the knowledge provided to the field of digital labour platforms, which other researchers hopefully could use in their research.

1.5 Report outline

Chapter 1 - Introduction presents the authors motivation and the background behind the choice of themes covered in the thesis. It then goes on to describing the project context and give a description of the project and the research questions. The contribution of knowledge follows before a brief outline of the report closes the chapter.

Chapter 2 - Background Theory covers the relevant background theory on digital labour platforms as well as the labour market model used in the Nordic countries that are necessary to understand the rest of the paper. It includes literature on what a digital labour platform is and the definitions used further on in this report. It also explains the core principles of the Nordic model and the differences between the Nordic countries labour market models.

Chapter 3 - Method describes the methods used, covering both the method used in the literature review and the case studies. It goes into detailing the decision behind the choices made, before explaining the type of case study chosen, the selection of cases and the data generation methods.

Chapter 4 - State Of The Art presents the state of the art covering the relevant literature found in the following topics: The state of digital labour platforms in Europe, workers rights and employment status, affordances on digital labour platforms, trade unions and digital labour platforms and lastly digital labour platforms in the Nordics.

Chapter 5 - Results presents the results of the case where each platform is divided into sections presenting the general company information, technological affordances found, employment form, salary, collective agreements, business model, before ending the chapter with a summary of the findings in a table.

Chapter 6 -Discussion presents the discussion of the findings and methods used before

addressing the research questions and detailing the limitations and weaknesses of the thesis.

Chapter 7 - Conclusion and Future Work gives a conclusion of the thesis, and details the future work identified.

Chapter 2

Background Theory

This chapter presents the background theory that is necessary to better understand the results and discussion in the following chapters. It starts by describing the literature on what a digital labour platform is and the definitions used further on in the report. It then introduces the core principles of the Nordic model and the Nordic labour market model. Further on is some of the differences between the models used in the Nordics detailed as well as a more detailed explanation of the model used in Norway.

2.1 Digital labour platforms

Historically did the emergence of digital labour platforms happen after the dot-com bubble in the early 2000s. This was in the form as crowdwork platforms on the internet with tasks ranging from computer programming and graphic design to relatively simple microtasks [7]. There are however in the last decade after the introduction of new technologies such as smartphones and connected sensors (IoT-sensors) as well as increased use of data analytics and big data that the most prominent digital labour platforms have emerged [8]. Examples are Gig/ on-demand platforms such as TaskRabbit (2008)¹, Uber (2009)², Lyft (2012)³, Instacart (2012)⁴, Deliveroo (2013)⁵ and Foodora (2015)⁶, which all were founded in the span of the last 11 years. As seen above are there many different types defined as digital labour platforms which are operating in many disperse sectors with

¹<https://www.taskrabbit.com/>

²<https://www.uber.com/>

³<https://www.lyft.com/>

⁴<https://www.instacart.com/>

⁵<https://deliveroo.co.uk/>

⁶<https://www.foodora.no/>

different business models, where it also in some cases are a unclear boundary compared to the traditional economy. This also why researchers mostly agree that it is difficult to have one clear and perfect definition of digital labour platforms [8][9][10]. Most of the researchers, economists etc. do however agree that digital labour platforms are multi-sided platforms with at least 3 stakeholder groups [1][11]. Where multi-sided platforms are by the most common definition "an organization that creates value primarily by enabling direct interactions between two (or more) distinct types of affiliated customers." [12]. The first stakeholder group are the platform owner which acts as a intermediary which provides the architecture and in many cases also control the interaction between the two other groups. The second group are the supply side also known as the persons who provide their services or work on the platform. Lastly do we have the demand group, also known as the clients, customers or buyers on the platform. The European Foundation for the Improvement of Living and Working Conditions (Eurofound) do however define digital labour platforms as "an employment form in which organizations or individuals use an online platform to access other organizations or individuals to solve specific problems or to provide specific services in exchange for payment" [11]. Along with the definition do they also provide 5 typical features/ characteristics and they are:

- Paid work is organized through online platforms
- Three parties are involved: the online platform, the worker and the client
- Work is contracted out
- Jobs are broken down into tasks
- Services are provided on demand

Other definitions also exists such as the definition by Pesole et al. "Digital labour platforms are defined as digital networks that coordinate labour service transactions in an algorithmic way." [4] which also mentions the algorithmic management and decision-making that many of the digital labour platforms use. Another definition used by the International Labour Organization (ILO) are "Digital labour platforms connect workers with consumers of work. The platforms also provide the infrastructure and the governance conditions for the exchange of work, and facilitate the corresponding compensation." [13]. Common for all of the definitions are their definition of how the platform act as an intermediary that connects consumers with service providers or producers. A summary of the different definitions that we also will be using further on in this thesis are that digital labour platforms use technology and algorithms in apps and/or other software to match workers with consumers. The owner of the platform, usually a company, act as the mediator between the parts often delegating the tasks to the workers and distributes the payment between the parts on the platform.

There are as mentioned earlier currently many different types of digital platforms and it is therefore important to clearly define the type of platforms we are referring to when mentioning digital labour platforms in this paper. The foremost distinction are clearly between

platforms where the primary purpose of the platform is labour or not. An example of a platform that can be used as a digital labour platform but are not defined as one, since its primarily used differently, is Facebook[14]⁷. The second distinction we make are that we limit the platforms in the study to platforms that mediate work or services and not assets, so called capital platforms. An example of a typical capital platform that mediate assets rather than work or services is Airbnb⁸. The third and last distinction we need to make are between platforms that mediate work over the web and platforms that require a physical presence at specific locations. Schmidt's categorization of digital platforms as seen in figure 2.1 [1] shows this distinction very well, as well as the categorization for most digital platforms. These two distinctions are given as cloud-work (web-based platforms) and gig-work (location-based platforms) are consistent with most of the other researchers with only some differences in the naming such as online and offline platforms or crowd-work or on-demand platforms [7][9][15]. In this report are we mostly interested in the latter of the two, i.e. the location-based platforms, and all of the platforms in the case study are within this categorization. There are however other literature on this with more than two categorizations of digital labour platforms. An example would be the categorization done by Pesole et al.[4] where they have decided on three categories instead of two. These three categories are: online freelancing platforms, microwork platforms and platforms that mediate physical services. In theory the same with just the cloud-work split into two categories.

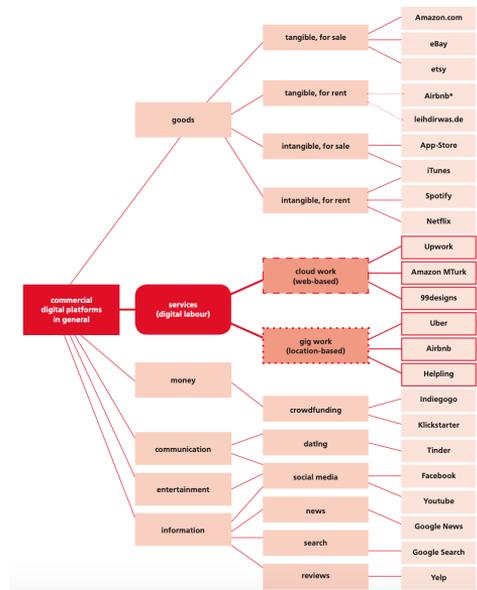


Figure 2.1: Schmidt's categorization of digital platforms [1]

⁷<https://www.facebook.com/>

⁸<https://www.airbnb.com/>

As already mentioned in section 1.1 are there a lot of different platforms, operating in different industries and using slightly different business models. Schmidt have for this reason created 3 sub categories for both cloud work and gig work, and a taxonomy for the 6 types of digital labour platforms to better identify and place them in the correct category. These are; if the work can be done remotely via internet with no specific location needed is it cloud work. Is the tasks or work given to one specific person or company is it a freelance marketplace, is it rather given to a undefined group divided into smaller tasks where each task is paid is it microtasking crowd work, and if the task is given to a undefined group where only one delivery is paid is it contest-based creative crowd work. The categorization for gig work do instead differentiated by the personal necessary, giving the the following categories: accommodation, transportation and delivery services, household services and personal services [1]. Some platforms may be hybrids of two or more types of platforms, and more specific subcategories could certainly exist due to the wide array of digital labour platforms. We will however further on in this thesis focus on platforms which primarily could be categorized to one industry/ categorization. This is important especially in regards of regulations as it is much easier to regulate companies/platforms which operate within one industry [16].

One common trait for digital labour platforms, or rather the company behind these platforms are their business model and categorization of workers. Although the business model of the platform companies are constantly changing, making it difficult at times to study them are there two traits that seem to be present at most platform companies [17]. The first is that the companies usually register and classifies themselves as technology companies, arguing that they provide a service using digital technology. This have however in many cases been disapproved by regulatory bodies or in court cases. The most prominent example of this is Uber which have been ruled to be a taxi company by both the European Court of Justice and other courts around the world[18][19][20]. The other important trait is their form of employment, or rather the the missing form of employment. These platforms in most cases do not recognize the workers on the platforms as employees but as independent contractors, partners or self-employed. This is one of the topics causing most controversies around the world, with rulings both in favor of the companies which that they are not employees, and vice versa. It should however be mentioned that this doesn't apply to all companies and some hire the workers on contracts classifying them as either a part-time employee or full-time employee. This controversy about employee or not is also very important to remember when looking at companies in the Nordics, as you will see later on in this paper.

2.2 Nordic Model

The Nordic countries, also known as the Nordics, consists of the countries Denmark, Finland, Iceland, Norway and Sweden, as well as some associated territories. These territories, as well as Iceland, are omitted due to their population size, limited market and lack of relevant studies. The Nordics will, therefore, be referring to the countries of Denmark,

Finland, Norway and Sweden in this report. The system and model used in all of these countries have due to the commonalities between all of the Nordic countries in how the economic, social, political policies and how work is organized, been named the Nordic model. The goals of this model are low unemployment, low inflation, high growth and even income distribution [21]. There are obviously some differences between the countries [22], but there are however three main pillars common for all countries that make up the core of the Nordic model, economic governance, public welfare and organized work as defined by the Nordic Labor Movement's Organization SAMAK[23]. The foundation for the three pillars and the Nordic model, especially the Nordic labour market model, appeared in the early decades of the 1900s, and the development escalated during the 1930s after the increase of social democratic and labour parties in the different countries governments [24]. In this period was a compromise between the two sides of the industry made, the workers with their trade unions and the employers with their employers organizations. This compromise was a pivotal part of the model we know today and helped the trade unions get more power and influence in the labour market [25]. To clarify is trade unions and labour unions normally used interchangeably, but the former will be used in this report. As the years went on did the trade unions reach new collective agreements and joint measures with the employers and their organizations, many of which have been implemented in the welfare state and are considered to be a part of the public welfare pillar today [25].

Of the three pillars is the organized work pillar the most relevant for this project, even though all of the three pillars are tightly coupled and working across each other. The more specific details and summary of the organized work pillar are as follows. A relatively equal balance of power between trade unions and employers organizations. Tripartite cooperation between the government, trade unions and employer organizations. Strict rules and regulations on how the power are distributed, protection of workers through workplace representatives, as well as clearly defined worker rights [25]. It should, however, be mentioned that there is no statutory minimum wage by the government in any of the countries in the Nordics, a clear difference to almost all other countries in Europe⁹. The solution to this is to have instead a minimum wage set by collective agreements negotiated by trade unions in each industry [26]. This works well for the Nordic countries due to their high percentage of unionization compared to other European countries where the Nordic countries are ranked as number 1, 2, 3 and 5 as seen in table 2.1¹⁰. In addition to having a high percentage of workers, unionized do also different laws in the Nordic countries apply the collective agreement to entire industries. This differs from each country but is called "Allmenngjøringsloven" in Norwegian, which translates into something like the law of general application in English. The system, therefore, covers around 90% of workers in Finland, 89% in Sweden, 84% in Denmark and 67% in Norway [26].

⁹<https://www.eurofound.europa.eu/data/statutory-minimum-wages>

¹⁰According to the European Trade Union Institute (ETUI) <http://www.worker-participation.eu/National-Industrial-Relations/Across-Europe/Trade-Unions2>

Country	Employees in union
Finland	74%
Sweden	70%
Denmark	67%
Cyprus	55%
Norway	52%
Italy	35%
Ireland	29%
UK	26%
Spain	19%
Germany	18%
France	8%
EU average	23%

Table 2.1: Percentage of unionization among employees in some European countries

Several studies have looked at the success of the Nordic countries in recent years and pointing out the Nordic labour market model as one of the most important contributions to this success [27]. Even the Minister of Social Affairs and Labour in Norway from the Conservative Party have publicly spoken out about the importance of the labour market model with the tripartite cooperation. This is in stark contrast to what politicians from the Conservative Party historically have expressed, often being opponents of the model, albeit not in recent years [28]. The consequences of the model have been big trade unions with smaller subdivisions, creating a more peaceful and organized way of discussions where all parts see a more holistic picture compared to much smaller and often more radical trade unions that can be found in other parts of Europe [29]. Overall are the results of the model, fewer conflicts and more cooperation between the three different parties of the labour market. Which have reduced the conflicts and strikes among the workers, increased productivity and increased wages for the workers, causing a flatter hierarchy with smaller wage gaps inside companies [30].

2.3 Differences Between the Countries

As mentioned in section 2.2 is this paper limited to the Nordic countries, which all use the Nordic model, albeit with some differences in the models. This is especially important regarding the social benefits, an essential part of the Nordic model, and the access to them

considering the employment status. A consequence of these differences is that the models are sometimes referred to as the Danish, Swedish, Norwegian or Finnish model instead of the Nordic model. This paper does not go onto specifying in detail the amount, duration etc. in each country or model, but will rather list the key elements and which type of employees that get access in each country, complemented with more detailed insight into the rights and benefits in Norway as this is the country that will be in the focus of the case studies. Table 2.2 show the differences between the Nordic countries regarding the statutory social benefits for self-employed workers [31].

	Denmark	Finland	Sweden	Norway
Healthcare	Full access	Full access	Full access	Full access
Sick-pay	Full access	Full access	Full access	Partial access
Paid maternity/paternity	Full access	Full access	Full access	Full access
Unemployment benefits	Partial access	Partial access	Partial access	No
Accidents at work	Voluntary access	Full access	Full access	No
Retirement pension	Full access	Full access	Full access	Full access

Table 2.2: Access to statutory social benefits for self-employed in the Nordics

As seen in table 2.2 are there some differences between the Nordic countries, where Norway stands out the most. There are also some other notable differences between the countries. As mentioned in section 2.2 are there some differences in the law of general application. Finland makes all collective agreements universally applicable to all sectors, while Norway only applies them to a few selected industries. On the other hand, have Denmark and Sweden rejected this kind of law [32]. Unemployment insurance and payout of funds are under the administration of trade unions, except in Norway where this is handled by the government. This may also be the reason why the unionization percentage is lower in Norway, compared to the other countries. The tripartite cooperation is much stronger and more comprehensive in Finland and Norway, especially compared to Sweden [32].

2.3.1 Rights and benefits in Norway

Since this report focuses on cases from platforms in Norway is a more detailed comparison of some of the differences in rights and benefits between the three different group of workers, traditional employee, freelancer and self-employed. The table 2.3 showing these difference is generated from data available on Altinn, which is owned by the Norwegian Digitalisation Agency, and is based on the law under normal circumstances and not the temporary law caused by Covid-19 ¹¹. A clear ranking of which group that have the best and most rights and benefits can me made from this table. Where traditional employees

¹¹<https://www.altinn.no/en/start-and-run-business/planning-starting/before-start-up/freelancers/>

have the most rights and benefits followed by freelancers with self-employed on the bottom of the ranking, one crucial thing to take away from this is the difference in collective rights such as strikes and collective bargaining a vital part of the Nordic model. It's not allowed in Norway to consider people as self-employed if they, in reality, are employees. The Norwegian Labour Inspection Authority have the possibility to step in if they see that the organizational form is deliberately used to circumvent the regulations [33].

Rights and benefits	Traditional employee	Freelancer	Self-employed
Sick-pay	100 % coverage from 1st day, employer covers the first 16 days	100% coverage after 16 days, may have insurance for the first days	80% after 16 days, may have insurance for the first days/ remaining percentage
Unemployment benefits	Yes	Yes	No, may sign up for insurance
Accidents at work	Yes	No, may sign up for insurance	No, may sign up for insurance
Occupational Pension	Yes	No, own responsibility	No, own responsibility
Covered by the Working Environment Act, Labour Dispute Act, Wage Guarantee Act ++	Yes	Varies, subject to individual assessment	No (with the exception of provisions on health and safety and discrimination)
Collective rights (strike, collective bargaining)	Yes	Varies, subject to individual assessment	No, due to competition law

Table 2.3: Rights and benefits for employees, freelancers and self-employed in Norway

Chapter 3

Method

This chapter details the method used in this project, covering both the method used in the literature review and the case studies. It goes into describing the choices made for the type of case study made, the selection of cases and the data generation methods.

3.1 Research Strategy

The research process of the study was following the commonly used research process model found in "Researching Information Systems and Computing" by Oates [2]. The model has 5 different steps with possible paths when conducting a research project. Figure 3.1 displays the chosen path for this project, with the various steps chosen highlighted in red. The research started with defining a set of research questions based on the motivation and experiences as described in section 1.1, simultaneously was a systematic literature review done to get a better knowledge of the field of digital labour platforms. A systematic literature review is the process of identifying and selecting relevant documents which cover the topics of the clearly defined research questions. Section 3.2 covers the process of how the systematic review was done. The strategy chosen for this project detailed in 3.3 was a multiple case study which will use the definitions and method by Yin in his "Case Study Research - Design and Methods" book [34] and the method in Oates book [2] to design the case study, The section also details the data generation methods used in the case study and why qualitative data analysis was used.

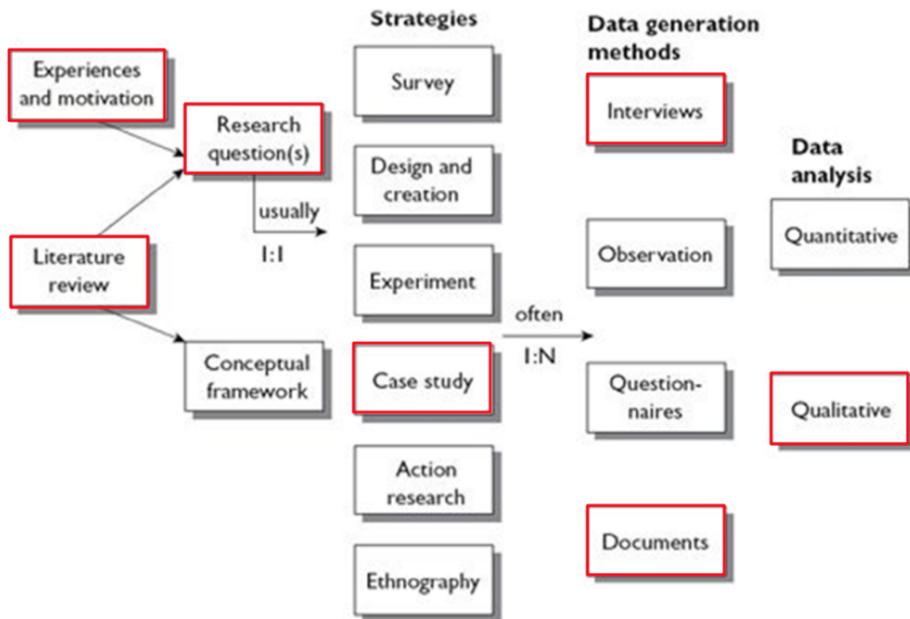


Figure 3.1: Model of the research process model by Oates' with chosen steps [2]

3.2 Systematic literature review

The topic for this thesis, digital platforms and more specific digital labour platforms, is a quite broad theme with many different names and descriptions. Doing searches in literature databases are a necessity when doing a literature review and with the recent popularity in this field of study is there a lot of literature available, an example is the term "digital platforms" which yields over 40 000 results on Google Scholar ¹. It's, therefore, necessary to use a clear and concise methodology to ensure good and relevant selection of literature to study. For this reason, was the guidelines for conducting systematic mapping studies in software engineering by Petersen et al. [3] used as a basis for structuring the search for relevant research. The methodology consists of the following five steps, and as seen in figure 3.2:

- Defining research questions
- Conducting search for relevant papers
- Screening of papers
- Keywording of abstracts

¹<https://scholar.google.com/>

- Data extraction and mapping

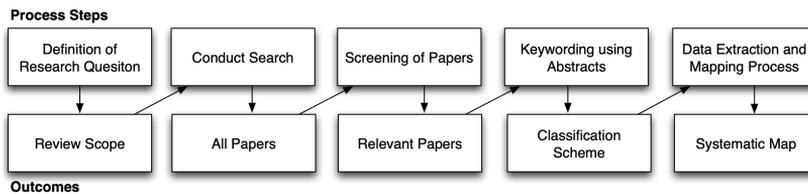


Figure 3.2: The process steps of Petersen et al. methodology [3]

The first step of the process is to decide the research questions (RQs). This is important to limit the scope of the study. Without doing this, are you risking spending a lot of unnecessary time reviewing a large amount of irrelevant literature. The first draft of the research questions was based on the author's motivation, as described in section 1.1 and inputs from the projects supervisor. The news articles that the motivation was based on were mainly from the Norwegian, British or American market, covering some of the most prominent digital labour platforms. This led to one main RQ and three sub-questions covering affordances, trade unions and the Nordics.

The second step, conducting search for relevant papers, requires a set of search strings to get the most relevant documents in the scientific databases. Using the AND, OR operators between specific strings helps to narrow or broaden the results from the databases. Constructing and provide the search strings also helps others when retracing your steps. As mentioned earlier are there many different names used on what is considered to be digital labour platforms, there is also two different spellings of labour and labor, which the search strings need to cover. It was also decided to use different search strings for the various topics related to each RQs. The result of this was one general group and three more specific group covering the topics of affordances, trade unions and the Nordics. Each group included one search string with the goal of retrieving a lot of results while the other narrowed down the amount of returned papers. The table with all the search strings and the number of documents returned can be found in table 3.1. Several different databases were evaluated, including ACM, ArXiv, IEEE Explore, Scopus and SpringerLink, but it was decided to only use Google Scholar. With the reasoning that this database returned the most articles and covered almost all the articles from the other databases. Some of the databases also returned none or very few results which made them unusable in for this project.

Topic	Search string	Returned
General	"Gigwork" OR "Crowdwork" OR "Gig economy" AND "Platform"	6740
General	"Digital labour platforms" OR "Digital labor platforms"	624
Affordances	"Gig" OR "Crowdwork" AND "Platform" AND "Affordances"	819
Affordances	"Digital labour platforms" OR "Digital labor platforms" AND "Affordances"	57
Trade unions	"Gig" OR "Crowdwork" AND "Platform" AND "Trade union" OR "Labour union" OR "Labor union"	1880
Trade unions	"Digital labour platforms" OR "Digital labor platforms" AND "Trade union" OR "Labour union" OR "Labor union"	164
Nordics	"Gig economy" OR "Sharing economy" AND "Nordic"	2360
Nordics	"Digital labour platforms" OR "Digital labor platforms" AND "Nordic"	60

Table 3.1: Results of search strings in Google Scholar

The third step, screening of papers go through the returned results from step 2 and filters out duplicate and irrelevant documents. The key in this process to find relevant papers is to use the title, abstract, and occasionally a skim through the paper in cooperation with some inclusion and exclusion criteria. This is an extremely time-saving process compared to reading all of the returned papers. The inclusion criteria that were defined and used are as follows:

- Papers that give definitions or categorization of digital labour platforms
- Papers presenting numbers and facts about platform workers, employment status or workers well-being
- Papers related to affordances used on digital labour platforms
- Papers on digital labour platforms including trade unions
- Papers looking at digital labour platforms in the Nordics

And the exclusion criteria used are as follows:

- Papers only giving geographical specific statistics or numbers outside of Europe
- Books, incomplete or inaccessible studies
- Studies that don't cover digital labour platforms
- Results beyond page 6 in Google Scholar
- Duplicate papers

- Outdated papers

The fourth step is to extract keywords from the abstract and use this to group papers together into different categories. This helps to both understand the context better and to find back to articles when they are needed. It was decided that there were six clear groups which each paper would fit into, and these groups and the number of documents are shown in table 3.2. The last step is then to extract data for analysis with the focus on presenting the frequencies of publications for each category and mapping it using visual plots like bubble plots. This is used to see which categories have been researched previously and to better identify gaps in the research. It should be mentioned that this step is omitted from the report since it was deemed unnecessary. This was because the author already at this point had a good overview of the literature, and a visual mapping would not benefit the study in any significant degree.

Category	Number
Affordances	13
Nordic	10
Numbers and definitions	11
Rules and regulations	7
Trade unions	9
Workers rights	14

Table 3.2: The 6 different categories and the numbers of papers

Other research methods were also used to both add and exclude papers from the final list of relevant articles. The first of these was to do a quick read through the remaining relevant papers after the filtering and then exclude the ones that were deemed to be irrelevant or not provide any additional information to the study. Simultaneously as reading through, the articles were the method of snowball sampling used. This is the process of looking closer into articles and papers that are referenced in the initial papers and then add the specific referenced papers to the list of relevant papers [35]. A final quality assessment of the papers was then done, excluding some more papers, before doing an extensive and thoroughly full-text read-through of the papers. In addition to this was some relevant research papers received from the supervisor of the project, who have extensive research experience and knowledge in the field of digital platforms and digital labour platforms. The results of the systematic review are presented as state of the art in chapter 4.

3.3 Case study design

Already early on in the research process was it clear that a case study of some digital labour platforms would be suitable for answering the research questions. This was also supported by the method in the book "Case Study Research - Design and Methods" by

Yin [34]. According to him, is it three conditions you as researcher need to factor in when deciding research method when doing social science research. These conditions consist of:

- The form of research question posed
- The control a researcher has over actual behavioural events
- The degree of focus on contemporary as opposed to entirely historical events

Yin also goes into arguing that the research questions can give clues to which research strategy that is the most appropriate strategy. Furthermore, do Yin argue that if the research questions, when studying contemporary events, is on the form of how and/or, is this an important clue that case study would be appropriate research strategy. The main research question of this study RQ1 is formulated in this way. The events, in the form of digital labour platforms, studied is also a relatively new and definitively contemporary as there are constant changes happening with these platforms. For this reason, was the decision of using case study as the research strategy kept.

Along with the method for case studies by Yin are the method of designing case studies from the same book as in the systematic literature review by Oates used [2]. Oates, in his method, uses the first part of the definition by Yin to describe what a case study is, while the full definition by Yin is quoted below [34].

1. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident, and;
2. Case study inquiry which copes with the technically distinctive situation in which there will be many more variables of interest than data points, as one result relies on multiple sources of evidence, with data needing to converge in triangulation fashion, and as another result benefits from prior development of theoretical propositions to guide data collection and analysis.

Oates is in his book stating that a case study is categorized by the 4 points listed below:

- Focus on depth rather than breadth
- Natural setting
- Holistic study
- Multiple sources and methods

Focus on depth rather than breadth means that the researcher should obtain as much detail as possible under the investigation about the phenomenon. While natural setting is referring to that the researcher don't create an artificial situation and disturb the setting as little as possible. Holistic study is that the researcher should not focus on individual factors, but rather on the complexity of relationships and processes and how they are connected. The last point, Multiple sources and methods, says that a wide range of data sources should be used.

To be able to make a good case study following all of the points above have Oates made a structured approach for planning a case study and then conducting it. The structured approach, which is listed below, is the approach this thesis will follow and detail with the choices made in the following subsections.

Oates is in his book stating that a case study is categorized by the four points listed below:

- The type of case study
- Selection of cases
- Generalization
- Selection of data generation methods

3.3.1 Type of case study

According to Oates, there are three different general types of case studies, these are:

- Exploratory study
- Descriptive study
- Explanatory study

An exploratory study is when the questions asked, or the hypothesis is made to help the researchers understand a problem and then use the results in a subsequent study. This type of study was quickly discarded as the results of the study were not planned to be used in any subsequent studies. A descriptive study gives a detailed analysis of a particular phenomenon and its context, and a discussion of what happened in the specific phenomenon. An explanatory study goes into even more detail than a descriptive study, trying to explain why certain events happened and why the outcome of these events occurred. The study also often tries to find which inter-linked factors that affected the outcome or if a theory from the literature matches the case.

Both the descriptive and explanatory study could be used in this project, but due to the time constraints and the project only having one researcher it was decided that descriptive study

was the best solution to choose. It was in addition to this decision to use what Oates calls a "Short-term or contemporary study" where one examines and research what is happening in the case "right now". This is a natural approach to do since digital labour platforms are a relatively new phenomena where constant updates and changes are happening. To better answer, the research questions were it also decided to use a multiple-case approach, which will give a more valuable and robust result since it can be more comparative with different results from each case. The RQ1 also implies that just one case would not be able to answer the question in a good way, in the form it is formulated. Had the word "How" been swapped with "Can" or "Could", would a single be able to give a sufficient answer to the question. A multiple case study will, of course, need to include a large amount of data and variables to be able to cover both the phenomenon of interest, as well as its context as described by [34]. This thesis is therefore limited to the number of cases since there is both a time constraint and limited human resources available on the project.

3.3.2 Selection of cases

One of the most critical steps in a case study is the selection of cases. To help with this have Oates [2] listed five different aspects which may be helpful in the selection process, and these are:

- Typical instances
- Extreme instances
- Test-bed for theory
- Convenience
- Unique opportunity

Typical instances are when a case is typical and similar to other cases and can, therefore, be representative for an entire group of cases. On the other hand, is the extreme instances which are so unique that they cannot be generalized to a group of cases. Test-bed for theory is cases where a theory can be either confirmed or denied. Convenience is cases that are easily accessible either in the form of available data or if there are participants that have agreed to participate or give you data. Unique opportunity is rather self-explanatory and is when an unplanned opportunity appears.

Of these aspects was the unique opportunity obviously not selected in the plan for when the selection of cases begun. The test-bed for theory were also discarded as there was no plan, either from the research questions or anywhere else, to test a theory. There were then three aspects left, and all of them was used as this probably would give the best results of cases to be able to answer the research questions. The convenience of a case was paired up with both the typical and extreme instances when looking for possible cases. The reason

for this was again the time constraints of the project, and choosing inconvenient cases could have resulted in much wasted time. Additionally was a small set of criteria to the case selected, the reasoning being that the cases must be in the right context to be able to answer the research questions. These criteria are:

- The platform must be a digital labour platform
- The platform must mediate work or services and not assets
- The company behind the platform haven't shut it down
- The platform is operating in Norway

Using these criteria limited the number of cases quite drastically, and we were left with only a couple of different platforms in different industries which were, transportation, food delivery, cleaning and online services. Out of these industries was online services and some of the platforms briefly examined but disregarded with the reason being that the workers on these platforms usually aren't geographically restricted and traditionally being self-employed organizing their own work. Both of these constraints made it difficult, or nearly impossible, to connect it to the theme of the Nordic model and answer the research questions. Two companies from the food delivery service, Foodora and Wolt, were early in the project chosen as relevant cases since they both fulfilled all of the criteria. Additionally was they both comparable cases where Foodora is an extreme instance simultaneously as in some aspects also being a typical instance, while Wolt is a very typical instance of a digital labour platform. The focus then went over to the cleaning industry where three different companies were found, WeClean, Freska and Vaskehjelp.no. Out of these three was only Vaskehjelp.no found to be a suitable case since. The reason for this is given in the list below:

- WeClean - Even though it checks off all the listed criteria, is the platform an extreme instance with very little information available, making it a very inconvenient platform to study. The company doesn't have an app either making it an even more atypical instance.
- Freska - It also meets all the listed criteria and is in many ways a more typical instance with a proper mobile app. The downside with this company is that all of the cleaners are professional cleaners who are carefully considered and hired with full-time employment, which is very untypical for digital labour platforms, making it an extreme instance.
- Vaskehjelp.no - Did as all the other companies meet the criteria, but contrary to the other companies is this company a typical instance of digital labour platforms, which is preferred for a case from this industry.

Transportation was the last identified industry. Globally are there many massive digital labour platforms in this industry, but only one of them is operating in Norway currently,

and that is Uber. Uber is maybe the most common example used when talking about digital labour platforms. The company's business model have even received its own definition in the Cambridge Dictionary in the form of "Uberization - the act or process of changing the market for a service by introducing a different way of buying or using it, especially using mobile technology"². The company and its platform was initially a part of the cases in the study but was later omitted. The reasoning behind this is that the platform only, as of June 2020, operates a limited service in Norway without the core concept of the service. It only operates a small sample of luxurious cars where the drivers are registered as professional limousine drivers, which only a tiny subset of the population is available to register as. This, in many ways, sets it apart from the concept of a digital labour platform where most people should be able to sign up to work. Examining the platform in Norway also proved to be difficult with the Covid-19 crisis limiting many of the previous possibilities such as field studies. Reviewing the literature also showed that Uber is a very popular company to use in case studies, and it will hence be very difficult to contribute any new research to the field of study, especially when relying on other literature and documents. Uber was also found to be very identical to Wolt in many ways, even though their core business doesn't operate directly in the same industry. Based on these factors, was it decided to drop the company from the study.

- WeClean - Even though it checks off all the listed criteria, is the platform an extreme instance with very little information available, making it a very inconvenient platform to study. The company doesn't have an app either making it an even more atypical instance.
- Freska - It also meets all the listed criteria and is in many ways a more typical instance with a proper mobile app. The downside with this company is that all of the cleaners are professional cleaners who are carefully considered and hired with full-time employment, which is very untypical for digital labour platforms, making it an extreme instance.
- Vaskehjelp.no - Did as all the other companies meet the criteria, but contrary to the other companies is this company a typical instance of digital labour platforms, which is preferred for a case from this industry.

3.3.3 Generalization

Generalization is what Oates refers to when it is possible to make a conclusion from a case that is not only relevant for the studied case but other cases also. This is highly linked to typical case instances mentioned in section 3.3.2. Oates mentions some examples on which basis cases can be similar and by that also typical cases, these are physical location, history, social mix, technical basis or organizational type. Of these are physical location, technical basis and organizational type important for the thesis, in addition, have we identified the business model and form of employment as pivotal elements. It is crucial for the study that

²<https://dictionary.cambridge.org/dictionary/english/uberization>

the conclusion can be generalized to other cases also, which is reflected in the research question RQ1.

3.3.4 Data generation methods

This project will use two different data generation methods, interviews and documents, as seen in figure 3.1. Interviews have according to Oates [2] three various forms; structured, semi-structured, or unstructured. Structured interviews have a predefined list of questions which is used to ask the interviewee, and follows them slavishly. Since every interviewee is asked the same questions, can the answers be compared to spot similarities or differences between the respondents. Semi-structured interviews allow for more deviation from the prepared questions and are thus closer to regular conversations. This is useful when further discussions and questions are expected to arise during the interview. Semi-structured interviews use the list with prepared questions to steer the conversation in the desired direction, but the researcher needs to be able to adapt the questions during the interview based on the answers from the interviewee. Unstructured interviews have no prepared questions, and the researcher must make the questions during the interview. This project will utilize semi-structured interviews since we want to gather specific information and at the same time as much information as possible. Should interesting and new relevant information arise during an interview is it, therefore, necessary to quickly adapt and ask follow-up questions to this information.

The procedure of conducting interviews for this project was as follows:

1. Send out emails to relevant persons and companies for the project, explaining the project and asking if they would be able to participate in the study. An information document with more details of the project, the process and their rights was attached to the email. Additionally were some persons contacted on social media platforms if email addresses were unavailable.
2. If a person or company responded that they would participate was a time and date for the interview set up.
3. The interviews were performed and recorded. As a consequence of the Covid-19 crisis were all the interviews in this study video interviews using Microsoft Teams.
4. In some cases were the interviewee not able to set aside time for a video interview, but instead, answer questions via email.
5. After the interview was relevant responses and information extracted from the recording and written down.

The detailed list of which persons and companies that participated in this study are held anonymously in accordance with the agreement with the Norwegian Centre for Research Data (NSD). The persons and companies contacted via email where couriers on the Foodora

and Wolt platform, union representatives, and marketing managers. The companies contacted are, of course, all of the companies in the case study such as Foodora, Wolt and Vaskehjelp.no, as well were different trade unions and employers' organization contacted. We obtained most respondents with connections to Foodora, and some to Wolt, but none of the persons or companies connected to Vaskehjelp.no was able to set aside time for an interview or respond to the email. Regarding the companies in the case study were Vaskehjelp.no not able to set aside time for participating in the project. Foodora and Wolt were only able to answer questions sent in via email, and a high percentage of the questions were they either unable to or not willing to answer.

The second data generation method used is a collection of documents. This method is an important part since the cases in this study are continually changing with news articles and changes on the platform happening at a rapid pace. To cope with this was an automatic search on Google News³ set up. Each company name, i.e. Foodora, Wolt and Vaskehjelp.no was set up such that an email with new news stories mentioning each company was sent out daily. This was set up and started at the beginning of March, and relevant news stories from these companies have since then been read and added to a list of relevant news articles. In addition to this was a Google News search on older news articles about each company also done. Furthermore was the following more general search terms used the find other news articles on Google News: "Gig-work", "Digital labour platforms" "Platform economy", "Nordic Model", "Plattformøkonomi", "Nordisk modell" and "Digitale arbeidsplattformer". As seen was the searches done using booth Norwegian and English terms. Websites, forums, videos and blogs were also heavily used in the document collection process. Searches for these documents occurred 2-3 times a week, with almost always finding new relevant documents. The last form of document collection was from finding relevant literature, this process was identical to the process already explained in section 3.2, except for different search terms. The search terms used to find relevant literature on the companies were: "Foodora", "Wolt" and "Vaskehjelp.no".

The data collected from using the methods of interviews and document collection makes this thesis a qualitative study since most of the data is not measurable or including numeric values. The study will instead use a qualitative data analysis trying to interpret the phenomena of digital labour platforms in the Nordic countries.

³<https://news.google.com/>

State Of The Art

This chapter presents the current relevant literature in the field of digital labour platforms and in the context of the Nordic model.

4.1 The state of digital labour platforms in Europe

To get an insight into the implications digital labour platforms could have, did we decide to take a closer look into the numbers and the state of the platforms in a European context. With a market that is growing by 25% a year and estimated value exceeding €20 billion [9] is it challenging to pinpoint the number of people working on these platforms and their status [36] [7] [8]. This section will, however, try to give a quick overview using the latest available numbers from the COLLEEM Survey published by the European Commission [10] [4]. The paper was found to be the most extensive, trustworthy and up to date paper, and is for this reason used in this study. There are, however, other studies that have conducted extensive research with roughly the same respondents. An example is a research paper on the size of Sweden's gig-economy by Huws and Joyce (2016) [37], where they had a total of 2146 respondents in Sweden compared to the report by Pesole et al. (2017) [10] which had 2321 respondents in Sweden. The numbers they present are in contrary to the number of respondents very different. Whereas the report by Huws and Joyce estimate that 12% have worked on digital labour platforms, or as they put it "the so-called 'sharing economy'" [37], and that around 25% had it as their primary source of income, are the numbers presented by Pesole et al. 7.6% and 1.7% respectively[10]. These numbers show how difficult it is to get accurate statistics from this field of study and all the results and numbers should, therefore, be considered as rough estimates rather than exact numbers. The number of digital labour platforms in Europe is difficult to measure, with some reports stating that there are over 300 alone in France and others estimate it to be a total

of 178 in EU [11]. What they can state, however, are that historically was it the big US platforms such as Uber that dominated when the first platforms emerged. Later on, have home-grown European platforms emerged and steadily increased their market share [11].

The findings of the study by Pesol et al. [4] which consisted of almost 33.000, showed that about 10% of the adult population has ever used online platforms for doing some labour services as a worker. While there is about 2% of the adult population that have it as their main income, which they define as "those who earn 50% or more of their income via platforms or work via platforms for more than 20 hours a week." [4]. The findings also showed some significant differences between the countries with the UK, Germany and the Netherlands having a relatively high percentage with digital labour platforms as their main source of income (2.5%-4.3%). In contrast, Finland, Sweden, France, Hungary and Slovakia had relatively small percentages (below 1.0%). The report also makes a generalization of a typical worker on these platforms, which are: "To summarize we can say that the typical European platform worker is a thirty-something-year-old male. Despite conventional wisdom, he is likely to have a family and kids, to be educated to degree level and to have fewer years of labour market experience than offline workers." [4].

The survey presented in the report also researched the education level among the respondents, which are presented in figure 4.1. These numbers also match results from other studies which yielded similar results with 57% having five years or more of higher education in a study from Ukraine [38].

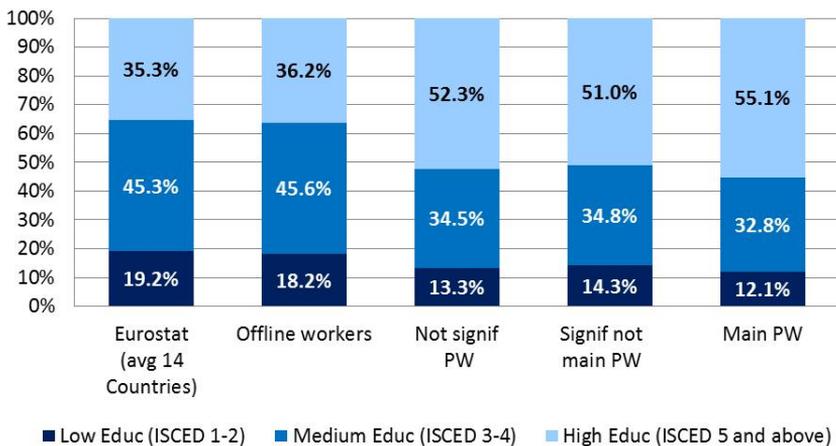


Figure 4.1: Distribution of education among workers on digital labour platforms compared to non-platform workers [4]

4.2 Workers rights and employment status

The COLLEEM Survey [4] asked all of the respondents who had worked on a digital labour platform on what they considered as their employment status. The results were that 68.1% declared themselves as an employee of the platform, while the results from those who had digital labour platforms as their primary source of income were 38%. The article points out that this is surprising because in most cases, the providers of labour services via platforms are legally independent contractors, a subcategory of the self-employed[10], rather than employees. As Harmon and Silberman point out in their article are the results of being considered as independent contractors the following: the workers are excluded, sometimes unfairly, from many rights and benefits afforded to employees, including minimum wage; paid sick leave, vacation, and parental leave; overtime pay; protection from unfair dismissal; compensation in the event of work-related illness or injury; employer contributions to health insurance and retirement; and the right to organize and collectively negotiate with employers or platform operators for improved rights and working conditions [39]. This is one of the reasons why there have been public debates in most EU Member States on the uncertain employment status of workers and working conditions[11]. Although this debate is there to date, no member states with dedicated employment status for platform workers, which means that they are treated as traditional employment workers [11].

Looking at all of the papers collected for this study can we see that all of them that covers workers rights have identified problems and undesirable conditions for the workers on the platforms. However, the ones that have come with the most comprehensive list of proposed improvements are the International Labour Organization (ILO) in their report about digital labour platforms and the future of work [7]. They propose a set of criteria that should ensure decent work on digital labour platforms. A summary of some of these criteria are employment misclassification (as described above), minimum wages, a transparent reputation system with the possibility to export it, and giving more information to the workers [7]. Although many reports tend to focus on the negative sides of the platforms and thereby creates a sense that there is a high rate of dissatisfaction on digital labour platforms, are some reports contradicting of this notion. In a report by Aleksynska et al. covering a survey of online labour workers of Ukraine, one of the most prominent digital labour markets in the world by tasks performed, did they find that only 5% were either dissatisfied or very dissatisfied with their work on digital labour platforms [38]. This report is, however, only one report and one cannot simply conclude that this implies to all other markets as well.

4.3 Affordances on digital labour platforms

One of the research questions of the project are "RQ 1.2:Which technological affordances do digital labour platforms use, and how do they affect the workers?". A review of the literature in the context of affordances and digital labour platforms were therefore deemed

to be necessary. First and foremost must we look into what kind of definition the literature have for affordances, or to be more specific technological affordances. In the literature review done by Sutherland and Jarrahi do they describe "affordances as relational between actors and materialities, considering both the rigidity of technological/material things and the purpose of human actors" [40]. While the authors Barzilay and Ben-David define it as "The term "technological affordances" relates to the ways with which technology shapes sociability. It examines the ways humans (users), perceive objects as possibilities for potential actions and act upon them." [41]. In the article by Duffy et al.[42] do they look at affordances in regards to social media platforms mentioning different definitions from other authors, ranging back to the first general definition of affordances from 1979. However, one interesting takeaway and definition of affordances that the previous two have failed to consider are how affordances can be imagined. They propose that how the users perceive the affordances are highly subjective based on previous personal experience, and how others use the platform as well. This causes users also to imagine non-existing affordances. I.e. are not all affordances on a platform equal to everyone; some are not even available to everyone. Universal for all of the different definitions is how they describe the technology to be embedded into a social context and thus describing that the platforms are a socio-technical system.

A review of the literature shows that there are many different affordances present on digital labour platforms. Both the article by Sutherland and Jarrahi[40] and the paper by Silva et al.[43] points to six key affordances that are present on digital sharing economy platforms, which most digital labour platforms are a part of. These six affordances can be looked at as an overall categorization for the technological affordances and are listed below.

- Generating flexibility
- Match-making
- Extending reach
- Managing transactions
- Trust building
- Facilitating collectivity

Generating flexibility refers to both the flexibility the workers have and the flexibility the platform may have over the work. An example is how most digital labour platforms make it easy to choose when to participate on the platform by letting the workers decide themselves when to work, making it easy to use the platform as a part-time job [44]. However, platforms also need to manage the number of workers simultaneously on the platform at all times to ensure market liquidity. This is especially true on location-based (gig-work) platforms, and are done by either forcing the workers to sign up for specific schedules, as in the case of Deliveroo or by providing algorithmic feedback to the workers and consumers. An example of this is dynamic pricing which encourages more providers/

workers by increasing the price, while simultaneously in a way discourage the user from using the service and vice versa [13]. The problem with this is that platform workers need to trust the algorithmic feedback, even though they have no access to information about how and why the decision was made.

Matchmaking, are how the platform connects the producer/worker with the consumer/client. The literature refers to two main ways these are done, either through automatic matchmaking based on things such as reputation score, location, skills and commodities, this is very typical for gig-work platforms dealing with transportation or delivery. The other way is by returning a list of producers/ workers based on a search with specific inputs.[1][13][40][43][45]. The essential part of both of these is the reputation system used. This type of system is one of the main technical affordances that are prevalent on most digital labour platforms [46]. The way this function is that workers are rated by their clients after completing a task, ride, delivery or job. The platforms then use this reputation score in their algorithmic ranking of search results or the algorithmic matchmaking. This has been described and named as algorithmic management, where there are the algorithms that make the decisions and allow the platforms to only have a few human managers who oversee thousands of workers[47]. Studies have shown that this form of control is very effective, as workers with higher scores tend to receive more work or higher ranking in search results. Workers are also well aware of this and have expressed how important it is to maintain a high average rating [46].

The literature does, however, mention some drawbacks of using the reputation system. Choudary does mention that there have been shown that the workers feel that the users are unable to distinguish between what the worker is responsible for and what the platform is responsible for when giving feedback, and thus feel that the feedback they receive is unfair [13]. A reputation system is also an essential tool the platforms have to increase the multihoming cost and ensure lock-in on the platform since it is impossible to transfer it to another platform [13]. Multihoming cost refers to the cost a user have when switching to another platform. High multihoming cost leads to fewer users that switch away from the platform, and low multihoming cost makes it easier to switch. Another drawback pointed out by Barzilay and Ben-David are "The Platform's design to conduct feedback scores without substantive guidelines may also cause those more in need of such work to prioritize lower rates to receive a better feedback score." [41]. It should be pointed out that some platforms do have two-way feedback where both the worker and the consumer rate each other. The consequences of this seem, however, to be a bias towards more positive feedback compared to platforms without two-way feedback [13].

A fundamental part for the reputation system to work smoothly and be as hassle-free as possible on gig-platforms dealing with transportation or deliveries are the opportunity to use an app on a smartphone. As Schmidt puts it in his report "Thanks to smartphones, the tracking and rating of customers, service personnel and independent contractors can now happen on the spot, face to face and in real-time. People assess each other's performance in the physical world immediately by actively rating the other" [1]. Smartphones itself are also regarded as a technological affordance since it allows for more autonomy among the workers by allowing them to work from self-selected places [48].

Extending reach is mostly referring to two things; the scale and depth of access the platforms provide and the extension of geographical reach. The scale of the platforms (number of users) allow the workers on the platform to reach out to previously unknown or unreachable consumers [40]. This is especially true for global cloud work platforms which in theory allows for workers and consumers to connect with anyone in the world with an internet connection. Another example of a more specific technical affordance is how some platforms provide automatic route planners to their workers. This function allows workers who are unfamiliar with the area to operate in a larger geographical area than previously known [13]. It should although be mentioned that this feature is not mandatory and other route planning tools such as Google Maps have shown to be popular among workers [49].

Managing transactions is an affordance of digital labour platforms that mitigate the transaction risk away from the worker and consumer to the platform itself [45]. The article by Sutherland et al. have a relatively clear definition of managing transactions, "The mediator handles the logistics of the transactions, either by holding currency, providing security, recordkeeping, or providing a workspace for the completion of a task." [40]. The design of most digital labour platforms is also made to automate the payment as much as possible. This ensures that the payment is made through the platform, allowing the platform to take their fee or cut [49]. Some platforms, such as Upwork, provides an electronic work diary that takes screenshots of the screen to control the time used on the task. This helps to both structure the workers time but also allowed the platform to provide hourly contracts based on the time used. Although, it seems from interviews done by the workers that they actively avoided this tool, and thereby hourly contracts, to protect their privacy[45]. This affordance is an example of what Choudary refer to as reducing bargaining costs [13]. This is something digital labour platforms seek to do since it increases the probability of an agreement between the producer and the consumer. Some platforms enforce a policy where the platform controls the price, examples are Uber and Foodora, while others provide bidding and auction tools to reduce the bargaining cost [13].

Trust building is about how the platform provides tools to increase the perceived trustworthiness among its workers and customers. This has previously been a problem in the digital space where anonymity and lack of physical interaction have been an obstacle for carrying out a transaction between two parts [43]. To cope with this have the platforms included many different technological affordances, where the reputation system is the most prominent. As already mentioned, do most digital labour platforms use a reputation system based on feedback from the clients. This system is not only used to award those with a high reputation but also to identify and remove bad actors [13]. Another affordance used is how the platforms handle the transaction risk, as mentioned earlier. Another technological affordance is the profile of the users or the self-presentation the users can do. This profiles can include entities such as skills, certificates and qualifications, biographical information and location. Research has also shown that having a trustworthy looking photo on a profile can substantially increase the trust among other users [40]. Despite this, do not all platforms provide the possibility to manage their profile, even cloud-work platforms without this feature exist, with the example of Amazon MTurk [50]. Although these are platforms where this feature is seen as very important[45],

The sixth and last affordance category identified by Sutherland and Jarrahi is facilitating collectivity. This is not about any technological affordances, but rather the fact that these platforms are sociotechnical platforms where the users often feel to be a part of a community.

Other key takeaways from the literature review regarding technological affordances are that there in addition to subjective metrics (reputation score) often exists objective monitoring of the workers. Automatic observation or tracking of the worker are standard tools of digital labour platforms. Examples are platforms that track the position and route of a worker or platforms that do automatic recording and monitoring of conversations [49]. This data is sometimes given in personalized metric-based feedback reports to the workers with a comparison threshold set by the platform for every single metric [13]. Another tool commonly found on digital labour platforms is the possibility for the worker and the client to communicate with each other on the platform [49]. The article by Choudary also points out the practice of how some platforms are only showing the option to accept a job without showing any additional information. I.e. are the platform designed to hide information from the worker such as destination, size and time limit, which is known as information asymmetry. The reason for this is for the platforms to ensure higher acceptance rates, while also penalizing workers with a high cancellation rate [13]. Besides, do Choudary and Wood et al. mention the lack of affordances, such as communication tools between the workers on the platform. This design choice discourages unionization [13][46] and studies have shown that due to the lack of this specific affordance have the workers used other platforms and tools outside of the platform to communicate. Examples are Uber drivers that use online forums, Facebook groups and subreddits, to discuss changing policies on the platform. Workers on Amazon MTurk have also verified that they use online forums outside of the platform for communication [47].

4.4 Trade unions and digital labour platforms

As described in 4.2 are there public debates all around the EU member states driven by trade unions [11]. The same section describes how the workers on the platforms usually are classified as independent contractors. This is something that Choudary is bringing up, mentioning that it poses an additional impediment to the exercise of collective rights. Since most jurisdictions, only allow collective bargaining through unionization [13]. Moreover, as we have seen in section 4.3 is the design of the platform discouraging unionization by not providing a way for the workers on the platform to communicate. Studies have shown that interpersonal and face-to-face contact is vital to the development of group solidarity and the lack of in-person engagement and co-location increases the difficulty for collective labour organization and action [51]. However, trade unions are not just watching what happens on the platforms. They are heavily involved in the European' future of work' debates as described by Harmon and Silberman [39]. The same article also points out that if the working conditions on digital labour platforms should be sustainable, must both trade unions and regulators work together with the platform operators. The literature

shows us that they are trying to do so, one example is the "Frankfurt Paper on Platform Based Work" [52] where staff from 9 European trade unions and organizations met to discuss digital labour platforms. The paper presents the result of the meeting, which calls for collaboration between workers, platforms, unions, and policymakers to ensure that digital labour platforms comply with relevant laws; that workers' employment status is correct; that workers have the right to organize and negotiate collective agreements with platforms; that workers receive at least minimum wage; and that workers have access to social protection and dispute resolution processes [39].

Researchers are also questioning whether trade unions will survive at all. One of them, Kurt Vandaele, tries to answer this exact question in his paper [15]. The results describe how traditional trade unions are losing market share to newer unions and other forms of collective representation that are mainly appearing around the digital labour platforms. An example of such unions that threaten traditional unions are presented in a case study from Bologna where the food delivery workers created an informal union called Riders Union Bologna (RUB). Despite being an informal union, did they manage to create a bill that was signed and approved by the city council that applied to all digital platform workers and not only food delivery workers. The platform companies have, however, according to the article not signed the bill and thus not agreed to follow it, making the bill rendered useless as of now. The paper also defines this form of unionism as an example of "unionism 2.0" [53]. This definition complies well with the paper by Vandaele who suggest that these forms of unionism will co-exist with the more traditional unions. Albeit it will probably be some differences between countries due to differences in regulations, labour market platforms and union cultures [15]. The report by Schmidt [1] also mentions this new form of unionization, thus with some other names. He calls it self-organization of independent contractors and looks at it as promising for workers on location-based platforms. Another researcher who shares the same scepticism as Vandaele is Hotvedt [54]. He states that "Relying on union support seems risky, as unions face particular problems organizing platform workers"[54] and follows up with suggestions that other and faster ways of organizing may be a better solution. We have regardless of Vandaele's and Hotvedt's scepticism toward traditional trade unions seen examples of collective agreements made between these unions and digital labour platforms. In April 2018 was a collective agreement between the trade union (3F) and the platform operator (Hilfr) signed [11]. Moreover, in September 2019 was a collective agreement between The Norwegian United Federation of Trade Unions and Foodora signed, albeit after a strike by the workers on the platform lasting for more than a month [55].

4.5 Digital labour platforms in the Nordics

As the main RQs for this project is about digital labour platforms and the Nordic model, is a review of the litterateur that describes the current status of digital labour platforms in the Nordics essential to get a better understanding of the research field.

To find the current numbers on digital labour platforms in the Nordics must we combine numbers from different papers, since none are covering all of the Nordics. Some of the numbers are already presented in section 4.1. The report from Pesole et al. [4], does in addition to Sweden have numbers for Finland. Interestingly are Finland and Sweden the bottom two countries on the list when estimating the percentage of workers that have used a digital labour platform for work. The numbers are as follows: 6.9% for Finland and 7.8% for Sweden. As mentioned earlier are the numbers much higher in the report by Huws and Joyce with this paper reporting 12% for Sweden [37]. Regarding the numbers for people who have these platforms as their primary income are the numbers 0.9% for Finland, 1.7% for Sweden and the paper by Huws and Joyce estimates it to be 3% in Sweden. Another research report by Rotnes et al. [31] also gives some numbers ranging in the span from 0.3% to 2.5%. Alsos et al. from 2017 presents a number of between 0.5 - 1.0% from Norway [17]. Contrary to the findings presented in section 4.1 where most workers are highly educated, are the same statistic not found among workers in the Nordics [31]. Another difference to the European market is how the workers are employees on the platform and not self-employed [31]. The authors of the article argue that a reason for this could be the that Nordic labour markets are highly organized, as we already have presented in section 2.2, and the pressure from trade unions are much higher in the Nordics compared to the rest of Europe. Hotvedt [56] and Alsos [17] do however point out that there are some shortcomings in the Nordic labour market model which allows platform workers to be self-employed. This can be damaging to workers in some industries where there is a low union density or its common to be self employed, such as the cleaning or transportation industry.

The literature is also covering several cases of collective agreements in addition to the cases presented in section 4.4. One researcher who has looked closer into the employment statuses of workers on digital labour platforms in the Nordics are Kristin Jesnes who have studied how this applies to Norway [5]. Her findings show that there is one clear difference to the European market, and the reason for that are the use of marginal part-time contracts instead of giving the workers the status of self-employed. By having a marginal part-time contract are the workers considered as much of employees as traditional employees, and this has a significant impact on the number of benefits, one can receive from the welfare system. The article also includes a case study of 10 digital platform companies, which resulted in Jesnes making a definition for the two different types of platforms she found. These two types are the typical platform companies, where workers are self-employed, and the hybrid platform companies, where the workers have marginal part-time contracts. Jesnes also made a modified version of the SOFL framework by Rubery et al. [57], comparing traditional employments (SER), with the employments of the typical platform companies and the hybrid platform companies, which can be seen in table 4.2. Jesnes do, however, point out that typical or hybrid model together with other atypical forms of work, does not solve the detrimental implications such platforms may have on the Nordic model.

SOFL	SER	Typical platform companies	Hybrid platform companies
Security	Stability of employment	Solo self-employed	Open-ended contract (marginal part-time) or relatively stable freelance relationship
	Guaranteed wage income	No guaranteed hours. Depends on demand and algorithmic management	Few guaranteed hours, possibility of extra hours
	Social security	Not covered by Working Environment Act. Own responsibility.	Covered by Working Environment Act (except freelancers). Access to social security measures (Table 2)
	Decent pay	Little opportunity for wage negotiations. No legal minimum wage. Extended collective agreements do not cover self-employed.	Little opportunity for wage negotiations. Might be covered by extended collective agreements.
Opportunity	Competence development	Low-/high-skilled work have more bearing on competence development than employment model.	Low-/high-skilled work have more bearing on competence development than employment model.
Fair treatment	Institutional framework	Algorithmic management. No workplace representation mechanism.	Algorithmic management. Workplace representation mechanisms, e.g. safety representative.
	Workplace	No workplace, which makes it difficult to meet other platform workers.	Not necessarily a workplace.
	Job stability	The rating systems might lead to unfair dismissal or fear of such.	Not necessarily a rating system
	Collective rights	No right to strike or collective bargaining.	Collective negotiations possible.
Life beyond work	Division between work and non-work time	No prior notification of jobs. Depends on demand. Risk of unsocial hours.	Some guaranteed hours, but still subject to employer flexibility. Risk of unsocial hours.

Figure 4.2: Typical vs. hybrid platform companies according to Jesnes [5]

Towards the end of this research project and thesis, was a new research report where Jesnes is one of the authors. This report is conducted in relationship with the Nordic Council of Ministers, which have funded the work of more than 30 researchers working on the report from 2017 until June 2020. The report named Platform work in the Nordic Models - issues, cases and responses [58] details and discuss many of the same topics as this thesis, even using many of the same sources and cases, in particular Foodora. This report is well worth the read and includes many relevant details on the phenomenon of digital labour platforms in the Nordic countries.

Chapter 5

Results

This chapter presents the results of the case study. Each platform is divided into sections presenting the general company information, technological affordances found, employment form, salary, collective agreements, business model, before closing the chapter by summarizing the findings in a more comparable format in the form of a table.

5.1 Foodora



5.1.1 General company and employment information

Foodora is a German online food delivery company established in 2014 under the name Volo GmbH, which was renamed in 2015 to Foodora. It's current headquarter is located in Berlin, Germany under the same roof as its owner Delivery Hero SE¹. Delivery Hero is a German parent company specializing in owning online food delivery companies and

¹<https://www.foodora.com/>

platforms, with a portfolio of almost 30 brands in different markets around the world.² Foodora entered the Norwegian market in spring 2015 and launched its operations in July the same year. It has further expanded to other cities in Norway, now operating with a total of over 1000 restaurants in 10 cities around Norway³. It also operates in the other Nordic countries of Sweden and Finland, making it only operating in the Nordics as of June 2019. It used to operate in countries such as Australia, Austria, Canada, France and the Netherlands but have shut down all its operations in these countries, while its platform in Germany was acquired by Takeaway.com another Food delivery service company⁴. Foodora does, however, have a strongly affiliated sister company in Foodpanda which is also owned by Delivery Hero, using the same technology and pink colour branding.

Business model

Foodora is a food delivery service connecting restaurants with customers using their website or iOS/ Android application. Foodora is responsible for handling the order, payment and delivery of the food to the customers. This is done by utilizing couriers on bicycles, mopeds or cars. Earnings are made in two forms, one from the delivery fee it charges the customer who orders (ranging from 49-99 NOK) and one by charging a percentage of the order (upwards of 30%) from the restaurants. These fees are variable based on income and the agreement each restaurant have with Foodora. Foodora has also, as of June 2020, launched the possibility to use the platform for ordering items from a small sample of stores also in addition to the traditional restaurants [59]. This business model is an example of the aggregator business model, which is a model where the company obtain information about specific goods or services and make the providers their partners. It then sells their partners goods or services under its own brand. To ensure that the service provided has a uniform quality and price do the aggregator platform and its partner sign a contract detailing specific details such as branding on the goods etc. [60]. In the case of Foodora is the restaurants its partners for goods and couriers its partners for service, with both having a contract stating that they have to use the Foodora branding. The model is also combined with a more traditional marketplace and logistics business model. The business model/ plan for companies like Foodora and other online food delivery platforms is to prioritize growth over profit to capture market share. This is also true for Foodora in Norway which had a net profit of -53.6 Million NOK in 2019, which is a part of their strategy according to the CEO of Foodora Norway, Elisabeth Myhre⁵.

Forms of employment

Foodora operates with four different forms of employment for its couriers in Norway; these are:

²<https://www.deliveryhero.com/blog/>

³<https://www.foodora.no/contents/foodora-1000-restauranter>

⁴<https://ecommercenews.eu/takeaway-acquires-delivery-hero-and-foodora-in-germany/>

⁵<https://e24.no/naeringsliv/i/Wbwmrj/foodora-tapte-mer-enn-50-millioner-i-fjor>

- Full-time employee
- Part-time employee
- Freelancers
- Self-employed freelancer

Among the couriers are bicycle couriers the definitive biggest group among the different modes of transportation used. And the distribution among the bicycle couriers, exempting couriers on mopeds and cars, is estimated to be around 55-60% full-time and part-time employees and 45-40%, freelancers. Including all couriers is the number closer to a 50/50 distribution. The couriers using cars and mopeds do; however, only have the possibility to work on the platform as self-employed freelancers [61].

Full-time employees are a relatively small group of couriers in Foodora. These are former part-time employees who have over a long period shown to work more than the hours in the part-time contract they were employed with before. The full-time contracts for these couriers are on 37,5/40 hours a week guaranteeing them these hours each week. Part-time employees are fundamentally the same as full-time employees except for having fewer hours in their contract. This group is the biggest group of couriers in Norway, where the standard minimum contract is for 10 hours a week. This could, however, be changed up if you have shown to work more than 10 hours, using the Working Environment Act section 14-4 a⁶ as the full-time employees. Both full-time and part-time employees have the same arrangement for allocating shifts which are as follows. Each employee marks in a calendar in the app used by the couriers when they cannot work for a given week. Two weeks prior to each working week is the schedule of shifts handed out to each courier in the app and via email. Each courier is then assigned to shifts accordingly to the number of hours in the contract. In addition to this is it each Wednesday at 09:00 published available shifts which are up for grabs for anyone, including the full-time and part-time employees. It is also to grab or swap shifts with others who want to swap their shifts. Shifts vary in duration but are usually between 2 and 5 hours.

Freelancers working on the Foodora platform are hired from an external company called Easy Freelance AS. This company collects a fixed percentage of 5.7% from the courier's payment each month for handling the paperwork for accounting and taxation⁷. These couriers have a completely different model from the couriers employed by Foodora directly. They do not have any guaranteed number of hours in their contract and are not automatically assigned to any shifts. To get a shift must the courier compete with all the other couriers including the employees when new shifts are published at 09:00 each Wednesday. They also have the same possibility for swapping shifts with other drivers as the employees. This way of organizing the shifts is called shift grabbing by the couriers. With many of the freelance couriers saying that this is one of the most critical parts of the job since it is important to be quick to get the best paying shifts. The self-employed freelancers have the same system as the other freelancers, just without the connection to Easy

⁶<https://lovdata.no/dokument/NLE/lov/2005-06-17-62>

⁷<https://arkiv.klassekampen.no/article/20190927/ARTICLE/190929970>

Freelance AS. Meaning that they are responsible for the accounting and correct taxation themselves.

Common for all of the different couriers is that they also can pick up new shifts which Foodora publishes a couple of hours before they start if they see that this is necessary. Couriers can also mark themselves as available if they want to work a specific day and then be contacted by a responsible dispatcher if Foodora needs you to work. All of the couriers are also divided up in teams of 15-20 riders with one rider captain who the riders can contact and get help from if needed.

A new, as of writing this thesis, a new model for shift grabbing are currently being tested and implemented. This is partly performance-based where the original model made the most popular shifts available to only the best performing bicycle couriers. This have after discussions between the couriers, trade union and Foodora been changed so that there is a bigger proportion of cyclist that are in the group of best-performing couriers as well as it changes so that the group of best-performing couriers only get access to grabbing shift 1 hour before others. This system is currently in a testing phase and not yet complete and can, for this reason, be changed in the future. This performance-based system is very similar to the system used in Australia when Foodora was operating there, as seen in figure 5.1.

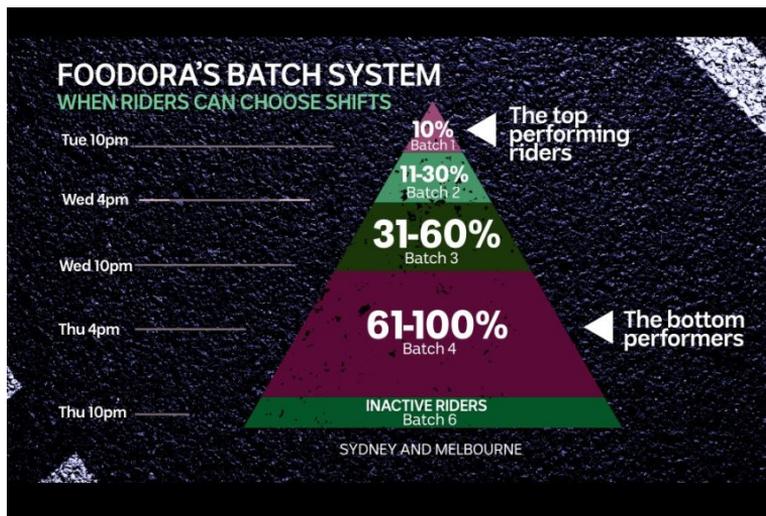


Figure 5.1: Foodora's batch system for picking shifts in Australia [6].

Salary

The salaries for the different bicycle couriers are divided into two groups, with differences between an employee and a freelancer. This can be seen in table 5.1. The salary of the employees includes equipment compensation of 2.5 NOK per delivery. In addi-

tion, do all bicycle couriers get a 10 NOK compensation if a delivery is over 4 kilometres. Self-employed freelancers are also at the moment getting 5 NOK per delivery if they use Foodora clothes as this is not something Foodora can force self-employed couriers to use. There is also a compensation for couriers working in the winter which, together with the base pay and equipment compensation is a part of the collective agreement with the trade union. The salary for the couriers using mopeds and cars are a bit different since they usually are over a longer distance than bike couriers. They get added to the per delivery salary depending on the distance of the delivery. The couriers can also receive tips from the customers, which naturally is very variable from each day. Tips are, however, something that the couriers say are a notable part of the salary. Some long term employees also have a higher salary than other couriers by having a higher base pay.

	Weekday	Saturday	Sunday
	123 NOK base pay	123 NOK base pay	123 NOK base pay
Employee	+	+	+
	17.5 NOK per delivery	22.5 NOK per delivery	27.5 NOK per delivery
Freelancer	71 NOK per delivery	71 NOK per delivery	81 NOK per delivery

Table 5.1: Salaries for bicycle couriers on the Foodora platform

Based on the feedback from the Foodora couriers is it a clear difference on which days, time of day you work, the weather on how much you earn per shift. Rainy days, weekends and after 17:00 is the best combination possible. On these days is it very rare that a courier must wait for a delivery to appear in the app they use, and as seen in table 5.1 does weekends pay better, especially Sundays. On days such as this is it not uncommon for couriers to be making 4 or even 5 deliveries per hour. The average number of deliveries a courier make over time is, however not this high. This number lies in the span between 2.5 to 3.5 deliveries per hour for most of the bicycle couriers on the platform. As you can see from these numbers, do the freelancers have a bit higher salary than the employees on average. This has caused a little bit of controversy among the employees and is set to be negotiated under the postponed renegotiation's of the collective agreement this fall. It should nevertheless be added that employees have much better access to social benefits as seen in table 2.3 in section 2.3, they also have, as of today, better access to getting the pest paid shifts on the weekends compared to the freelance couriers.

Advantages and disadvantages

There are almost always both advantages and disadvantages in a job, this is also true for couriers working at Foodora. The feedback from the couriers are very similar and mentions mostly the same advantages and disadvantages. The feedback from the interviews are also matching feedback available on the internet, such as figure 5.2 which is from a former portal for Foodora couriers in Germany⁸.

⁸<https://ridersfoodora.de/>

Top 5 most loved things about your job

1. The **exercise** you get while riding your bike
2. Having the **flexibility** when applying for shifts
3. Being **independent**
4. Making your **customers happy** while working with a **great team**
5. **Exploring** your city

Top 5 most hated things about your job

1. The **communication** when you have problems
2. **Long distances** between deliveries
3. **Waiting times** at the restaurant
4. **Weather** conditions
5. Your **salary**

Figure 5.2: Advantages and disadvantages among German Foodora couriers

Based on the feedback from the couriers is the most common and highest-ranked advantages the "free" training and joy you get from cycling, as well as the smile on a hungry customer face when you deliver their food. The disadvantage or problem that is the most annoying, according to the couriers, is when there happens a problem or something that is not within routine procedures. According to the couriers is this because the app is rigorous and controlling with little or no flexibility for the courier to fix things themselves. An example is if a restaurant has problems with an order causing big delays, the courier could then not leave the restaurant and complete another delivery but must wait for the restaurant to finish even if this causes a delay of 10-20 minutes. The only way for a courier to rearrange the order of the deliveries/ task is to contact the dispatch centre which can override the systems algorithmic order. This is highly connected to the technological affordances that are available or not available in the app for the couriers.

Collective agreement

In September 2019 did Foodora reach an agreement with The Norwegian United Federation of Trade Unions after a five-week strike among the couriers. The collective agreement includes as mentioned in the section about salaries a minimum wage rate with a higher base pay, compensation for equipment, extra pay in the winter and early retirement pension. The deal with compensation for the equipment was one of the most important parts of the agreement since the couriers must provide and maintain the bicycle, mobile phone and data plan themselves [55]. A renegotiation of the collective agreement was planned in spring 2020, but has been postponed to fall 2020. This new agreement will be between the employers' organization Virke and The Norwegian United Federation of Trade Unions, since Foodora has joined Virke since the previous agreement was signed.

5.1.2 Technological affordances

A platform can have many different technological affordances available for the couriers, but also lack some functionality that the couriers demand. These technological affordances are especially important for platform workers such as Foodora couriers since the

app is their boss and dictate their work. Foodora uses an app for its couriers called Roadrunner, which is not distributed through the traditional channels such as Apple App Store and Google Play but via Microsoft's App Center on a website accessible for on mobile devices⁹. This app is developed by Delivery Hero, the parent company of Foodora, and is used by many of their other online delivery services such as Foodpanda.

In the case of Foodora in Norway have the feedback from the couriers related to the functionality in the app been much better after the collective agreement was signed in fall 2019. Having a trade union representing a big group of couriers instead of feedback from only a few couriers have had an impact on acceptance on proposed changes from the couriers. One example of this is the possibility for customers to give tips to a courier. This functionality was something that Foodora had on its platform but wanted to remove, but after discussions with couriers and the trade union was it decided to keep the functionality. This was, however, only applied to the Norwegian market, and it is now not possible to give tips to the couriers in Sweden and Finland.

After thoroughly examining the apps and websites of Foodora, external websites, news articles, blog posts, videos, forums and interviewing different couriers on the platform have we identified some notable technological affordances and features on the Foodora platform. Besides, have we identified some affordances and features that are either of subpar quality or completely missing.

Normal workflow using the app - The workflow is as follows for a courier. The courier is assigned shifts and can view the start time, end time and the area where it is. They can also see available shifts and grab them. When starting a shift, do they need to be within a specified geofence area at a given time before they can go online and start to get deliveries in the app. The courier then gets a notification of a new delivery which they must accept quite quickly. After accepting a delivery do they get the address to the restaurant, expected time of hand over from the restaurant, order code and the items in the order. When the order is ready from the restaurant is a notification with a 2-minute delay sent to the courier that the order is ready to be picked up. The courier shows or says the order code to the restaurant and are then handed the order, placing it in the bag before marking it in the app. The address of the customer is then shown in the app. When the food is delivered to the customer, do the courier mark it as delivered in the app. At the end of a shift, do the courier slide switch in the app to go offline. It is also possible that the courier is directed to a new restaurant to pick up a second order before delivering to the customers.

Algorithmic management - The core functionality of Foodora is its software managing the task assignment to the couriers. The parameters used and how the algorithm works is a company secret that Foodora won't share and the couriers are for this reason unaware of how it works. There are, however, some natural assumptions which can be made according to the couriers. The main task of the algorithm is to make the distribution of deliveries as effective as possible, to do this is it likely that it estimates the expected delivery time of

⁹https://install.appcenter.ms/orgs/hockeyapp-z6mg/apps/roadrunner-01/distribution_groups/all-users-of-roadrunner

each courier based on location and average delivery time each specific courier use. This is something that most couriers are aware of and therefore know that it's smart to be around areas with many restaurants if they don't have a delivery waiting. Some discussions and conspiracy theories have although occurred among the couriers since the parameters used in the algorithm is a secret. An example would be that freelancers get assigned more deliveries than employees and vice versa. None of these conspiracy theories has been backed by any data or confirmed at any point.

Location tracking - Each courier is tracked continuously at all times as long as they are working on a shift. The customer also has access to this location when a courier is assigned to a delivery. There are of course some privacy concerns with constant location tracking, but all the couriers in this study understood why this was necessary and why it is not possible to turn the location tracking off when they are having a break. This is because the location is an essential function to make the app work, and it also prevents couriers from leaving the geofence area where they would still be paid if they are employees but not receive any tasks to perform. The possibility for the customers to track the location is also something that the couriers prefer as the customer often is ready when to receive the food when they arrive at the customer's address, which reduces the time used at finding and meeting the customer.

Delivery location - When a courier registered as an employee is receiving a delivery notification, are they not able to see the address or location of the customer. They must accept the order and will only see the address after the food is marked as picked-up from the restaurant. This is not the case for the freelancers which operate with another salary model. They can see the address of both the restaurant and the customer before accepting a delivery. The result of this is that some of the deliveries, in particular the longest, gets dismissed by freelancers and end up with the employee couriers. There are, however, discussions between Foodora, the couriers and the trade union to implement a system to fix this. One proposed solution which is under development is to give a set number of strikes to couriers who deny deliveries, and if they receive many strikes in a short amount of time will they be temporarily suspended from receiving new deliveries for a couple of hours.

Maps - Whenever an address is visible to the courier in the app can they press the address which opens a built-in map in the app. This marks the address on the map and your location. The feedback from the courier about the map is that it's very good and detailed with good information on house numbers, and where the entrance is. One functionality of the map that the couriers say is subpar is the route planner. This often shows a sub-optimal route to the given address. Foodora have however implemented the possibility to open the address and get directions in an external app such as Google Maps¹⁰.

Information and stats - The app provides the couriers with some basic information such as a list of shifts, how many deliveries you have made, an average of deliveries per shift/hour, total income last month. It also has the possibility to select each day you have worked and see the number of deliveries made and how much you earned that day. Foodora

¹⁰<https://maps.google.com/>

also distributes a report to each courier showing some different stats on a bi-weekly basis. The contents of this report have constantly changed over time and are not always the same from month to month, but some of the stats it can show are average speed, average time used per delivery, average time waited in restaurants and distanced travelled. It also has in some reports added how you ranked compared to other couriers, either by specifying that you are in the top 10% of average deliveries per hour, or by specifying if you are above or below average. As mentioned is this something that changes from report to report and is obviously in an adapting phase.

Feedback possibilities - The couriers have two forms of feedback possibilities, one for when urgent problems occur during work and one for more general feedback. The app has the functionality for calling the dispatch centre if an urgent problem occurs during a shift. They also have the possibility to contact the rider captain if he is available to assist you with the problem. For more general feedback must the riders send in an email to Foodora or contact the HR-department. It is also, of course, possible for them to contact their respective union representative also.

Rating system - Foodora do not use a direct rating system where the customers can rate the courier. However, an internal system based on the performance of the courier is available to Foodora and the algorithm but not visible for the couriers. This system is currently not used to any degree except for delivery time estimation but will be used when the performance-based system for allocating shifts is introduced.

Forum and connectivity to other couriers - Foodora previously had an internal Slack¹¹, a communication platform, for communication between the couriers and the management of Foodora. Foodora governed this, and there were no private channels for the couriers only. This communication platform was shut down when it was used to organize the strike in the summer of 2019. The couriers then started their own Slack which is governed by the couriers and is still used by the couriers today to help each other and discuss problems and experiences from working for Foodora. As of today do not Foodora provide any communication platform such as a forum where it is possible for couriers to contact each other or the management with public questions or criticism, but an integrated forum in the app is under development. It could possibly be launched in the future, according to Foodora.

5.1.3 Foodora in other countries

As mentioned in section 5.1.1 did Foodora previously operate in more countries than Norway, Sweden and Finland. Two of these countries are Australia and Canada, which both have some interesting information associated with the ceased operations in the countries. Foodora ceased its operations in Australia in August 2018 right before two lawsuits against the company were scheduled to appear in court. The cases were about the unfair dismissal of a courier as well as if couriers should be classed as employees or not. Foodora ended up

¹¹<https://slack.com/>

losing both these cases after they withdrew from the Australian market [62]. In the case of the Canadian operations did Foodora cease all of its operations in the ten cities they operated on May 11 2020. This happened just two months after The Ontario Labour Relations Board ruled in favour of the couriers who demanded that they should be classified as employees and have the right to unionize with the Canadian Union of Postal Workers [63].

5.2 Wolt



5.2.1 General company and employment information

Wolt is a Finnish online food delivery company established in 2014 with headquarters in Helsinki, Finland and launched its food delivery service in 2016. It operates in 80 cities and 22 countries around the world, with over 10 000 restaurants and 20 000 couriers on its platform¹². Wolt entered the Norwegian market in spring 2018 when it launched its operations in Trondheim March 2018. It has since then expanded in the Norwegian market to three other cities and are also operating in the other Nordic countries of Denmark, Sweden and Finland.

Business model

Wolt is an online food delivery service matching customers with restaurants using their website or their mobile application on iOS or Android. Wolt is responsible for handling the order, payment and delivery of the food to the customers. This is done by utilizing couriers on bicycles, mopeds or cars combined with proprietary technology and software to do this as efficiently as possible. Earnings are made in two forms, one from a delivery fee it charges the customer, ranging from 49-109 NOK, and one by taking a commission of 30% from the restaurants¹³. This business model is exactly the same as Foodora as described in section 5.1. And they are as most other digital labour platforms classifying themselves as a technology company [64].

¹²<https://wolt.com/>

¹³<https://piopio.dk/restauranter-advarer-bestil-ikke-mad-gennem-wolt>

Forms of employment

Wolt only operates with one form of employment for its couriers in Norway, this is self-employed freelancers who need to register an Enkeltpersonforetak (ENK), a type of sole proprietorship, before being able to work as a courier for Wolt [65]. Wolt then signs a contract with the Enkeltpersonforetak hiring the person from that company instead of the person directly. For this reason is the couriers referred to as partners by Wolt. The couriers can sign up using either a bicycle, moped or car as the means of transport, with bicycle couriers being the largest group by a clear margin. The group of couriers working in Norway consists primarily of migrant workers as well as some students and other Norwegian citizens [64]. This is also the case in the neighboring country of Denmark where many of the couriers are foreign workers using a Working Holiday permit to work [66]. It should be noted that even though the job as a courier is advertised as a part-time job, is almost 20% of the couriers in Norway using it as a full-time income [67].

Salary

Wolt have two forms of working as a courier, which also affects how the courier is paid. The first method is to grab new available shifts the coming weeks when they are published on Wednesdays. The shifts are distributed following the first come first served algorithm, making it very difficult to grab shifts when almost all of the couriers try to grab shifts at the same time with most shifts gone within 30 seconds [64]. The other method is that the couriers can at anytime they want, as long as it is within the operating hours of Wolt and inside of a marked geofence area, go online in the app and start getting deliveries. These two methods have some differences to the pay scheme, but both method has the following base scheme.

- 70 NOK per delivery
- 4 NOK extra for each 250 meter in distance after the first kilometer per delivery

This means that a delivery of 2 km earns the courier a payment of 86 NOK. The couriers that are able to get a shift is however guaranteed a minimum pay of 170 NOK per hour. So if you only get two deliveries of 1 km and 1.5 km you would as a courier without a shift earn 148 NOK and as a courier with a assigned shift get 170 NOK guaranteed that hour. An example with 3 deliveries of 1 KM would end up paying 210 NOK for both the couriers. The average deliveries made on average by a bike courier on the platform is in the span of 2 to 3 deliveries per hour in our findings. In addition to this has the couriers been able to receive tips from the customers since the beginning of March 2020. This source of income is naturally very variable and depends on the customer and not the platform. Wolt also pays out bonuses to couriers if they reach some specified goals, the bonus is different for each courier and not always available making it a very unreliable source of income.

Advantages and disadvantages

Many of the advantages and disadvantages are the same for Wolt couriers as Foodora couriers as described in section 5.1.1, such as the "free" training and the joy you get when delivering the food to a happy customer. The couriers on Wolt do however prefer the flexibility a bit more, with 84% of the couriers responding that they like the flexibility they get as a Courier on Wolt [67]. The disadvantages is often connected to the form of employment, with the lack of social benefits such as sick pay, as well as the uncertain salary each month. The distribution of shifts is also something that is mentioned as a disadvantage among the couriers [64].

Collective agreement and unionization

The couriers on Wolt are not employed by Wolt but rather in their own ENK and can for this reason not demand a collective agreement. There have been little to none engagement among the Norwegian riders to unionize, but there is currently a initiative in Denmark similar to what the Foodora couriers in Norway did in 2019 ¹⁴. Even though Wolt is not an employer of the couriers and by that have any legal obligation to do so, do they provide a insurance for accidents as a Wolt courier. This insurance is however very poor and provide nearly no coverage in case of an accident [68]. Contradictory to all of this have the Marketing manager in Wolt Norway, Christian Etholm, publicly said that "Wolt is a Nordic company with Norwegian values built upon a Nordic Model" (Own translation) [67].

5.2.2 Technological affordances

Couriers on Wolt use an app called Wolt Partner which is available on the App Store and Google Play. The app's functionality is identical for all of the couriers in the different markets Wolt operate, with the only differences being language settings and currency used in the app. After thoroughly examining the apps and websites of Foodora, external websites, news articles, blog posts, videos and forums and have we identified some notable technological affordances and features in the app used by Wolt. In addition have we identified some affordances and features that are either of subpar quality or completely missing from the app or the platform.

Normal workflow using the app - The workflow is as follows for a courier. When opening the app is the courier greeted by a home screen showing the map, the current delivery area, the demand in that area (busy, normal or under normal) and the option to go online. When online the within a specified geofence area, the courier will receive a notification when they get a delivery. The app then show how many tasks the delivery consist of, the address of the restaurant and a timeline with estimated time of pick-up and

¹⁴<https://www.facebook.com/pages/category/Labor-Union/Wolt-Workers-Group-108558417293239/>

drop-off at the customer. The courier then accepts the delivery and are shown a screen with the order, order number and estimated time before the order is ready to be picked up. When the order is a notification sent to the courier which after picking up the order confirms that the order is picked-up in the app. The next task is then shown, either a new restaurant or a customers address. If the courier is unable to reach the customer from the given instructions sent in by the customer could the courier call the customer directly from the app. After delivering the food to the customer is the delivery marked as finished by the courier.

Algorithmic management - Wolt uses algorithmic management to distribute the deliveries in the most effective way to its couriers. The parameters used and how the algorithm works is a company secret which neither the public nor its couriers know. The couriers on the platform are although quickly adapting and starts to learn where the most popular restaurants and areas are located.

Location tracking - The algorithm used to distribute is as other online food delivery apps heavily dependent on the location of its couriers and the couriers are therefore tracked the entire time they are online in the app. The location of the courier is also used by Wolt to collect data such as time used on each delivery, time spent waiting, average speed and if you are not moving. The customers also have access to a couriers location when a courier is assigned to an order.

Delivery location - The couriers are not able to see the final delivery location before picking up the order from the restaurant. However, a estimation with the time of each tasks including drop-off time is shown to the courier at all times.

Maps - The app provides a built in map pinpointing a address, such as a customers address, but don't provide any route planner. The solution to this is the option to open the address in an external app with the route suggestions there. The choice of external app used can be changed in the settings of the app.

Information and stats - The app provides a basic information section with stats such as time worked, deliveries completed, distance traveled and income for a given day, month or year. There is also a section for viewing assigned shifts and available shift up for grabs.

Scheduling breaks - The couriers have the possibility when online to go in an schedule a offline period if they want a break ensuring that they don't get assigned any orders in this time span.

Feedback possibilities - The couriers can contact support directly from the app, both when offline or online. This sets them in contact with the Wolt support center which may answer questions or help the courier if a problem occur during a delivery. If a restaurant is late with their delivery can they also mark this in the app, causing the app to recalculate the timeline. The courier also have the option to write a little feedback message after each time they go offline. There is also the option to give a thumbs up or down in three categories: how the functionality of the app was, how the cooperation with the restaurants was and how the support from Wolt was.

Rating system - Wolt don't use any rating system of its courier visible to the customers and users of the app. They do collect data on how the couriers are performing, but this data is currently in our findings not currently being used to rate the couriers on the platform.

Connectivity with other couriers - There is no functionality in the app for couriers to contact other couriers or access a forum with frequently asked questions from other couriers. The couriers have therefor organized their own communication channels, using platforms such as Facebook. An example of this is the Danish Wolt Workers Group ¹⁵.

5.3 Vaskehjelp.no



5.3.1 General company and employment information

Vaskehjelp.no is a Norwegian platform company providing a marketplace for customers to find cleaners. The company's headquarter is located in Trondheim where it also started its operations in March 2017. The platform has over 400 cleaners registered on its platform and over 100 000 app downloads as of January 2019 ¹⁶. The company is currently only operating in Norway, with most of the cleaners available in the biggest cities.

Business model

Vaskehjelp.no is a platform connecting customers with cleaners using apps available on the App Store and Google Play. The goal of the platform is to provide a legal service in the home cleaning industry, which have been characterized by illicit work paid under the table. Vaskehjelp.no is in this case, acting as a intermediary between the customers and cleaner, being responsible for handling all the technological aspects such as the app, payments, communication between the two parts and maintaining a trusted marketplace. It also ensures that all the cleaners are correctly registered with a valid HSE-card (HMS-kort in Norwegian) and organization number. Vaskehjelp uses a commission model where they take a fixed percentage of the hourly rate to cover for marketing insurance and development of the platform.

¹⁵<https://www.facebook.com/groups/woltworkersgroup/>

¹⁶<https://www.adressa.no/pluss/okonomi/2019/01/17/Suksess-for-vaskehjelp-p%C3%A5-app-18242751.ece>

Forms of employment

The cleaners using the Vaskehjelp platform must be self-employed with their own ENK. This is the only form of employment available for the cleaners to register as on the platform, as they must provide a valid organization number to be able to apply. They also need to get apply and obtain a valid HSE-Card, since this is a part of Norwegian law for cleaning personnel. This card must be worn at all times during work to show that a person is an authorized cleaner.

Pricing and salary

The cleaners on the platform can decide the hourly pay rate they charge the customers themselves. The app is showing them the hourly rate they will charge the customers, and what they will get after the commission by vaskehjelp and VAT is added. The hourly pay can however not be set below the minimum pay as stated in the collective agreement for the cleaning industry. Cleaning services is one of the industries where the general collective agreement is applied to persons working in this industry, even self-employed workers, by Norwegian law. This minimum pay is, as of June 2020, 187,66 NOK¹⁷. The income made by the cleaners is paid out twice a month, where the cleaner itself is responsible to pay income tax since they are registered with an ENK. The cleaners are covered by an insurance provided by Vaskehjelp, which the cleaners indirectly pay for thanks to the commission taken by the platform.

5.3.2 Technological affordances

Vaskehjelp uses the same app for its customers and cleaners, which is available on both the App Store and Google Play. The app is divided into 5 sections, jobs, inbox, profile, calendar and settings/information. After having used and examined the app as well as the company website did we find some notable and interesting technological affordances on the platform.

Setting a geographical location you can work, the days you are available to work

Normal workflow using the app - The cleaner marks in the app which geographical area they are able to work in, where they can decide the radius of the circle themselves. They then need to mark the days at which time they are able to work. When a customer request a job does the cleaner get a notification and then shown the details of the job including time, duration, total payment of the job, and details from the customer. The cleaner can then either accept or deny the job request. When a job request is accepted can the cleaner communicate with the customer through the built in chat functionality. The cleaner then mark the job as done in the app when they are finished cleaning.

¹⁷<https://www.arbeidstilsynet.no/arbeidsforhold/lonn/minstelonn/>

Rating system - The app is using a rating systems where the customer can give a thumbs up or down after a job is done. Furthermore can the customer leave a short written feedback which is shown on the profile page of the cleaner. The rating system of thumbs up is shown on the list of available cleaners shown to the customers when searching for a cleaner.

Profile - Each cleaner have a profile where they can upload a photo of themselves. This is encouraged to do by the platforms since a profile with a photo is shown to be chosen more often. The cleaners can also upload a short description of themselves, detailing who they are and their experience. In addition to this is the hourly pay rate shown. Besides these three affordances can't the cleaners edit or change the rest of the information on their profile. The rest of the profile contains the number of jobs completed and the number of likes received. The average response time and the cancellation percentage is also shown. The profile rounds of at the bottom with the feedback messages received from their customers.

Available information and support The app provides a calendar where the cleaners can see upcoming jobs and empty time slots. The cleaners also have the possibility to see all the completed jobs, how much they have earned on each job and the current amount scheduled to be paid out. Furthermore is a FAQ provided with some common questions from the cleaners. There are however not possible to contact any support directly in the app, since this must be done using email.

Communication with other workers It is not possible for any of the cleaners to communicate with any of the other cleaners on the Vaskehjelp platform using the app.

5.4 Findings

The case study of the three platforms has uncovered many interesting details and aspects of each platform. These aspects include the forms of employment, technological affordances, business model and more. To make the findings as clear as possible are the findings presented in table 5.2,

	Foodora	Wolt	Vaskehjelp
Employee	Partially	No	No
Collective agreement	Yes	No	Partially
Guaranteed working hours	Yes	Partially	No
Platform type	Hybrid platform company	Typical platform company	Typical platform company
Revenue model	Fee + percentage	Fee + percentage	Percentage
Algorithmic management	Yes	Yes	No
Differential pricing	Partially	Partially	No
Worker decide price	No	No	Yes
Ranking	No	No	Yes
Continuously tracked	Yes	Yes	No
Possibility of communication with other workers	No	No	No
Skill level	Low-skilled	Low-skilled	Low-skilled
Fixed workplace	No	No	No

Table 5.2: Framework for evaluating digital labour platforms

Chapter 6

Discussion

This chapter presents the discussion of the findings and methods used before addressing the research questions and detailing the limitations and weaknesses of the thesis. 5.

6.1 Discussion of findings

6.1.1 Technological affordances

Algorithmic management

The results of the study show that algorithmic management is a core functionality of both Foodora and Wolt, something that they share with most of the other gig-work platforms as described in the state of art chapter. The study shows how similar the two systems and algorithms used by Foodora and Wolt are. By the looks of the literature are other food delivery and transportation companies probably using very similar algorithms, which from a workers standpoint makes other aspects more important when looking for the best suitable platform.

It is also interesting to see how many of the technological affordances on the platform that is "helping" the platform to have control over the worker. The cornerstone of this control is the algorithmic management which decides who gets a task to do and what they should do. This control is very strict with little to no flexibility for the worker to change anything; this is something that the Foodora couriers also highlighted as one of the disadvantages of the platform. Location tracking and hiding of information as long as possible, such as the delivery location, is also limiting the control and flexibility the

worker have on the platform. Contradicting to all of this is that all of the platforms in this study are highlighting the fact that you will be your own boss. I would rather say that the report by Alsos et al. [17] "Når sjefen er en app" (translated to: "When the boss is an app"), is a much better term to describe who the boss on these platforms are.

Rating

The only platform in this study with a rating system viewable to the customers is Vaskehjelp.no. Their rating system using thumbs up instead of the more traditional star system which the literature refers to as a reputation system. State of the art describes how important it is to have a high average rating and how well aware the workers are of this [46]. Receiving a bad average rating, or in the case of Vaskehjelp few thumbs up, can be very bad for the number of jobs received which again affects the salary. The internal rating system that probably exists on Foodora and Wolt, based on the collected information, should not be forgotten either. These rating systems are more secret and unknown to the workers, which makes it even more difficult for the worker to increase the rating. These internal rating systems can also, just like the public rating system, have a detrimental effect on the earnings of a worker. An example of this is the proposed performance-based model for selecting shifts by Foodora.

Connectivity with other workers

None of the platforms in this case study has the functionality for communication between workers, either as a communication channel or a forum. The literature found in state of the art shows that this is common for digital labour platforms with many examples explaining how workers are using external communication platforms to connect with each other [47]. The case of Foodora shows how vital a communication platform with all the workers can be when trying to unionize. The Slack provided by Foodora containing all of the couriers on the platform was seen to be a pivotal element of organizing a successful strike followed by a collective agreement. By not having this communication feature available to its workers would I argue that the platforms indirectly limit the possibilities for the workers to unionize.

Other remarks

Although most of the companies categorize themselves as technology companies 2.1, do indications show that many of the companies still are far from a highly skilled and innovative technology company. With many of the apps very similar, with similar functionality is it no doubt that the companies copy certain functionality from each other. Another takeaway from the study is that they still cannot compete with other technology firms on certain functionality. An example is the sub-par or missing route planner in the built-in

map, which is the case of both Foodora and Wolt. The company collects a lot of data and have more than enough, and even better data than most other companies, on which routes that are the quickest considering that they are only operating within certain areas of some cities.

6.1.2 Employment

Employment, collective agreement and unionization

Collective agreements and trade unions are a crucial part of the Nordic labour market model and society as a whole in the Nordics. Since there is no statutory minimum pay in any of the Nordic countries is it the trade unions and the tripartite cooperation that ensures that workers in the Nordics are decently compensated for their work and that their rights are acceptable. It is, therefore, a bit worryingly if the business model and organizational model with no employees get a bigger market share in Norway. Even though the latest available numbers from the literature shows that the share of platform workers have of the working-age population only lies between 1-2%, is the number probably much higher today. The reason behind this is the increased popularity for these platforms as well as the increased number of platforms operating in Norway since the numbers were published. It is also more worryingly when I read articles such as the examples in section 5.1.3 where attempts at unionization and getting status as an employee have resulted in the company denying all responsibility and quickly withdrawing from the market. This is, in my opinion, something that is not so unlikely to happen to platforms in Norway, either by existing ones or new ones entering the market, or maybe both. The only certain thing the platform workers can be guaranteed today is that they probably must live with the uncertainty of having a job tomorrow for a long time.

6.2 Method

Using the methodology by Petersen et al. [3] is believed by the author of this thesis to be a good way of conducting systematic mapping of literature. And it seems to be a popular and well-used methodology by other researchers with well over 2000 citations (a combination of the old and the updated version). Combining this method with the snowballing method has been found to be a good and successful way of doing systematic literature studies in software engineering [35], which I can agree on. However, is this a very time-consuming method which requires a great capacity in filtering out papers and limiting the number of relevant papers. The process of doing this has been difficult, and there are possibly many relevant articles that have been incorrectly dismissed.

Regarding the method used for the case study by Oates [2] and [34], are the experiences with the method very good. It is understandable why these two research methods are pop-

ular and used by many researchers both in the field of computer science but also other fields of study. The four-step approach for conducting a case study by Oates was really helpful, and also made me as author reflect more than initially planned on the selection of cases. The help from the approach in selecting the data generation methods and the reflections made during the selection was to great help when actually doing the data collection. This was particularly true when the data collection at some points seemed to be stuck in a dead-lock when difficulties aroused. I am very pleased with the choice of selecting two well documented and proven methods when looking back at the project as a whole.

We can see that the companies sometimes grab what they think is useful for their business from the Nordic labour market model, but usually on worse terms than the solution employees have. An example would be the insurance that Wolt provides to its couriers, which was found to be dreadful and only applicable in a few cases. Wolt also completely misses the biggest problem workers encounters when they get injured, which is the lack of income. Employees in Norway, and the other Nordic countries, are entitled to sick-pay from day one when injured or sick. This security does not any of couriers on Wolt, freelancers on Foodora or cleaners on Vaskehjelp have, with they only getting paid from day 16.

6.3 Addressing the research questions

The introduction of this thesis listed the following research questions:

RQ 1: How do digital labour platforms fit into the Nordic model?

RQ 1.1: What studies has been done in the field of digital labour platforms?

RQ 1.2: Which technological affordances do digital labour platforms use, and how do they affect the workers?

RQ 1.3: What impacts do these platforms have on unionizing through traditional trade unions?

Below will I try to discuss and answer these questions based on the theory, results, literature and discussion in this thesis.

What studies has been done in the field of digital labour platforms?

The field of digital labour platforms has certainly grown over the last couple of years, with many new research articles appearing each month. In regards to the question is it many different kinds of studies that have been done, some are about the technological accordance on these platforms while others can be more interested in the employment and labour rights. There are also many different case studies in this field, looking at some of the digital labour platforms present at the market. The systematic review also uncovered

that there are economical, social and technological studies to be found in this field. As for this thesis were there six categories of relevant articles found, as shown in table 3.2, and state of the art for the relevant articles to this study is presented in chapter 4.

Which technological affordances and tools do digital labour platforms use, and how do they affect the workers?

As seen in relevant literature 4, the results 5 and the discussion 6.1.1 are there several technological affordances which recur and are almost always present at a digital labour platform. I have identified some of the most important ones, and combined do they affect the workers in a certain way. Using algorithms is the cornerstone of each digital labour platform, with algorithmic management being the most prominent affordance on two of the platforms in this study. Another key affordance is the rating of the workers, also known as a reputation system. This can both be a secret internal system or a publicly viewable rating. Gig-platforms such as the ones operating in the food delivery industry or the transportation industry is constantly tracked and measured when working, to make the platforms as efficient as possible. One of the findings from the cases study is that none of the platforms has an affordance that enables the workers to communicate with each other; this coincides with the literature which paints a similar picture. A combination of these affordances causes most the workers on the platforms, especially the gig-work platforms, not to be able to manage their own workday freely. This is contradicting to what the companies describe on their own websites. Instead, do the workers have a boss in the form of an app that tells you what to do at all times, with little to no possibility to control the tasks or time by the worker. For this reason, would I like to argue that the workers get affected and controlled so much by the platform that the worker, in reality, is an employee of the platform. It would, therefore, be interesting to see if the Norwegian Labour Inspection Authority steps in and investigates if any of the platforms violates Norwegian law as described in 2.3.1.

What impacts do these platforms have on unionizing through traditional trade unions?

It is particularly interesting that the industries with the lowest degree of unionization or where self-employment is common, as described by Hotvedt [56] and Alsos [17] in section 4.5 are the same industries where most digital labour platforms in Norway operate today 3.3.2. Employees are something that is absent on two of the platform in the case study, Wolt and Vaskehjelp.no, with only Foodora having about 50% of its couriers hired as employees. Findings from the case study also show that all of the apps are isolating the workers in several different ways. First and foremost do none of the workers on the studied platforms has any permanent workplace where they can meet other workers, as seen in table 5.2. Neither of the apps has any functionality for communication between the workers, which, as discussed in section 6.1.1 indirectly limits the worker's possibility's to unionize.

As seen in 2.3 is it only employees who have the right to unionize in Norway. Trade unions and collective agreements, as discussed in 6.1.2, is essential to the Nordic labour market model. But to make this model work must the trade unions be able to unionize

workers on digital labour platforms. This is, however, shown both in the results and the literature to be difficult since a typical platform worker is self-employed without any tools on the platform to contact and talk the other workers. The case of Foodora does, however, show that it is possible to unionize and negotiate a collective agreement with a digital labour platform company. There is however no doubt that the trade unions likely need to adapt their methods if they should be able to cope with the rapid development of these platforms, which often causes chaos when many, both serious and frivolous, companies enter a market.

How do digital labour platforms fit into the Nordic model?

The main research question of this thesis can be answered by looking at each of the three platforms in the case study. The typical labour platforms, which are the most common, don't fit into this model at all. Of the platforms in this study, is Wolt the platform that is clearly identified as this type of platform. Even though this platform is originating from Finland and developed in the Nordics does it not fit into the Nordic model. Although they proclaim so themselves "Wolt is a Nordic company with Norwegian values built upon a Nordic Model" (Own translation) [67]. The Vaskehjelp.no platform is identified as being in a gray area between being a hybrid and a typical platform. This does not make it in any way better in terms of fitting into the Nordic model. The platform in the case study closest to fit into the Nordic model is Foodora. This platform is clearly identified as a hybrid platform company, and could even be closer to a standard employment relationship company had it not been for the high percentage of freelancers on the platform. In many ways do Foodora fit into the Nordic model, and compared to other digital labour companies, is it clearly a step in the right direction. But to really be able to fit into the Nordic model must it increase the proportion of employees, as well as be more transparent and open about the internal rating system and the use of algorithmic management in my opinion.

6.4 Limitations

In addition to the already mentioned limitation of time and human resources are there several other limitations and weaknesses of this thesis which are listed below.

- **Data collected** - In the middle of the research project was Norway with almost the rest of the world forced to shut down due to Covid-19. This caused not only havoc for the entire world but also for how the data collection should happen. The solution was to move the interviews over to using video interviews instead. The crisis caused by Covid-19 did unfortunately for the research project, increase the work load for the companies in the case study, after they experienced a huge increase of customers. This has persisted indefinitely and have caused most of the desired interviewees to respond that they don't have time to participate in a short and quick interview. The ones who did however participate was extremely helpful to the study. The case that has been affected the most by this is Vaskehjelp.no.

- **Number of cases** - A multiple-case study does naturally contain more than one case, but the correct number of cases is always difficult to know beforehand. Considering the time constraint and human resources was it decided to only use three cases. In hindsight, could this maybe have been increased to provide av more robust result which would have increased the credibility of the answers to the research questions also.
- **No direct involvement with the cases** - Both due to the Covid-19 crisis and the research method chosen was there not at any point in the study any hands-on experience. This could have been in the form of signing up as a courier and started working on one of the platforms to get a better understanding and more precise data collection. This was although already limited from the start with the research method used.
- **Systematic literature review** - I see now in hindsight that the systematic literature review could have been done in a smarter way, which would probably have resulted in a better result.

Conclusion and Future Work

This chapter gives a conclusion of the thesis, and details the future work identified.

7.1 Conclusion

This thesis have presented the results of a systematic literature review and a multiple-case study. Following the research method of Oates [2] and [34] was a multiple-case study on the digital labour platforms Foodora, Wolt and Vaskehjelp.no made. The field of study include a lot of different articles covering many different approaches and themes. The most relevant takeaway from the relevant litterateur is the framework made by Jesnes [5] to compare and identify the type of digital labour platform.

Some key takeaway from the findings is how important trade unions and collective agreements are in the Nordic labour market model. In a contrast to this is another key takeaway on how the platforms is isolating the workers in several different ways, at the same time as they are operating in the industries with the lowest degree of unionization or where self-employment are common. This combined with the common employment form of self-employed partners have made the work for traditional trade unions very difficult. There were some prominent technological affordances identified from the literature and the case studies, where algorithmic management is arguably the most important for at least gig-work platforms.

The result of the case study show that only on of the platforms is identified as a hybrid platform, namely Foodora. This platform is also the only platform that to somewhat degree can be said to fit into the Nordic model, where the proportion of employees and lack of transparency about the technological affordances on the platform is limiting it from being

completely recognized as digital labour platform that fits into the Nordic model.

7.2 Future Work

Further research on other digital labour platforms in Norway or the Nordics could help in improving the framework by Jesnes and the semi framework presented in this thesis. Doing so would make the the frameworks better and more robust which can then be further used to evaluate digital labour platforms in a Nordic context. A comparative study between digital labour platforms in the Nordic and the rest of the world could also be an interesting basis for a research report. Identifying differences and similarities between the platforms and examine if the Nordic society and labour market model affects the platforms in any way. Inclusion of high-skilled platforms, which was omitted from this thesis, in future work could also provide new insights into the field of study.

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