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The Digital Transformation and its impact on labour: how Industry 4.0 and digital labour platforms revolutionize healthcare

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*To my Beloved Parents, who have devoted their
lives to my emotional and professional growth*

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INTRODUCTION

Digitalization, Industry 4.0, Gig Economy and *Uberization* are frequently used buzzwords in the current Digital Era. They all refer to the Digital Transformation, which is affecting the way of producing goods, offering services, creating value and working. The traditional boundaries of organisations are blurring, new technologies create innovative solutions and platforms offer a novel way of finding and asking for work. The thesis aims at underlying the different connotations, advantages, risks and consequences of this widespread phenomenon of change in both organizational and juridical terms.

The first part focuses on the constituting elements of the Digital Transformation, i.e. Industry 4.0 and the Gig Economy. After a short overview of the historical industrial revolutions, it concentrates on the latest and most disruptive one. The Fourth Industrial Revolution or Industry 4.0 includes different technologies and innovations, which encourage organisations to change their business models. Big Data, IoT and Analytics are only some of the novel elements that allow for predictive analyses and better decision making. Augmented and Virtual Reality, 3D printing, the diffusion of e-commerce and the support given by digital marketing help industries to offer customized solution and a better customer experience. Robotics are changing the way in which humans approach working environments and are requesting new skills and training opportunities. Indeed, one of the current issues regards the development and updating of different skills, including technical, cognitive and sociobehavioural ones. In order to be able to capture the advantages of the digital transformation, investments in human capital, especially lifelong learning, are needed. We will see the Human Capital Index to measure this aspect. This chapter provides an analysis of the numerous advantages of 4.0 technologies, starting from the integration of value chains, both vertically and horizontally, leading to the concept of Open Innovation developed by Chesbrough. On the other hand, it focuses on the potential risks that can emerge from the adoption of 4.0 principles and of the potential ways to prevent them.

The second part of the chapter regards the macro area of the Gig Economy (Platform or On-Demand Economy) and it offers a definition of this heterogeneous phenomenon with its main characteristics. It focuses on the two categories of this

new working arrangement (crowdwork and work on-demand via apps), their related subcategories and the possible types of platforms involved, as specified by Kaganer. Both of these two categories involve three parties (the requester, the worker and the platform), but the industrial relations and the way in which work is delivered change. This issue gives rise to a huge debate related to the status of employment of these workers, who are often regarded as independent contractors, even if many gig relations have the features of traditional employment. This fact gives rise to the so-called Platform Paradox, as defined by Prassl. The chapter offers a deep analysis of the several advantages of gig economy's adoption in many industries, as well as the multitude of risks to which these workers are exposed. We will review both qualitative and numerical data about this complex phenomenon and the useful introduction of the Online Labour Index (OLI) to monitor its development.

The last part of the first chapter focuses on the Italian gig economy arena. In particular, we will see the factors behind its adoption and the categories involved. In Italy, the term gig economy often comprehends the similar concept of sharing economy, referring for example to the services offered by Airbnb or BlaBlaCar. However, the present elaboration will focus only on the pure meaning of the gig economy and the related working relations behind this concept.

The second part shifts the attention to the juridical point of view, focusing on the issues related to the labour law classification of these workers between self-employment and traditional employment relations. It provides a critical analysis of the classification of these workers as independent contractors and the consequent lack of labour rights that are traditionally associated only to employees.

The discussion starts from the supranational level with the Fundamental Principles and Rights at Work promoted by the International Labour Organization (ILO) and it underlines the fact that gig workers are not even ensured these universal and human rights. It provides several principles to build a fairer economy and it analyses some potential forms of platform workers' collective representations.

The analysis of this chapter continues with the European Union perspective, indicating the recent solutions for the protection of these workers at communitarian level. Then, it focuses on two virtuous examples of the European countries Denmark and Belgium, which have had different outcomes.

The chapter ends with the Italian situation, including national considerations and recent solutions for the workers' labour protection at urban (Bologna and Turin) and regional level (Lazio) for particular categories of workers.

The paths for policymakers are various. In particular, this chapter presents a debate regarding the necessity to introduce an intermediate category or to rely on the existing categories of subordination and autonomy.

The last part introduces the concrete case of the digital transformation in a less common sector of analysis, healthcare. After a general overview of this industry and the challenges that it is facing, the chapter underlines the potential forces of 4.0 technologies and the on-demand economy as a way to solve the existing problems in healthcare. Health 4.0 or e-health has vast adoption possibilities, but also risks that have to be balanced. It emerges that in healthcare the use of 4.0 innovations is extremely functional for the development of the gig economy in this sector, which is growing steadily. The chapter presents the different health segments that are covered by the on-demand economy arrangement and it introduces the possibility to create combinations with other gig economy sectors, such as food delivery or transportation. The advantages of the platform economy in healthcare are enormous, both for the recruitment of the right talents and the match between patients and medical professionals. However, it is necessary to be aware of the obstacles in its adoption, including those related to the previously mentioned juridical classification of workers and the necessary rights and protection.

The analysis of this chapter is enriched with a sociological and cultural perspective, focusing on the human factors behind the adoption of digitalization in a sector where the human part coexists in a ubiquitous way with the technological one.

CHAPTER I - THE DIGITAL TRANSFORMATION AND ITS IMPACT ON WORK

The *Digital Transformation* is a widespread phenomenon of change due to the adoption of new digital technologies in many aspects of society. It is often referred to as *Digital Disruption* because it has the power to “destroy” old business models and replace them with higher value added ones.

The Digital Transformation has significant impacts on two complementary perspectives, bringing innovative aspects in both of them. One is the way of doing business and organizing production processes, known as *Industry 4.0* or the *Fourth Industrial Revolution*. The second regards the way of providing work thanks to the diffusion of *digital platforms* and the *Gig Economy* in general.

Industry 4.0 and the Gig Economy are both results of the Digital Transformation, but they refer to different sectors. Indeed, Industry 4.0 is typical of manufacturing, whereas the gig economy covers different tertiary services. What they have in common is the fact that they both drastically influence the way of working. Moreover, they are starting to be applied to the same sectors. One example is healthcare, in which the innovations of the Fourth Industrial Revolution are complemented by the emerging presence of digital labour platforms for medical professionals. Chapter three will cover this innovative solution.

It is crucial to have a complete understanding of these disruptive forces in order to appreciate the attractive opportunities they can unlock, but also to be aware of the risks and challenges they are introducing. These aspects will be covered in the next paragraphs after a short overview of the industrial progress in the last centuries.

1.1 From the First to the Fourth Industrial Revolution

As we know, through the history, three main industrial revolutions have shaped the world economy leading progressively to further improvements in the working and living conditions and to a higher level of integration at work. What is less familiar is the current industrial revolution we are witnessing nowadays.

The first wave of change came with the *First Industrial Revolution* at the end of the 18th century. Great Britain was the starting point of this revolutionary change, which transformed an agricultural society in a more industrial one.

Previously, manufacturing was mainly done in people's houses or weavers' cottages by hand or with basic tools¹. With the advent of industrialization, the textile and iron industries developed, water power was exploited and the steam engine was introduced, powering machinery and steamships during the Revolution. Specific machinery and the first factories changed the way of working and led to over-increasing productivity and a lower need of human energy. However, work was still highly labour-intensive and it required humans to develop any type of task.

This era underlined the first long-term demographic growth and contributed to the consolidation of some European countries in the international market.

However, a limiting aspect of this phase was the fragmentation between different stages in the production processes². To overcome this limitation, the following period brought more integration thanks to the adoption of the division of labour (Taylorism) and Henry Ford's assembly line. The *Second Industrial Revolution* started in the late 19th century, a period of rapid change and huge technological transformation. It was driven by many important innovations, such as electricity, oil and chemical products (which improved the production processes and allowed for mass consumption) and the telegraph, which made communication easier. The notion of work changed drastically because people had to get used to strict procedures and clock-regulated shifts.

The most innovative revolution was the *Third Industrial Revolution* during the second half of the 20th century. It brought novelties in the fields of communications, transportations and physical materials. Production was automated through electronic and IT systems and the first PLC (programmable logic controller) was introduced. The technologies of this period created a reduction of physical distances known as the "shrinking of space"³, allowing the fall of barriers in the movement of people, goods, capital and knowledge. It changed the way of interacting and doing business, allowing machines to support decision-making.

At the end of the 20th century, there was an increase in world trade in terms of both volume and intensity accompanied by a new era of globalization.

¹ The Economist, *The third industrial revolution - The digitisation of manufacturing will transform the way goods are made and change the politics of jobs too*, 21/04/2012

² Amatori F., Colli A., *Business history: complexities and comparisons*, Routledge, 2011, pg. 45

³ See note 2, pg. 141

All these evolving aspects and a gradually higher degree of complexity lead to the situation we are currently living in. Robotics, artificial intelligence, 3D printing, web-based services and many other smart solutions characterize this period.

What emerges clearly is the progressive passage from the Fordist model of the Second Industrial Revolution, characterized by standard and repetitive tasks performed by low skilled people, towards the model of Industry 4.0 with high skills and flexible working conditions. The scenario of the last and current *Fourth Industrial Revolution* is much more complex than the previous ones due to its disruptive force, as it will be analysed in the next paragraph.

1.2 Industry 4.0 disruption: how digital technologies create value

The Fourth Industrial Revolution or Industry 4.0 is the current digital revolution whose driving forces are automated and interconnected technologies that create cyberphysical systems.

The term “Industrie 4.0” was used for the first time in 2011 during the Hannover Messe fair in Germany⁴. It is also known as the Industrial Internet of Things or Advanced/Smart Manufacturing⁵, which is its typical sector of application.

The society is experiencing an era of growing collaboration between humans and machines in the creation of new products, services and methods of production. PwC consultants conducted a survey⁶ to estimate the potential diffusion of Industry 4.0. It emerged that by 2020, European industrial companies will invest 140 billion dollars per year in Industry 4.0 solutions and more than 80% of them will digitalize their value chains by 2020.

1.2.1 The technologies of the Fourth Industrial Revolution

Although the Fourth Industrial Revolution is mainly associated with the collection and analysis of Data, its driving forces are multiple. Indeed, according to McKinsey⁷, four disruptive technologies are transforming companies' value chains, especially in

⁴ *Industry 4.0 - Summary report*, DLG-Expert report, May 2015

⁵ www.hannovermesse.de, *Industry 4.0 for beginners*, 12/02/2016

⁶ PwC, *Industry 4.0 - Opportunities and Challenges of the Industrial Internet*, December 2014

⁷ McKinsey&Company, *Industry 4.0. How to navigate digitization of the manufacturing sector*, 2015

the manufacturing sector.

- The first macro area consists of the above-mentioned Data, Computational Power and Connectivity: *Big Data*, the *Internet of Things (IoT)* and *Cloud Technology* are disrupting the industry. This is possible thanks to the cost reduction of sensors and actuators inserted, for example, in physical objects. They are interconnected and they produce a huge amount of data (Big Data) that can be analysed. The analysis aims at giving information on how to make products more efficiently and to build new business models and services⁸. Data allows for predictive analysis and forecasting and to support decision making. In this area, cloud technology is crucial to manage data on external servers and to share them between all the authorized parties.
- The second set regards Analytics and Intelligence, which have significantly increased due to knowledge improvements in the field of artificial intelligence (AI) and machine learning. Analytics regard the analysis conducted after the collection of data.
- Thirdly, human-machine interactions: the ways in which men can interrelate with machines. They allow the creation of an extraordinary customer experience through Virtual and Augmented Reality, which can be applied to a variety of sectors. Human-machine interactions also comprehend touch interfaces and gesture recognition, commonly used by consumers.
- The last cluster is related to digital-to-physical conversion. After the collection and the processing of data, it is necessary to have effective instruments to produce the goods. An example is the use of advanced robotics or additive manufacturing (3D printing) used for a wide range of materials.

The key of these aspects is their interconnection in order to have a networked system. The digital transformation reflects the sense of the acronym “ATAWAD” (the 3As: anytime, anywhere and from any device)⁹, meaning that people and things are constantly connected. This can influence many sectors and manufacturing is just one evident area of application. We can recognize Industry 4.0 also in education,

⁸ <https://www.plattform-i40.de>

⁹ <https://wisembly.com/en/blog/2015/10/15/anytime-anywhere-any-device-the-atawad-concept>

logistics, healthcare (with the introduction of smart devices), agriculture (with drones and wide collections of data to develop the so-called smart agriculture), the hotel sector (with online platforms and social media creating a simpler and more pleasant experience for customers), or even smart cities.

Industry 4.0 is drastically changing the way people live and the society as a whole. If correctly applied, it can produce significant benefits and improvements in the efficiency for companies and the quality of life for people and the society.

Nowadays, it is frequent to see new technological instruments among people, both at work and at home. For example, *wearable devices* are becoming a common way to perform many actions like receiving calls and messages or monitoring one's health. CCS Insights estimates that the sales of those smart devices will double by 2022, especially in the category of smartwatches¹⁰. Their application is revolutionizing not only businesses, but also community useful sectors such as healthcare.

The *Smart Home* is another disruptive example, where electronical devices in a house are interconnected and managed at distance by the owner's phone.

The Fourth Industrial Revolution can also be seen in wider applications. A crucial example is the concept of *Smart City*, whose aim is to increase the city's operational efficiency, improve services and the public welfare through the use of information and communication technologies.

1.2.2 Industry 4.0's benefits and risks: how to mitigate them

As concerns companies, one clear advantage of Industry 4.0 and its related technologies is the fact that goods can be produced "on demand" and, thus, preventing an excess of inventories¹¹. Moreover, Industry 4.0 allows for a rapid scaling up¹² and eliminates the traditional boundaries of the firm. Indeed, digitization allows for a higher and more optimized integration of value chains, both vertically and horizontally¹³. Vertical integration means that all the functions on the value chain are connected. Digitization ensures an efficient flow of information and data among different departments, such as product development, sales or logistics.

¹⁰ <https://www.ccsinsight.com/research-areas/wearables/>

¹¹ See note 4, pg. 6

¹² World Development Report, *The changing nature of work*, 2019, pg. 3

¹³ PwC, *Industry 4.0 - Opportunities and Challenges of the Industrial Internet*, pg. 16

Whereas, horizontal integration refers to the networking with different actors, from the suppliers to the customers, who can be active players in the production process. External value chains of partners are included to guarantee a constant supervision to fulfil all customers' requirements.

Except from suppliers and clients, other useful partners are universities and research institutes that can collaborate with firms to develop innovative solutions and start a process of Open Innovation. This term was invented by Chesbrough¹⁴ and substituted the prior paradigm of close innovation. Open Innovation underlines the logic that the knowledge acquired from outside can be as useful as the one developed within the firm's boundaries. For this reason, the so-called Contamination Labs are spreading in many Italian universities as a form of collaboration between firms and students/professors of different courses in the creation of innovative ideas and value. The concept of Smart Factory underlines this aspect, since it refers to the opportunity to obtain higher value from the inside of the firm and from its supply network¹⁵.

Thus, Industry 4.0 is a revolution due to its availability of data that connects all the products and the value chains partners. In practical terms, it allows a more flexible production and adaptation to new demands: the network among different parties creates a better coordination and a more lean production. The final products or services are customer-oriented especially when the customer takes part in the design of the idea and obtains a tailor-made solution.

The customer experience is improved in many ways, from the above-mentioned customization of products, to the collection of data through digital marketing and a consequent better knowledge of the needs of the clients. The power offered by virtual reality offers extraordinary experiences in physical shops or through connected applications. In addition to all these technological instruments, the support given by the diffusion of e-commerce allows clients to buy online from any location and thus obtain an omnichannel and complete customer experience. Additive manufacturing facilitates customization because 3D printers can realize

¹⁴ Chesbrough H., *Open Innovation: the new imperative for creating and profiting from technology*, Harvard Business School Publishing Corporation, 2003, pg. 52

¹⁵ Deloitte, *The smart factory: responsive, adaptive, connected manufacturing*, 31/08/2017

any prototype in the shortest time possible. This allows the maximization of customers' benefits, which in turn generates additional value.

All these processes require not only a change of the product/service, but also a transformation of the existing business models into new, digital and disruptive ones that take into consideration the analysis of data and value chain integrations.

Although the positive aspects, the introduction of Industry 4.0 may also lead to a series of risks that have to be taken into consideration.

First, the increasing use of automation could lead to a decrease in employability. In the recent World Economic Forum report, nearly 50% of companies estimated that robotics could replace a part of their full-time workers by 2022¹⁶. By the end of 2019, 2.6 million of industrial robots will be in operation worldwide. The number of robots per worker is the highest in advanced countries like Germany, Korea and Singapore¹⁷. However, the presence of workers is still high, showing that this concern is overestimated. It is true that technology is replacing workers in some jobs and sectors, but its innovative force is also creating the demand for labour and generating opportunities for new types of jobs. Indeed, Industry 4.0 may be seen from two perspectives. One is automation, which substitutes human work and makes some jobs obsolete. The second is innovation, which requires new skills and new capable workers to be employed in new tasks or new labor markets. The latter, in particular, may also relate to the spread of the gig economy, the central focus of this thesis.

Another risk of Industry 4.0 is related to cybersecurity, which comprehends the technologies used for the protection of an information system, preventing external attacks to its data. The security in information technology is a prerequisite to have solid bases to implement Industry 4.0 in any organisation. It is clear that the new technologies, in particular IoT, create a battlefield for any type of attack aiming at the steal of companies' information and know-how¹⁸. In order to prevent problems related to cybersecurity, it is necessary to raise awareness about the issue among all the levels in a company. Moreover, it requires new experts educated on how to prevent those unfavourable events.

¹⁶ World Economic Forum, *The Future of Jobs Report*, Centre for the New Economy and Society, 2018, pg. viii

¹⁷ See note 12, pg. 20

¹⁸ *Cybersecurity in Industry 4.0*, AgendaDigitale.eu, 31/01/2018

Although there are some challenges, Industry 4.0 is a huge opportunity for any type of organization. It is crucial to follow the digitalization path in order to stay competitive or there may be the risk to be driven out of the market. Firms and societies need to be active and flexible players in the adoption of the digital technologies that are best suitable for their activities.

1.2.3 The importance of new skills to be competitive

In the era of the digital transformation and the changing nature of work, it is necessary to adapt one's competences and skills to remain powerful resources in the labour market. The digital transformation is disrupting the skillset of individuals, but it is difficult to predict to which amount, depending on the type of industry.

A recent Italian article by Il Sole 24 Ore¹⁹, in collaboration with EY, states that six of ten jobs will change in the next five years due to technological changes. Although many people fear that technology will substitute human labour, there is no concrete proof of this fact except for 5-10% of jobs. However, what will surely change is the request for specific skills and abilities.

EY predicts a polarization of workers between those who will have the necessary skills to thrive and be rewarded in an increasingly digital and global world; and those who will have to compete for low specialization jobs, less requested with the passing of time. Human competences need to be updated periodically. For this reason, the recent World Development Report by the World Bank²⁰ underlines the necessity to strengthen the lifelong learning of individuals. In the gig economy, one single worker can perform different gigs over time. This requires him/her to be a lifelong learner.

It is crucial to prioritize the development of skills that cannot be replaced by robots.

In particular, three types of skills are necessary to thrive in the new labour pool:

- Advanced cognitive skills, such as problem solving and critical thinking.
- Sociobehavioural skills, e.g. communication, creativity, empathy and the ability to work in a team.

¹⁹ Barbieri F., Prioschi M., *Nei prossimi 5 anni cambieranno 6 lavori su 10. Ecco come*, Il Sole 24 Ore, 05/03/2019

²⁰ World Bank Group, *The changing nature of work*, 2019

- A combination of different skills, which would allow workers to learn, adapt quickly to changes and move from one job to another.

These are the ingredients to survive in an increasingly digital and international labour market, characterized by a multigenerational working force and many skill gaps. The digital transformation in labour needs to be accompanied by investments in human capital from its foundations in early childhood. To underline this issue, the World Bank has introduced a new *Human Capital Index*, an indicator that links investments in human capital (especially in education and health) with the productivity of the next generation of workers²¹. It indicates the total amount of human capital that a child could acquire by secondary school if he/she receives full education and health opportunities.

Training is crucial to renovate one's skills. If people can work online, they could also learn in the same way. In this sense, technology gives a huge support with the diffusion of learning platforms called MOOCs (massive open online courses) allowing individuals and organisations to receive personalized and flexible education at any time and place. In the Digital Era, the wider the skillset is the more opportunities a person can capture, in particular in the varied gig economy, which is the topic of the next paragraph.

1.3 Work in the Digital Age: the gig economy and platform workers

Industry 4.0 is just one of the consequences of the digital transformation. Indeed, the most relevant issue is the digitalization's direct impact on the labour market. The latter is drastically changing due to several factors, among which digitalization (included Industry 4.0) has a strong predominance. The other elements are the demographic development, globalization, the competitiveness of the national economy²² and even climate change²³, which are affecting national labour markets.

²¹ See note 20, pg. 4

²² Walwei U., *Digitalization and structural labour market. The case of Germany*, ILO Research Paper n. 17, 2016, pg. 2

²³ European Economic and Social Committee, *Impact of digitalisation and the on-demand economy on labour markets and the consequences for employment and industrial relations*, 2017, pg. 58

Although digitalization is the core point of this thesis, all the other factors deserve a brief consideration.

- The competitiveness of the national economy is crucial to secure an attractive labour market. It incorporates an institutional setting that guarantees property rights and an efficient education, training and social security (Walwei, 2016).
- Demographic developments impact on the composition of the workforce.
- Globalization has significant effects on labour and labour law issues. In particular, it strengthens companies to the extent to which they could move their business activities to the most convenient countries. This is possible because each branch has to follow its specific national regulations. The so-called “social dumping” and “law shopping”²⁴ allow enterprises to choose the most favourable conditions among different law systems in the global arena to decrease labour costs. This process gives rise to a higher level of inequality.
- Climate change is linked to labour since many jobs rely on the services provided by ecosystems (e.g. agriculture and tourism) and it may lead to a reduction in labour productivity²⁵.
- Finally, the main issue is digitalization. It has strong influences on productivity and economic growth. We are the witnesses of how technological change is affecting labour with the emergence of new job categories and novel ways of providing work. The digital transformation is accompanied by the consolidation of the gig economy and the related spread of digital labour platforms in different sectors. As said by Seghezzi, the General Director of Adapt Foundation, Industry 4.0 and the gig economy are “two sides of the same coin” because they change labour and could be complementary²⁶.

²⁴ Brino V., Perulli A., *Handbook of International Labour Law*, Giappichelli Editore, 2018, pg. 2

²⁵ *The employment impact of climate change adaptation*, Input Document for the G20 Climate Sustainability Working Group International Labour Office - Geneva, ILO, August 2018

²⁶ Dagnino E., Nespoli F., Seghezzi F., *La nuova grande trasformazione del lavoro*, Adapt University Press, pg. 165

1.3.1 Definition and categories: crowdwork and work on-demand via apps

The Gig Economy, called also On-Demand Economy or Platform Economy, does not have a universally shared definition. Prassl²⁷, a law professor at the Oxford University focusing on regulating the gig economy, states that it should not be considered as a single and unified phenomenon. This topic has opened many debates and researches in the US and Europe and has brought to different outcomes. It can be broadly defined as a market system in which independent workers are engaged in short-term jobs, the so-called “gigs”. The match between the demand and the offer of labour between individuals or companies takes place on digital platforms or apps. Thus, there are three parties involved in the entire process: the platform, the worker (the provider) and the requester of the task (a client or a crowdsourcer).

The key elements behind the concept of the “gig economy” are the short term of the working relationship, the flexibility and the payment by task in the majority of cases²⁸. Thus, a gig or platform worker is not a traditional employee, who is hired by an employer with a relatively long-term contract, but they belong to non-standard forms of employment. They are on-demand workers whose job is led by data and algorithms. For this reason, the gig economy has caused important debates about the nature of the job, the relationship among the actors involved and the working conditions of workers. All these aspects will be analysed in more detail in the second chapter. Gig work can refer to any industry. The most known example is *Uber* in the taxi-driving sector, where an application connects drivers with passengers. Another symbol of the gig economy is provided by the food delivery industry, where *Deliveroo* and *Foodora* are well-known companies.

It is possible to identify two categories in the macro area of the Gig or Platform Work: “crowdwork” and “work on-demand via apps”²⁹. They differ in particular for the way in which workers provide the job (physically or virtually) and for the

²⁷ Prassl J., Risak M., *Uber, Taskrabbit, & Co: Platforms as Employers? Rethinking the Legal Analysis of Crowdwork*, Comparative Labor Law & Policy Journal, 2016

²⁸ Lapanjuuri K., Wishart R., Cornick P., *The characteristics of those in the gig economy*, Department for Business, Energy & Industrial Strategy, February 2018

²⁹ De Stefano V., *La gig-economy e il lavoro*, International Labour Organization, 2016

working location (locally or at a global level). However, they are joined by the fact that they are both supported by digital technologies to match demand and supply of work and they are supposed to give a wide flexibility in the working conditions.

Crowdwork

The first category, crowdwork, may be defined as the outsourcing of certain tasks to a geographically dispersed crowd through online platforms³⁰. In other words, work is both managed and performed online and then delivered to any part of the world. It is linked to the word “crowdsourcing”, introduced for the first time in 2006 by Jeff Howe in an article on Wired³¹. Crowdsourcing is the practice of outsourcing certain tasks or activities to a large number of people connected via the Internet.

The author makes the example of Amazon Mechanical Turk (AMT), a web-based marketplace in which people can perform simple and short time tasks to earn some money. Another famous platform was CrowdFlower, which changed its name to Figure Eight in 2018. There are many other examples, such as Freelancer.com from Australia, Upwork and Top Coder from the US, Twago from Germany and so on.

What associates all these names is the presence of three actors involved in this new form of labour: the online platform, its clients (crowd sourcers or requesters) and its registered members (crowd workers). The platform has the role of intermediation between the other two parts: the clients outsource certain tasks to the members, as long as they have a computer and the access to the Internet.

Although they belong to the same category, they function in different ways. For example, Figure Eight helps its client companies to have different tasks completed among the platform’s workers (contributors who want to earn through the platform). The platform distributes different sections of the client’s request to different workers that have to do simple tasks (such as recognizing some elements in a picture or transcribe some data) and then compares multiple contributions to verify if they were done correctly³². The aim is to train machine-learning algorithms, by unifying the technology of Artificial Intelligence with human help.

³⁰ Berg J., Furrer M., Harmon E., Rani U., Silberman M. S., *Digital labour platforms and the future of work: towards decent work in the online world*, ILO Office - Geneva, 2018, pg. 3

³¹ Howe J., “*The rise of crowdsourcing*”, Wired Magazine, June 2006, available at <https://www.wired.com/2006/06/crowds/>

³² See note 30, pg. 8

Among the most relevant crowd sourcers, we could find Google, Intel, Facebook, but also small or big companies that want to reduce some costs.

A different approach is offered by Freelancer. This platform allows companies or individuals, who need the help of some professionals to complete a task, to post a project (e.g. for the development of a website) and different freelancers can send their bid. Then, only one worker is assigned to that job and has to deliver the project until the deadline.

In this second case, the crowd workers can browse through different tasks or projects and select the ones that are best suitable for them if they want to obtain the monetary reward. On the other hand, they need to be selected by the crowd sourcers, who can ask for specific qualifications or reject the final “product” if they are not satisfied; or they may be chosen through algorithms. In this part, reviews have a crucial role.

Those examples show that there are different types of crowdwork: it may imply simple and repetitive tasks or complex projects. Indeed, crowdwork can be divided into two major typologies³³.

- One is microwork, in which individuals are asked to perform micro tasks that require very little time, such as text transcriptions and data entry. The selected person does not need specialized skills and, consequently, the remuneration is low. Amazon’s AMT is a clear example.
- The second is online freelancing and it refers to a higher complexity. Clients are asked to complete professional projects that require specific skills and longer durations, for example graphic design or web development. In this case, the compensation is higher. Upwork and Freelancer are common freelancing marketplaces for this type of work.

However, we can find both types on the same platform. Medium complexity tasks can be included in both the categories, depending on the necessary time of completion and the compensation.

From the point of view of the people to whom the tasks are assigned by the platform, we can have two distinctions³⁴.

³³ World Bank Group, *The global opportunity in online outsourcing*, June 2015, pg. 7

³⁴ See note 30, pg. 4

- Tasks assigned to selected individuals (in the case of freelance marketplaces, such as Freelancer).
- Tasks assigned to a crowd of people: micro tasking crowdwork (AMT) or content-based creative (99designs). In this case, it may happen that more people perform a task or develop a project but, at the end, only one person obtains the financial reward.

As we have just seen, the category of crowdsourcing offers a wide range of typologies. According to Kaganer³⁵, the presence of a human cloud workforce gives rise to four different types of crowdsourcing platforms.

The first is the facilitator platform: the match between the client and the worker takes place directly through a bidding process, as in the case of Freelancer. They both can see each other's reviews and communicate in a direct way from the beginning to the delivery of the project/task.

The second is the arbitrator platform and it involves a competition between different suppliers to provide the best solution (for example a competition for a graphic design on 99designs). Only the winning idea gets the monetary return.

The aggregator platform is the third model: this is the case of Figure Eight or Amazon Mechanical Turk, in which many workers perform a huge multitude of repetitive and uncoordinated micro tasks (such as transcription, image recognition or Internet search).

Lastly, the governor platform is typical of complex projects, which require reliable, qualified and coordinated workers (e.g. TopCoder). For example, a software development project gets broken into several steps and the platform gives each of them to platform users that have obtained supplier certifications in order to obtain a high quality output.

Although the multitude of difference existing between the different crowdwork platforms, they are all having a great success. Globally, the number of online platforms for crowdwork is about 2300. This phenomenon is growing significantly: the World Bank forecasts³⁶ that by 2020 it will generate revenues from 15 to 25 billion dollars.

³⁵ Oshri I, Kotlarsky K., Willcocks L., *The Handbook of Global Outsourcing and Offshoring*, 3rd edition, Palgrave Macmillan, 2015, pg. 58

³⁶ World Bank Group, *The global opportunity in online outsourcing*, pg. 24

Work on-demand via apps

The second category, work on-demand via apps, is about the work provided by individuals in a specific area through location-based applications (apps). This means that work is managed online but performed offline: it is a sort of digital version of the traditional job-on-call.

On the contrary of crowdwork, workers do not have limitless opportunities since they may participate only to geographically accessible labour markets, defined through geolocation.

An emblematic example is Uber³⁷, a digital platform that connects drivers with users through a mobile application. The user can send a request for a ride and Uber forwards it to the drivers located nearby. When a driver accepts the request, the application gives further details about the name of the selected driver, the arriving time and information about the car. The prices are decided by means of a software and the payment is directly managed on the app, allowing Uber to receive a percentage of the total amount. The crucial part is the reciprocal evaluation of both the driver and the user in order to have useful feedbacks for future rides. It is a way of safeguarding the interests of all the parts involved.

As for the case of crowdwork, it is possible to give the “job” to selected individuals or to an indistinct crowd. However, the first option is more developed and it covers many industries from transportation (Uber) to delivery (Deliveroo) and household services (Taskrabit). In the second option, we can find local microtasking, such as Streetspotr, whose functioning is similar to crowdwork except for the fact that the task can be completed by a multitude of people that live in a physical location. Streetspotr³⁸ with its 500000 users is the largest mobile workforce in Europe. It helps its clients to complete their projects by sending smartphone notifications to its gig workers informing them about Spots, i.e. potential tasks near them (for example taking photos or answering some basic questions about products in a supermarket). Workers have only 12 hours to complete the tasks they accepted and are paid within 30 days by the platform, but only after the platform’s quality control of their jobs.

³⁷ <https://www.uber.com>

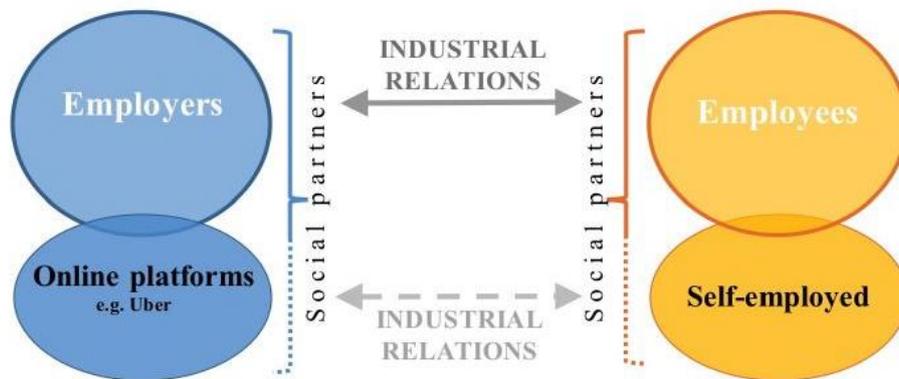
³⁸ <https://app.streetspotr.com>

1.3.2 Industrial relations in the gig economy and the Platform Paradox

The gig economy provides a system of industrial relations that can be similar or different to the traditional model, according to which category it refers. Indeed, we can underline two main schemes.

Figure 1 provides a first comparison of the relationship between the parties involved in the on-demand economy (in the lower part of the figure) and the traditional employer-employee relationship (in the upper part).

Figure 1: *Industrial relations in the on-demand economy (work on-demand via app)*



Source: *European Economic and Social Committee*³⁹, pg. 44

This representation can be referred to the first typology of work in the gig economy: work on-demand via app. Indeed, the role of the platform can be assimilated to the role of a digital “employer”.

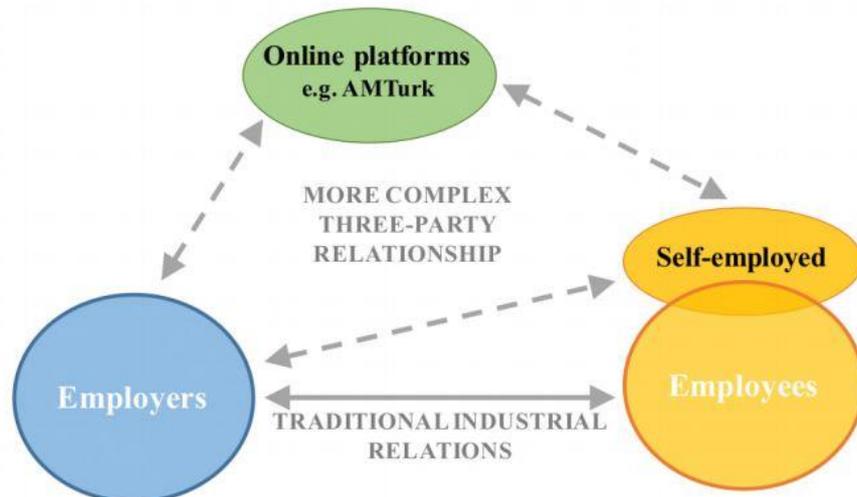
This is the case of Uber because many drivers “work for” Uber in providing services to its clients (people who need a ride). The self-employed workers, on the contrary, may be associated to traditional employees rather than independent contractors. The contact among the employees and the clients is direct since they actually meet. The potential consideration of the driver as a real “employee” is an important aspect, shared also by the previously mentioned professor Prassl⁴⁰ and it will allow to better understand the labour law issues related to the qualification of these workers, which will be seen in the second chapter.

³⁹ European Economic and Social Committee, *Impact of digitalisation and the on-demand economy on labour markets and the consequences for employment and industrial relations*, 2017.

⁴⁰ Prassl J., Risak M., *Uber, Taskrabbit, & Co: Platforms as Employers? Rethinking the Legal Analysis of Crowdwork*, pg. 29.

The second option refers to the category of crowdwork. In this case, the relationship is much more complex due to the direct contact between all the three actors involved. Figure 2 shows a simple representation of the functioning of this relationship.

Figure 2: *Industrial relations in the on-demand economy (crowdwork)*



Source: *European Economic and Social Committee*, pg. 48

As we can see, in this case the new model differs from the traditional view (in the lower part of the figure). This happens in the majority of crowdsourcing platforms. With the introduction of the platform as a real intermediary, the system gets more complex and is entirely mediated by the platform itself. The relationship does not suppose a physical meeting between the parts. In this case, the platform cannot be seen as an “employer” because there is a fragmentation of this function among different crowdsourcers. This is the case of AMT or Taskrabbit, a platform dedicated to any type of task at home (from house cleaning to furniture assemble) helping crowdsourcers to find the best or cheapest worker among a multitude of “taskers” by means of algorithms.

This ambiguity in the role of the platforms and its possible similarities with the function of the employer create different debates. Prassl, in his new book “Humans As A Service”, introduces the concept of the Platform Paradox. It means that gig economy platforms present themselves as marketplaces that help the matching between different parts, but they are just concealing their real identity. In fact, they

actually behave as they were employers in the traditional sense of the term⁴¹. This is because they follow the whole transaction and strictly control the workers by providing terms and conditions of the service, securing the payment, guaranteeing workers' performance and monitoring quality feedbacks by means of ratings. For this reason, many platforms should be considered as employers since their aim is to make the workers act in compliance with the platform's policy, as if they were their employees in the traditional manner. Thus, in certain cases gig workers should be considered as workers in the traditional sense of the term. The issue here is to understand how long can some platforms hide the reality behind their business model and what can labour law regulations do to safeguard those workers. The second chapter will try to give an answer to these questions.

1.3.3 The Online Labour Index and an identikit of gig workers

Due to the complexity of finding a universally shared definition of the gig economy, it is difficult to find reliable numerical data about the topic. Many sources have tried to estimate the number of total gig workers in different countries, but the results are not comparable since everyone computes it in a different way. Indeed, some data are restricted to only one category of the gig economy; others are too wide because they include platforms that are not linked to labour; and so on. Moreover, a worker may be registered to many platforms at the same time and some businesses do not want to share their data.

What is sure is that the gig economy has grown in importance and size over the last years, both in terms of the numbers of workers and the monetary investments. The only reliable numerical information we have regards the U.S. economy, the largest area of influence for the on-demand economy. It counts 57 million gig workers (36% of the total workforce)⁴² and this number will probably increase to 43% by 2020.

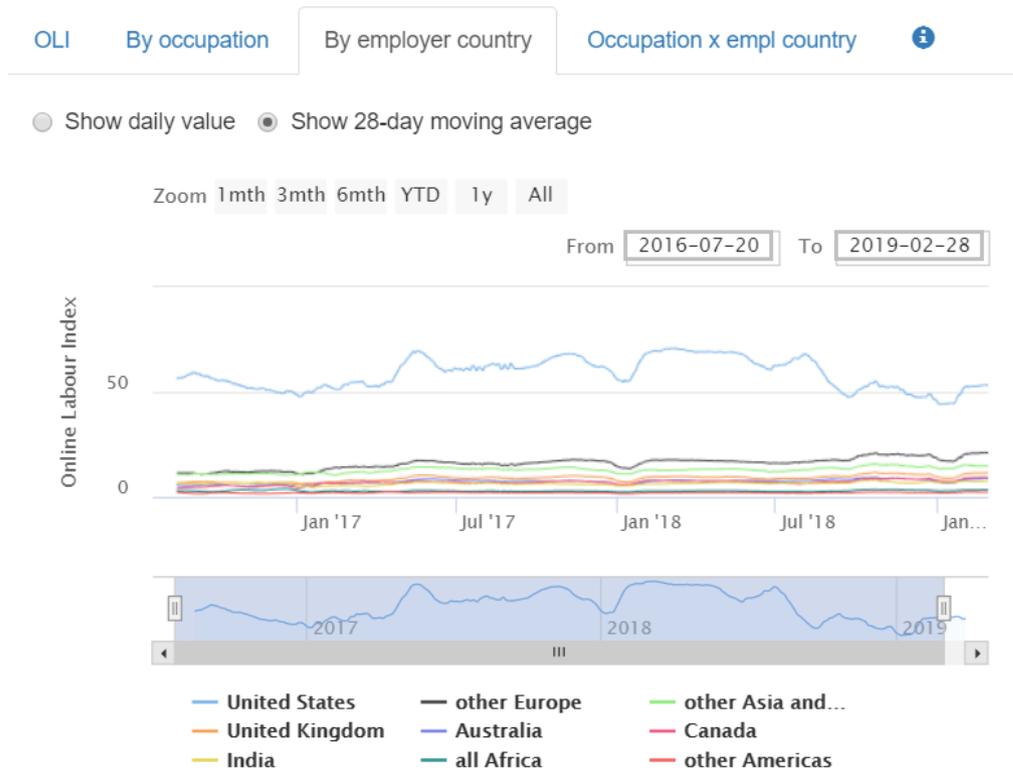
Since traditional labour market statistics do not contain information about online work (mainly because of the above-mentioned definitional problem), the research center iLabour Project at the University of Oxford introduced the experimental

⁴¹ Prassl J., *Humans As A Service. The Promise and Perils of Work in the Gig Economy*, Oxford University Press, pg. 5, 2018

⁴² Forbes, *57 Million U.S. Workers Are Part Of The Gig Economy*, 31/08/2018

Online Labour Index (OLI). The OLI is the first economic indicator for the gig economy that tries to become an equivalent of traditional labour indicators. It measures how the use of online labour platforms varies over time by country and by occupations⁴³. The next figures provide some example of the features offered by this index. Firstly, it shows in real time which are the countries or areas requesting more gig workers.

Figure 3: An example of the OLI functionalities: spread of the gig economy in relation to the employer country



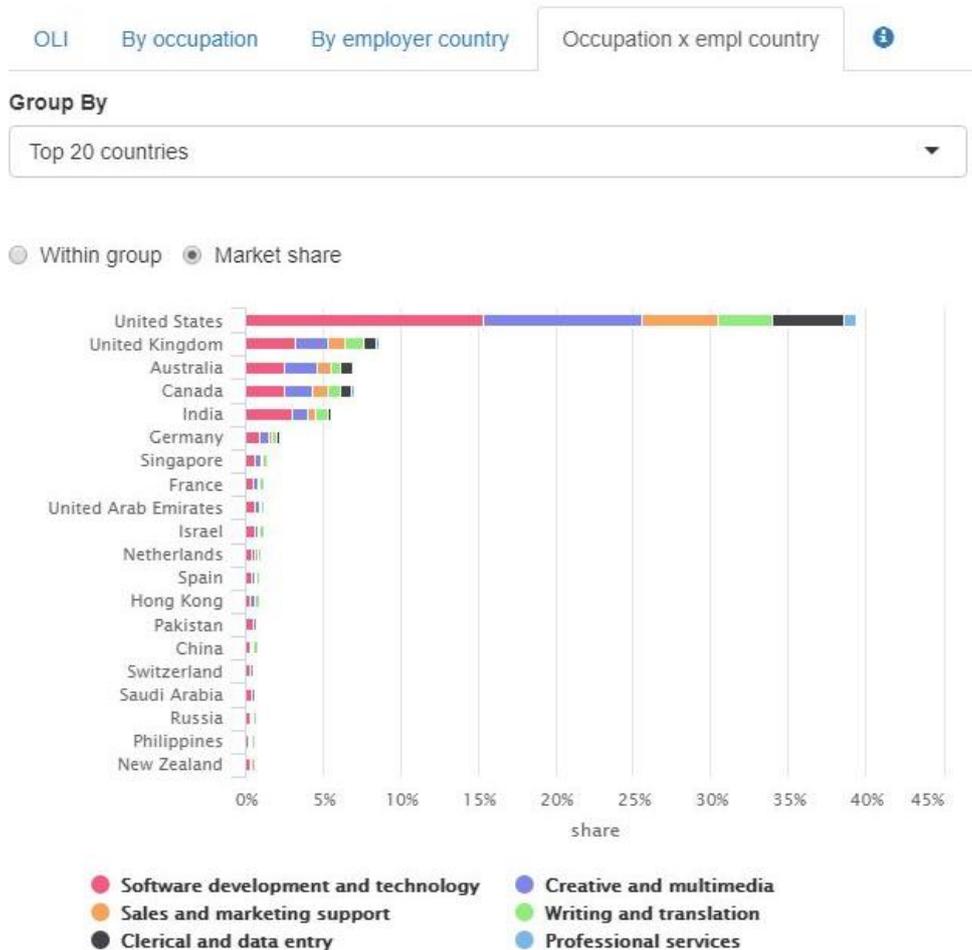
Source: *Online Labour Index*

As we can see in figure 3, since the launch of the Index, the United States have had the higher relative share in the gig economy (more than 50%), followed by Europe. Among the European countries, the UK have a separate line due to the high relevance of the gig economy in that country. In total, the UK and other countries in Europe account for 30% of the global requests for gig workers.

⁴³ Kässi O., Lehdonvirta V., *Online labour index: Measuring the online gig economy for policy and research*, Technological Forecasting and Social Change, Volume 137, 2018. Index available at <https://ilabour.oii.ox.ac.uk/online-labour-index/>

Another functionality helps to monitor together both the ranking of countries and the sectors or activities characterizing the gig economy in that area (figure 4).

Figure 4: An example of the OLI functionalities: group by country and divide by occupation



Source: *Online Labour Index*

It can also be represented in the inverse manner: grouping by occupation and dividing per country to offer an overview of the most frequent gig economy areas. The OLI suggests that the most spread categories of platform work are related to software development and technology, followed by creative activities (such as logo creations) and multimedia.

As concerns workers, a study by the World Bank (in 2015) underlined that they mainly come from the US (23.9%) and India (21.5%), followed by the Philippines (18.6%).

Since the limitations of quantitative data, it would be useful to have some qualitative information, which are more reliable and easily verifiable. A survey conducted by

the International Labour Organisation (ILO)⁴⁴, provided a contribution to the issue by offering general characteristics of workers in the gig economy. Thus, we can say that in the survey the average age is 33 years and the gender balance changes across countries. They are usually educated people: less than 18% had a high school diploma, 25% studied at university or similar, 37% had a bachelor's degree and 20% a postgraduate one.

The survey estimated an average pay per hour of only 3-4 dollars. This is even more negative for the 30% of them to whom crowdwork is the primary source of income. A study conducted with the workers of Amazon Mechanical Turk tried to identify the reasons why people accept to work in this new Digital Labour Economy. Some of them are jobless, others try to find an additional source of income even if they already have a primary job, or they see platform work as a balance between work and private life due to its flexibility of time and space.

1.4 Advantages and challenges of digital labour platforms

The new opportunities offered by digital labour platforms have to be balanced with the challenges they may produce. Many authors have tried to give their support to this analysis to spread the awareness of all the possible consequences of engaging in this type of employment. There are different sources of literature underling common aspects in this phenomenon. In particular, the Dr. Professor De Stefano⁴⁵ gave a huge contribution to the trade-off between benefits and risks associated with the gig economy.

1.4.1 Opportunities for “employers” and workers

The on-demand economy can bring many benefits to the labour market, starting from the fact that it may be a way to fight unemployment by offering new working possibilities. We can list many advantages that can induce people to join any form of platform work, offering benefits to both online “workers” and the work requesters. In the case of platform workers' welfare, we may find at least three main advantages.

⁴⁴ Berg, *Digital labour platforms and the future of work. Towards decent work in the online world*, ILO, 2018

⁴⁵ De Stefano V., *The rise of the «just-in-time workforce»: On-demand work, crowdwork and labour protection in the «gig-economy»*, International Labour Office Geneva, 2016

Flexibility is one of the main benefits of the gig economy (De Stefano, 2016). It helps workers to find the perfect balance between work and life-related issues, giving them a short-term satisfaction. Their self-employment status and the related flexible working schedules allow them to decide how, when and where to work autonomously. This may be the reason why many people decide to devote partly or entirely to this new form of work.

Secondly, workers have the opportunity to work on a worldwide basis, especially in the case of crowdwork. They have access to tasks or projects published in any part of the world and can complete them without leaving the familiar boundaries of their house. In particular, this is a positive aspect for those who do not have a primary occupation due to the lack of job in their local market. Thus, the gig economy has the power to create new jobs and escape the boundaries of the local perspective of work. Moreover, workers have the possibility to select among a multitude of “gigs” the ones that are best suitable to their skills. This is also relevant for workers with different limitations, like age, disabilities or health problems, who are isolated in their homes. It may be a good chance also for those who find it difficult to obtain an occupation. Technology and data give a huge contribution in this sense by suggesting and allocating the right task to the right person.

On the other hand, for companies/organisations/individuals (we call them requesters) a first positive aspect is the unlimited opportunity given by the wide and continuous demand of online labour and differentiated availability of skills. Companies or privates can count on a huge knowledge and know-how pool at lower costs than having those resources inside the firm. This causes a reconstruction of the traditional boundaries of the firm.

According to McKinsey, another crucial benefit is the role of information technologies and the Internet in reducing transaction costs. Indeed, the match between workers and job providers happens in a fast way thanks to the intermediation of the platform and the support by smart algorithms.

Moreover, firms can count on a “scalable workforce” (De Stefano, 2016) available on-demand at any time and place, and close the relationship when they no longer need a specific service from the gig-worker.

1.4.2 Challenges and new debates

The last point of the previous paragraph can be considered as a negative aspect from the point of view of the worker. Are freelancers (online workers) truly free or is it a form of “slavery”? These kinds of questions are arising among different authors and governments worried about the conditions of these non-standard workers.

They are often considered as independent contractors, this is to say self-employed persons. For this reason, they are not supposed to be safeguarded as traditional employees who have labour rights and social protection. Indeed, issues like working time, minimum wages, antidiscrimination, holiday or sick leave, dismissal or maternity protection are not contemplated in the world of platform work. There are no safety guarantees for workers since they use their own tools to complete the work on platforms. In addition, the system of reviews and feedbacks, to which every worker is exposed, causes a shift of platforms’ customer care responsibility to workers, ensuring that they will try to do their best to make the relationship work in order to obtain positive rates and not to be excluded from the platform.

The gig economy hides the risk of contributing to the “commodification of workers” (De Stefano, 2016), in which they are considered as a simple extension of the platform and not as human beings. The word “work” is hidden behind other terms like “gigs” or “services” to estrange those “workers” from traditional employer-employee relationships. One clear example of this exaggeration can emerge from the words of the CEO of Amazon’s AMT, who talks about “humans-as-a-service”. It means that we can use human work when needed and pay them only for that short time, in the form pay-as-you-go, without concerning about other issues like workers’ social security. An extreme situation may lead to the dehumanization of the workers’ activities due to their virtual trait, in crowdwork in particular. The consequence of this aspect may create the misperception that workers are invisible or disposable objects (De Stefano, 2016).

Another problem may be the situation of exclusive financial dependence on only one platform company: the worker may feel “obliged” to work just for one party. This may lead to an ambiguous situation in which the two parties have a relationship with the traits of a traditional employment status, but which lacks any type of social protection. Informality is an additional risk in the case of online platform work.

This means that workers do not register their activity in public institutions for tax purposes, for example.

The gig economy gives rise to another serious challenging situation, the so-called race to the bottom. In other words, companies are in competition to save labour costs by employing workers with low wages or by offering them bad conditions. The online work is making it grow even faster than the usual outsourcing of production to developing countries. In particular, it is spreading to sectors that were not affected before, such as IT, data analysis, marketing of finance. On the other hand, workers are in competition to obtain the same job and they ask for the wage that is typical in their country. Thus, it increments the opportunities for “labour arbitrage” by companies/requesters that decide to assign the gig to the person whose cost of labour is cheaper⁴⁶. Therefore, workers do not have many options to set a fairer price for their services or, even worse, they may conduct price dumping. The latter means that they can reduce intentionally their monetary request or even work for free. This is particularly typical of new platform members who want to receive positive reviews in order to be more attractive for future online opportunities.

Another limitation of online platforms is the fact that it may require a long time to find the job offer that best suits one’s capabilities and interests. A research by the ILO discovered that on average it takes almost 20 minutes to find work for every working hour. The time lost in searching has not a monetary return and it may not lead to an effective selection by the requesters.

Moreover, the majority of gigs are poorly paid or characterized by high levels of competition. This requires long hours of work in order to earn a reasonable remuneration. Thus, the advantage of flexibility provided by the gig economy may not always lead to an effective satisfaction for the workers, since they need to be often connected to adjudicate the most profitable jobs.

Another negative aspect, especially in the typology of crowdwork, is linked to the fact that some jobs may require to be completed in a particular period of time and this is a problem in the case of different time zones. Workers may feel obliged to work at night to deliver the job and get a positive review.

⁴⁶ Graham M., Hjorth I., Lehdonvirta V., *Digital labour and development: impacts of global digital labour platforms and the gig economy on worker livelihoods*, Transfer, vol. 23(2), 2017, pg. 145

Payment is another crucial issue. A survey from New York shows that 50% of freelancers encounter problems at the time when they have to be paid⁴⁷ in terms of delayed payment or total absence of it. This depends on the platforms involved and the mechanisms through which the compensation is released. In some cases, the possibility for requesters to reject a completed and submitted work may lead to opportunistic behaviours, in which requesters may lie that they are not satisfied to avoid the payment. Another problem is linked to the unilateral changing conditions by the platform (such as requesting higher fees or changes in the modalities of payments), which the workers had to subscribe in the moment when they joined the platform. Moreover, the pervasive technology has a strong control on workers in some cases. Workers are tracked anywhere through GPS or PC movements. Some platforms that pay workers per hour have the tendency to make screenshots of the worker's screen to monitor if he/she is actually working.

Lastly but most importantly, as stated at the beginning of the paragraph, the platform economy gives rise to a huge debate about the role of labour regulations for these workers. This issue cannot have a universally shared answer due to the multiplicity of platforms and the different rules that are behind each of them and the different national regulations. The critical issues can be summarized in the following questions.

- What should the status of employment of these workers be?
- Are they provided any individual or collective labour rights?
- Would the introduction of a new working category be helpful or would it be enough to provide better protection and rights in existing categories?
- If platforms could have the role of the employer, what should their duties be?
- What are labour law regulations doing to protect those workers?

These aspects will be debated in detail in the second chapter, starting from the necessity to offer to every worker the fundamental labour rights promoted by ILO Declaration on Fundamental Principles and Rights at Work⁴⁸.

As we have just seen, the list of risks and negative aspects for platform workers overcomes the relative benefits. For this reason, it is clear that this phenomenon

⁴⁷ https://www.ilo.org/washington/WCMS_642303/lang--en/index.htm

⁴⁸ Adopted by the International Labour Conference at its 86th Session, Geneva, 18 June 1998. Annex revised in June 2010.

requires a higher attention and a permanent solution to protect these workers from discrimination and potential opportunistic behaviours.

However, although these critical issues are created by the development of digital technologies, technology itself can be a source of solutions. Indeed, it can regulate work and offer protection to workers⁴⁹. For example, for people working on crowd platforms it could reduce the time spent in searching for a new task with more sophisticated algorithms that maximize the time for more profitable activities. This can be a way to allow platform workers to get higher compensations and step toward a minimum wage. Data driven technologies have to be used to understand and give a support to workers.

1.5 Platform work in Italy

The gig economy has started to develop also in our country and it is rapidly growing. The so-called “*economia dei lavoretti*”, which is a publicly shared translation, started in Italy about 10 years ago with the introduction of services delivered online, such as translations. However, the prevalent form of platform work regards the typology of work on-demand via apps. In particular, in North-Italian big cities, it is common to have platforms about delivery or baby-sitting found online but performed locally.

1.5.1 Platform work categories

The gig economy categories found in Italy reflect the general distinction between crowdwork (delivered online) and work on-demand via apps (delivered locally). However, some authors have the tendency to enlarge the concept and include in this form of work the so-called sharing economy⁵⁰. This category refers to the rental of personal goods and properties in exchange of a monetary return. A famous example is Airbnb, an accommodation-sharing platform that offers the possibility to spend a period of time in hosts' rooms, house or flats. People share their houses with others and the platform (an intermediary) is paid a service fee. Another sharing-economy

⁴⁹ Berg J., De Stefano V., *It's time to regulate the gig economy*, 18/04/2017, Open Democracy

⁵⁰ Eurofound, *Digital Age - Employment and working conditions of selected types of platform work. National context analysis: Italy*, 2018

platform is BlaBlaCar, which gives the possibility to travel with other people in order to divide the costs of the journey.

Since the aim of this thesis is to analyse digitalization's impacts on work and its related debates, the third category will be excluded from the next considerations since it does not refer to work related issues. With "platform work" we will underline any category related to labour mediated through platforms and, thus, consider only the first two categories.

In the first typology (crowdwork), some of the most used platforms in Italy are 99designs (graphic design) and Clickworker (to perform micro tasks), which are mainly used for professional reasons. On the other hand, we can find also platforms for personal services belonging to the second category of the gig economy, like baby-sitting or pet-sitting (Le Cicogne and Animali alla Pari), cleaning services (Helpling) and the well-known platforms for food delivery, such as Deliveroo and Foodora.

1.5.2 The spread of the phenomenon

Several factors have contributed to the increase of this digital phenomenon in Italy⁵¹.

- Firstly, digitalization and the increasing ubiquity of services enabled by the internet allowed a growing number of people to be aware of the opportunities given by this new trend.
- Employers' search of flexibility in terms of capabilities: they are looking for workers who can easily adapt to changes.
- Workers' preference for flexibility at work in terms of working hours and requested tasks.
- The lack of attractive alternatives in the traditional labour market, characterized by high levels of unemployment (10.5% in January 2019⁵²) after the economic crisis.
- The demand for cheaper services: professional services offered online on platforms have a lower cost than those requested by companies' professionals.

⁵¹ Ibidem

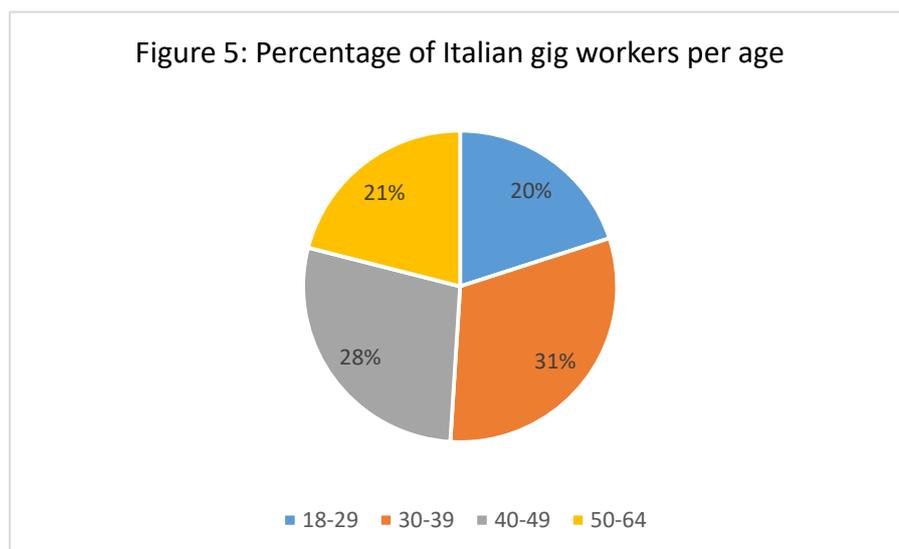
⁵² Source: Eurostat

As a premise, in terms of numbers it is necessary to highlight that correct and reliable data are difficult to provide since the number of platform users does not exactly correspond to the total number of actual platform workers. This is because many users may have more registered accounts or others may be not active. However, they are a useful starting point to make some estimates.

A recent *IlSole24Ore* article⁵³ reports an interesting research by the Rodolfo De Benedetti Foundation done through a web survey to about 15000 gig workers. It estimated that the number of gig workers in Italy is between 700,000 and one million, depending on the fact if we include the category of the sharing economy or not. For 20% of them (150,000 workers) platform work is the unique form of income.

Since the media attention in Italy is mainly focused on platform work regarding food delivery services, it would be logical to think that the majority of workers are riders of food delivery platforms. It is not true: the total number of riders is only 10,000 workers (only 1.4% of the entire Italian gig workforce). The majority of Italian gig workers operate in sectors other than food delivery. Unfortunately, it does not have the necessary attention from politics or the media.

As concerns demographic data, there is almost a gender equality: about 55% of platform workers are male; the other 45% belong to the female population. As concerns the age, the below graph represents the division among four ranges of age.



Source: *own elaboration built upon Rodolfo De Benedetti Foundation data*

⁵³ *IlSole24Ore, Dai rider ai servizi cloud, un milione gli addetti della gig economy, 02/06/2018*

As emerges from the graph, half of them have an age of less than 40 years.

- The highest level is between 30 and 39 years old (about 30% of workers).
- Approximately 20% is between 18 and 29 years old (the majority is made of students, 54% of them).

Although one may think that the gig economy covers the younger generation, it may be surprising to see that the other half is between 40 and 64. The majority of people over the age of 40 perform gigs as a second “work”, in particular if they are related to their primary career.

As regards monetary terms, the economic rewards are low, especially if we consider the situation of workers who do not have any other job. Indeed, the average monthly remuneration is 572 euros in the case in which the gig work is the unique form of income, falling to 346 euros for other workers considering an average hourly pay of 12 euros.

The XVII Annual Report by the INPS⁵⁴ offers a precious contribution in mapping this phenomenon in Italy. It focuses in particular on riders due to their impacts on media and provides some data from the interviews to the CEOs of the two most influencing food delivery platforms in Italy: Deliveroo and Foodora.

The two platform companies were selected also because of some similarities, including the fact that they operate in the same large cities and they both offer a private insurance policy for their riders. However, they differ in the contractual relationship they subscribe with the workers and the payment systems. Here are some of the main findings:

- 30% of them are independent workers, 50% students and 20% unemployed persons.
- Almost 35% of gig workers in these two companies do not have other jobs; about 30% work while studying; 15% have another job in addition to this one.
- The majority of them declares to be satisfied with the role of the platform worker. Those who are not fulfilled with the position comply about the low remuneration.

⁵⁴ INPS, *XVII Rapporto Annuale*, July 2018

- Although they are provided with an insurance policy, which is not typical of the majority of jobs in the gig economy, many workers are not aware of it. In particular, in the case of Foodora, 67% of Italian gig workers do not have awareness about it.

This last point highlights the necessity to provide a nationally shared regulation about the gig economy, since individual decisions risk to be overlooked. The fragmentation of rules between different gig categories or different countries may lead to the worsening of the fundamental labour rights for workers.

CHAPTER II – ADDRESSING THE ISSUE: LABOUR LAW DEBATES AND POTENTIAL SOLUTIONS

As we have seen, the situation to which gig workers are exposed calls for urgent action from the labour law point of view. The main cause that has prevented the adoption of a universally shared agreement regarding these workers is the lack of a one-size-fits-all solution due to the vast heterogeneity of the platform or gig economy.

This chapter will try to give a contribution to the labour law issues behind this phenomenon by providing a critical analysis of some solutions at international, European, national, regional and urban level and by underlying some possible considerations about whether is it necessary to build a third category for these workers or not. As a premise, it is necessary to highlight that the case studies presented in the next paragraphs refer mostly to work on-demand via apps because it has attracted a larger attention from the media and law regulations. This is because, in this category of platform work, working conditions are directly influenced by local regulations and thus they require specific regulatory frameworks. On the contrary, in the category of crowdwork, which is delivered online, the geographical dispersion of workers does not allow the application of specific laws.

2.1 Platform workers' status of employment, protection and evaluation: slavery or virtue?

The first chapter has pointed out a series of crucial questions regarding the conditions of platform workers. The most relevant one concerned the juridical classification of their status of employment and the related protections to which they are (or are not) subjected. As said, they belong to non-standard forms of employment, which do not have clear and unified regulations.

The long list of risks highlighted the precarious situation that characterizes these workers, who usually do not have access to individual or collective rights. This is due to the fact that they are regarded as *self-employed* or *independent contractors* and not traditional “employees”. This juridical classification causes many problems, since in the majority of national jurisdictions self-employed workers are not

supposed to obtain labour rights such as minimum wages, sick or holiday leave, anti-discrimination protection and so on. The classification as independent contractors comes from the flexibility that these workers are supposed to have. However, this flexibility does not always manifest since they are subjected to strict procedures and “threatened” with the deactivation of their accounts. Currently, many gig workers are becoming “slaves of algorithms” just to earn an extra income. Algorithms’ control and management of every aspect of work on platforms are only a form of disguised flexibility.

In particular, the system of ratings to which platform workers are subjected after the conclusion of work may be interpreted as a form of control typical of subordination relationships, as mentioned in the previous chapter. We can identify three main negative effects caused by the reviews’ system on digital platforms⁵⁵. Firstly, workers may feel induced to perform “emotional labour” in order to obtain positive feedbacks. This refers to the felt pressure to complete actions, which are excessively submissive and obedient towards the requester. In addition, this system may be responsible for the marginalization of workers who are rarely active and of newcomers, since the ratings system creates a tough competition, by favouring those who have the highest and most positive reviews. Moreover, this marginalization is even higher for those who have physical and educational limitations and thus struggle in competing with high quality workers.

The crucial challenge is that platforms do not have any duty in simplifying the condition of workers in relation to the problems posed by ratings. On the contrary, they use it as a form of control mechanism, which can be assimilated to traditional control systems in employer-employees relations. For this reason, it is necessary to introduce the obligation for platform operators to guarantee the portability of ratings from one platform to another and to fight against discriminatory behaviours. We will see that this rule is starting to be introduced through different regulations at European or national level.

For all these reasons, it is logical to think that the declared advantages coming from this new form of work are not sufficient to be considered as virtuous and positive. On the contrary, should they be considered a new form of slavery of the 21st century?

⁵⁵ Dagnino E., *Il lavoro nella on-demand economy: esigenze di tutela e prospettive regolatorie*, Labour&Law Issues, Vol. 1, n. 2, pg. 96-97, 2015

The answer may be affirmative if platforms or policymakers do not introduce concrete protections for workers.

2.1.1 Potential paths for labour law regulations

The possible paths for policymakers are multiple. Many authors have tried to give their contribution to the issue by suggesting some scenarios and solutions to protect gig workers as it happens in the case of traditional employment. The Australian authors Stewart and Stanford have tried to summarize the main options in regulating platform work. They highlighted five crucial possibilities for policymakers⁵⁶.

- 1) The first approach is the enforcement of existing regulations with the aim of demonstrating that platform work truly represents a form of employment that can be faced with existing laws and definitions.
- 2) The second option regards the clarification or expansion of the definition of the concept of “employment” in order to capture the novel relationship between a worker and a digital intermediary, by considering a wider range of activities under the employment definition or by limiting the possibility for platform operators to categorize employees as independent contractors.
- 3) The creation of a new category related to “platform workers” is another possibility. It implies the introduction of new rights and protections for these specific workers. Although it has already been applied in some countries (e.g. the UK and the intermediate category of the “worker”), this option has created a divide between many authors.

On the one hand, it was supported by authors like Harris and Krueger, who introduced an intermediate category for this gray area called “independent worker” that shares some elements with employees and others with independent contractors⁵⁷. According to the authors, these workers would receive many of the protections typical of employees, such as the freedom to

⁵⁶ Stewart A, Stanford J., *Regulating work in the gig economy: what are the options?*, The Economic and Labour Relations Review (ELRR) Vol. 28(3), pg. 430-432, 2017

⁵⁷ Harris S., Krueger A., *A Proposal for Modernizing Labor Laws for Twenty-First-Century Work: The “Independent Worker*, Hamilton Project Discussion Paper 2015-10, Brookings, 2015

collective bargaining, but not those related to unemployment insurance or working hours, such as minimum wages. This is due to the difficulty of attributing their working time to a single platform and because, as stated by the authors, they have the freedom to choose whether to work in that flexible arrangement. On the contrary, De Stefano strongly criticizes this approach since it would create a further and more complex regulatory division, as we will discuss in paragraph 2.4.2 after the analysis of the Italian case and its introduction of a tertium (or even quartum) genus to regulate platform work.

- 4) An effective solution may be the introduction of protections for every individual who performs productive “work” and the related decline of the employment status as the factor for the recognition of labour rights. In other words, workers should be protected by virtue of the working activity they perform, regardless of the nature of their working relationship with the platform. This would require the adaptation of regulatory frameworks, especially for the rights linked to financial aspects (such as minimum wages or paid leaves).
- 5) The last option shifts the focus from the worker to the employer. The idea is to face the already mentioned Platform Paradox (Prassl, 2018) and unveil the real role of platforms. As we have seen in the first chapter, platforms can actually be seen as employers: only one in the case of work on-demand via apps and a fragmentation of that role in crowdwork. This solution is meant to reconceive the meaning of an “employer” and to allow gig workers to have different employers.

Although these options differ from each other, they clearly show that the challenge posed by the gig economy requires a more precise clarification of the actual role of both workers and “platform employers” in this under-regulated new labour market. This regulatory innovation can be obtained only with the strengthening of labour regulations at national and supranational level with the aim of extending protection and benefits to these workers.

At supranational level, the International Labour Organization, since its constitution and during its one hundred years, has strongly affirmed that “*labour is not a commodity*” (Declaration of Philadelphia, 1944). Unfortunately, what we see today is a process towards the commodification of workers, as analyzed in the first

chapter, whose guilt is the digital transformation. For this reason, we should start to raise the awareness of the idea that “*labour is not a technology*”, as claimed by the labour law expert De Stefano⁵⁸, and unveil the real essence of the so-called “*disguised employment relationships*”⁵⁹, as labelled by the ILO.

The discussion of the issue will start from some basic considerations, which should be obvious but they are not in the case of the gig economy. Indeed, as we will see in the next paragraph, even fundamental rights, which do not have any connection to the juridical classification of workers, risk to be undermined.

2.2 The role of the ILO and the initiatives towards decent work

2.2.1 Fundamental Principles and Rights at Work in the gig economy

The International Labour Organization (ILO) was established in 1919 as part of the Treaty of Versailles and as the main institution for the creation of an international code of labour⁶⁰. Today, it comprehends 187 countries and, during its one hundred years, it has tried to promote decent labour in an environment of freedom, equality and human dignity. It pursues social justice and fights against the exploitation of workers. Thus, it is clear that it could be the starting point for a critical overview of the current condition of gig workers.

In 1998, *the ILO Declaration on Fundamental Principles and Rights at Work* proclaimed a series of universal human rights⁶¹, which should protect human dignity. It indicated four fundamental labour standard:

- 1) The freedom of association and the right to collective bargaining⁶²;
- 2) The prohibition of forced or compulsory labour⁶³;

⁵⁸ De Stefano V., *Labour is not a technology - Reasserting the Declaration of Philadelphia in times of platform-work and gig-economy*, IUSLabor 2/2017

⁵⁹ Disguised employment relationships refer to all the arrangements in which the working relationship has the connotation of employment, but the employer-part conceals it in order to avoid the labour regulations connected to the case.

⁶⁰ Perulli A., Brino V., *Handbook of International Labour Law*, Giappichelli Editore, 2018, pg. 25

⁶¹ See previous note, pg. 34

⁶² ILO, Conv. n. 87/1948. Conv. n. 98/1949

⁶³ ILO, Conv. n. 29/1930. Conv. n. 105/1957

- 3) The abolition of child labour⁶⁴;
- 4) The prohibition of discrimination in employment⁶⁵.

Although the Declaration gained a large consensus, it seems that nowadays these core labour rights are not applied to the new category of workers even if they are supposed to be universal and addressed to the entire workforce, regardless of the economic development of the country of origin. Indeed, gig workers are even excluded from the legal application of these fundamental rights⁶⁶. In particular, they are kept out from the freedom of association and from the right to engage in collective bargaining. This is because in many countries individual contractors are not allowed to join trade unions or bargain collectively. Moreover, in the category of crowdwork, workers are dispersed in different locations and this makes the possibility of associating even more difficult. Others may be afraid to call for collective rights since the system of ratings may be negatively influenced by their behaviour.

Secondly, people can be engaged in forced or child labour also online. Indeed, sweatshops are not only physical. We usually think that workers in the digital era have the flexibility to work from any place assuming that it is safe and comfortable, without suspecting that this form of labour may lead to the spread of new forms of sweatshops in digital form. Some developing countries are the living field for practices such as “gold-farming”⁶⁷. It refers to a typology of “online work” in which “gold farmers” play computer games to obtain virtual coins or other treasures that are sold to online gamers in the developed world for real money. People in advanced countries encounter in this practice because they do not want to waste time in repetitive levels of the game and to move on more quickly. Thus, they rely on these gold farmers, in particular from China, who may be even children. It may be a form of exploitation since some gamers play up to twelve hours per day to earn enough coins. The pervasive spread of the Internet may tempt children to access to this new form of online labour leading to the violation of this fundamental labour standard. The main problem is the fact that codes of conduct and monitoring mechanism about

⁶⁴ ILO, Conv. n. 138/1973. Conv. n. 182/1999

⁶⁵ ILO, Conv. n. 100/1951. Conv. n. 111/1958

⁶⁶ De Stefano V., Aloisi A., *Fundamental Labour Rights, Platform Work and Human-Rights Protection of Non-Standard Workers*, 2018

⁶⁷ Ibidem, pg. 7

supply chains are not concerned about this new form of labour⁶⁸. To prevent these exploitative practices it is necessary that governments or international institutions provide stronger labour regulations for online work.

Another concern is related to the fourth fundamental labour standard. As underlined by De Stefano, the gig economy has a double effect on the discrimination issue. On the one hand, it can lead to positive effects since the avoidance of a physical contact and the possibility to work anonymously may reduce the risk of discrimination. Moreover, as analysed in the first chapter, platform work fights against discrimination when it offers jobs to people who are obliged to stay at home due to health problems, disabilities or older age. On the other hand, the gig economy may also lead to discriminatory attitudes. They may occur in the form of crowdwork restricted to selected geographical areas due to the choices made by requesters, or the cause can be found in the reviews system, especially when they are unfair and biased. They may lead a discriminatory effect against the bad-reviewed worker and the consequent damaging opportunities for future working relations.

Thus, we understand that the proclaimed universal and fundamental labour standards are not put in practice in the digital era of work. This aspect is even more relevant when we realize that it has stimulated fewer debates and less attention than other labour rights like minimum wages or holiday leaves. The protection of human dignity should be put in the first place and then we can discuss about secondary rights. The necessity to reach decent work should be the starting and leading point for the development of other labour rights and solutions.

If we do not stop forced labour in developing countries, what is the sense of ensuring minimum wages? If we do not prevent children from working, what is the sense of offering paid maternity leave?

2.2.2 Criteria for a fairer platform work and a stronger social protection

In order to provide support to this issue, the ILO has published a report⁶⁹ about Decent Work in the online world. It suggests some initiatives that aim at improving online platforms and it offers many policy recommendations for a fair crowdwork.

⁶⁸ Ibidem

⁶⁹ Berg J., Furrer M., Harmon E., Rani U., Silberman S., *Digital labour platforms and the future of work. Towards decent work in the online world*, ILO, Geneva, 2018

The ILO provides an effective approach towards fairer conditions for microwork, which is an extended version of the previously suggested criteria provided by Silberman⁷⁰ for a fairer gig economy.

The first aspect that needs to be highlighted is the fact that gig workers should not be wrongly categorized as independent contractors or self-employed if they are employees in practical terms. We have seen that it is typical of work on-demand via apps such as Uber, in which platforms have control on the working modalities. Many cases have been brought to the attention of different courts because workers wanted to be considered as employees, but these juridical resolutions were only related to specific workers. What is needed is a general and national labour system able to audit work practices and strengthen laws regarding employment classification in order to prevent abuses. This first criterion would automatically solve the other issues about workers' rights and benefits.

If the above-mentioned possibility could not be applied to some categories of gig workers, it is necessary to provide other forms of solutions. Despite their status of employment, all workers should have access to the fundamental labour rights. In particular, gig workers should have the right of freedom of association and collective bargaining. Workers should have a legally binding method to express their needs or problems to the platform. It may be in the form of union memberships or the recognition of collective bargaining. This requires the revision of competition law in some jurisdictions that do not allow independent gig workers to organize collectively⁷¹. A way to complement the lack of collective bargaining agreements may be the adoption and enforcement of a platform's *Code of Conduct* for members⁷². In order to redact it correctly, platforms may rely on the guidelines provided by the ILO's Tripartite Declaration of Principles regarding Multinational Enterprises and Social Policy (MNE Declaration). It offers effective practices for an inclusive workplace and social policy instructions. The platform codes of conduct should aim at preventing intimidation on workers and negative behaviours by offering clear mechanisms of violations reporting and defense. Moreover, platform may take as a reference the *Crowdsourcing Code of Conduct*, which lists ten principles for a fair

⁷⁰ Silberman S., *Fifteen criteria for a fairer gig economy*, IG Metall, 2017

⁷¹ See note 69

⁷² Ibidem, pg. 108

platform work that have to be respected by the platform companies that have signed it⁷³:

- The legal compliance of tasks: platforms need to check and ensure that all the tasks/projects are legal to avoid banned contents (illegal, violent or discriminating tasks). In particular, this is useful to avoid child labour, by ensuring that the minimum level of age is proclaimed.
- Legal and tax clarifications: platforms have to inform workers about all the necessary procedures that they need to undertake in terms of legal and tax regulations linked to crowdwork. If the platform companies are not allowed to give this kind of information, they should at least inform the workers about the matter so that they can manage it on their own.
- Fair payment: platforms agree to offer a fair compensation to workers based for example on the complexity of the task and the requested qualifications. The potential earning has to be communicated in advance and the payment should be made without delays.
- Friendly working environment: platforms commit to create a motivating environment for workers as it happens in physical jobs. The platform should be easy to use, provide sections to offer support to workers and encourage good work by offering badges, awards, FAQs and training (such as e-learning).
- Mutual respect: platforms have the role of intermediaries between the other two parts (workers and requesters) and thus they have to transmit trust and respect in a diligent way, by listening to both parties.
- Clear tasks and reasonable timing: platforms have to check and provide clear task descriptions, including a detailed content and a realistic timing of completion in order to give the necessary time to workers and avoid non-payments.
- The preservation of flexibility: workers should feel free to choose how, when and if to accept a task without being afraid of negative consequences. Moreover, they are not expected to build a long time relationship with exclusively one platform.

⁷³ *Code of Conduct*, available at <http://crowdsourcing-code.com/>

- Prompt feedback and communication: platforms have to ensure assistance and technical support for workers. They should nurture communication with them by giving constructive feedbacks and suggestions in order to achieve a higher quality.
- Data protection and privacy: platforms cannot reveal private or contact information about workers to third parties (including requesters), unless they have a written approval from the worker. Requesters are only given the necessary data in an anonymous way.
- Regulated approval process and rework: after workers have submitted the task/project, they must receive a written form of the approval process and the platform has to communicate the waiting period. If a requester refuses a project, the platform has to provide the reasons to the workers and offer, if possible, the chance of reworking. Workers must have the possibility to complain and if they cannot find an agreement, they can do it via an office built for this purpose. Indeed, in 2017 the “*Ombuds Office*” was opened with the aim of solving disputes between workers and the undersigned platform operators. Workers can send their problems through the Office’s online form and the Office tries to solve them by means of its board of people.

Moreover, for gig workers who could be considered as employees, the compensation should be in line with the minimum wage that is applied in that location. On the other hand, for gig workers who are entitled as self-employed the compensation should be 1.5 times higher, as suggested by the ILO, since they have additional costs (such as their private equipment or health insurance contributions). The compensation should also be compared with the local living wage and the median one obtained by workers who do similar jobs under traditional contracts.

Rigid rules should be introduced to monitor non-payment situations in order to avoid opportunistic behaviours (a cost reduction strategy) by the requesters. It means that, in the cases in which the platform allows requesters to refuse the payment for the task/project delivered, the workers should have the possibility to contest the decision and ask for an opinion from another figure (for example a platform’s employee specifically introduced for this role). If requesters refuse the work, they should firstly explain the reason and then, most importantly, fill in a legally binding agreement stating that they will not use the refused work for any

purpose. Another aspect that is linked to the previous one regards the review part. Workers should not be evaluated in the case of non-paid tasks/projects since these reviews may be biased or defamatory and not a true representation of the quality of the work. On the other hand, the non-payment rates/frequency should be published on the requesters' accounts to help workers evaluate in time how the relationship with a specific requester may end. Moreover, reviews about workers should neither be influenced by the refusal of a task. Workers should not be "punished" if they decline a task or a particular working time. This criterion would help the preservation of flexibility, which is the core feature that attracts workers to this kind of work, by allowing them to decide truly whether and when to work without feeling "obliged" to accept. Thus, they should not risk the deactivation of their accounts. If the deactivation cannot be avoided, workers should be clearly informed about the reasons behind the suspension of their accounts and they should have the chance to contest the decision. The pervasive use of algorithms and automatic decisions on the platform should be complemented with the judgement of human employees or third party characters⁷⁴.

Another solution suggested by the ILO to offer more responsible conditions to workers is ensuring them the right to leave the platform and continue the relationship with a client outside the platform's boundaries when the latter changes its terms and conditions unilaterally. If workers and requesters find the service offered by the platform useless, they should be given the opportunity to build a traditional employer-employee relationship without the intermediation of the platform. This criterion requires the introduction of specific policies underlying the conditions for this event. Another aspect regards the possibility for workers to have a complete work history, containing all the tasks completed and the payments received for tax purposes. This would be a way of contrasting informality, one of the risks mentioned in the first chapter. Moreover, a work history would also be useful for the enrichment of workers' resumes.

All these criteria should be supported by social protection policies to guarantee a fair treatment of every worker, regardless of their employment status. A research by the ILO highlighted the fact that current policies can be adapted to the new digital

⁷⁴ Ibidem

work, without creating new ones. The first step should be the adaptation of existing social insurance legislative systems with the aim of offering a coverage also for self-employed platform workers. In addition, technology should give its support in simplifying the coverage of platform workers, by developing simpler mechanisms for payments and taxes or by ensuring the portability of entitlements and ratings for workers who perform tasks for more “platform-employers”.

Another aspect that has to be taken into consideration is the necessity to identify which legislative framework has to be applied to cross-border relations since the third parties involved in the gig economy (the platform, workers and requesters) may also belong to different countries. Despite their origins, workers should be offered at least a basic level of social protection, which can be obtained through taxes. To achieve this objective it is necessary to ensure functional and sustainable tax systems that are able to finance the expected benefits from the state (such as pensions or child benefits for workers).

2.2.3 Collective representations of digital workers: FairCrowdWork and Turkopticon

The above-mentioned criteria suggested by the ILO are useful to develop a fairer gig economy, but we also need mechanisms to measure the relative results. The digital economy has driven the focus towards the individual and the micro-division of labour, making traditional collective aggregations difficult to obtain. However, at the same time, the strengthening of the web has introduced novel ways in which workers can communicate and organize together in order to create global bonds and spread their collective needs locally or globally. What we see now is the creation of auto-organized networks at European, national or trans-national level aiming at representing the collective interests of these workers both in the case of crowdwork and work on-demand via apps.⁷⁵

As regards work on-demand via app, we can find many emerging examples in different European cities and countries. In the next paragraphs, we will see the collective actions born in the city of Bologna, in the region of Lazio and in Belgium.

⁷⁵ Forlivesi M., *Alla ricerca di tutele collettive per i lavoratori digitali: organizzazione, rappresentanza, contrattazione*, Labour&Law Issues, Vol. 4, No. 1, 2018

What they all have in common is the fact that workers urge for actions from both platforms and the local administration to support and recognize their spontaneous organization. As concerns crowdwork, FairCrowdWork and TurkoPicon are two effective examples. They can be considered as digital workers' aggregations that exploit the opportunities provided by web networks and use the rating system to evaluate platform requesters⁷⁶, and thus to offer support and directions to other workers.

FairCrowdWork depicts information about platform work (crowdwork and work on-demand via apps) from the perspective of workers and unions. It is a website introduced in 2015 with the aim of offering ratings about many digital labour platforms. The information are obtained through surveys submitted to real gig workers, in which they are asked detailed questions about their tasks, the relations with the requesters and the platform itself and so on⁷⁷. The workers' answers are then transformed into numerical ratings. This website is a relevant instrument from a double point of view.

- On the one hand, FairCrowdWork is a useful instrument for platform workers who can access information about the working conditions of a new platform and make the relevant considerations before joining it. In addition, it gives advices and legal information to platform workers from specific countries (Germany, Austria and Sweden) or it puts workers in contact with different partner organization in other countries. Moreover, it provides information about existing unions for platform workers, such as IG Metall⁷⁸ in Germany and the Independent Workers of Great Britain⁷⁹. Thus, this website provides a form of protection for workers' individual and collective rights by overcoming information asymmetries.
- On the other hand, it is a starting point for debates about fair conditions on labour platforms among different actors (such as policymakers, researchers

⁷⁶ Ibidem

⁷⁷ <http://faircrowd.work/>

⁷⁸ In 2016, the German IG Metall opened its doors to self-employed members working on platforms.

⁷⁹ Its London branch "Couriers and Logistics" is active in the defense of workers' rights in the British courier and logistics industry, including also self-employed workers for food delivery platforms (e.g. Deliveroo or Uber Eats).

or journalists), who may find inspiring data upon which they can develop new solutions or start new discussions.

FairCrowdWork could be considered a more advanced version of a previous website launched in 2009, Turkopticon⁸⁰, which allows workers from Amazon Mechanical Turk to review the requesters. Turkopticon lacks the wider application that is typical of FairCrowdWork, which can rate more platforms and not just one. The criteria to vote the requesters are based on the pay, the speed of the revision and the payment, the fairness and the prompt communication. However, another difference from the more recent website is the fact that Turkopticon is lower in objectiveness since the mechanism behind the ratings may be not entirely authentic. This is because it is open to anyone who registers on the website. Thus, there may be the probability that persons who are not AMT workers express their ratings or register more than one time.

However, this website offers advantages to workers (who can choose the requesters in a more conscious way and avoid those who frequently neglect the payment), but also to fair and trustworthy requesters (who gain a better reputation and become more attractive for efficient workers). Thus, the system of reviews, which is typically used to rate workers, may be applied also to the evaluation of requesters in order to prevent opportunistic behaviours and to force platform operators to treat workers in a respectable way.

2.3 The European Union proposal

2.3.1 The European Pillar of Social Rights and the EU directive on transparent and predictable working conditions

The European Union works constantly in achieving better working conditions and rights for workers in the Member States. In particular, the European Commission has always been aware of the flexible working frameworks that have emerged in the digital economy and it aims at eliminating any form of inequality. The role of the Commission in this area is to close the gaps in the current legislation in order to guarantee social protection to everyone.

⁸⁰ <https://turkopticon.ucsd.edu/>

One approach came with the proposal of a “*European Pillar of Social Rights*” proclaimed in November 2017 in Gothenburg. Among its elements, one is about the access to social protection also in the gig economy framework⁸¹. The Pillar is composed of twenty principles divided into three categories⁸²:

- 1) Equal opportunities and access to the labour market;
- 2) Fair working conditions;
- 3) Social protection and inclusion.

In particular, the second area contains two crucial principles, which can be considered as benchmarks in the introduction of regulations about the gig economy. One is the fifth principle about adaptable and secure occupation⁸³. It states that regardless of the type and duration of the working relationship, workers have the right to an equal treatment and the access to social protection and training. Thus, it is clear that it refers to all categories of workers, included platform ones. In addition, this principle states that employment relationship with precarious working conditions have to be prevented. These aspects will be fundamental since many cases presented further in this chapter offer solutions that try to be in conformity with this principle.

The seventh principle⁸⁴, on the other hand, regards information about employment conditions and protection in case of dismissal. It asserts that workers have the right to receive written information about their rights and obligations at the beginning of the working activity. In the same way, they have the right to be informed earlier about a dismissal and the related reason. They can be supported by an impartial entity to evaluate the decision.

Another principle, which is linked to the fifth, is the number twelve⁸⁵ about social protection, which underlines again that workers, or self-employed under comparable conditions, have the right to adequate social protection regardless of the employment relationship and its duration.

⁸¹ https://ec.europa.eu/ireland/news/eu-commission-launches-reflection-on-social-dimension-of-europe-by-2025_en

⁸² https://ec.europa.eu/commission/priorities/deeper-and-fairer-economic-and-monetary-union/european-pillar-social-rights/european-pillar-social-rights-20-principles_en

⁸³ *The European Pillar of Social Rights*, Ch. II - Fair Working Conditions, Principle 5, 2017

⁸⁴ *The European Pillar of Social Rights*, Ch. II – Fair Working Conditions, Principle 7, 2017

⁸⁵ *The European Pillar of Social Rights*, Ch. III – Social Protection and Inclusion, Principle 12, 2017

A first step towards the implementation of the European Pillar of Social Rights is the new *directive on transparent and predictable working conditions*, as stated by its Promoter Calvet Chambon. It was approved by the European Parliament in April 2019⁸⁶ and now it is waiting for the approval of the European Council. The directive regards minimum rights for different categories of independent workers in atypical forms of employment. It includes workers on zero-hour contracts, domestic or voucher-based ones and, most importantly, those involved in the gig economy. The necessary requirement is that they are paid to work at least twelve hours in a period of four weeks. The aim of the new EU directive is to obtain protection for these workers by avoiding abusive practices in unregulated labour markets and by providing measures regarding different aspects:

- “Employers” have to give essential information about the employment relationship and the related responsibilities to workers within a week after the first day of work. The information should regard at least the identification of the parties involved in the relation, the nature of work (highly important for gig workers) or its description, the remuneration and the modalities of payment, the starting and the end date of the relationship. Moreover, it has to indicate the main working place and, if any (as in the case of many platform workers), the principle according to which they can choose several places has to be applied⁸⁷. This information has to be in a written form and it can be delivered electronically.
- It would deny exclusivity agreements by allowing workers to engage in projects for more “employers” and thus preventing the risk that they become economically dependent on only one figure.
- Workers have the right to be given favourable conditions, such as free mandatory trainings, limiting working hours, duration of the probationary period if requested and so on.
- If workers have variable working hours, they can be indemnified if the “employer” cancels late the agreed work.

⁸⁶ <http://www.europarl.europa.eu/news/en/press-room/20190410IPR37562/meps-approve-boost-to-workers-rights-in-the-gig-economy>

⁸⁷ *Provisional agreement resulting from interinstitutional negotiations*, European Parliament – Committee on Employment and Social Affairs, February 2019, pg. 24

The next step is the approval from the EU ministers and then it will enter into force the twenty-first day after its publication in the official “Gazzetta”. National governments will have three years to decide about the modalities of its adoption: the directive provides minimum rights and thus governments can enlarge them and make them even more favourable for workers.

However, it emerges the willingness to provide a concrete help for these workers who have never obtained a commonly shared support at European level. Indeed, until now the adopted solutions were introduced at single-firm or regional level. It is emblematic to highlight the steps undertaken by two European countries, which had two different outcomes but could be an effective example for other countries. One of these is Denmark with the first collective agreement for the platform economy, recently introduced and still in place. The second is Belgium, which has had effective collaborations with the so-called umbrella companies, but without a happy conclusion.

2.3.2 Denmark: an innovative agreement and the Disruption Council

Denmark can be considered as a point of reference in addressing the gig economy issue since it has provided a solution for the status of employment of workers and their protection at work. Indeed, Hilfr.dk, one of the country’s digital platforms, signed the world’s first collective bargaining agreement concerning the platform economy⁸⁸. It happened in April 2018 with an agreement between the platform and 3F, one of the Danish most influential trade unions.

The virtuous platform was founded in 2017 and it offers cleaning services provided by its 450 workers. Although its young age, it has the necessary qualities to provide better working conditions and rights to its cleaning assistants. The platform’s founders are aware of the ambiguous reputation of these new business models and they have declared that nowadays many platforms digitalize tax evasion by making use of an underpaid workforce. On the contrary, the Danish platform is innovative due to its distinction between two groups of workers: people working as freelancers and those who are *Super Hilfr*, this is to say employees in the real sense of the word,

⁸⁸ CPH Post, *First ever collective agreement for the platform economy signed in Denmark*, 10/04/2018, available at <http://cphpost.dk/news/first-ever-collective-agreement-for-the-platform-economy-signed-in-denmark.html>

who are covered by the collective agreement. Indeed, every person who joins the platform to work is initially considered as a freelancer and they can apply to become a Super Hilfr employee. If he/she works for more than one hundred hours, they automatically obtain the Super Hilfr status unless they decide to continue as freelancers⁸⁹. Thus, the platform provides a clear solution about the employment status of gig workers, by allowing them to choose what is more suitable for them and, if they want, by hiring them as traditional employees. Super Hilfrs have many favourable conditions in terms of workers' protection rights thanks to the juridical classification as employees. Indeed, this agreement ensures platform workers to have access to pension contributions, sick pay and holiday pay contributions. In addition, workers can benefit from a minimum wage (141 kroner per hour, corresponding to approximately 19 euros) and so they succeed in obtaining a fair salary. The introduction of a minimum wage is necessary for any gig worker in order to fight against the frequent pay per piece instead than per hour. Similar requests will be seen in the next paragraphs regarding the Italian situation.

Moreover, the Danish platform takes care also of its autonomous freelance workers since all of them are provided with insurance and have a minimum salary (130 kroner, lower than the one assigned to Super Hilfr employees). In addition, both employees and freelancers on the platform must comply with tax regulations. The aim is to provide clear procedures in order to overcome tax avoidance and the related risk of informality, mentioned in the first chapter. The platform takes charge of the entire procedure for its employees ensuring correct tax payments according to Danish law, whereas freelancers are obliged to do it themselves. The hourly price for workers hired as employees is obviously higher due to the above-mentioned contributions offered to Super Hilfr workers. However, the final fees charged by the platform for its intermediation is taken from the requester's bill and not from workers' wages. It is a way to offer fairer and more transparent conditions and treat the worker as a relevant player, allowing them to earn respectable wages and try to do their best. The platform is conscious of the fact that they can attract the most capable workers only by ensuring them fair treatments and thus be considered a social responsible platform.

⁸⁹ <https://hilfr.dk/about-super-hilfrs>

The agreement between the platform and the trade union entered into force in August 2018 and it will be monitored and evaluated for one year to see if it produces satisfactory consequences. Although the agreement regards only one platform and it does not provide a national solution, it is an effective starting point for future developments. This fact gained a huge attention also by national characters, such as the Danish Prime Minister and the CEO of the Confederation of Danish Industry, who attended the signatory ceremony⁹⁰. Thus, the national attention is largely focused on the platform economy and is supporting innovative platforms that are able to cope with the new business models and labour law issues and that find a way to raise the standard for the gig economy.

Moreover, in order to be prepared to face the digital transformation and its influence on labour markets, the Danish government introduced the *Disruption Council* in 2017. It is made up of thirty members (including ministers, different CEOs, social partners, researchers) and headed by the Danish Prime Minister. Its role is to analyse and provide solutions to unlock the opportunities offered by digital innovations in the country, by developing skills and solid political initiatives. The support given by the Council and the government, more in general, may result in five steps⁹¹, regarding both labour law regulations and skills development:

- The adjustment of the regulation regarding unemployment benefits will ensure to every worker a secure safety system in case of unemployment, regardless of the employment status.
- Platform work will be considered equal to the traditional one as concerns social benefits. It will allow more people to enter in the platform economy without concerns.
- The Council supported the above-mentioned first collective agreement between Hilfr and 3F.
- The strengthening of the future potential of the platform economy: the government agrees in adjusting regulations regarding this topic and

⁹⁰ <https://blog.hilfr.dk/en/historic-agreement-first-ever-collective-agreement-platform-economy-signed-denmark/>

⁹¹ World Economic Forum, *5 ways Denmark is preparing for the future of work*, 21/11/2018, available at <https://www.weforum.org/agenda/2018/11/denmark-is-preparing-for-the-future-of-work/>

launching a web platform responsible to provide answers about the public regulation of the on-demand and sharing economies.

- Investments in training, education and lifelong learning are fundamental to upskill the workforce for the challenges in the digital era. Among the initiatives, we can find the “transition fund”, created to provide free training.

The Danish case should be taken as a reference for any platform around the world, confirming that it is possible for new digital technologies and platform business models to coexist with labour rights, ensuring fair and decent working conditions and labour rights for workers. It shows that platform workers could have the opportunity to unionize as traditional employees do.

However, it is difficult for the Danish model to be replicated at the European level for the creation of a uniform regulation. Maria Tzanakopoulou, a researcher of EU law at the University College London (UCL), thinks that the Danish innovative action will make no difference at the EU level⁹². A European shared regulation is complex due to the wide variety of gig workers, the lack of European specific competencies (such as the introduction of a minimum wage) and there may be a low real political interest for the matter, as stated by the researcher.

Although this critical consideration, any country and any platform should guarantee to platform workers the labour rights typical of employees: both individual (such as safety and health protection) and collective (as the above-mentioned minimum wages and decent working conditions), regardless of the classification of the worker. As we have just seen with the Hilfr case, it is possible to have both autonomous workers and employees in the same situation with the possibility to allow them comparable benefits.

2.3.3 Belgium and umbrella companies' protection

A possible way to protect platform workers is the introduction of the so-called “umbrella companies” in countries where the gig economy is spreading. They refer to companies that are created with the aim of ensuring a working contract to autonomous workers, who want social protection and an administrative support for

⁹² Magnani A., *Contratto, ferie, 19 euro l'ora: come funziona in Danimarca la gig economy*, Il Sole 24 Ore, 18/04/2018

the collection of their earnings⁹³. In addition, these companies offer help to workers in case of delays or refusal of payments by the requester/client by providing workers with their own monetary funds and thus preventing one of the risks listed in the first chapter. In some cases, they can assume the function of a collective workers representation.

In Italy, this proposal was highly recommended by Pietro Ichino⁹⁴. Umbrella companies are already present in some countries, such as the UK and Belgium, which showed a unique situation. Indeed, Belgium was especially known for role of SMart (Société Mutuelle pour les Artistes), an umbrella company that was founded in Belgium in 1998 as a community-based organisation, which reached 80,000 members over the years. It is present in eight European countries with the role of supporting freelance workers in their activity by guaranteeing security, administrative, legal and fiscal help.

In Belgium, it signed an agreement with Deliveroo, ensuring some benefits and protection to food delivery workers. First, they were given a minimum wage regardless of the number of deliveries and thus ensuring an income security. In addition, they received a contribution for the use of the smartphone and the bicycle and they were reimbursed eventual expenses for its maintenance.

Deliveroo signed this contractual agreement with the umbrella company in order to have an available student workforce at its disposal (without hiring them directly as workers) and thus it could access the Belgian employment tax relief for students. Both workers and the platform benefited from this cooperation⁹⁵. The reference period in which the agreement was put in place was between 2016 and 2018. The food delivery platform used SMart as an intermediary to employee workers. In other words, the gig economy for this particular situation included two different intermediaries: the platform for the match between demand and supply of labour, and the umbrella company for the protection of workers.

⁹³ <http://www.rainews.it/webdoc/welcome-to-your-gig/un-altra-gig-economy-e-possibile.html>

⁹⁴ Pietro Ichino is a senator and a labour law lawyer, who proposed the draft law “*Disposizioni in materia di lavoro autonomo mediante piattaforma digitale*”, October 5th 2017.

⁹⁵ Drahokoupil J., Piasna A., *Work in the platform economy: Deliveroo riders in Belgium and the Smart arrangement*, ETUI – European Trade Union Institute, 2019

In Belgium, workers are asked to choose between three categories: salaried work, independent worker and civil servant⁹⁶. It is clear that the second category includes the workers active in the platform economy, such as Deliveroo. SMart members are guaranteed a social security after they have signed the SMart contract together with the platform on which they work. After that, SMart takes care of all the aspects related to work: it pays the contributions and taxes on behalf of the worker and it gives the salary to its members (after having kept a 6.5% fee for the service) even in the case in which the platform company has not done the payment.

In the case of Belgium, SMart signed a joined agreement with Deliveroo and another platform, Take Eat Easy, in order to administrate the payment processes and to ensure protection to workers. Thus, SMart had the typical role of an “umbrella employer”, who ensured the necessary insurance policies for the protection of platform workers. Workers could decide to remain self-employed managing the relation with the platform directly or to be “employed” by SMart. In particular, SMart workers have access to a minimum wage, minimum three-hour shifts, safety training, the partial reimbursement of the use of the mobile phone and the a coverage insurance against accidents at work or against others. The latter was financed with the fees obtained from workers. In addition, workers could benefit from a salary fund created to safeguard them from delayed payment or its rejection. The effectiveness of this system was proven when Take Eat Easy went bankrupt in 2016. In that occasion, SMart used its salary fund to distribute a remuneration to the riders who were its members for a total amount of 340,000 euros. On the contrary, the other riders, who have not signed the membership with SMart, remained unpaid. After this event, the umbrella company gained a huge consideration and the number of its members started to grow: 90% of Deliveroo riders were members of SMart⁹⁷. Unfortunately, this cooperation was terminated: at the end of 2017, Deliveroo decided to close the agreement with SMart. The payment system was changed and Deliveroo introduced new mechanisms to distribute workers. If they wanted to continue to work through the Deliveroo platform, they had to be considered as self-employed riders and take care of responsibility insurance on their own. This change

⁹⁶ <https://smartbe.be/en/>

⁹⁷ Drahoukoupil J., Piasna A., *Work in the platform economy: Deliveroo riders in Belgium and the Smart arrangement*, pg. 11

was made in the same period in which Deliveroo and SMart were close to a collective agreement. Thus, the platform wanted to avoid this fact and the termination of the cooperation brought benefits to Deliveroo. The justification provided by the platform for this termination was to give workers greater flexibility, by using a compensation per-delivery instead of per-hour. However, the real reason behind this fact was linked again to the Belgian taxation system, which introduced an incentive for self-employed workers active on platforms. Thus, self-employment became convenient as the previous case of having students working.

One clear aspect that emerges from this situation is the central role of public policies, in this case taxation ones, which may alter the conditions of platform workers. In the above-mentioned situation, the tax incentive (which created to offer benefits to workers) produced the opposite effect at the end.

Given all these aspects, it is not surprising that workers did not agree with the decision of Deliveroo to close the contractual agreement with SMart. Indeed, in January 2018 a group of two thousand riders, supported by trade union federations, started a strike to protest against the self-employment status. The situation was calmed down only after a negotiation with the platform, but the situation never returned to the SMart model.

A survey conducted by the European Trade Union Institute (ETUI) with the support of SMart highlighted the negative opinion of workers about the decision of Deliveroo: 75% of interviewed riders agreed that the “employment” with SMart gave them a wider range of benefits than the case of working as self-employed. Some workers described SMart as a “family” that offered them insurance and support. Workers considered the collaboration with SMart as a way to promote flexibility while safeguarding working rights. On the contrary, they saw the shift towards the new system as a way to offer flexibility only to Deliveroo: in this way, the platform could organize working conditions and payments systems autonomously without interferences by external parties and it could exercise control over workers. On the other hand, riders stated that, from their point of view, the new system was a loss of workers’ rights, insurance guarantees and benefits due to the lack of a real contract. Some interviewed workers called it a “modern slavery”, which turns workers into commodities.

Half of the interviewed agreed in the probability of ending the working activity with the food delivery platform after the dissatisfaction with the new terms of the service. They feared that they would earn 50% less with the compensation paid per-delivery instead than per-hour and were not intended to do demanding shifts in risky conditions in order to do more deliveries.

All these elements hide a crucial aspect, which is the struggle to organize collective representations of workers in the platform economy. Thus, interventions in politics and labour regulations at international and national level are necessary to ensure flexibility to workers while offering them individual and collective rights.

For this purpose, the next chapter shows some cases and policies which were introduced in Italy to give fundamental and labour right to gig workers with the hope of reaching a wider sphere of influence, especially at national level. Only a robust regulatory approach could guarantee the ideal protection for workers.

2.4 The Italian case

In Italy, the gig economy issue is highly fragmented at national level. The labour law regulations have provided solutions and policy frameworks especially in the urban or regional area.

The situation in the city of Turin was the one that has attracted the media attention and the outcome has changed more times. Recently, we have encountered also the intervention of the city of Bologna and the region of Lazio, which have led to effective solutions, but still limited in comparison to a hoped national intervention.

The next paragraphs will analyse the evolution and effectiveness of the above-mentioned actions starting from the urban level (Turin) with a critical review, proceeding with national considerations and discussions about the effectiveness of introducing a new category for platforms workers or adapting existing regulations, and ending with two effective interventions at urban and regional level (Bologna and Lazio).

Many aspects may be repetitive in all the cases, but it underlines the fact that the necessary solution may be unique and based on the same elements. It should only be applied to a wider range of workers without territorial fragmentations or differences among gig economy sectors.

2.4.1 The case of Turin: the starting and turning point

Turin is well known when it comes to gig workers' working conditions and rights. The case of the food delivery multinational platform Foodora is emblematic in this sense. The media's attention has been focused on the evolution of the trial of six former riders, who were dismissed by Foodora after a general protest in the autumn of 2016. In that occasion, they protested against the low wages and the introduction of the pay per piecework and they fought for better working conditions, since the platform has been exploiting their work without the adequate protection. Indeed, before starting their working activity, workers had to sign a contract of a *coordinated and continuative collaboration* (co.co.co: collaborazione coordinata e continuativa). The contract stated that they were fully flexible and autonomous and not exposed to any form of subordination or employer-employee relation. The riders received some distinctive instruments from the platform, such as a safety helmet and a jacket with the name of the brand Foodora, but they had to leave a deposit of 50 euros for them. They were paid only 5.60 euros gross per hour, which was even lower than the amount of a voucher in the case of occasional services. They turned to the Labour Tribunal of Turin asking for the recognition of the status of employees and for the introduction of working rights, safety and privacy protection. This was the first civil case concerning the Italian gig economy.

In April 2018, the Tribunal dismissed all their claims at first instance ("ricorso di primo grado"). The motivations for which they could not be recognized as employees were primarily based on: the acceptance of the contract by both the signatory parts, the fact that workers were flexible and not obliged to give their availability for any turn requested by the platform, and the absence of a hierarchical power in the hands of the platform company. Another reason that may have convinced the Tribunal to side with the platform is the fact that actually workers were provided some protection measures from the platform. Indeed, Foodora guaranteed them the INAIL insurance against injuries at work, INPS contributions and an additional insurance to safeguard them in case of damages to third parties. However, the Tribunal's first decision did not take into consideration the fact that workers were "obliged" to sign the co.co.co contract that stated that they were autonomous since it was the only one available. Moreover, the signed documents lacked a real conformity with the actual situation in which they worked because in

fact, behind the role of “collaborator”, they had to work as real employees. The riders’ lawyers explained that they had to be constantly available, even in bad weather conditions, and they were monitored through an electronic bracelet. The lawyers have shown some mobile chats between the riders and the platform’s operators as a proof of lack of interest towards workers’ rights⁹⁸. As concerns the counter-argument against the third motivation, the riders declared that the platform had the power to direct and organize work and thus that it had the role of an employer.

Thus, given all these elements, the riders and their lawyers did not want to give up and they continued the juridical process hoping for a better resolution. The lawyers feared that the recognition of this system as legitimate could create a domino effect and worsen the platform workers’ condition of other sectors. For this reason, they have presented another claim at second instance (“ricorso di secondo grado”) to the Court of Appeals (Corte d’Appello) of Turin.

The good news finally came in January 2019, when the decision of the Corte d’Appello of Turin⁹⁹ turned upside down the previous decision of the Tribunal. The Court recognized to the five rides the rights and protection typical of employees. This was the first time in which the riders were considered in the collective bargaining framework in Italy. In particular, workers have to receive a remuneration for the work they have previously done on the basis of their belonging to the category of employees of the collective contract’s fifth level, in the field of logistics and goods transportation. In addition, they have been recognized the right to paid holiday leaves, sick leaves and paid “tredicesime” wages. In addition, Foodora was obliged to reimburse them one third of the legal expenses for this case. It is clear that “This is a first answer to the *contractual jungle* put in place by many platform companies of this sector, showing them that they cannot turn workers into slaves”, as said by Druetta, one of the lawyers of the riders¹⁰⁰. This resolution has to be balanced with the Court’s objection to their other claims about their

⁹⁸ Callegaro F., Famà I., *Foodora, respinto il ricorso dei rider in tribunale: il giudice ha accolto le ragioni della società tedesca che aveva negato le accuse*, La Stampa, 11/04/2018

⁹⁹ Corte d’Appello di Torino, Sezione Lavoro, Sentenza n. 26/2019, published on 04/02/2019.

¹⁰⁰ Callegaro F., *Processo Foodora: Corte d’Appello accoglie il ricorso degli ex rider*, La Stampa, 11/01/2019

discriminatory dismissals (since they were not welcomed back to work) and about the issue regarding privacy protection, according to which they asked to be indemnified by the platform because of the access to their personal data and the control at distance. However, we can say that the recent decision of the Court of Turin is a huge achievement and advancement in this topic even if it regards a limited part of workers. The recognition of the rights typical of employees is the most satisfactory solution for digital workers and it should be achieved also at national level, not only for a limited part of workers, in order to obtain the desired results and equality in labour by creating a general agreement about digital work principles.

What may happen next? There may be the possibility that other riders take the same steps of their colleagues from Turin. As we have seen in the first chapter, the number of Italian riders is about ten thousands. However, this may influence also other sectors outside the food delivery, such as taxi driving or house cleaning.

Another possibility, which is already spreading, is the change of the platform's policies. After the juridical processes and the increasing media attention, Deliveroo itself, its competitors (such as Uber Eats) and other digital platforms have started to put in place new insurance policies to protect workers¹⁰¹. One example is Uber and its partnership with AXA, a French insurance multinational company. The aim is to provide new insurance policies including sick leave, work accident and maternity or paternity leave for Uber drivers. Whereas, as regards the Deliveroo case, after its first victory at the Tribunal in April 2018, it was not unperturbed and it introduced a new insurance policy the following month. The latter regarded the coverage of work injuries and damages to others and it offered a refund to workers for the inactivity period after an accident. Workers were protected also for the hour after the log-out from the application. However, these new protection policies were highly different from those of a traditional employee in terms of maximum numbers and regulations.

Thus, it emerges that platform companies in Italy are starting to understand that this unregulated environment may end. For this reason, the recent decision of the

¹⁰¹ Biagio S., *Foodora, rider come dipendenti? Ecco cosa può succedere adesso*, Il Sole 24 Ore, 12/01/2019

Court of Appeals can be the turning point for the search of an effective solution for the Italian gig economy issue.

2.4.2 A critical review of the decision of the Court of Appeals of Turin and national considerations

The Court of Appeals of Turin has introduced a *tertium or quartum genus* in the organization of work between the contract of subordination (employee-employer relation) and the one of autonomous work, offering workers a new connotation different from the previous contract of co.co.co. The category in which these workers are now inserted regards the contract of “lavoro etero-organizzato”, introduced with the Jobs Act in 2015. It means that working collaborations (such as the co.co.co), which are based on exclusively personal and continuous services and whose execution mode is organized by the buyer (the platform in this case) also in terms of working times and places, have to be regarded under the subordination contract’s regulation¹⁰². For this reason, as already said, the Court acknowledged to allow them the retribution typical of employees of the CCNL’s fifth level in logistics and goods transportation, treating them under the discipline of subordinated workers. The decision of the Court was based on the fact that the case presented the feature of “hetero-organization” in several aspects:

- Riders worked in turns, in places and following routes selected by the platform, and thus they were not autonomous in the organization of the service.
- The delivery times were specified by the platform, which did not allow more than 30 minutes per delivery.

Thus, these two aspects demonstrate that the execution of the service is organized by the platform with regard to places and time of work, as stated in the typology of hetero-organized work. However, the working activity of gig workers towards the platform is not compulsory and it does not request a wide period of time in terms of hours per week (around twenty hours). Thus, the Court could not insert these workers in the category of traditional employment, but it agreed in ensuring them the protections expected in above-mentioned art. 2 D.Lgs n. 81/2015.

¹⁰² From 1 January 2016. Article 2 of the D.Lgs 15 June 2015, n. 81 (Jobs Act).

In other words, the hetero-organized workers (included platform workers) are autonomous, but their working activity is regulated as it were an employee-employer relation in terms of safety conditions, compensation, working times, holiday leaves and social protection.

The aspect that the Court did not adequately motivate was the rejection of the application of the regulatory framework related to the dismissal from the job. As stated by the lawyer Paoletti¹⁰³, it should have been applied as the other conditions since it is not excluded from the hetero-organized work regulation.

Paoletti affirms that the case of Turin could introduce a *quartum genus* in the Italian work arrangements in addition to the traditional salaried employment (as defined in article 2094 of the Civil Code), autonomous work (article 2222 of the Civil Code) and continuative and coordinated collaborations (co.co.co. agreements under article 409 n. 3 of the Code of Civil Procedure). Paoletti calls the fourth arrangement “hetero-organized co.co.co relation”, underlying the fact that workers remain autonomous as in the case of co.co.co contracts but they are given the majority of rights belonging to traditional employees.

Despite the decision of the Court is only a partial solution, it is clearly a more efficient move than the previous decision of the Tribunal and it has created different opinions between labour law scholars about this case. In particular, some labour law professors are more oriented towards the allocation of gig workers in the category of employee-employer relation since it needs two fundamental elements to exist¹⁰⁴. One is the exclusive allocation of the activity’s result to a company/person different from the worker who has done the service; the other is the external organization of the activity. In the Foodora case, they are both present and then workers may be seen as employees.

As concerns the Italian national intervention about the issue of the gig economy, we can say that it is lagging behind. In June 2018, the newly elected Italian Minister of Economic Development, Labour and Social Policies put attention on the situation of

¹⁰³ Studio Legale Ichino Brugnattelli e associati, *Riders di Foodora, l’avv. Marco Paoletti commenta la sentenza della Corte d’Appello di Torino*, 11/02/2019, available at <https://ichinobrugnatelli.it/it/riders-di-foodora-lavv-marco-paoletti-commenta-la-sentenza-della-corte-dappello-di-torino/>

¹⁰⁴ Faioli M., *Perché al caso dei rider di Foodora il Jobs Act calza a pennello*, *Wired*, 27/02/2019

riders, defined as the symbol of an “abandoned generation”. The creation of the first contract regarding the gig economy was one of the main points of *Decreto Dignità* in order to end this system of lack of protection. The proposal regarded the prohibition of a pay per-piece work, the obligation to provide an INAIL insurance for work accidents, the duty for platforms to offer the necessary education to workers regarding safety and to equip them with protection instruments.

A discussion between the different parts (platform companies, associations) followed in order to find a common agreement. However, they failed in reaching the same point of view and the plans did not follow the expected path¹⁰⁵.

At the end of April 2019, the Labour Minister announced that the regulation for riders is finally ready. The new rules will be inserted in the Italian law for the minimum wage, which will be discussed in Senato. Now we have just to wait in order to see if the national norm will reach an outcome.

However, many institutions disagree with the decision of providing a legislative solution. For example, CISL’s representatives declared that a contractual solution would be more effective than a legislative one in order to guarantee immediate actions; one of UIL’s secretary supports the theory that it would be enough to impose the collective bargaining contract also to this increasing share of workers¹⁰⁶. The positive aspect of the Italian national intervention is the fact that the precarious situation of platform workers has gained awareness.

In the meanwhile, Italian regions are increasingly asking for the national legislation. In order to fill the gap of a definitive national intervention, some Italian regions (or even cities) have started to introduce regional regulations or guidelines to protect platform workers. This was the case of Turin and, as we will see in the next paragraphs, of the solutions provided in Bologna, in the region of Lazio and more recently with the start of the discussion in Tuscany. Thus, it is clear that in Italy the national intervention has been overcome by local solutions, which have recognized the urgent necessity to find a solution as soon as possible.

¹⁰⁵ Corriere Comunicazioni, *Gig economy, Regioni in pressing sul governo: “Serve una legge nazionale”*, 27/03/2019, available at <https://www.corrierecomunicazioni.it/digital-economy/gig-economy-regioni-in-pressing-sul-governo-serve-una-legge-nazionale/>

¹⁰⁶ Corriere Comunicazioni, *Di Maio: “Pronta la norma sui riders, garantiti stipendio e diritti”*, 29/04/2019 available at <https://www.corrierecomunicazioni.it/lavoro-carriere/di-maio-pronta-la-norma-sui-riders-garantiti-stipendio-e-diritti/>

2.4.3 The introduction of a new category of workers versus the allocation of gig workers to subordination

As regards the classification of gig workers, many researchers have tried to provide an answer to the feasibility of considering platform workers as employees. Generally, labour law frameworks apply universally used tests to define who is an employee. An alternative solution was provided by Davidov, who introduced a purposive approach in a case study to reach the conclusion that Uber drivers should be considered as employees¹⁰⁷. His approach was created with the aim of understanding “who is an employee” and its advantage is the fact that it prevents the obsessive use of legal and probably outdated tests.

In order to give an answer to his question, it is necessary to ask if a specific worker should, under his/her specific platform work arrangement, has access to the protection of labour law. A positive answer would mean that he/she should be treated as an employee. In order to provide an answer, the author suggests to check whether the relationship between a gig worker and a platform (“employer”) is characterized by two vulnerabilities, usually protected by labour laws. He identifies them in subordination (also called *democratic deficit*, in the sense of control) and dependency (in particular economic, referring to possibility for workers to spread risks, but it is also related to social and psychological needs). The presence of both should call for the necessity of introducing some forms of labour law protection; whereas the presence of only dependency should allow for the introduction of an intermediate category (dependent contractor) with some protections. Through this approach, the author came to the conclusion that both vulnerabilities are present in the Uber case and thus they should be considered as “employees”. However, this approach was criticized due to its case-by-case solution and for the fact that it does not provide any consideration about the adequacy of existing regulations in addressing “platform-employees”.

As concerns the introduction of a new category to describe platform worker, we may find different point of views. De Stefano has intervened in this topic by underlying the fact that the introduction of a new category between autonomy and

¹⁰⁷ Davidov G., *The Status of Uber Drivers: a Purposive Approach*, Spanish Labour Law and Employment Relations Journal, 2017

subordination could complicate the issue¹⁰⁸. He uses the example of the “Occam’s razor” principle taken from philosophy, which states that simpler solutions are more likely to be correct and suitable to avoid unnecessary actions. One reason for this is the fact that the gig economy is not only reduced to riders, but it comprehends a vast heterogeneity of workers that perform various activities in different modalities. Thus, introducing a new general category for the digital economy may not solve the situation. Moreover, every new category requires a proper legal definition, which in turn may create uncertainty and shift the grey-area to other precision-related concerns.

Another argument related to De Stefano’s thesis is the fact that in some jurisdictions, qualifying workers in an intermediate category could deprive them of many rights, which are attributed only to employees. One example is the UK labour law framework in which the division between “self-employed” and “employees” adds the intermediate category of “workers”, who have only access to a part of labour protection in comparison to employees. Indeed, they do not have the right to the protection against unfair dismissal, as in the recent Foodora case in Turin, and to the right to ask for flexible work. Moreover, in a country like the UK there are obstacles for intermediate categories to claim reclassification for the full employment status.

A further reason against the introduction of a new category is related to the fact that non-standard forms of employment do not include only the gig economy, but they comprehend other forms of labour, which do not have a clear labour law classification and regulation. Thus, the creation of a designated category for gig workers would cause a wider segmentation in the labour market and the related labour regulation, causing more complexity. Thus, the crucial necessity is to consider the gig economy as work, which is not separated from the traditional labour market.

However, we may find opposite arguments that support the “proliferation of intermediate categories”, as defined by Davidov. In particular, Dr. Professor Perulli critically analyses the rigid distinction between subordination and autonomy in an increasingly complex and ambiguous labour market. As a premise, it is necessary to

¹⁰⁸ De Stefano V., *The rise of the «just-in-time workforce»: On-demand work, crowdwork and labour protection in the «gig-economy»*, International Labour Office Geneva, 2016, pg. 18

highlight the idea of economic dependency. Perulli tried to formally analyse *economically dependent work*¹⁰⁹, which can be attributed to subordinate work and to a part of autonomous work, leading to the qualification of an atypical working relation. The latter can be included in labour law regulations in terms of both *selectivity* and *universalism*, concepts present also in Davidov's literature¹¹⁰. Universalism refers to a range of universal benefits that apply to everyone; whereas selectivity regards those who are addressed to a specific target who is in need of them. We can affirm that the introduction of an intermediate category (such as "dependent contractors") may be a way to balance selectivity and universalism. The economically dependent workers, as labelled by Perulli, belong to a working framework with no subordination in legal terms (since they are not formally subordinated to any employer), but who present a condition of economic dependence. They are also called *parasubordinate* workers and they fell in the grey zone between the two traditional legal alternatives.

According to Perulli, the challenge posed by the digital transformation does not simply affect the juridical labour qualification between the traditional categories (which are becoming obsolete), but it mainly refers to the rationality of the effects produced by this classification. The crucial point is the fact whether these two strict categories produce a *rational* and *equal* qualification in terms of values, regardless of the formal classification of workers. The author defines a rational and equal labour system as the one which is able to offer regulative solutions that prevent an uneven balance between excessive protections to one part and few or any to the other¹¹¹. Perulli makes the example of Foodora riders: the distinction between autonomy and subordination is not the most relevant issue, but regulations need to concentrate on the lack of rights and labour protection even in the case of self-employment. The absence of individual or collective rights for these workers can be seen as the inadequacy of existing categories to produce *rational axiological*

¹⁰⁹ Perulli A., *Economically dependent / quasi-subordinate (parasubordinate) employment: legal, social and economic aspects*, 2002

¹¹⁰ Davidov G., *The Goals of Regulating Work: Between Universalism and Selectivity*, University of Toronto Law Journal, 2014

¹¹¹ Perulli A., *Il Jobs Act del lavoro autonomo e agile: come cambiano i concetti di subordinazione e autonomia nel diritto del lavoro*, WP CSDLE "Massimo D'Antona" 341/2017, pg. 6-7

outcomes in the current complexity of the labour market¹¹². Thus, the aim of labour law should be the introduction of equity and social justice in the regulation of these working relations, which cannot be pursued with the strict traditional alternatives. On the contrary, they cause fragmentations in this constantly evolving labour market and a consequent ambiguous situation. For these reasons, the author highlights the necessity to add the concept of *economic dependency* as a way to enlarge selective protections to non-subordination working relations, by introducing an intermediary category or by offering to workers subjective and personal solutions (protection selectivity) in existing categories.

Thus, it is clear that regulative frameworks do not have to force the allocation of these hybrid professional figures into the existing category of subordination in order to ensure them basic protections, but it is more crucial to guarantee social justice in the recognition of workers protections.

2.4.4 Bologna and the introduction of “Carta dei diritti fondamentali del lavoro digitale nel contesto urbano”

In Italy, labour law regulations regarding the on-demand economy tend to be at regional or urban level. One recent example was provided by the municipality of Bologna, which introduced the so-called “*Carta dei diritti fondamentali del lavoro digitale nel contesto urbano*” (the charter of fundamental rights for digital labour in the urban context) to protect the riders operating in the city.

It was signed in May 2018 by the major of Bologna and other municipality’s representatives, CGIL, CISL, UIL, two platforms (Sgnam and MyMenu, which are now merged in one single company, Meal Srl, active in the food delivery sector) and workers representatives (Riders Union Bologna)¹¹³. In March 2019, the most recent signatory part was the American multinational company Domino’s Pizza. The aim of this charter was to introduce minimal security standards regardless of the worker’s juridical status in order to maintain the dignity of work and be aware of the importance of labour rights in this grey area. This idea is in line with the previously

¹¹² See previous note, pg. 7

¹¹³ <http://www.comune.bologna.it/news/firmata-bologna-la-carta-dei-diritti-fondamentali-dei-lavoratori-digitali-nel-contesto-urbano>

mentioned fifth principle of the European Pillar of Social Rights “flexible and safe employment”.

The negotiation between the different parts led to several principles listed as articles in the charter¹¹⁴ and it created some main macro areas of action: contractual transparency, pay, protection and rights, the portability of ratings.

The first point (art. 2 and 3 of the Charter) regards the prior access of workers to full information regarding their working conditions and it follows the same indications listed in the previous chapter regarding the EU, such as the parties involved, the working place, the nature of the job and information about the time and the duration. Moreover, platforms are required to explicit the minimum number of paid working hours, to highlight the reciprocal right of withdrawal and to specify the working instruments, if any. The last aspect is important since platform operators have to inform workers about the possibility of being monitored at distance, for example through GPS systems. In addition, in order to protect workers from the risk of discrimination caused by the rating system, platforms have to ensure the possibility for workers to address to third parties in case of objection¹¹⁵. The second topic of the charter includes different articles¹¹⁶ and it has the strongest importance since it supplies clear directions regarding the protection of the individual.

- First, workers have the right to have a fair and respectable hourly pay (art. 4 of the Charter). In any case, it must not be below the minimum contained in collective agreements signed by sectoral trade union organizations, which are representative of traditional employees in similar services to the platform’s ones. This decision aims at linking the digital economy to national contracts for traditional employment relations. Moreover, platforms have to give an additional compensation to gig workers who provide their service in particular conditions (at night, during holy days or in difficult weather conditions).
- Workers must not be discriminated in any form and the platform’s withdrawal from the working relation has to be motivated and formally

¹¹⁴ Comune di Bologna, *Carta dei diritti fondamentali del lavoro digitale nel contesto urbano*, 2018

¹¹⁵ See the previous note, pg. 6-7

¹¹⁶ See the previous note, pg. 8-9-10

explicated with prior notice in a written form (art. 5 of the Charter). The termination of the contract is allowed only for just cause. The prohibition of discrimination is in line with the ILO's fundamental labour right principle.

- Platforms have to show attention to the right to health and safety of workers by evaluating and preventing any risk (art. 6 of the Charter). Thus, they agree in signing an insurance for their workers to protect them from illnesses and injuries at work and any form of accident. This is relevant in the case of riders, who may be involved in car accidents with other people and thus the platform has to offer the insurance coverage for workers and the potential parties involved. In addition, platforms have to provide all the necessary safety instruments.
- Another aspect regards the protection of workers' personal data for privacy issues. It states that platforms have to provide information about the purpose of the use of data and the entities that can have access to it. Workers may suspend the proliferation of personal data if the process violates the regulatory terms. They can also make objection about the use of data for platform's control and monitoring purposes.
- Workers are allowed to freely connect to the platform and, most importantly, to disconnect (art 8 of the Charter) at any time.
- As concerns collective rights, workers have the right to build or to join a trade union organisation. They can do it during or after the working time with a limitation of ten hours per year, which have to be remunerated. They can meet in places provided by the platform, if any. In alternative, the municipality of Bologna can offer a space for them and this is also valid if workers are active on more platforms.
- Workers have to be listened to and thus the Charter gives them the right to stay off the job collectively (art. 10). This right allows them to show their potential discontentment against the platform.

The administration of the Bologna municipality agreed in monitoring the outputs of the application of the Charter and discussing with the interested parts every semester. The experiment of the food delivery has the future hope of enlarging the application of the charter to other on-demand sectors and to other cities in order to

support the growth of the digital economy with consideration of workers' protections.

However, the initiative of Bologna has not reached the desired effect since it was not initially signed by the most consolidated platforms, such as Deliveroo, Foodora and Just Eat. Some platforms rejected the proposal stating that their workers are already satisfied, others pointed out the fact that signing the Charter in Bologna would be an unfair behaviour against other cities in which they operate.

In order to convince more platforms in taking part in the agreement, the municipality of Bologna intends to list on the website a list of the virtuous platforms that have already signed the charter as a synonym of quality and to inform citizens to pursue a more aware and responsible consumption. In addition, the municipality intends to give incentives to the signatory platforms and to offer courses about security at work. Disincentives will also be present as a form of "punishment".

The most positive outcome of this regulative approach is the recognition that collective territorial bargaining has the power to introduce effective protection for digital workers, by using a perspective that is not linked with the frequent dilemma between autonomy and subordination. Although the limited effectiveness of this solution, it shows how the territorial level is the most suited one to understand the needs of gig workers. This is because at this level it is easier to build social coalition mechanisms between all the social actors involved in the digital economy: workers (organized in spontaneous organizations), institutions, unions and citizens-consumers (Forlivesi, 2018). They are all able to influence the market power of platforms at the local level, by relying on reputational effects, and to build a collective counter-power able to create new "windows" for bargaining. Indeed, the final result in Bologna was the outcome of traditional collective counter-powers (such as strikes, which have preceded the negotiation) and innovative organization mechanisms (modern forms of communication, such as groups and events on social networks), which allowed workers' representatives to reach a large group of people in a rapid way¹¹⁷. In addition, this case clearly shows the possibility for digital workers to create "partnerships" with different urban actors capable of supporting their collective arrangements.

¹¹⁷ Martelloni F., *Individuale e collettivo: quando i diritti dei lavoratori digitali corrono su due ruote*, Labor&Law Issues, Vol. 4, No. 1, 2018

2.4.5 The Lazio region initiative: “Norme per la tutela e la sicurezza dei lavoratori digitali”

At the regional level, Lazio was the first innovator in the field of the gig economy since it has provided a regional law for the protection of digital workers. Indeed, it can be considered the first law for digital labour in Italy¹¹⁸. The “*Law proposal n. 40*”¹¹⁹ about “*Rules for the protection and safety of digital workers*” was encouraged by a discussion between workers (riders in particular), platform companies and trade unions.

The proposal of the present law was firstly submitted in June 2018 by Giunta Regionale to the evaluation of Consiglio Regionale. Although it was mainly thought for the protection of riders working in the food delivery industry, as in the case of Turin, its beneficiaries are all the workers active in the current on-demand economy via-apps or platforms. The elaboration of the law was supported also by a web consultation and it was finally approved in February 2019.

The premise behind this regulatory framework is the idea that innovation and rights cannot be separated, but they need to go hand in hand to obtain the perfect bond. Similar to the Charter of Bologna, the regulation of Lazio tries to be in conformity with the fifth principle of the European Pillar of Social Rights. It provides guidelines regarding digital labour issues about the dignity, the safety and the health of gig workers, the transparency of the digital economy and the fight against any form of inequality and exploitation¹²⁰. In detail, it consists of six main pillars¹²¹:

1. Health and safety in the digital work: the platform has the duty of ensuring a mandatory insurance policy for workers against work accidents, occupational illnesses and damages to others during the working activity. Moreover, digital workers should be psycho-physically protected by providing them with an education about safety and risks prevention at work.

¹¹⁸ Masciocchi P., Sole 24 Ore, *Le norme per la tutela e la sicurezza dei lavoratori digitali*, June 2018

¹¹⁹ Regione Lazio, Giunta Regionale, atto n. 9858, June 15th 2018, available on Bollettino Adapt: <http://www.bollettinoadapt.it/proposta-legge-regionale-norme-per-la-tutela-e-la-sicurezza-dei-lavoratori-digitali/>

¹²⁰ See previous note, Capo I Disposizioni Generali, Art. 2 (finalità, oggetto e definizioni)

¹²¹ Camera R., *Lavoratori digitali: un portale pubblico per gestire l'attività e garantire le tutele*, 26/06/2018, IPSOA

Their working instruments have to be exposed to regular maintenance from the platform, which is also responsible to equip workers with the necessary safety instruments (Art. 3 and 4, Capo II, Le Tutele).

2. Social security and protection: the platform must take care of issues like maternity or paternity, for which workers will receive a proper insurance. As regards the first two points, the insurance does not have any exemption to be charged to the worker.
3. Remuneration: workers cannot be paid for the final output, but the compensation has to be based on the minimum pay per hour, which is elaborated through collective bargaining contracts signed by the most representative labour unions (Art. 5, Capo II), as in the case of Bologna. In this way, the frequent scenario in which platforms decide about the entire process is limited by the influence of other parties.
4. Education and information: the platform has the duty to make adequate formation for workers about risks prevention (as stated in the above-mentioned point number two) and to inform them in a written way about the contractual relationship in a transparent way. The information that have to be listed are almost the same from the previously mentioned cases, such as the potential risks, places of work, the specific activity, the remuneration and the benefits. Additional elements are the safety instruments, the typology of education provided by the platform, the effects of the customers' reviews and, last but not least, the verification of those ratings in case of worker's objection (Articles 6 and 7, Capo II). The law establishes also the portability of ratings from one platform to the other.
5. The *Digital Labour Portal* and the *Digital Economy and Labour Council* (Consulta): these instruments will support the present law. One is the so-called "*Portale del lavoro digitale della Regione Lazio*", to which gig workers from Lazio and the related platforms can access to obtain instruments and incentives from the region. It will consist of the Regional General Register Office (Anagrafe regionale) for digital workers and the Regional Register for digital platforms. The latter can be joined only if the platform respects all its duties and, after the registration, it can use the regionally recognized label "Fair Economy" (Art. 9, Capo III, Gli Strumenti).

On the other hand, the Council's aim is to provide further analysis and discussions among the parties involved in the digital economy in order to keep the present law monitored and updated and to follow the future development of the issue. Moreover, the Council has the role of creating a Charter of the digital workers' rights to provide rules and promote awareness about their protection. It should also spread the idea of a more responsible consumption.

6. Monetary resources: for the years 2019 and 2020, the Lazio region will dedicate one million euros for the intended labour protection policies and 100,000 euros for the realization of the internet portal in 2019.

The law establishes that, in the case in which a platform does not follow these duties, it can be charged a penalty for an amount from 500 to 2000 euros (Art. 8, Capo II). Although the present law can be regarded as complete from the point of view of digital labour protection, it lacks a core aspect. Indeed, it does not address the issue of the juridical status of gig workers. Are they treated as self-employed workers or employees? The Lazio's regional law is not clear about this aspect. However, regardless of the specific employment status, we can say that it offers an innovative step forward in facing the digital labour issue.

Another limit may be the fact that, although it is addressed to all the digital workers operating in the on-demand economy, we can state that it can be referred only to the category of work on-demand via apps. Crowdwork is more difficult to be managed at regional level due to the dispersion of workers and platforms worldwide. On the contrary, workers on-demand via apps operate in the Lazio region and are more easily monitored and mapped. Seven thousands of them operate exclusively for Lazio's food delivery platforms, whereas the total amount of digital workers is about 100,000. Thus, it is clear that the most visible category of gig workers (riders) is only a small part of a large share of work that needs protection.

As concerns future prospects, a hoped orientation would be the application of the present law to other Italian regions (e.g. the region of Tuscany has already started to discuss about the protection for digital workers) or, more usefully, a national law that would include all the aspects of this regional law. Uniformity in digital labour

legislation is highly recommended if the country wants to grow by exploiting the opportunities of the digital transformation.

2.5 Drawing conclusions: the manifesto to save the gig economy

As we have analysed in this chapter, the possible actions that can be undertaken to safeguard platform workers are multiple. The core aspect that emerges is the fact that the status of employment of these workers is not as crucial as their access to labour rights and protection. This means that it is fundamental to guarantee them individual and collective rights regardless of their juridical classification. Both independent and employed platform workers should be protected in the same way when it comes to fundamental and minimum labour rights.

As a way to recapitulate the most significant solutions and proposals pointed out in this chapter and to offer new ones, we will take as a reference point the recent update (May 2019) of the manifesto about how to save the gig economy written by Aloisi, De Stefano, and Silberman¹²². The majority of the points highlighted by the authors reflects the proposals and solutions adopted in the different cases analysed until now.

First, we should not consider platform work as a parallel dimension to the traditional one. It is crucial to implement existing regulations with rights concerning platform workers, who should be treated equally to standard employees. Working conditions should be the same regardless of the fact whether they work just to earn extra earnings or whether they are professionals earning their primary source of income on platforms. As regards the status of workers, platforms should classify as employees those who perform regular activities in an attempt to motivate them to deliver an efficient service. For this purpose, digital technologies can be a support in providing data about activity sessions and most requested services. On the other hand, platforms could use self-employed workers for temporary actions, which can be performed by anyone. In both the previous cases, it is necessary to offer respectable working conditions for workers, especially for those who are self-employed. Platforms have to guarantee minimum standards and rights, such as the

¹²² <http://regulatingforglobalization.com/2019/05/01/a-manifesto-to-reform-the-gig-economy/>

prohibition of discrimination and the access to collective bargaining (as we have seen in the paragraph regarding ILO's Fundamental Rights at work), a decent wage, health and safety conditions. In order to evaluate the working conditions of a particular typology of platform worker, it could be useful to compare them with those of professional engaged in similar activities in the traditional work in terms of compensation, insurance, protection and so on. In order to allow platform workers to express their collective rights, representative bodies for them should be created. For example, Foodora riders have set up the first platform work council in Vienna, whose members have representative and bargaining functions.

There are many ways to implement decent standards. One possibility is the introduction of Codes of Conduct, containing instructions about minimum levels of protection. They should provide transparent information and guarantee that online content is legal, while avoiding misleading behaviours. We have seen the example of the Crowdsourcing Code of Conduct, highly used by many German platforms.

In addition, platform work should be regulated in terms of payments by providing clear rules regarding the issue, especially concerning refusals of payment by platform requesters. As we have seen, an external and neutral part should be individuated and addressed in case of non-agreement between the parts involved. A crucial theme in platform work, as underlines in the recent EU directive on transparent and predictable working conditions, is the portability of ratings and of the working history of workers. It should be accompanied by the abolition of the exclusivity clause.

Lastly, as concerns working hours, the above-mentioned authors suggest that policymakers should regulate the on-demand economy as a type of casual employment¹²³. An emblematic model is the Dutch regulation of zero-hour contracts, another form of non-standard employment. In that case, workers have the guarantee of a minimum working time after some months of work on the platform. What is sure is that regulations at any level are necessary to provide a secure working environment for workers in the gig economy. In this way, digital platforms and new powerful digital technologies could allow many sectors to gain efficiency and deliver a higher value. This is true for traditional industries focused on

¹²³ It refers to the case in which workers are guaranteed to work only when it is necessary, without future expectations.

production and consumption, but also for socially relevant sectors such as healthcare. The digital transformation is revolutionizing the way in which healthcare operators accomplish their irreplaceable role and the way in which people approach to this area, as we will see in the next chapter.

CHAPTER III - TAKING ADVANTAGE OF DIGITAL TECHNOLOGIES AND LABOUR PLATFORMS IN HEALTHCARE

The digital transformation and its different connotations are not only changing sectors that are based on the production and consumption of goods, but also those whose forces are the planning and development of services, which create commonly shared benefits to citizens. One of these is healthcare, whose effectiveness reflects the advancement of a country or, on the opposite, its decline.

In the recent years, we are witnessing how digital technologies are affecting healthcare and the consequent changes that are shifting the traditional hospitals towards more innovative future expressions of hospitals 4.0 and different approaches to medical work. The various stakeholders of the healthcare industry are trying to stay updated on the latest trends in digitalization and thus they are introducing new technologies or devices that can help the digital revolution run more smoothly in this fundamental sector.

This chapter will focus on the current challenges of the healthcare sector and the adoption of digital technologies as a way to overcome them. It will analyse their advantages, the negative aspects and the social factors behind their acceptance. It will then analyse new forms of on-demand healthcare as a way to solve the problems related to the workforce and the consequences on the parts involved.

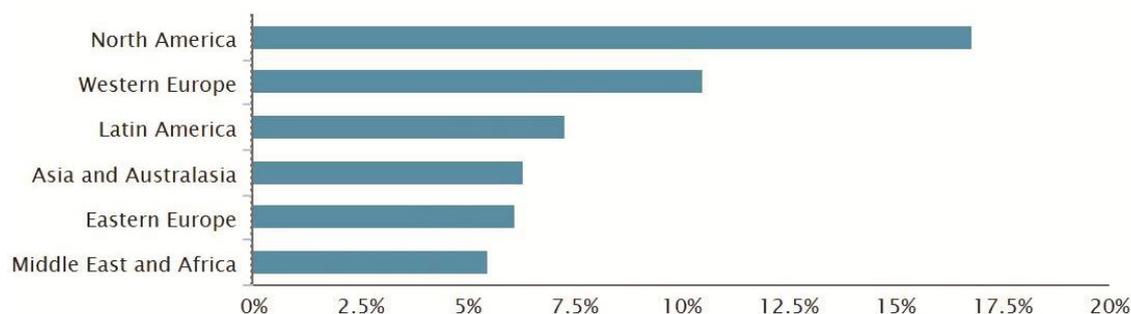
3.1 The healthcare sector: an overview

The global expenditures for healthcare are expected to increase at an annual rate of 5.4% in 2018-2022 in comparison to 2.9% in the previous five years¹²⁴. As concerns financial data, the global spending will probably reach a total amount of US\$ 10059 billion. In detail, North America will be responsible for US\$ 4175 billion, followed by Asia and Australasia with US\$ 2427 billion, whereas Western Europe will account for US\$ 2279 billion in the time range 2018-2022 (source: The Economist Intelligence Unit). Healthcare is one of the sectors that absorbs a large part of GDP. As we can see in the next figure, almost 30% of the GDPs of North America and

¹²⁴ Deloitte, *Global health care outlook: shaping the future*, 2019

Western Europe are devoted to healthcare expenditures, respectively 16.8% and 10.5% in 2019.

Figure 4: Healthcare spending as a percentage of GDP (2019)



Source: *The Economist Intelligence Unit*

The factors that are behind this increase of expenditures are multiple. One is the growing and aging of the population due to the rise of life expectancy: the average in Western Europe went from 77 years in 1999 to 82 in 2019 and from 76 to 80 years in North America (source: The Economist Intelligence Unit). Currently, the number of people over the age of 65 are 11.6% of the global population.

Another element that is responsible for the healthcare spending is the victorious fight against communicable diseases, i.e. infectious diseases, caused by viruses or bacteria transmitted from one individual to another. On the other hand, a large part of costs is due to the spread of non-communicable diseases (such as diabetes and cancer), which are expanding steadily. Other factors that explain the rise of healthcare expenditures are the expansion of developing markets, clinical and technological developments and the rising labour costs (Deloitte, 2019).

It is clear that the large area of influence of this sector and the related expansion in spending require a more efficient system able to produce results while reducing costs. The trend that we are starting to see regards a double point of view. On the one hand, we are experiencing a shift from a “sick-care” to a true “health-care”, in which the medical actions are oriented towards the prevention of illnesses instead of a late intervention. On the other hand, the patients, and the citizens in general, are becoming more informed and willing to get awareness of their health conditions and of the ways in which they can be active players. They have high expectations about their country’s healthcare system in offering new innovative solutions and providing coordinated and accessible services. For this reason, the digital

transformation is moving towards this direction with the aim of introducing innovative technologies in order to improve the healthcare experience, offer customized programs, build systems based on data, revolutionize where and how services are provided and by whom (Deloitte, 2019).

The digitalization of healthcare is the key determinant of the engagement of patients and thus it is crucial to analyze its impact not only on the providers of these services, but also on the receivers of them. Thus, the next paragraph will first provide an overview of the emerging technologies in healthcare and their related benefits as well as risks and then it will focus on the sociological effects they create on patients and workers.

In addition, another crucial issue has to be pointed out. It is expected that we will experience a shortage of physicians in the next years. In particular, a recent study predicted a shortage of nearly 122000 healthcare professionals (or 46900 in the most positive scenario) by 2032 in the US¹²⁵. The demand for doctors grows faster than their supply mainly due to the increase and aging of the population, which regards also the consequent aging of the workforce. Over 65 years old people will grow by 48% by 2032 and 2 out of 5 doctors will be over that age or retired (IHS, 2019). This fact is accompanied by the growing difficulty in attracting a skilled workforce.

In order to address this issue, it is necessary to seize the opportunities offered by technology as a way to deliver more innovative services and complement the work of traditional physicians. For these reasons, the interest in the implementation of virtual health programs is growing (Deloitte, 2019), as we will see in this chapter. On the other hand, digital platforms for on-demand healthcare may offer a support for the lack of adequate professionals at the right time and place, as it will be analyzed in the final part of the chapter.

3.2 Digital technologies in healthcare

Industry 4.0 has its manifestation in healthcare through the so-called *Health 4.0* or *e-health*. As we have seen in the first chapter, the technologies and the opportunities

¹²⁵ IHS Markit Ltd, *The Complexities of Physician Supply and Demand: Projections from 2017 to 2032*, report prepared for the Association of American medical Colleges (AAMC), April 2019, pg. 4

introduced with the digital transformation are multiple. The same can be applied to healthcare, which will perceive the benefits even more than other sectors.

3.2.1 The objectives of the digital revolution in healthcare

Health 4.0 is based on a series of principles, which were previously introduced by Hermann with regard to the automotive sector and then adapted to healthcare¹²⁶:

- The implementation of Health 4.0 should be coordinated with already existing technologies and social or legal requirements.
- Virtualization: Health 4.0 often manifests in the real-time exchange of data and the related integration of the physical sphere with the virtual one. The authors of the present principles define virtualization as “a copy of the real world, digitally stored in a storage device” (Thuemmler and Bai, 2017). It is based on the use of algorithms (autonomous or not) that support the customized healthcare services and treatments for each patient.
- Decentralization: Health 4.0 allows the collection and processing of health data in any place, at any time and in any way (which can be translated in the already mentioned ATAWAD principle).
- Real-time availability: this quality is necessary for Health 4.0 in order to be ready to face cases of emergency, which are frequent in this sector.
- Service orientation: the aim of Health 4.0 is to transform processes from the real world into functional services, which can simplify the access and the monitoring of healthcare treatments and procedures from anywhere.
- Healthcare digital services have to be offered on a custom and tailor made basis for each patient, relying on the specific data analysis of each one.
- Safety and security: Health 4.0 has to take into consideration the risks associated with patient safety and privacy issues, and thus it has to be in line with countries’ legal requirements.

The digital revolution in this sector changes both the way in which healthcare is delivered and the structure of hospitals¹²⁷, allowing the delivery of health services

¹²⁶ Thuemmler C., Bai C., *Health 4.0: How Virtualization and Big Data are Revolutionizing Healthcare*, Springer International Publishing Switzerland, 2017, pg. 213-215

¹²⁷ McKinsey & Company, *The hospital is dead, long live the hospital! Innovations that will shape the next generation of hospitals*, May 2019

outside the traditional boundaries of medical clinics. Patients are able to be monitored at home or in any other remote place without incurring in higher costs. The connection of different devices and the collection of data supports a high quality care with a strong focus on prevention and prompt intervention.

The response of healthcare providers to the new needs and developments in the sector is based on a series of objectives (McKinsey & Company, 2019).

Firstly, they are oriented towards the adoption of lean processes in order to guarantee high-quality services and productivity improvements thanks to the support of artificial intelligence (AI).

A second objective regards the reform of the workforce since the cost increase and the physicians' shortage require a more efficient allocation of existing human resources. To achieve this goal, healthcare operators are ensuring that highly qualified professionals are devoted only to crucial activities, leaving them free from bureaucracy or less-valued tasks, which can be assigned to other figures, or empowering nurses to perform activities with a higher responsibility thanks to training programs. For this purpose, the gig economy can give a huge contribution to healthcare, as we will see.

The third area of intervention regards the introduction of three typologies of technology: automation, technological organization of time for hospital workers and real-time decision support (McKinsey & Company, 2019). Automation allows the healthcare staff to spend more time with their patients and provide a higher quality care, by making repetitive and manual tasks automated. One example is the automation of food delivery services. The technological organization of time helps to manage the activity of human resources (doctors, nurses) in a more efficient way by lowering costs. For example, the Massachusetts Institute of Technology (MIT) has built an AI robot for this purpose. The last technology for inpatient care regards the use of computer vision and algorithms to support physicians' decision-making, by reducing mistakes and planning efficient processes. The most advanced systems are based on algorithms that are able to make diagnoses from anywhere: for example, some mobile platforms rely only on mobile phone images to recognize skin cancers and they are accurate as specialized doctors.

On the other hand, as regards the care outside the hospital, the objective for healthcare providers is to use technology for remote care and thus enrich the patient

experience and to equalize care at distance with the traditional one. This aspect includes telehealth or online medical consultations, which will facilitate the connection between patients and physicians, or between different doctors to share knowledge. Telehealth can be defined as the long distance clinical healthcare by the use of electronic and digital information and instruments¹²⁸. Its technologies include video conferences, wireless communications and the Internet. It is becoming a new form of gig or on-demand economy, since many platform companies have risen in order to provide a faster and more effective match between patients and clinicians. Moreover, telehealth may become an effective instrument to reach people living in rural or difficult accessible areas (as long as they are provided with electronic devices and an Internet connection), and thus it would be a method to try to lower inequalities.

Another core objective is the involvement of patients in the delivery of care by means of digital instruments, such as apps or the access to medical records online. Moreover, healthcare providers will need to harness data from patients in order to offer personalized treatments, which can lower healthcare expenditures. Now, we will see how 4.0 technologies are helping to achieve these objectives and the advantages of each of them, as well as some challenges they create.

3.2.2 The advantages and the challenges of 4.0 technologies in healthcare

As seen in the first chapter, the technologies of Digital Revolution can be divided into different macro areas. The first one is about Big Data, the Internet of Things (IoT) and Cloud Technology. We can affirm that they are already revolutionizing healthcare and their area of influence can even be larger for the future. In particular, Data are at the core of this sector due to the high amount of information that has to be collected and then analyzed to provide the most accurate solutions to a multitude of diseases. Data in healthcare are still at the first stages of a continuum, but this transformation is going fast. The advantages of data in this sector are to provide better health profiles and to offer predictive models useful for a successful diagnosis

¹²⁸ Definition provided by The Office for the Advancement of Telehealth (OAT)

and treatment¹²⁹.

As regards the collection of data through IoT, among the already applied technologies in healthcare, we can find wearable devices with body sensors, which have created a high competitive market where strong firms invest in more innovative solutions. Wearable devices are used to monitor one's health conditions in a time range and thus they have the advantage of detecting potential diseases before they manifest at a late state. They are often connected to mobile application, spreading the so-called use of *m-Health*. In healthcare, the IoT is often called the *Internet of Medical Things* (IoMT) or the *Internet of Healthcare Things* (IoHT), capable of monitoring relevant medical information in real time (such as blood oxygen levels, insulin level or blood pressure) and sending alerts in case of emergency. It is calculated that the healthcare sector is the one with the highest and most important impact from IoT. Indeed, a study by MarketResearch shows that by the next year 40% of IoT technologies will be related to this sector, with a total amount of almost 120 billion dollars.

IoMT technologies can be especially useful in the case of chronic diseases (for example diabetes or heart disease) in order to provide patients with effective instruments (such as blood glucometers or blood pressure measurements), whose data can be automatically sent to a healthcare provider in case of high risks patients. This information is crucial for these patients since they require a constant monitoring and they need to be autonomous in the necessary treatments. It is estimated that IoMT can reduce the healthcare costs for chronic diseases by 10-15%; whereas their application at the most advanced and full potential in remote monitoring and patient adherence can reduce these costs by more than 50%¹³⁰.

These technologies create a proactive role of patients in taking a direct control and monitoring of their health, becoming less dependent on the medical interpretation of physicians. This is possible also thanks to the user-friendly interfaces of these devices, which can be understood in a simpler way. It is crucial to empower patients in taking proactive actions since it is the most effective way to prevent future illnesses.

¹²⁹ McKinsey & Company, *The role of big data in medicine*, November 2015

¹³⁰ McKinsey & Company, *The Intern of Things: mapping the value beyond the hype*, 2015, pg. 41

These medical devices may have an integrated cloud platform for the storage of data, which can be transferred to different devices or apps and their crucial advantage is to support the healthcare industry to conduct researches.

In addition, they accelerate the “de-hospitalization” trend, taking patients out of physical hospitals, and the development of the “*Beyond The Pill*” solutions for pharmaceutical companies. This means that they go beyond the delivery of drugs and they are starting to take care of patients also in the following steps thanks to sensors monitoring health conditions¹³¹. Moreover, as previously said in the case of chronic diseases, the IoMT helps the reduction of the constantly increasing health expenditures. The remote monitoring of one’s health is a huge achievement especially in the current situation of doctors’ shortage. Technological devices allow the monitoring of one’s health from any place and thus they facilitate the diffusion of gig economy solutions in healthcare.

A future hope is that these connected and wearable devices will be able to monitor every aspect of healthcare in collaboration with robotics and AI. Indeed, the second macro area regards Artificial Intelligence (AI), which is incrementing in the case of healthcare. It produces benefits as well as risks and debates. Many people criticize it for the lack of a holistic approach typical of human judgment and, on the contrary, they state that AI may incur in unsafe advices for doctors, leading to ethical debates such as the allocation of responsibilities for harms caused by AI errors¹³².

However, the benefits of AI are enormous in the field of healthcare. It is a real step forward in the development of new medical solutions and the development of new medicines thanks to the analysis of large quantities of complex data. One recent example is the possibility for AI to detect dementia (Alzheimer’s disease) before symptoms manifest and thus provide an earlier diagnosis¹³³. Further researches will be necessary to apply it in practice, but it clearly shows how digitalization can improve health at a global level.

In addition, AI can fight the problem of medical staff shortage by automating many repetitive tasks, allowing doctors to devote their time to more useful activities and gaining motivation. On the other hand, others fear that AI risks to substitute a large

¹³¹ Champagne D., Hung A., Lecler O., *The Road to Digital Success in Pharma*, Focus, Vol. 22 n. 18, 2015

¹³² Academy of Medical Royal Colleges, *Artificial Intelligence in Healthcare*, 2019, pg. 11

¹³³ The Times, *AI could detect dementia before symptoms*, November 7th 2018

part of human workforce leading to unemployment¹³⁴. However, it is unlikely to happen since the complexity of skills typical of doctors is not easy to replicate. AI is suitable to collaborate with doctors, by empowering them to take more informed, updated and confident decisions.

Healthcare may be supported by other advanced manifestations of Industry 4.0, from robotics for surgery to the use of 3D printing in order to achieve the objective of leaner and more efficient processes by reducing time and costs. 3D printing, in particular, is relevant for the fabrication of medical devices and components, such as prostheses and organs (for potential transplants), or for the application in the dental sector. From the point of view of workers and competences, it can be crucial for the education of healthcare professionals, by allowing them to take part to surgical preparations and procedures¹³⁵. Indeed, it allows a truthful replication of body organs to be used as a way to make preparatory operations and studies before real interventions. The market for 3D printing technologies is accelerating quickly and it will probably reach 2.3 billion dollars by 2020 at the global level.

However, there are many differences across different states in the degree and speed of adoption of digital health. In Italy, for example, even if the awareness of these huge opportunities is present, the country is lagging behind in their widespread introduction. The management and regulation of these solutions does not have a sufficient organizational and financial investment. In the last five years, almost 150 billion euros were addressed to health expenditures (both private and public), but the necessary investments for the next five years will reach 210 billion euros (source: Istat). In comparison to other advanced countries, the Italian digital health spending amounted to 22 euros per person in 2017. This value is low if we compare it with Great Britain (60 euros), France (40 euros) and the high value in Denmark (70 euros per person).

What is sure is that the application of AI and of other disrupting technologies will require time to gain trust among the workforce and the patients. As concerns doctors and other healthcare professionals, they will require specific training programs and changes in the academic education of future workers in order to

¹³⁴ *Artificial Intelligence in Healthcare*, pg. 32

¹³⁵ Deloitte, *The future of health care potential, impacts and models of 3D printing in the health care sector*, 2018

amply their mindsets with specific skills and knowledge about the recent digital issues. As regards patients and the citizenship in general, they need to gain awareness of this digital revolution and of the potential opportunities it brings in order to gain more confidence about digital services. For this purpose, it would be interesting to analyze the impact that the digital transformation is creating on the sector's workforce and on the people who are affected by this progressive revolution. Are they afraid of healthcare's digitalization or do they consider it as a positive advancement? Which are the factors that influence their acceptance or refusal of digital healthcare services? The next paragraph will provide an answer.

3.3 A sociological perspective

Healthcare is a sector whose influence affects almost every person in any country with an existing health ecosystem. For this reason, it is not surprising that its digital revolution may create huge debates and different point of views among workers, patients and researchers about the effects of these technologies on not only economical but also sociological aspects. The crucial feature of this sector is the strong interaction between people, objects (electronic or not) and the environment, in which these relations took place. Thus, workers and patients have always to be contextualized in an ecosystem, which is an influencing aspect that creates a positive or negative impact on the relation. This requires a socio-technical approach between humans and between men and objects, and thus focusing on both the objective characteristics and the sociological and subjective elements of the interaction¹³⁶. The next paragraphs will underline some human factors behind the digitalization of healthcare and they will introduce a critical perspective on this revolution.

3.3.1 Digitalization and patients: the disintegration of widespread myths

A survey conducted by the consulting company McKinsey¹³⁷ highlighted a list of myths that have been frequently associated with the development of the digital

¹³⁶ Patel V., Kannampallil T., *Human Factors and Health Information Technology: Current Challenges and Future Directions*, Yearb Med Inform., 9(1): 58–66, 2014

¹³⁷ The McKinsey Digital Patient Survey (2014) was conducted in particular in the United Kingdom, in Germany and Singapore, which are countries with very different health system.

transformation in healthcare, although they are not true. They will help us understand the approach that people feel towards the digitalization of healthcare. The first myth regards the fact that many executives are convinced that people do not want to use digital services in healthcare. This affirmation is false since 75% of the responses were favourable for the introduction of digital services, as long as they truly answer to their needs¹³⁸.

A second myth concerns the category of people who are more willing to adopt them. The false belief is that only younger patients are opened to digitalization in healthcare. On the contrary, the survey showed that even older generations (over the age of 50) are interested in the adoption of digitalization at the same rates of younger people.

Another myth has often been associated with the typology of technology that is more preferable for healthcare digitalization. Many people believed it is focused on mobile health, i.e. the use of mobile devices or applications in healthcare. However, the survey's responses underlined that it is not universal among all the age groups. This is the only topic of the survey in which we can find a distinction between younger patients (willing to adopt m-health) and older ones (not truly focused on this digital solution).

In addition, many healthcare providers think that they need to develop highly innovative features for digital services in order to conquer citizens. On the contrary, the survey showed that patients prefer efficiency and a better access to information as the core features for the success of a digital service or technology¹³⁹.

The last myth is about the false thought that it is necessary to start the process on a large and complex scale and thus many healthcare providers get skeptical before launching innovations. On the contrary, the survey demonstrated that patients would prefer simple actions and a faster adoption rather than huge initial IT investments. Patients do not look for the entire completion of the system, but a progressive and simple evolution is more preferable¹⁴⁰.

Although their differences, the survey showed that they are asking for the same features in adopting digital healthcare.

¹³⁸ Biesdorf S., Niedermann F., *Healthcare's digital future*, McKinsey & Company, 2014, pg. 3

¹³⁹ See note 134., pg. 6

¹⁴⁰ See note 134, pg. 7

Thus, it emerges how very often the delay of the adoption of digital services is biased by some false beliefs, which have to be overcome in order to be willing to adopt new revolutionizing solutions.

On the other hand, we can see that patients are not afraid of the waves of change brought by the digital transformation in healthcare, probably because they have become accustomed to it before thanks to other sectors.

3.3.2 Human factors influencing the adoption of digital health services

The digitalization in healthcare consists of a system of interconnections between different actors, from physicians to patients or citizens in general. In order to understand the potentials of the digital transformation in this sector, it would be interesting to analyze the human factors that influence the attitude of these actors towards digital health. Literature provides a study of different cases in order to assess the main determinants in this topic, including both the facilitating factors and the obstacles to get engaged in digital health¹⁴¹.

The first factor is linked to the personal motivation of the people involved. It suggests that patients consider the digital revolution as an effective solution to gain motivation to remain healthy and active since new technologies allow them to monitor and gain awareness of their health conditions at any time and place. However, the perceived obstacles were found in the lack of time or interest towards digital programs, such as physical activity or weight monitoring¹⁴².

In addition, other limiting factors that may influence the motivation are the poor knowledge of these technologies or the preference for traditional methods. In particular, in Italy the digital divide and the related marginalization of elderly people is a challenge for the future development of digital health, starting from basic services such as the booking or consultation of medical exams online¹⁴³.

¹⁴¹ O'Connor S. et al., *Understanding factors affecting patient and public engagement and recruitment to digital health interventions: a systematic review of qualitative studies*, BMC series, 2016

¹⁴² Bardus M., Blake H., Lloyd S., *Reasons for participating and not participating in a e-health workplace physical activity intervention: a qualitative analysis*, International Journal of Workplace Health Management, 2014, pg. 13-14

¹⁴³ Fondazione Censis, *Cittadini e sanità digitale: l'impatto sociale della digitalizzazione in sanità*, 2016, pg. 68

A second factor can be found in personal life values. Many people are willing to adopt new technologies, such as m-health applications, because they are compatible with their life routines or mindsets. This area comprehends a vast quantity of facilitating reasons, (e.g. the time at their disposal, their life priorities and the level of digital literacy). Others are positive towards digital technologies, such as mobile apps, since they allow health monitoring without necessarily contacting a specific doctor and thus providing some anonymity, which is highly appreciated in this topic.

On the contrary, the life values barriers towards digital healthcare are linked to the previously mentioned lack of time or to a negative opinion about personal information security since many patients fear a risk of unnecessary information disclosure. Indeed, privacy issues are present in any sector in relation to digitalization.

A third enabling factor regards the way in which a patient gets involved in these technologies and online services. Literature shows that recommendations from known and trusted people are often a determining factor for healthcare technology engagement. In particular, this is true for Italian citizens, who give a huge relevance to the collective perception of these services (Fondazione Censis, 2016). Moreover, altruistic reasons are also present, meaning that patients may feel the need to give their support to a research by making their data available.

3.3.3 A critical perspective on the benefits of digital healthcare

As we have seen, the advantages provided by the use of digital services and technologies in healthcare are several. These positive effects ensure the acceptance of the healthcare workforce towards this revolution. Literature points out a group of characteristics that are appreciated by medical professionals in the use of e-health or m-health, which can be summarized in the following dimensions¹⁴⁴.

Firstly, availability is the crucial consequence of digitalization on the workforce: technologies allow for an increase in efficiency and consequent time-saving practices or easier access to information. In turn, this guarantees physicians to be able to serve more patients in a shorter amount of time.

¹⁴⁴ Lapao L., *Digitalization of healthcare: where is the evidence of the impact on healthcare workforce's performance?*, IOS Press, 2018

Another aspect is the possibility to provide services and monitoring at distance. It strengthens homecare through the accessibility to the workforce from any place, with easier interactions and adapted communication through the use of telehealth, which, as we will see, has been transformed into a form of gig economy.

Thirdly, healthcare workers are helped in their daily work thanks to the facilitated access to information, which can be useful for advancements in their competencies by providing second opinions to their solutions. The digitization of medical data is the priority for any other form of digital technology in healthcare. One clear example is the Italian introduction of the *Cartella Clinica Elettronica* (CCE) called *Electronic Patient Record* (EPR) in other countries, which is accessible to different medical professionals and which makes the work of clinicians faster by offering more continuative responses for each patient.

However, healthcare professionals and many researchers criticize some fields of digital health. An influencing author is the Professor Deborah Lupton, who wrote many reports about the topic from a different perspective. She points out how the majority of debates regarding this issue are concerned about the benefits, especially cost savings and improvements in health prevention. However, she wanted to contribute with a critical approach by using a sociological and cultural view, showing that digital technologies in healthcare have the potential of creating different ways of thinking about healthcare and medicine¹⁴⁵. She calls her field of research “*critical digital health studies*”, aiming at assessing the social, political and ethical factors behind digitalizing healthcare. According to her socio-material perspective, technologies are material actors correlated with human actors, whose relations build different material and not material, or human and not-human combinations, both with active roles.

In this perspective, the concept of *affective atmosphere* was introduced into healthcare. It means that feelings are created by these interactions between humans and not-humans in particular places or times. Humans may both influence this atmosphere or, on the contrary, be influenced by it. For example, the hospital is characterized by an affective atmosphere, where human actors (doctors, care-

¹⁴⁵ Lupton D., *Digital Health Technologies and Digital Data: New Ways of Monitoring, Measuring and Commodifying Human Embodiment, Health and Illness*, published in *Research Handbook on Digital Transformations* (edited by F. Olleros and M. Zhegu), Edward Elgar Publishing, 2016 (a)

givers, patients and other people) interact with non-human figures (rooms, sounds or technologies)¹⁴⁶. They are both responsible for the creation of emotions typical of this place and this fact implies that the same technology may have a different impact in relation to the place where it is used (in the hospital, at home or anywhere). Non-human elements have a strong role in creating the so-called “therapeutic landscape”, able to make people feel well (Lupton, 2016b).

Thus, healthcare has a strong emotional feature, which affects societies, making them more willing to adopt some technologies or creating contrasting feelings in relation to the emotional experience lived by the involved people. They co-habit with these technologies, which often make them feel good or comfortable, or make them feel anxious when the data seems bad.

As people move with these devices, they constantly produce other affective atmospheres in collaboration with other humans or non-human elements, considered as “human companions”. Any space outside the hospital could then become a therapeutic landscape and for this reason, the concept of the gig economy applied to healthcare may function, as we will see in the following paragraphs, by ensuring care in any place, even at a patient’s home or through a virtual and digital interaction.

One of Lupton’s strongest critical analysis is linked to the concept of data in digital health. The author states that they can be used for purposes other than exclusively medical ones. Indeed, in many cases they may be given to third parties for commercial and governmental purposes, blurring the boundaries of each area. This has impacts on the society since it enlarges the social injustice and exclusion of disadvantaged groups. Indeed, the use of people’s data may shift to their commodification and the so-called *dataveillance*, i.e. their utilization as a method of surveillance and regulation. At this point, a form of discrimination may begin due to the automatic categorization of people in particular social groups. The author introduces the example of the managerial use of data in order to assess people’s eligibility for health or life insurance. There may be the possibility that someone is excluded just because of the analytics of their personal health data. These discriminatory practices are possible because many health apps or platforms

¹⁴⁶ Lupton D., *How Does Digital Health Feel? Towards Research on the Affective Atmospheres of Digital Health*, 2016 (b)

require the acceptance of determinate terms and conditions, which may also include the transfer of people's collected health data to other parties.

In addition to this aspect, digital technologies may intensify the economics and social marginalization of other groups due to the lack or limited access to digital devices or to the internet.

This marginalization may also incur for demographic reasons, having older people involved in the use of self-tracking devices, which on the one hand, allow them to be proactive, but on the other hand, risk to isolate them from human interactions.

Thus, the society may see inequalities in the geographical, socioeconomic, state of health and demographic areas due to digital healthcare.

The *digitally engaged patient*, as it is called by the author, seems empowered by these new technologies, shifting the care responsibility from healthcare figures to patients. However, this idea may also have political connotations, since it encourages citizens to be voluntarily engaged in taking care of their health, which in turn reflects into more productive and successful societies (Lupton, 2016).

Recently, Lupton wrote an interesting book¹⁴⁷ about this topic focusing on all of her critical perspectives. Her book is defined as the first systematic analysis about digital health and its impact on social life. Her considerations are always taken from a sociological and cultural view of the phenomenon.

As regards doctors, she points out a series of reasons why they may not support digital technologies, such as telemedicine. In particular, she affirms that the simplest manifestation of digital health, i.e. the search for medical information online, may ruin the prestige of medical professionals, distancing patients from true opinions. At the same time, from the point of view of patients, telemedicine is efficient in terms of costs and time, but the perceived quality is lower than traditional healthcare frameworks.

3.4 The adoption of the Gig Economy in healthcare

The phenomenon of the gig economy is not limited to the sectors we have analyzed in the previous chapters. It is true that the most frequent applications of the on-demand economy are in food delivery and transportation, but it does not exclude

¹⁴⁷ Lupton D., *Digital Health: Critical and Cross-Disciplinary Perspectives*, Routledge, 2017

other industries to take the advantages of this new form of labour market. Healthcare is one of them. This typology of providing labour and matching the demand and supply of work has the potential of producing significant benefits for this sector, starting from fighting against the workforce shortage and lowering healthcare costs. However, it may also cause some negative aspects, as it happens in other industries that embraced the gig economy.

3.4.1 Taking advantage of digital labour platforms in healthcare

The gig economy in healthcare has already begun in some countries, in particular in the United States. It is evident in the growing trend of hiring temporary workers, which has started with nurses and is now spreading among doctors. The gig economy is changing the way in which healthcare is provided and the place (if any) where physicians and patients meet.

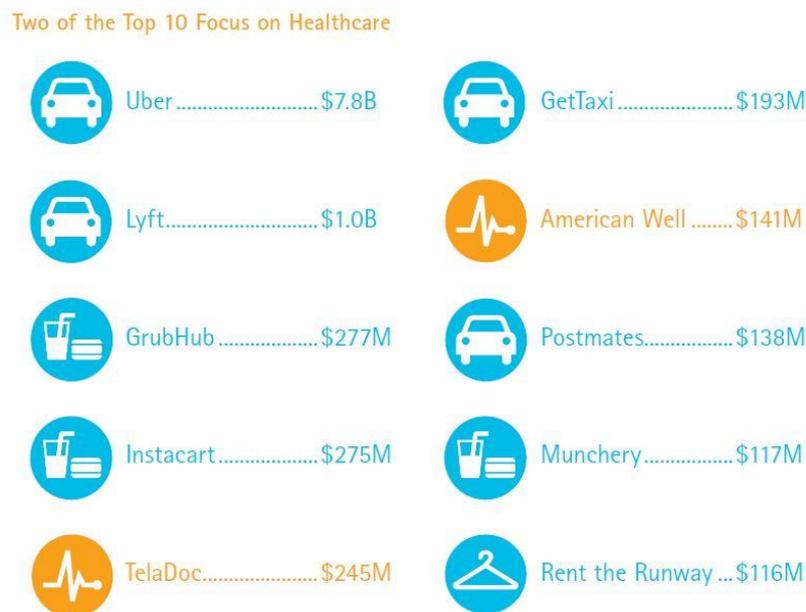
The factors behind the adoption of on-demand workforce for the healthcare sector are mainly the shortage of physicians and the willingness to reduce costs, as we have seen in the previous paragraphs. The gig economy offers the possibility to rely on a contingent workforce for temporary working activities or to find the right professionals thanks to the use of digital labour platforms, which help to gain efficiency and flexibility to both workers and healthcare institutions. In addition, it requires fewer costs for the patients and the healthcare institutions, especially in the USA due to the complexity of the health coverage system.

The spread of the phenomenon in healthcare is accelerated also thanks to the ubiquity of mobile applications and the strengthening of connectivity systems. Nowadays, these aspects are appreciated not only by younger people, but also adults in their older ages, who are eager to adopt these new ways of interacting with healthcare professionals. However, we can affirm that Millennials and Generation Z are those who are mostly driving the “trend” of the on-demand healthcare. This is true from the perspective of both workers and patients. Indeed, as regards the workforce, this working arrangement is particularly attractive for Millennials, who are the next generation of workers, always searching for a better work-life balance and more flexible labour conditions. From the point of view of Millennials and Generation Z in the role of patients, it is proven that they prefer on-demand healthcare rather than traditional primary care due to its easier and more

convenient accessibility and shorter waiting times. Indeed, 45% of young people between 18 and 29 in the United States do not have a primary care doctor in the traditional way¹⁴⁸. This trend towards the preference for the flexibility of healthcare is expected to grow by 10-15% annually.

The on-demand economy in healthcare is keeping pace with other digital sectors, especially in the United States. In 2017, 16% of American doctors stated that they were planning to abandon traditional medical employment in the following year. The consulting company Accenture calculated that until 2015 healthcare was among the list of the most funded on-demand companies in the United States. Indeed, two out of ten funded companies belonged to digital health on-demand services. The next figure shows the rank of the different companies and the respective investments in US dollars.

Figure 5: A list of the most funded on-demand companies



Source: Accenture Research and CB Insights (2016)

We can say that *TelaDoc* and *American Well* platforms for telemedicine are only behind transportation and on-demand food delivery services, showing how patients are increasingly demanding “healthcare-to-go” and flexible medical arrangements. Indeed, from 2000 to 2015 the American on-demand economy spread into six main

¹⁴⁸ Corporate Synergies, *Millennials: Who Needs Primary Care Physicians? Give Us On-demand Healthcare*, 2019 (available at <https://www.corpsyn.com/on-demand-healthcare>)

categories: transportation (accounting for 76% of the total investments), food delivery (10%), health (6%), followed by household activities, logistics and other professional services (2% or 3% each)¹⁴⁹. In addition, it was calculated that healthcare was the second fastest growing segment in the on-demand economy: in the United States, the number of healthcare platforms rose from four to forty from 2010 to 2014 (Accenture, 2015).

One of the best-known examples is *Nomad Health*¹⁵⁰, a platform company that works as an intermediary between freelance doctors and healthcare institutions in matching the demand and supply of work. It substitutes the role of recruiting agencies or other organizations, by allowing a more flexible and easier job match with lower recruiting commissions. It is a win-win combination: workers enrich their careers, while healthcare organizations have access to a large number of talents.

Another form of on-demand economy in healthcare is provided by telehealth and the related spread of apps and platforms that manage the interaction between doctors or other medical figures and patients. Many doctors are starting to prefer this new form of work, allowing them to connect with patients remotely, through apps, video conferences or digital platforms, even while they are comfortably at home. It may imply only virtual interactions or visits to the patients' places, bringing back to life the past house call. Many startups (platforms) have emerged to provide this kind of services by connecting doctors (providers) and patients (requesters). One example is *HeyDoctor*, which allows American patients to book online "visits" in a short time even if they do not have a health insurance. The first step that patients have to complete is to fill an online module with simple medical questions and choose a local pharmacy. Then they can start immediately the interaction with a registered doctor (a gig worker), who suggests the most suitable treatment for the patient and makes a prescription for a laboratory test (such as a blood type testing) or a medicine (e.g. for acne treatment) that can be picked up in the selected local pharmacy. The platforms shows transparent prices for each medical visit, with many treatments under the affordable price of twenty dollars¹⁵¹. This system is more

¹⁴⁹ Accenture, *Healthcare For Here or To Go?*, 2016

¹⁵⁰ <https://nomadhealth.com/>

¹⁵¹ <https://www.heydoctor.com/>

likely the traditional gig economy category of crowdwork, where interactions are based on a virtual contact between the involved parts. Whereas, we can also find other forms of on-demand healthcare that imply a direct face-to-face contact between the patient and the healthcare professional. An example is *CarolHealth*, a platform that connects patients with licensed and registered nurses, who will provide the necessary cures in the comfort zones of one's home and thus enabling a first virtual contact with a consequent home visit.

The benefits behind the introduction of the gig economy in healthcare reflect the already mentioned advantages of this labour arrangement in general. In particular, it allows healthcare executives to find doctors, nurses or other medical staff when they need them and for the requested time, as in the case of Nomad Health. On the other hand, it helps many healthcare professionals to find the workplaces that best fit their needs and working aspirations.

As regards patients, through telemedicine they have the possibility to talk to doctors and schedule visits at any time by means of an application or platform. The advantages are multiple, starting from the easier accessibility to healthcare, relevant in the case of elderly people or those with limited mobility.

In addition, it allows to make free space in hospitals for more urgent cases and to ensure faster procedures. At the same time, it may allow patients to have longer visits outside the hospitals, since on-demand doctors have a flexible scheduling and more time to dedicate to them.

This form of interaction is particularly useful in the United States since patients have the possibility to access to medical care even if they do not have an insurance. They know in advance the fees they are going to pay and this may be an incentive to encourage them to monitor their health conditions more regularly. The healthcare gig economy is diffusing in other countries. In Europe, the British government started to plan the use of an app for the country's National Health Service to provide on-demand healthcare in case of workers' shortages or in busy periods.

3.4.2 Healthcare on-demand segments and intersectoral combinations

The typologies of healthcare activities that are involved in the new form of providing labour and asking for medical services regard various segments. Taking as a

reference the already mentioned American case, we can find the following medical areas with different target persons or potential patients (Accenture, 2015).

1. The most requested service regards primary care, whose investments amounted to almost 640 million dollars in the previous five years. This fact was especially driven by platforms or apps such as *Doctor on Demand*, which allows patients to contact doctors or other professional figures in any place and at any time, and thus overcoming the need of physical hospitals¹⁵². Patients can receive treatments programs in case of urgent or chronic care; they can be introduced to healthy habits in order to focus more on a preventive care; or they can even ask for emotional help from qualified psychologists. The new frontier of telemedicine encourages patients to be more aware of their health conditions and take care of their habits, by relying on a faster and always available medical consultancy.
2. Fitness and wellness is the second health on-demand sphere, where more than 20 million dollars in investments are used to match people with personal trainers. This segment is complementary to the widespread diffusion of wearable devices, allowing, together with on-demand trainers, to encourage people to have a healthier lifestyle. One example of this kind of platform is *Handstand App*, belonging to the typical category of work on-demand via app, which allows requesters to search for a trainer (worker) at any time and place.
3. The third macro on-demand healthcare segment (with investments of 19 million dollars) is about behavioural care, where people can search for licensed therapists available in any moment to answer to their psychological needs through chats or video conferences, by paying them for weekly or other temporary online therapies. Patients appreciate this system since it reduces the costs of consulting a private specialist and at the same time is gives them faster responses for a more quick solution to their problems.
4. The forth-ranked segment accounts for 15 million dollars and it regards specialty care, i.e. offering medical temporary services in a specific area of medicine. Patients can describe their specific symptoms and a specialized

¹⁵² <https://www.doctorondemand.com/>

doctor can take care of them through a virtual platform by planning a suitable treatment for them (e.g. *Spruce Health*, which allows an affordable and easy communication with many specialists).

5. The healthcare on-demand economy regards also the access to effective remedies for simple healthcare issues, such as a flu or a physical weakness. The presence of digital platforms, such as *The IV Do*¹⁵³, allows for the prescription of particular medications after the doctors have reviewed the patient's medical history and assessed the most appropriate treatment. It may also include a physical visit at the patient's home or any other selected place. The platform ensures a full privacy protection of the patients' medical data. Moreover, the above-mentioned digital platforms is present also at an international level (for example in the USA, the UK and Ibiza).
6. The last sector that can be included concerns the healthcare and wellbeing of animals. Indeed, we can consider also veterinary services as part of the health ecosystem. The on-demand economy for this sector includes digital platforms that connect pet owners with different veterinarians, who will come to visit the animals directly at home.

What is interesting for this sector is that the spread of the gig economy is not only limited to staffing and recruiting the right talents or finding the most suitable healthcare service when needed. Indeed, it can work in collaboration with other on-demand sectors, as indicated by the following two examples.

Healthcare could use on-demand activities from other sectors, such as Uber in the driving industry. Indeed, it would be possible to use ride-hailing services in healthcare to transport patients, excluding those in a medical emergency that strictly require an ambulance. It is calculated that these flexible forms of transport could reduce the per capita use of ambulances by seven percent¹⁵⁴. In this way, it ensures a wider availability of ambulances for urgent situations and it allows a more predictive transport of patients, who can choose where to be carried.

Another option is the combination between healthcare and the food delivery sector. It could offer benefits to patients with particular conditions, such as diabetes or

¹⁵³ <https://www.theivdoc.com/>

¹⁵⁴ Wringley J., *Healthcare and the Gig Economy: a Marriage of Risk and Reward*, Fisher Phillips, 2018

heart disease, by delivering at their places specific foods prescribed by the medical operators.

3.4.3 The obstacles for the adoption of on-demand healthcare

Although the clear opportunities, the introduction of the gig economy in this sector has also negative effects as in other industries. The problem of the legal qualification of these doctors, nurses and other healthcare staff remains a problem for the effectiveness of this opportunity. The protection against discrimination and the guarantee of traditional rights, deeply analyzed in the previous chapter, remain a crucial priority for the correct development of the issue. Other drawbacks are related to the specific competences and training requested for healthcare professionals in using this new form of medicine delivery.

In the case of pure telehealth, we can also encounter the reduction of care continuity and a dramatic cut of face-to-face contacts, which may cause some legal issues in different countries. For example, in the United States, some of the country's states do not even have a legal framework to manage telemedicine; others require that the physician is located in a hospital or any other clinical building in order to provide virtual telehealth services. In others, it may weaken the rights of these doctors since in some of the states they do not receive the same reimbursements between physical and virtual visits¹⁵⁵. For this reason, many doctors have started to use telemedicine as the form of gig economy complementary to their primary medical job.

If we take Italy as a reference point, we can introduce further obstacles for the implementation of on-demand healthcare. In our country, telemedicine is not exploited as it should be. The problems behind its adoption are based on the lack of specialized telehealth workforce (both in hospitals and at home-care) and of efficient processes able to manage and regulate telehealth work.

The international report published by Philips about the *Future Health Index* shows that Italian healthcare institutions have invested 24 million euros in telehealth in 2017, but less than 40% of Italian healthcare executives considers telemedicine extremely important. Moreover, in Italy and other countries, technological

¹⁵⁵ Mace A. in Healthcare Weekly, *The ultimate guide to telemedicine – one of the greatest health innovations of the 21st century*, May 2019 (available at <https://healthcareweekly.com/telemedicine-ultimate-guide/>)

infrastructures may have a role in the lower adoption of digital and on-demand healthcare services. In addition, concerns about data privacy remain one of the core barriers to the full adoption of these techniques in many countries. For example, in Italy 41% of the population does not trust companies that get access to their personal data¹⁵⁶.

However, the full integration of data is required to obtain the full potential of digital health. The reconfiguration of hospitals' technologies and workers' reorganization should be a priority in order to face the challenges that the current healthcare scenario poses at a global level. A legal support by governments, trainings for already established clinicians and effective education for the future workforce are necessary in order to be capable to overcome the barriers and open the doors for further innovations.

The most interesting aspect is that in the case of healthcare, both 4.0 technologies and gig economy solutions are complementary to each other. Indeed, in the majority of cases, the virtual/remote assistance of doctors has to be supported by digital devices able to capture the patients' health data. For this reason, it is necessary to nurture both to reach the effective level of digital adoption.

¹⁵⁶ Corriere della Sera, *Telemedicina: Italia «rimandata». Ancora troppi ostacoli all'adozione*, November 2018

CONCLUSIONS

The thesis tried to highlight the advantages introduced with the double side of the digital transformation and to balance them with the general risks and the specific challenges in labour law. As we have seen, the impacts on labour are impressive, allowing organisations to gain efficiency, overcome their traditional boundaries and reconstruct the way in which people work. In particular, the adoption of the gig economy introduces several benefits in many industries, ensuring a cost reduction and a constant availability of labour. This is especially true for the healthcare sector, in which the on-demand economy is a potential solution for the increasing problems about healthcare expenditures and workforce shortages.

Although the complex heterogeneity of the on-demand economy, we have seen that all these non-standard workers are joined by a weak position, characterized by a lack of protection and labour rights and by a ubiquitous dilemma about their juridical status. In order to capture the maximum value of digital labour platforms, it is necessary to address the negative aspects they bring. The thesis pointed out a series of solutions, which have been adopted at different levels, starting from the international sphere with the priority to ensure fundamental rights to any worker regardless of their working relationship, as promoted by the International Labour Organization. At European level, the governing bodies have started to indicate effective guidelines for platform workers protection and the hoped expectations are that they will be adopted in the member states.

Since workers in the on-demand economy reflect features of both autonomous work (flexible possibilities) and of traditional employment (the control that the platform exercises through the system of ratings), it is not surprising that we may find contrasting opinions about their juridical classification. The debate about their allocation in an intermediate category or in the traditional employment sphere is still ongoing. However, regardless of their labour law categorization, we have seen that the highest priority is to guarantee them the introduction of minimum rights, even if they are considered independent contractors. This is the case of the current Italian situation, in which steps forward have been made at different levels to protect particular working categories and to ensure minimum protections as a way to safeguard them and, at the same time, to attract workers to this new working

framework, which may be also a method to fight unemployment. However, a national regulation is necessary to avoid an excessive fragmentation and segmentation at different geographical levels. The example of Denmark should be emblematic for future developments in other countries.

Platform workers have to be treated equally to traditional employees in order to avoid the risk of commodification of workers and forms of “modern slavery”. The notion of “gigs” should be overcome, allowing the recognition of these activities as real “work”, which requires concrete actions from the labour law point of view. The on-demand economy and the new digital technologies are valuable resources, whose advantages should be motivating factors for their adoption and the fight against the associated risks. The exponential growth of the digital transformation in different sectors, including healthcare, shows that the digital challenge cannot wait. Organisations and governments need to be proactive players in the digital era if they do not want to be disrupted.

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