

Alma Mater Studiorum - Università di Bologna

in cotutela con Universitat Pompeu Fabra

DOTTORATO DI RICERCA IN  
SOCIOLOGIA E RICERCA SOCIALE

Ciclo 35

**Settore Concorsuale:** 14/D1- SOCIOLOGIA DEI PROCESSI ECONOMICI, DEL LAVORO,  
DELL'AMBIENTE E DEL TERRITORIO

**Settore Scientifico Disciplinare:** SPS/09 - SOCIOLOGIA DEI PROCESSI ECONOMICI E  
DEL LAVORO

Precarious Employment and Social Reproduction:  
the impact on health and well-being

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**Esame finale anno 2023**

## Abstract

This dissertation aims to make a theoretical and empirical contribution to the debate on precarious employment, social reproduction and the impact on health and well-being. In recent years, numerous studies have examined the effect of precarious employment as a social determinant on health and well-being, focusing on gender differences in this phenomenon. Within this framework, the research design is to investigate this topic quantitatively in the United Kingdom using longitudinal data to assess the long-term effects of precarious employment and informal care work on health. More specifically, the aim of this thesis is to investigate the impact of precarious employment on health and to analyze gender differences within this phenomenon, particularly in relation to the role of informal care work. The analysis shows that precarious employment is indeed associated to a detrimental effect on health and that this effect is stronger for women's mental health. Additionally, the analysis shows that time spent on informal care work explains part of the gender gap in mental health, and that informal care and the number of hours spent on it are associated with worse mental health for women. Finally, during the first few months of Covid-19, for both men and women, performing more hours of care work on average is associated with worse mental health, showing that it is not so much the change from fewer to more hours that affects health, but rather those who do more hours on average, hence the long-term effect of being an intensive informal carer.

La presente tesi si propone di dare un contributo teorico ed empirico al dibattito sul lavoro precario, sulla riproduzione sociale e sull'impatto sulla salute e sul benessere. Negli ultimi anni, numerosi studi hanno esaminato l'effetto del lavoro precario come determinante sociale sulla salute e sul benessere, concentrandosi sulle differenze di genere in questo fenomeno. In questo contesto, il progetto di ricerca si propone di indagare quantitativamente questo tema nel Regno Unito utilizzando dati longitudinali per valutare gli effetti a lungo termine del lavoro precario e del lavoro di cura informale sulla salute. Nello specifico, l'obiettivo di questa tesi è indagare l'impatto del lavoro precario sulla salute e analizzare le differenze di genere all'interno di questo fenomeno, in particolare in relazione al ruolo del lavoro di cura non retribuito. L'analisi mostra che il lavoro precario è associato ad un effetto negativo sulla salute e che questo effetto è ancora più forte per la salute mentale delle donne. Inoltre, l'analisi mostra che il tempo dedicato al lavoro di cura informale spiega parte del divario di genere nella salute mentale e che il lavoro di cura informale e il numero di ore dedicate ad essa sono associati a una peggiore salute mentale per le donne. Infine, durante i primi mesi di Covid-19, sia per gli uomini che per le donne, lo svolgimento in media di un maggior numero di ore di lavoro di cura è associato a una peggiore salute mentale, dimostrando che non è tanto il passaggio da un minor numero a un maggior numero di ore a influire sulla salute, quanto piuttosto coloro che svolgono un in media maggior numero di ore, e di conseguenza l'effetto a lungo termine di essere un caregiver informale intensivo.

Esta tesis pretende hacer una contribución teórica y empírica al debate sobre la precariedad laboral, la reproducción social y el impacto sobre la salud y el bienestar. En los últimos años, numerosos estudios han examinado el efecto de la precariedad laboral como determinante social sobre la salud y el bienestar, centrándose en las diferencias de género en este fenómeno. En este contexto, el diseño de la investigación consiste en investigar cuantitativamente este tema en el Reino Unido utilizando datos longitudinales para evaluar los efectos a largo plazo de la precariedad laboral y el trabajo no remunerado de curas sobre la salud. Más concretamente, el objetivo de esta tesis es investigar el impacto de la precariedad laboral en la salud y analizar las diferencias de género dentro de este fenómeno, particularmente en relación con el papel del trabajo no remunerado de curas. El análisis muestra que la precariedad laboral está asociado a un efecto perjudicial sobre la salud y que este efecto es más fuerte en el caso de la salud mental de las mujeres. Además, el análisis muestra que el tiempo dedicado al trabajo no remunerado de curas explica parte de la brecha de género en salud mental, y que el trabajo no remunerado de curas y el número de horas dedicadas al mismo se asocian con una peor salud mental para las mujeres. Por último, durante los primeros meses de la Covid-19, tanto para hombres como para mujeres, realizar más horas de trabajo de curas de media se asocia a una peor salud mental, lo que muestra que no es tanto el cambio de menos a más horas lo que afecta a la salud, sino quienes realizan más horas de media, de ahí el efecto a largo plazo de ser cuidador no remunerado intensivo.



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# Introduction

## The overall aim of the thesis

In the recent years there has been a growing interest in the literature about precarious employment. The increasing erosion of employment conditions and standard working arrangements has led to a stronger and renewed interest in precarious employment as a social determinant on health and health inequalities affecting both individuals, families, and society (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner 2011; Benach et al., 2007). In fact, in recent years a considerable number of studies is examining the effect of precarious employment on health, both physically and mentally (Matilla-Santander et al., 2019; Julià et al., 2017a; Lewchuk et al., 2008; Virtanen, M. et al., 2005; Quinlan, 1999; Quinlan and Mayhew, 2006).

The present doctoral thesis intends to embed itself by studying this topic in the United Kingdom using longitudinal data. In the specific, the main objective of this dissertation is to study in dept the impact of precarious employment on health and to analyse gender differences within this phenomenon, particularly by looking at the role of unpaid care work. The present thesis is not structured as a conventional monograph, but each chapter is intended to be stand-alone although overall connected in drafting order with subsequent chapters. The chapters are designed to follow a sequential order through the research questions of this thesis, while also exploring the different theoretical frameworks connected to each topic illustrated. The present thesis unfolds in five distinct parts. It begins with a theoretical chapter that explores the emergence of the **conceptualisation of precariousness and the historicization of precarious employment**. It shows how, from a global and gender sensitive perspective, precariousness is indeed the norm of labour relations and how precarious employment has been a persistent feature of employment over the course of history. The fact that women have been disproportionately represented in precarious employment throughout history is highlighted, with the specific case of the United Kingdom examined. Finally, the chapter discusses how precarious employment is a social determinant of health and well-being. This is the starting point for our second chapter, which is an empirical analysis of the **relationship between precarious employment and workers' health**, and how it differs between men and women, using

data on the United Kingdom population. The chapter aims to test quantitatively whether increased exposure to precarious employment conditions affects the physical and mental health status of individuals and, second, determining which aspect most influences this relationship. Therefore, it is studied to what extent precarious employment affects the health and well-being of the individual, and what dimension most influences this relationship: duration, uncertainty, absence of rights and social protection, or material deprivation.

Having shown, in line with the existing literature, that precarious employment does indeed have a detrimental effect on mental health and that there is a gender difference in this association, with the effect being stronger for women, we hypothesise that this relationship is influenced by the time spent on unpaid care work and social reproductive work. Therefore, in chapter 3, we proceed with a review of literature on the *Social Reproduction Theory*, the main historical phases of **social reproduction**, the *Crisis of Care* and the *Total Social Organization of Labour* by Glucksman. This leads us to an empirical analysis of the impact of care work and the social reproduction task in our sample. In chapter 4, given the **gender differences** found in the analysis of the effects of precarious employment on mental health, we assess the extent to which gender inequalities are determined by the time spent on **unpaid care work**. Finally, in the last empirical chapter (chapter 5) it is investigated the impact of unpaid care work on mental health during the **Covid-19 pandemic**, delving into gender inequalities in care work and childcare during the peak of the pandemic.

Drawing from the literature limitations, we aim to analyse the relation between precarious employment and health with longitudinal data on the United Kingdom, using the Understanding Society data (University of Essex, Institute for Social and Economic Research, 2022; University of Essex, Institute for Social and Economic Research, 2021), to assess the long-term effects of precarious employment on both physical and mental health.

## **The choice of the United Kingdom as a case study**

The present dissertation, and more specifically the empirical chapters, focus on studying the effects of precarious employment on health and well-being in the United Kingdom

using longitudinal data. There are several reasons for choosing the UK as a case study and using data from Understanding Society Survey (University of Essex, Institute for Social and Economic Research, 2022; University of Essex, Institute for Social and Economic Research, 2021).

Specifically, it can be argued that the United Kingdom is a highly appropriate candidate for examining the research questions of this dissertation. The origin of the concept of precariousness is analysed in detail in Chapter 1, but it can be pointed out that the term *precarity* hardly existed in the English language before the 2000s (Choonara, 2020; Vosko, 2000; Düll, 2004; Kalleberg, 2011; Betti, 2018), and in fact was not included in the Oxford English Dictionary until 2018 and since then, the concept of precarity has experienced an extraordinary rise in the English-speaking academic literature (Choonara, 2020). Nevertheless, the British economy provides a highly relevant case for the study of precarious employment. In addition to the wealth of literature about employment relations on the UK, the changes in employment that characterise precarity in the neoliberal period are of great interest to study (Choonara, 2020). In the decades following the Second World War, the United Kingdom experienced something close to Standing's conception of standard employment, before taking a sharp turn towards neoliberalism from the late 1970s under Margaret Thatcher's prime ministership (Arestis and Sawyer 2005). The apparent absence or weakness of evidence in favour of precarity as an emergent condition leads one to question the automatic association often made between neoliberalism and employment precariousness (Choonara, 2020). Prosser (2016) suggested that one possible sign of an increase in precarious employment would be the spread of temporary employment across the labour force. However, no factors emerged as particularly strong drivers of precariousness in the UK, despite concerns about the impact of recent austerity measures, suggesting an apparently and reasonably stable labour market regime (Prosser, 2016).

Furthermore, it needs to be highlighted the importance of defining and operationalization precarious employment in order to truly and fully capture the impact of precarious employment. As noted by Fevre (2007), the in the UK Labour Force Survey is asks whether there was "any type" of temporary employment in the previous period, using therefore an extremely broad definition. Choonara (2019) reports that even taking into account those workers who do not report being temporary in any way, but who say they

have a zero hours contract (ZHC) or are agency workers, permanent forms of employment remained the norm for around 90% of the UK workforce in 2015, comparable to the situation in the late 1970s. Variations in the use of non-permanent forms of employment over the period largely reflect the state of the economy, with a marked increase in the data for temporary work following the 1990-1991 recession and, to a lesser extent, after 2008-2009 (Choonara, 2020). The use of ZHCs is also likely to have increased in the aftermath of the 2008-2009 recession, however, the extent of this phenomenon is obscured by measurement issues, and often a lack of precise information in survey data (Choonara 2019). Drawing on Standing's approach, Melin and Blom (2015) conclude that if we add those in temporary employment to all the unemployed and, critically, to all those working part-time in the UK, almost two in three women are in the precariat and a third of men are in a precarious position. Furthermore, the TUC (2017) estimates that, including those in ZHCs, insecure agency work and low-paid self-employment, there were 3.2 million people in precarious employment in the UK in 2017, and that the number of workers on zero-hours contracts rose from 70,000 in 2006 to 810,000 in just ten years (TUC 2017). One reason why growing precariousness may not be reflected in an increase in temporary work is that UK employers may not need to resort to temporary contracts (Newsome et al., 2018). For these reasons it is desirable to study precarious employment in the United Kingdom, using a definition of precarious employment that permit an operationalization capable of catching all those affected by some level of precariousness. To achieve this in the empirical part of the thesis, we measured precarious employment using dimensions similar to those used in the Employment Precarious Scale - EPRES (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). The Understanding Society data allows us to have information to measure several of the original dimensions of EPRES and, due to its longitudinal structure, allows us to see the long-term effects of precarious employment (University of Essex, Institute for Social and Economic Research, 2022; University of Essex, Institute for Social and Economic Research, 2021).

Finally, we need to consider the relevance of the events that have taken place in the UK in the recent period. This period has been very significant in terms of changes in the labour market, in particular the Covid-19 pandemic, Brexit and the end of free movement, labour shortages, etc., and although the evidence is still rather limited, it is worth reflecting on these changes. According to ILO/OECD (2020), existing vulnerabilities and inequalities

in global labour markets have been exposed and exacerbated. Focusing on the UK, those with lower incomes were much more likely to have worked in the sectors that closed during the pandemic lockdowns, and the self-employed experienced a much more dramatic fall in earnings than those in employment (ILO/OECD, 2020). Moreover, likewise than before the pandemic, there are certain groups that are more affected by precarious employment and they have experienced an intensification of precariousness during the pandemic, identifying gender, ethnicity and class as key interlinking variables (Torres et al., 2021). For example, while both involuntary part-time work and involuntary fixed-term work increased during the pandemic, this appears to have been concentrated among certain types of workers, such as women, minorities and low paid workers<sup>1</sup>.

It also highlights the serious problem of the lack of sickness benefits in the United Kingdom, with 67% of people in precarious employment receiving no sick leave or any kind of pay in the event of illness, compared with only 7% of those in secure employment (TUC, 2021). Many precarious workers, therefore, are likely to have faced a difficult choice between self-isolation when infected or exposed to Covid-19 and continuing to work without access to sick pay and other social support (Cubrich et al., 2022; Matilla-Santander et al., 2021). The problems faced by precarious workers during the pandemic run parallel to longer-term structural changes in the labour market. These have most recently been reported by the Resolution Foundation (2021), which found that a large proportion (two-thirds) of employment growth in the UK since the financial crisis (post-2008) has been in non-standard work (zero-hours contracts, agency work, temporary work and low-paid self-employment). It appears, therefore, that the deficits in decent work were already growing prior to the pandemic<sup>1</sup>. Thus, the Understanding Society data give us a great the opportunity to examine the significant events that have affected the UK in the recent period, using data collected from 2010 to 2020, and even preliminary effects during the pandemic of Covid-19, with data collected from April 2020 to September 2021.

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<sup>1</sup> <https://www.gov.uk/government/publications/labour-market-enforcement-strategy-2020-to-2021>

Scale and nature of precarious work in the UK: December 2021 update

## **Overview of the chapters**

### **Chapter 1 - Precarious Employment: historicizing a gendered and global phenomenon**

The first chapter of the present thesis focuses on notion and phenomenon of precarious employment through history. Notwithstanding the growing body of literature on the matter and the increased attention, precarious employment is not a recent phenomenon. In large part it has been studied since the beginning of the industrial capitalism post-Fordism being linked to the notion of “flexible labour arrangement” in the Western labour market. However the history of precarious employment is dated long before the post-Fordism and constitutes a long-term phenomenon that has marked, although in different shapes and sizes, all phases of historical capitalism. The first chapter, therefore, contributes to the understanding of precarious employment showing its development in the history of industrial capitalism and through the historicization, shows the gendered nature of precarious employment. The historical studies have questioned the conception that precarious employment is a modern trend and a specific feature of post-industrial society, demonstrating how precarious employment have characterized the whole history of industrial capitalism, both in the Global North and in The Global South. In addition, female employment constitutes a privileged perspective to illustrate how precarious employment and job instability have characterized the capitalist societies in the last three decades. In the chapter, we focus on the employment conditions in the United Kingdom before and after the First Industrial Revolution, to show how employment conditions for women have changed during the years. To summarize the subdivision of the chapter, there are four main paragraphs. In the first part is reported the debate on the emergence of the concept of precarious employment and the concepts connected to it such as job insecurity. The second paragraph focuses on the historicization of precarious employment, criticizing of the Global North-centric and gender-blind approach which considers precarious employment a recent phenomenon. In the third part, we concentrate on the case of United Kingdom. Reporting the employment conditions of female workers both before and after the First Industrial Revolution, is shown how precarious employment has been a constant for female workers in the United Kingdom. Finally in the fourth paragraph, being precarious employment a social determinant of health, it is shown a brief

review of the pathways in which precarious employment affects health, both physically and mentally.

## **Chapter 2 - The Impact of Precarious Employment on Health**

The second chapter of the thesis analyses quantitatively the detrimental effect of precarious employment on health, both physical and mental. Extant literature has consistently found that precarious employment conditions are associated with worse physical and mental health (Kalleberg, 2009, Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b). There are several possible explanations to this association, in addition to the pathways shown in the previous chapter. Some examples are the insufficient economic resources for family sustenance and long-term plans or investments and the feelings of inadequacy towards the expectations of society, accrued because of the inability to succeed making projects for the future, being independent, starting a family, etc. Consequently, precarious employment can be a constant stressor in everyday life, leading to poor mental and physical health. In the literature is lacking a unanimous definition of precarious employment, however it is widely agreed that precarious employment should be measured through a multidimensional measurement taking into consideration all the different dimensions in which precarious employment could affect the life of the individual. Precarious employment, consequently, should be measured using several dimensions such as employment insecurity, income insufficiency and economic deprivation, limited rights and social protection, and short-term contract.

In the Chapter 2, hence, the aim is to measure precarious employment using each dimension separately estimating the different impacts on physical and mental health, and finally in a separate model, all the dimensions are taken together to check how they affect one another. In the specific, we take into account the dimensions of temporariness, wages, rights, disempowerment, and uncertain working time, similarly on the dimensions selected for the Employment Precarious Scale, which is widely used in literature about the association between precarious employment and health. In addition to multidimensional measurement of precarious employment, this research intends to contribute to the literature topic using longitudinal data, to analyse the long-term effects of negative employment conditions on physical and mental health. Using panel data from

Understanding Society on the United Kingdom, from 2010 to 2020, we run hybrid models to estimate the effect of being precariously employed on both physical and mental health.

### **Chapter 3 - Social Reproduction and the double burden of paid employment and unpaid care work**

The third chapter focuses on the concept of social reproduction and its impact on women's employment and health. Seen that in the previous chapter the effect of precarious employment on health have been analysed and in the association there are gender differences, in literature, this gender inequalities have often been hypothesized to be due to the double burden of paid employment and unpaid care work and household responsibilities. Using the concept of social reproduction in this chapter are reviewed some of the most relevant contributions on the topic focusing on the debated *Social Reproduction Theory* and the theoretical approach for which we are living a crisis of care. Finally, a description of the main historical phases of social reproduction and a brief description of the *Total Social Organization of Labour*, theorized by Glucksmann, is made.

Social Reproduction is described as all the activities and attitudes that permit the maintenance of life on daily basis and intergenerationally and historically it has been mostly assigned to women. In fact, in the capitalist society there is a strong gender division between the economic production and the social reproduction. Historically, men have been in charge of the economic production, while women of the social reproduction. Nowadays in the Western countries' wage is an essential component of the family income, even though there was no equal redistribution of the social reproductive labour. Therefore, women end up dealing with a double burden of paid employment and unpaid work of social reproduction and care work. In addition to this, women are performing more often than men a precarious employment and the effect of precariousness on health seems to affect more strongly women than men in the same situation. Consequently, women come across numerous sources of disadvantage that put them in a more vulnerable position and make harder for them to access a more successful job position, and all these domains combined create a larger burden on women's mental health. The aim of this

chapter is, therefore, to fully understand the theory behind gender differences in social reproduction, which are empirically tested in Chapter 4.

#### **Chapter 4 - Social Reproduction and gender differences: the effect on Precarious Employment and Mental Health**

As we have seen in the previous chapters, precarious employment is a social determinant of health and well-being, and precarious employment is a gendered phenomenon, where women are more affected by precariousness than men. In addition, the association between precarious employment and mental health seems to affect stronger women than men in the same situation. This has been argued in the literature to be due to the double burden of paid work and household responsibility and care work which the women are more subjected. Therefore, women tend to fall into precariousness more often than men and in addition, women experience several other social disadvantages and inequalities such as the division of female unpaid work and social reproductive labour, and all these domains combined create a larger burden on women's mental health. Nevertheless, so far there has been little empirical evidence in the literature that care work and social reproductive labour play a role in the relationship between precarious employment and mental health.

Therefore, Chapter 4 aims to understand whether the association between precarious employment and mental health (results of the analysis made in Chapter 2) is partly explained by the time spent performing care work. Using panel data from Understanding Society, the analysis is based on a sample of United Kingdom population from 2010 to 2020. Precarious employment is included in the analysis as previously done in Chapter 2, using the multidimensional approach based on EPRES and its adaptations. The empirical section is divided in two: in the first part, the distributions of the variables about care work and social reproduction are shown, with the aim to verify whether there is a gendered division in the share of work performed by women in our sample. In the second part are reported the results of the hybrid models to estimate the effect of hours spent performing care work on the relationship between mental health and precarious employment.

## **Chapter 5 - Informal Care Work and Precarious Employment during the Covid-19 outbreak**

The ongoing pandemic of Covid-19 and the economic downturn that derived from it, have had strong repercussions on employment conditions worldwide and people in precarious employment are among those most affected by the Covid-19 pandemic. Furthermore, the pandemic of Covid-19 does not represent only a health crisis but also an economic crisis and a crisis of care. Accordingly, the Covid-19 pandemic has exacerbated the pre-existing gender differences in social reproduction and increased for women the burden of informal care work. Emerging data on the impact of Covid-19 pandemic suggest that women's lives are being affected more than men's lives. The global Covid-19 crisis has revealed how the world economy is based on the invisible and unpaid work of social reproduction or care work. The burden of domestic and care work has increased exponentially over the past years, due to the closure of schools, which has brought the need for childcare, homeschooling, but also a greater need for care of elderly and sick relatives, and domestic work due to the inability in many cases to access external care services. Women, who, as we have seen, tend to have to perform this type of task more often than men, may in fact have had a greater problem reconciling work and care work, especially as they are also more often affected by precariousness and, therefore, more expendable than those with more stable and well-paid jobs. Therefore, it is essential to understand the impact of the Covid-19 pandemic on informal care work, how new forms of precariousness are affected by the current crisis and how this impacts the health and well-being of workers.

In Chapter 5, therefore, it is shown how, during the Covid-19 outbreaks, the restriction imposed by the United Kingdom's government to limit the spread of the virus, influenced precarious employment dimensions, informal care work and the division of housework. In addition, in Chapter 5 are tested the hours spent performing informal care work during the pandemic effect on mental health and how these effects changed between women and men. The data used from Understanding Society, were collected during the first months of the pandemic with the intent of producing useful data to study the changing impact of the Covid-19 on the well-being of individuals, families and the UK community. The five waves selected of Covid-19 data, going from July 2020 to September 2021, were connected to Wave 10 of the main survey with information before the start of the pandemic (2018-2019). The empirical section is divided in two: in the first part is shown

the distribution of the variables regarding precarious employment, the time per week spent performing informal care work, housework and childcare, while in the second part, are reported the hybrid models on the effect of hours spent performing informal care work on mental health.

## **Data and Methods**

### **The data - Understanding Society: the Main survey and the Covid-19 study**

For the statistical analysis have been used two longitudinal databases which are part of the Understanding Society Study, and which are both collected by the Institute for Social and Economic Research at the University of Essex. In the case of the Main survey, used for Chapter 2 and 4, participants were followed over a long period of time to give a better understanding on people's life (University of Essex, Institute for Social and Economic Research, 2022). In the household panel study, every person included in each selected household is interviewed, resulting in a large sample. This gives the possibility to investigate also on different sub-groups and ethnic minorities over time. The participants to the study are selected all over the nation and though all ages and social backgrounds, leading, therefore, Understanding Society Study to be designed to be representative of the United Kingdom<sup>2</sup>. Similarly than all longitudinal studies, the Understanding Society experiences some level of attrition, where participants leave the Study at some point. In case families and individuals moving, they are followed in their new place of residence and the new household is included in the Study. However the interviews are interrupted when the participants move outside the United Kingdom. As reported on their official website, over 95% of participants who participated in the previous wave continued to take part in last wave of Understanding Society, making them one of the most stable longitudinal studies in the world.

Instead the Covid-19 study, used in Chapter 5, was collected between April 2020 to September 2021, drawing participants from the main Study sample (University of Essex, Institute for Social and Economic Research, 2021). The interview was collected through

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<sup>2</sup> <https://www.understandingsociety.ac.uk/documentation/mainstage>

a short web or telephone survey, covering topic intended to cover the changing impact of the pandemic on the welfare of UK individuals, families and wider communities<sup>3</sup>.

## Longitudinal analysis

To those not familiar with longitudinal analysis is shortly reported a recap of how to read the descriptive statistics reported in the empirical chapters, and more in depth the advantages and disadvantages of the hybrid models selected for the main analysis. To describe panel data, we have to take into account that there are two sources of variation: 1) between units, which means individuals are systematically different one another; 2) and within units, that represent individuals' behaviour varies between observation over time (Grotti, 2021). In the present thesis most of the descriptive statistics have been reported through one way tabulation. To exemplify how to read a table we report a preview of a descriptive statistics of Chapter 2. In the following table there are three columns: Overall, Between and Within. The overall in this case shows us what we would obtain with a one way tabulation of cross sectional data, so considering all individuals and all waves at once. The between variation tell us that 17.5% of male were not in a permanent job position at least once during the observation period, and 97.5% of male were in a permanent job position at least once in the observation period of our analysis (2010-2020). The male individuals in the sample are 13,846, but the total of the between component is 15,931. Which means that there are male individuals in the sample that during the observation period changed their status, sometimes were in a permanent job position and sometimes were in a not permanent position. Finally, the within component means that, during the time analysed, those ever not in a permanent job were in this situation in 47.3% of the observation recorded. Those ever having a permanent job were in this situation in 94% of the observations.

**Figure 0.1-** example of descriptive statistics: duration of the contract of employment.

| Temporariness       | Male    |         |         |         |         | Female  |         |         |         |         |
|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                     | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
| Duration            | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| not a permanent job | 3251    | 7.1     | 2425    | 17.5    | 47.3    | 4251    | 8.0     | 3149    | 19.2    | 47.4    |
| permanent job       | 42773   | 92.9    | 13506   | 97.5    | 94.0    | 49059   | 92.0    | 15929   | 97.1    | 93.6    |
| Total               | 46024   | 100     | 15931   | 115.1   | 86.9    | 53310   | 100     | 19078   | 116.3   | 86.0    |
|                     | n.      |         | 13846   |         |         | n.      |         | 16401   |         |         |

<sup>3</sup> <https://www.understandingsociety.ac.uk/documentation/covid-19>

## Hybrid models

The statistical tool chosen for the main analysis in this thesis is the Hybrid estimator, which is part of the between-within estimators. The main characteristic of this technique is that allows to estimate the within effect, like in fixed-effects models, and the between effects like in random-effect models. They allow to consistently estimate the effect of time varying characteristics, like fixed-effect models (Baranowska-Rataj & Strandh, 2021). The advantage of hybrid models over fixed effects models is that they can show both time-invariant between-individual effects and time-varying within individual effects, while fixed effects models can show only the within-person effect (Baranowska-Rataj & Strandh, 2021). This is possible by including both the deviations from the individual-specific means of the time-varying characteristics and the person-specific means of these characteristics in the set of the model covariates. The inclusion of the person-specific means of time varying characteristics picks up any correlation between these variables and the unobserved random effects (Baranowska-Rataj & Strandh, 2021). An advantage of hybrid models is, therefore, to combine advantages of fixed- and random- effects models, allowing us to estimate the effect of level 2 variables while providing effect estimates of level 1 variables that are unbiased by a possible correlation with the level 2 error (Schunck, 2013). An additional benefit of using hybrid models is that the comparison of between and within effect gives an evaluation of the degree to which unobserved heterogeneity in level 2 characteristics is responsible for observable relation between the outcome and a level 1 variable, which is not accounted for by our model (Schunck, 2013). We opted to use Hybrid models because they are more suitable to use than fixed effects when we are dealing with unbalanced panel data with a short time dimension (Baranowska-Rataj & Strandh, 2021; Bell and Jones, 2015; Wooldridge, 2019), which is the case of our analysis. However, handling interactions in hybrid models is particularly complex, nonetheless this technique is a useful extension to the standard (random-effects and fixed-effects) approaches. (Schunck, 2013). To sum up, hybrid models are (Grotti, 2021):

- Characterized by high flexibility;
- Estimate both within and between effects;
- Combine advantages of fixed and random effects models;

- Give us information on how much our estimates would have been biased by unobserved heterogeneity by comparing within and between effects;
- Handling interaction is complex in hybrid models.

**Figure 0.2-** example of hybrid model – care work on mental health.

|                          | <b>Male</b>                      | <b>Female</b> |
|--------------------------|----------------------------------|---------------|
| Care work we             | -0.2                             | -0.7***       |
| Care work be             | -0.9***                          | -1.1***       |
| Age we                   | -0.3***                          | -0.2***       |
| Age be                   | 0.1***                           | 0.1***        |
| <b>Educational Level</b> |                                  |               |
| Medium                   | -0.5                             | 0.4           |
| High                     | -1.0                             | 0.4           |
| Other                    | -1.1                             | 0.3           |
| Constant                 | 45.4***                          | 43.0***       |
| legend:                  | * p<0.05; ** p<0.01; *** p<0.001 |               |

To exemplify how to read the results of a hybrid model we report a preview from Chapter 4. The within effects (we) are the deviation and can be interpreted as in Fixed- effect models (Grotti, 2021). For a given female, moving from a lower number of hours spent on unpaid care work to a higher number of hours is associated with a worsening of mental health by -0.7 points. Means represent the between effects (be), similarly than in a between-effects model (Grotti, 2021). In this case, for females who on average, throughout the observation period from 2010 to 2020, had more hours of care work is associated a worsening of mental health by -1.1 points. In the hybrid model, like we see with the educational level, gives possibility to also estimate the effect of time-constant variables.



# **Chapter 1 - Precarious Employment: historicizing a gendered and global phenomenon**

## **Introduction**

The increasing erosion of employment conditions and standard working arrangements has led to a renewed interest in precarious employment and its effect on health (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner, 2011; Benach et al., 2007). Notwithstanding the growing body of literature on the matter and the increased attention, precarious employment cannot be considered a recent phenomenon. In fact, rarely it is studied in the longer history of industrial capitalism or in the precapitalist era. From the late 1970s, the conceptualization of precarious employment was connected to the notion of “flexible labour arrangement” in the Western labour market, as a major shift to the transition from Fordism to Post-Fordism (Betti, 2018; De Vito, 2017; Mosoetsa et al., 2016). However precarious employment is not intrinsically linked to the nature of post-Fordist society and the evolution of the capitalist system over the past three decades, but constitutes a long-term phenomenon that has marked, although in different shapes and sizes, all phases of historical capitalism (De Vito, 2017; Mosoetsa et al., 2016; Betti, 2014).

The aim of this chapter is to contribute to the understanding of precarious employment showing its development in the history of industrial capitalism and through the historicization of the phenomenon, we are able to show the gendered nature of precarious employment. In this sense, female employment constitutes a privileged perspective to illustrate how precarious employment and job instability have characterized, in addition to the nineteenth- and early twentieth-century history of capitalism, also the period of great economic-industrial expansion in the 1950s and 1960s and, subsequently, the evolution of the capitalist system in the last three decades (Betti, 2014). In the recent decades, social scientists, economists and legal experts have deemed precarious employment as a modern trend and a specific feature of post-industrial society, developing in the 1980s after the end of the Fordist era (Betti, 2018; De Vito, 2017). To question this conception, the contribution of historical studies which have demonstrated how precarious employment has characterized the whole history of industrial capitalism,

both in the Global North and in The Global South (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013), has been vital. Precarious employment is consequently interpreted as the norm of employment relationships in capitalist societies. Instead the standard employment model, opposed to precarious employment, that could be described as a long-term, full-time job, characterized by the presence of rights and social protection of the workers, should be considered the historical exception, that characterised only some categories of workers in Western countries for a short period of time during the twentieth century (Breman and Van der Linden, 2014).

The chapter is divided into four main parts. In the first paragraph, we discuss the emergence of the concept of precarious employment and the concepts connected to it (e.g. job insecurity) in academic literature. In the second paragraph, it is reported a historicization of the phenomenon of precarious employment, showing a critique of the Global North-centric and gender-blind approach, which considers precarious employment a recent phenomenon with no historical tradition (Munck et al., 2020; Betti, 2018; De Vito, 2017; Mosoetsa et al., 2016). In this paragraph, the feminist and post-colonial points of view on the history of precarious employment are reported, showing how it is to be consider the norm of capitalist employment relationship, rather than the exception (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013). Based on a gendered approach, the third paragraph focuses on the history of women's employment in the United Kingdom and Britain. Starting from the work of Pinchbeck (2013), in her book *Women Workers and the Industrial Revolution 1750-1850* about the employment conditions of female workers both before and after the First Industrial Revolution, we are able to show how precarious employment has been a constant for female workers in the United Kingdom. Finally, in the fourth paragraph is shown a brief review of the pathways in which precarious employment affects health. Precarious employment is, in fact, a social determinant of health, both psychologically and physiologically (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner 2011; Benach et al., 2007; Benach et al., 2016; Bodin et al., 2020; Cortès-Franch et al., 2018; Kalleberg, 2009; Padrosa et al., 2022), and over the past years there has been a growing interest in the literature on the association between adverse employment conditions and negative effect on health. A gender sensitive

perspective is, therefore, essential to estimate how precarious employment affects male, female labour in a different way across time and space, and by this defying the inaccuracy of the conceptualization of precarious employment as a recent phenomenon.

## **1.1 The emergence of the concept of precarious employment and its representation in the literature**

Precarious employment has been described and divided in the academic debate through several terms. The variety of definitions represents the complexities of the phenomenon and tries to describe the different types of experience possible. Some terms used to describe precarious employment and its subdivisions in the literature are flexibilization, atypical employment, alternative work, non-standard work, marginal work, precarious or peripheral, casual work, contingent work, underemployment, informal work, etc. (Benach et al., 2014; Tompa et al., 2007; Vosko et al., 2003). Over the past four decades, the debate on job insecurity and precariousness in the economic and social sciences has developed with different timing and modalities from country to country, but from the outset with an international dimension and a strong European emphasis. Significant impetus has come from international organizations such as the ILO, the European Foundation for the Improvement of Living and Working Conditions and the European Union, which have helped to promote studies, projects, comparative research and opportunities for in-depth studies (Betti, 2014). Despite the renewed interest in this phenomenon, rarely it is studied in the longer history of industrial capitalism or in the precapitalist era. From the late 1970s, social scientists supplied conceptualization of precarious employment related to the concept of “flexible labour arrangement” in the Western labour market as a major shift in the transition from Fordism to Post-Fordism, nevertheless, the history of precarious employment can be traced back much further (Munck et al., 2020; Betti, 2018; De Vito, 2017; Mosoetsa et al., 2016; Breman and Van der Linden, 2014). Barbier (2002; 2011) locate the origin of the term precariousness, from a linguistic point of view, in the Latin root *precor* or *precarious* – pray or obtained by praying, dating to the late Middle Ages or Early Modern Era and Marcel van der Linden (2014) has adopted the perspective of the *Longue durée*, accounting categories of the casual poor and the casual wage labour to track back the first examples of precarity from Ancient Greece. Despite the term being

present in the past, it became more often associated with employment and welfare in European countries only after the Second World War and it was used, less frequently, associated with the notion of workers' conditions as early as 1840 (Betti, 2018). The term was used more and more often to get awareness of the effect of precarious work of the proletariat and the lumpenproletariat (Betti, 2018). Well-known examples of the use of the notion of precariousness can be found in Engels's *Condition of the Working Class in England* (Engels, 2009) and in Marx and Engels's *Communist Manifesto* (Engels and Marx, 2015) and in Marx's *Capital* (Marx, 1990). As pointed out by Betti (2018), contemporary observers, yet, often do not distinguish precarious employment conditions from the precariousness of the working-class existence as such. Unemployment and low wages were deemed responsible for the precarious working-class conditions even in late 1940 when full and stable employment was a common global goal, however precarious employment and precariousness were conceptualized in the 1960s when stability was considered the norm in the labour market (Betti, 2018).

Pierre Bourdieu used the concept of precarity to describe the condition of the "unstable" Algerian workers, which he associated to the lumpenproletariat (Bourdieu et al., 1963). Similarly, Sylos Labini (1963), about precarious employment and social classes in Italy, associated the concept of precarious work with the notion of the Marxian lumpenproletariat and suggested that it was the result of the economic divide present in Italy between the industrialized North and the South. During the second half of the twentieth century there has been an increasing number of historical studies, focusing on the nineteenth- and early twentieth-century working class, uncovering its structural precariousness (Munck et al., 2020; Betti, 2018; Mosoetsa et al., 2016; Breman and Van der Linden, 2014). The understanding of precarity was then enriched by all the feminist studies pointing out the gendered composition of precariousness and indicating that precariousness is a crucial category of analysis to study women's employment conditions (some examples are Betti, 2018; Betti, 2015; Betti, 2014). We see these contributions more in-depth in the next paragraph.

The conceptualization of precarious employment to which we are accustomed, therefore, has been developed as the **opposite to the normative standard employment model** of Western society during the 1950s-1970s (Breman and Van der Linden, 2014; Betti, 2018). Therefore, is to be expected that the term precariousness is mainly used to analyse the

employment conditions during the Fordist era, as this has to be considered the main period of job stability in the history of industrial capitalism, compared to the generalized instability of the nineteenth and twentieth centuries (Betti, 2018). Nevertheless, the concept of precariousness was increasingly used to describe something else of employment conditions in the past two decades (Betti, 2018). Some exemplifications can be found in Judith Butler (2009), who wrote that precarity concentrates on the circumstances that threaten life in ways outside of one's control or Pierre Bordieu (1998), which used the French term *précarité* to describe the transformation of society resulting from globalization and neoliberalism as well as affirming that in these circumstances everybody was to be considered precarious.

The complexity of precarious employment leads to an increasingly difficulty in finding a univocal definition of precarious employment. In fact, in the literature, there is **no unanimous definition of precarious employment** transcending the socio-political and historical context in which it is developed (Jonsson et al., 2021; Bodin et al., 2020; Benach et al., 2016). The difficulty to find a formalized definition of precarious employment is testified by the reluctance of the institution of using it as a key notion that was considered highly political and was against of the mainstream employment policies based on the concept of labour flexibility (Betti, 2018). The economic crisis of the 1970s and its social consequences triggered a renewed interest in precarious employment as it leads to an expansion of flexible working arrangements in Western society (Betti, 2018). The concept of precariousness itself was elaborated in contrast with the standard employment model (Bremman and Van der Linden, 2014; Munck, 2013; Neilson and Rossiter, 2008). Since the second half of 1970s, the terms precarity, precariousness and precarious employment were more and more present in French, Italian and Spanish academic literature, however, it is only in the early 2000s that the terms *precarious employment* and *labour precariousness* started to get used in Anglo-Saxon countries, except for Canada (Choonara, 2020; Vosko, 2000; Düll, 2004; Kalleberg, 2011; Betti, 2018). Instead, in South America, the definition of precarious employment was already related to the ideal of industrial wage labour and standard employment relationships during the 1980s, despite the prevailing informality of the labour market. Precarity was seen as a consequence of the labour mark reform of the 70s, done under the influence of neoliberal economic policies during the military dictatorships (Betti, 2018). In a study for a

European project made by Düll (2004), he pointed out that between the 1970s and 1990s the academic debate was strongly influenced by how the study of precariousness originated in each country based on different aspects: it originated in research on poverty in France, in undeclared work in Spain, in labour market regulation in Germany, and undeclared work and labour market regulation in Italy. An exception was the United Kingdom, in which in the early 2000s precarious unemployment was still not yet addressed as such, but it was seen as a consequence of other phenomena, such as poverty and social exclusion (Betti, 2015; Betti, 2014). During the 1990s the debate on precarious employment became highly polarized. In some cases, the international debate appears to focus almost exclusively on the issue of **labour flexibility, understood by most as a positive challenge** (Betti, 2014), an opportunity for the workers and an obligation to create new employment. For instance, this was the position supported by the European Employment Strategy of 1997 (Betti, 2018). Instead, a growing number of sociologists highlighted the association between job flexibility, precariousness and erosions of working conditions (Betti, 2018). Only between the late 1990s and early 2000s, studies began to multiply addressing to the individual and social costs of flexibility, in which the concept of precarity increasingly surfaced (Rodgers and Rodgers, 1989). Early critical studies on the effects of flexibility included those of Standing, who indicated the possible dark sides of flexibility in several studies published in the mid-1980s by ILO (Standing, 1986).

Castel (2017) pointed out in his work that precariousness was a destabilizing force for society as a whole, while Bordieu (1998) wrote about the negative impact of precarious employment at the social level and Boltanski and Chiappello (1999), studied the spread of precarious employment as an effect of the labour market segmentation created after the crisis of the 1970s. In the **United Kingdom, the research on precarious employment was still limited in 1990s**, and the few exceptions used key works like “insecurity” or “vulnerability” instead of precariousness (Sverke et al., 2006; Betti, 2018; Betti, 2014; Betti, 2015). The language used is particularly important for understanding the evolution of the debate on employment precarity in the transition between the 1990s and the 2000s. The use of the more neutral concept of labour flexibility, which had characterized the entire first half of the 1990s, started to decline in favour of precariousness, which was increasingly marking the economic-social literature in the

2000s. As we have seen previously, the Latin languages are the first to introduce the expression of precarious employment, while we must wait until the 2000s when the same term started to be used as much in most Anglo-Saxon countries (Choonara, 2020; Barbier, 2002).

A major contribution to the theorization of precarious employment is the one by the German sociologist Ulrich Beck (2014), who devoted an extensive reflection on the "thousand worlds of precarious work" and the impact of globalization on the processes of precarization in European countries. Beck also theorized two modernities in contrast with the distinction between the industrial and post-industrial or Fordist and Post-Fordist economy. In his opinion, it is clearer to define the distinction among society between securities, and clearly defined boundaries of the first modernity and consequently the insecurities, uncertainties of the second modernity (Beck, 2014). Therefore, to him, the boundaries between work and non-work became more and more blurred (Beck, 2014). However, French literature is the one that most confronts the concept of precarity. The term *precarité* has been used, as we have seen, since the 1980s, and in the 1990s, numerous scholars, such as Barbier and Nadel (2000), Paugam (2007), and Bordieau (1998), addressed to the problem of labour and social precarization resulting from the hegemony of the flexibility paradigm. In England, however, studies on precarity appear decidedly more limited. The few that address the problem, as previously shown, did so only tangentially, starting with other keywords such as insecurity and vulnerability (Sverke et al., 2006; Betti, 2018; Betti, 2014 ; Betti, 2015).

During the 2000s the academic debate on precariousness expanded in all Western countries and beyond, and the interest in the topic was shared for disciplines also outside the social sciences (Hammer and Ness, 2021; Hammer and Plugor, 2019; Betti, 2018; Betti, 2014). In addition, due to the expansion of the social movement's campaign in Europe in the 2000s against precarious employment consequences, the concept became popular also outside the academia among the general public debate (Betti, 2018). Furthermore, a fundamental component of the European debate from the beginning of the new millennium until the economic crisis in 2008 was based on the conceptualization and implementation of the **flexicurity model**, which aimed at the combination of managerial flexibility and employment security (Betti, 2018; Betti, 2014). This concept was mostly theorized by Scandinavian scholars (Wilthagen and Rogowski, 2002) and later acquired

by Europe as a whole, by the explicit goal presented in the renewal of the European Employment Strategy (ETUC, 2007). Despite that, several scholars pointed out the increasing trouble in balancing the employment instability with all the diverse systems of social security, different welfare systems and the different financial capabilities of the European states (Heyes, 2013).

Beginning from the 2000s, the relationship between gender and precarity began to receive increasing attention. Scholars pointed out **the gendered nature of precarious employment** and how women seemed to be more affected by it (Fudge and Owens, 2006; Vosko et al., 2009; Betti, 2014; Betti, 2015; Betti 2018; Benach et al., 2016; Menéndez et al., 2007). This gives a fundamental theoretical framework for a critical rethinking of the relationship between feminization and the process of flexibilization of work (Munck et al., 2020; Betti, 2014; Betti, 2018). In addition, Breman and Van der Linden (2014) made a useful contribution to rethinking the concept of stability, pointing out the exceptionality on the historical level of the spread of the standard employment model, limited to thirty years during the twentieth century and only to the Western countries. Embracing a gender sensitive perspective, however, it appears that **precariousness represents a continuous feature of employment** present in Western countries even during periods of strong growth. In these phases of capitalism, it is the most "marginal" individuals in the workforce, such as women, who are employed through precarious forms of employment (Munck et al., 2020; Betti, 2014).

## **1.2 Historicization of precarious employment: the cases of female labour and the Global South**

The emergence of precarious employment as we know it, is usually described as something recent, dating back to the Post-Fordism and the post-industrial society, however, we can find several historical contributions which argue that precarious employment and job insecurity have to be dated earlier and that precarious employment constitutes a long-term phenomenon that can be observed in different forms and dimensions in all phases of historical capitalism as well as in the pre-industrial age (Betti, 2014). On the theoretical level, recent contributions of particular importance for the

historicization of labour were made by Betti (2018; 2016; 2015; 2014), Van Der Linden, (2014) and Munck (Munck et al., 2020; Munck, 2013)

Precariousness and precarious employment notions were scarcely used in the academic literature from the 1950s to the 1960s and, as we saw previously, they were not properly conceptualized yet as terms. To describe what we would define today as precarious, the literature tended to highlight the level of exploitation and existential instability as the prevailing traits, frequently associated with keywords such as “exploitation” and “discrimination” (Betti, 2015). Similarly, the concept of stability, as opposed to the concept of precarity was still not precisely defined. It was only in the 1970s that the concept became common and increasingly began to denote the condition of a growing proportion of industrial workers (Betti, 2015). From the 1990s, the new organizational model led to a breakdown of the production process and the development of sub-supply chains, the process of outsourcing and the emergence of global value chains have deepened the segmentation of the labour market. This led to the fragmentation of employment conditions, triggering a process of precarization of the labour market (Betti, 2015). The elaboration of the conceptualization of precarious employment was done mostly in contraposition to the emergence of the more regulated and stable employment conditions of the twentieth century and in particular during the Fordist age (Betti, 2018; De Vito, 2017; Betti, 2016; Betti, 2015). However, if we adopt precariousness as a category to reread the history of capitalism we can witness that precariousness is not only present in contraposition to the increasing level of stabilization of the proletariat, but also traces back to the employment condition of the marginal workers such as women, migrants and minors (Munck et al., 2020; Betti, 2015). This is because the existence itself of these marginal workers has been necessary to create a suitable ground for the progressive stabilization of the adult male worker, in the role that is often addressed in the literature as the male breadwinner (Betti, 2015). From this point of view, **labour stabilization is a result of a nonlinear process**, which is strongly influenced by the pressures of labour movements and the translation of those demands both on the political and legislative levels (Betti, 2015). In fact, the labour legislation of the twentieth century performed a crucial role in the redefinition of stable employment relations and in particular, thanks to laws intended to regulate the exploitative conditions for women and minors (Betti, 2015). As we have seen, the standard employment model has played a

crucial role in the definition of the concept of precarious employment, portraying it as the opposite of standard employment, and labelling it as the exception of labour market regulations (Betti, 2016). Employment without a defined working time, regular income or not constrained to a specific workplace converted in a so called non-work, as they were considered a deviation from the normative model of work (Petrungato, 2013), and this model, as we have seen, became widespread during the Fordism (Vosko, 2010). This was made necessary by the centrality of industrial mass production, in which the work required should be stable and full-time, however entire categories of workers, such as women, were excluded from those having stable jobs (Betti, 2016).

Only recently, the concept of precarious employment has been started to be investigated as a historical phenomenon. The studies done during the last decade about the Global South have pointed out the presence of what nowadays we could define as precarious employment long before the Post-Fordism (Hammer and Ness, 2021; Munck et al., 2020; De Vito, 2017; Mosoetsa et al., 2016; Betti, 2016). Therefore, precarious employment needs to be considered a **norm of capitalism** and not an exception (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013). A great contribution to this thesis has been made by global and post-colonial studies together with critical feminist studies, as **gender sensitive and Global South perspectives** have been proved to be of decisive influence on reassessing the role of precarity and stability in the history of capitalism inverting the concept of norm and exceptionality of these phenomena (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013; Tompa et al., 2007). The gender sensitive perspective makes it possible to question the monolithic point of view widespread during the Golden Age and to point out the plurality of existing employment conditions based on the fact that female labour was indeed characterized by precarious employment conditions (Betti, 2015). Mosoetsa et al. (2016) in their work, address the recent wave of precarization as a return to a “normality” of capitalism after the interruption occurred during Fordism, and that this interruption occurred only in some countries of the Global North. In addition, feminist scholars pointed out that adopting gender sensitive perspective and intersectionality is possible to deconstruct the exceptional character of precarious employment in Western countries, revealing that the standard employment model, that became the normative conception of employment, had

never included the whole workforce, excluding in particular women and migrants (Betti, 2016).

### 1.2.1 The Global South and the globalization of precarity

During the onset of the economic crisis of 2008, there was a growing body of research on the relationship between precarious employment and globalization (Kalleberg and Vallas, 2017; Meehan and Stauss, 2015; Kalleberg, 2013). Research on this topic was commissioned by the Eurofound, the ILO and the European Commission (Evans and Gibb, 2009), even though it was addressed mostly as “nonstandard employment” in contraposition to the concept of decent work (ILO, 2016). Finally, the association between precarious employment and human rights has become a relevant topic in the international debate about globalization and precarization (Mantouvalou, 2012). The proliferation of job insecurity in the 2000s is, therefore, closely linked to the new phases of globalization and the renovation of global capitalism following the economic crisis of 2008 (Betti, 2015). The “**globalization of precarity**” appears to be the necessary offset to the globalization process that has affected the capitalist system in the last decades (Betti, 2015). The globalization of precarity takes place spatially, inverting the role of countries in which the Global North is now based on the periphery of the international division of labour, in order to favour the emerging countries against the “**Brazilianization of the West**”, theorized by Beck (2014), and it does not affect anymore only the working class as it used to do in the earlier phases of capitalism (Betti, 2015). Nowadays, precarious employment tends to affect people regardless of their social status and educational level, affecting potentially the totality of the population (Standing, 2011; Betti, 2015). Beck (2016, 2014) was one of the first scholars to overturn the developmentalist narrative, coining the expression “Brazilianization of the West”. In his book, he claims the rise of precariousness and informalization of employment conditions in the Western labour market and the unforeseen convergence with the precarious employment arrangements present in the economies of the Global South (Beck, 2016). Over the years following the economic crisis of 2008, the Global South countries joined the debate on precarious employment. Among them, Munck (2013) offers a crucial contribution to acknowledge the role of precarious employment in the history of

capitalism beyond the Western countries **criticising the North-centric point of view** of the previous literature on the topic. He points out that what is usually described with the term precarity has always been the norm in the Global South (Munck 2013). From a global perspective, the Fordism Era needs to be considered, therefore, an exception to the rule when the Global South is taken into account (Hammer and Ness, 2021; Munck et al., 2020; Mosoetsa et al., 2016; Betti, 2016). Breman and Van der Linden (2014) pointed out that the countries of the Global North were converging in terms of precarity and informality to the countries of the Global South. The relationship between precarization and informality has become motor in expanding the debate on precarious employment in the Global South and post-colonial studies (Hammer and Ness, 2021; Breman, 2010; Betti, 2018; Bhattacharya and Lucassen, 2005; Eckert, 2016; Rogan et al., 2017; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013; Petrunaro, 2013). Hill (2017), in his work contest Standing's concept of precariat as a new class, pointing out that Black Americans have experienced precarious employment long before the rise of neoliberalism and that they are possibly part of the *eternal precariat* (Hill, 2017). El-Tayeb (2013) affirm that the population of the Global South has been the main subject of precarization, and precarious employment is not a specific sign of a crisis of late capitalism but is instead a long-term fundamental component of the modern capitalist system (El-Tayeb, 2013). Thanks to the growing number of studies using the Global South perspective, it has been revealed that precarious employment is not a new phenomenon and neither is the exception in global labour market, it is indeed a dominant trait of capitalism with the sole difference that nowadays is no longer confined to the margins of the capitalist systems but is now also affecting the Global North and in particular the white male middle class (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016), as similarly women's employment conditions have been often overlooked in the past.

### **1.2.2 Precariousness and the Gender Sensitive Perspective**

The gender sensitive perspective, in addition to the Global South point of view, constitutes a privileged perspective to uncover that precarious employment has been a continuous feature of employment, also during the period of growth such as the economic

and industrial expansion of the Fordist Era of the 1950s-1960s (Betti, 2014; Betti, 2015). Frequently, the growing stability of the proletariat was balanced by the disadvantageous employment conditions of female workers (Betti, 2015).

Reviewing the different stages of capitalism, since the first industrial revolution, employment was primarily precarious both in industry and agriculture in England and France (Betti, 2014). Again, in countries such as the ones which have been just mentioned, throughout the early nineteenth century, wages were proportional to the quantity and quality of the work produced, labour relations were defined exclusively on an individual basis and layoff could occur at any time without prior notice (Betti, 2014). Therefore, at this stage, precariousness was a key feature of employment conditions of both male and female labour (Betti, 2014). This as we anticipated, led in the last two decades of the nineteenth century to most European countries, including England, enacting laws regulating the employment condition of women and children with the intention of limiting the exploitation and under-remuneration of their jobs (Betti, 2014). After the World War II in the U.S. and in the more industrialized European countries, employment started to become more and more regulated and stable (Betti, 2014), however examining from a gendered point of view it appears how this interpretation of the Fordist Era as the one characterized by stability par excellence is basing this assumption looking exclusively at the male employment model (Betti, 2015). Historically women's employment has been deemed as intrinsically unstable due to the belief that female workers would prioritize family and domestic labour over their paid employment. Since the role that women performed in society was primarily the one of wife and mother, this idea was particularly difficult to eradicate (Betti, 2015). During times of economic downturn, this conception of women had, as consequence, that was socially acceptable to lay off women without prior notice, so they could re-enter the domestic sphere and once again perform the role of housewife in accordance with the gender models established at the time (Betti, 2015).

Some examples in the literature that attempt to historicize the gendered sensitive perspective of precarious employment can be found since the 1970s, such as Scott (1988) that in his study intend to trace through the history of capitalism the recurrence of various form of precarious employment for female workers. In her works Betti (2010; 2014; 2015; 2016; 2018) studied the situations of Italian female workers both in the industrial and

post-industrial society, showing the gendered nature of precarious employment in Italy. Kessler-Harris (2007) attempts in her study to redefine the relationship between class and gender, expanding the categories for the analysis of working women. Several feminist scholars focus on the relationship between the female body and precarity, as well as precarity and reproduction (Betti, 2018; Puar, 2012). In addition Fudge and Owens (2006) and Vosko (2011) analyse the gendered inequalities present in precarious employment and how this phenomenon is increasing, examining the relationship between feminization and flexibilization of work globally. In the specific, Fudge and Owen (2006) find in their study that national policies and laws often reinforced gender roles, leading female workers to be employed more often in temporary and precarious jobs (Betti, 2016). Vosko (2011), instead, points out that the erosion of standard employment had not reduced gender inequalities. She identifies precarious employment as always present in the long history of capitalistic relations of production and that, therefore, cannot be considered as the exception in the labour market but on the contrary, the norm, especially when considering women. Analysing the reality of the Canadian industry during the Fordist era, she points out that the standard employment relationship was a strongly gendered model, in which women were mostly segregated in the marginal sector characterized by strong instability and precariousness (Vosko, 2011). The model, consequently, empathized the gender inequalities of the men in the position of the breadwinner and the women in precarious employment (Betti, 2016). In addition to these contributions can be found various feminist scholars adopting the Global South perspective, which contributed examining the relationship between the precarization and the global feminization of labour, seen as the growth of female participation in paid work around the globe in addition to the extension of traditional female working conditions to the workforce as a whole (Betti, 2018).

The labour market, hence, was and still is gender biased. The discriminatory nature of precarious employment that emerges, affects a disproportionally larger percentage of women, originating in the so-called *feminization of the labour market* (Vosko, 2000; Tompa et al., 2007; Betti, 2015). Women have fewer opportunities for stabilization of their contracts and due to the gender roles, they often need to conciliate paid employment with social reproductive tasks such as caregiving and motherhood duties, which still have a strong effect on female workers' dismissals (Betti, 2015). With the *Precarious Women*

*Workers Resolution*, the gendered nature of precarious work was even sanctioned by the European Parliament in 2010, in this case, a series of measures were proposed to prevent its spread and reduce its negative consequences (European Parliament, 2010; Betti, 2018; Betti, 2015).

### **1.3 Women in precarious employment: the specific case of the United Kingdom**

In recent years, the academic literature on precarious employment has been increasingly overcoming the gender-blind approach and Eurocentric perspective (Betti, 2018). Several scholars are using an intersectional approach to outline the gendered history of precarious employment (Betti, 2018). Intersectionality has been demonstrated to be relevant both for feminist and gender studies and for labour history (Betti, 2018; Boris and Janssens, 1999). We have seen in the previous paragraph some cases of research papers using the gender sensitive perspective in the study of precarious employment. However, it can be pointed out that there are some variations in different countries, and consequently this paragraph focuses on the specific case of the United Kingdom, analysed in depth by Pinchbeck (2013) in her book *Women Workers and the Industrial Revolution 1750-1850*, originally published in the first edition in 1930. We report, therefore, the most important findings of her work related to the employment conditions of female workers in the United Kingdom.

The theory by which female labour force participation was produced by the First Industrial Revolution and since then their participation in the labour market has increased is quite unsupported by the facts. Pinchbeck (2013) points out that in the United Kingdom, women have been employed in industrial systems productive work and their contribution has been proved often indispensable. Nonetheless, for centuries women have been mostly performing their work at home, under the handicraft and the domestic systems and their work, therefore, has been often taken for granted. The incorrect idea that women in the United Kingdom only became industrial workers with the Industrial Revolution, came probably from the fact that it was only when new developments brought **separation from home and workshop** that a higher amount of women were forced to follow their work and become wage earners outside their houses (Pinchbeck, 2013). In

addition, before the First Industrial Revolution, female workers did not receive a proper salary; in the industrial classes, the earnings of the wives and the children were incorporated into the wage of the head of the family. Instead, regarding agriculture and trade, often marriage was arranged as a business partnership in which the couple worked together. In the cases in which wives were not able to work together with their husbands, it was then required for them to become wage earners themselves, as it was by the public opinion of the eighteenth century that women and children were able to earn at least to support the men for their maintenance (Pinchbeck, 2013). Of those wedded to day labourers and fixed rate wagers, most women were, therefore, working for some domestic industry such as spinning, knitting and lace making. The difficult economic position in which women were standing was probably also influenced by the fact that for a long time they have been working as assistants to their husbands and fathers (Pinchbeck, 2013). Their employment was, hence, **under-remunerated, untrained and unskilled**. Furthermore, due to the high death rate in the eighteenth century, there was an elevated number of widows. As the single women's wages were frequently not enough to survive, it can be pointed out to be tough to manage for unmarried or widowed women. In the bigger cities and in London especially, the rate of unemployment or underemployment of women was even higher than in the countryside, as consequence, we can find that was associated with a higher frequency of prostitution, starvation and unemployment (Pinchbeck, 2013).

The Industrial Revolution established a new order of things, also in the employment conditions of women. The development of the large scale industry during the second half of the eighteenth century led consequently to a **dramatic reduction of work from home**. In the same process created by the Industrial Revolution, the family wage disappeared, and the agrarian and industrial changes deprive women of their earnings for working at home (Pinchbeck, 2013). The process of transition affected women adversely in several ways, and the family income was extremely diminished by these changes, however, men's wages during the industrial revolution readjusted to partly meet the change. In the main time, the rise of unemployment, **distress and poverty rates increased drastically** at the end of the eighteenth century. Evidence of these changes can be found in the several protests for the lack of employment, in the formation of the Ladies Committee, and in the Reviewers to the Board of Agriculture (Pinchbeck, 2013). Since most women had lost

their wages and consequently, the household salary remained below the level of the family subsistence, the re-employment of women and children was a matter of urgent necessity.

After a while, at the beginning of the nineteenth century, women were finally **reabsorbed by the industrial work** outside the house, nonetheless experiencing more adverse employment conditions than their counterparts. Consequently, the population in the cities increased and a great number of women were employed in the industrial sector. In addition to this, women were employed largely also in agriculture as their salary was still lower than those of male workers and so they were employed as cheap occasional labour. The exploiting employment conditions of women and children in agriculture helped develop the so-called Gang System (Pinchbeck, 2013). This organisation was composed of groups of workers, working under the direction of an overseer, moving from farm to farm, and was characterized by the extreme hardness of physical labour and uncertainties connected to this type of employment. Finally, some domestic industries were restored by parish officers and philanthropists, and women that did not manage to get a more remunerative job such as industrial work were again employed in activities such as lacemaking, tambouring, straw plaiting, glove and button making (Pinchbeck, 2013). The new system of female employment in factories created by the industrial revolution was far superior to the domestic system for the health and well-being of the workers, especially after the **State began regulating the working hours and employment conditions** of factory workers. Still, women's earnings remained competitively low compared to men's. The progress made in the mid-nineteenth century seems very little deemed by the modern standard; however, we can argue that much had been achieved by comparing the employment conditions of those working in factories to those performing other jobs during the same period. Among lacemakers, glovemakers, straw plaiters and other domestic workers that we have seen before, survived yet diminished, female workers were still working in bad conditions, the cottages were usually overcrowded, they had to work for longer hours and the salary would not earn a living wage. In London, for dressmakers and milliners, the conditions were even worst, and they had to up to eighteen or twenty hours a day for several months a year (Pinchbeck, 2013).

As previously stated, in the past, marriage for most women was seen as a business partnership, especially in agriculture and trade, and at the beginning of the industrial

revolution during the period of reassessment, the majority of them lost their economic independence. The Industrial Revolution crucially affected the economic situation of women, either they became financially dependent upon their husbands, or they found new employment to become wage earners themselves. Until then, married women in the United Kingdom had **never had the legal right to possess their earnings** or even their share of the family wage. This might be retrogressive from the individual point of view, notwithstanding, the salary earned alone by women was not enough for balancing the loss of the family of the woman performing her domestic duties and their wages served only to increase their husband wages, which was disproportionally higher, and was necessary to cover the whole family (Pinchbeck, 2013). The Industrial Revolution, therefore, made an advance in the sense that men's earnings were readapted to be paid on a family basis, and then women were not forced to work for the family substance but could be able to stay at home for caring for the children and the house duties.

By the mid-nineteenth century, the position of women in the industry and their earnings deriving from it became a subject of public discussions. The facts were studied by several inquiries from the Parliamentary Commissions and led to some degree in the **measure of state protection for female workers**. Several acts and commissions, such as the Reports of the Sadler Committee and the Factory Commission and the First Report of the Children's Employment Commission in 1842, had uncovered the terrible women's and children's employment conditions in factory labour and mines, hardware manufacture and domestic industries etc. (Pinchbeck, 2013). The outraged reaction of the public had as a consequence reduced, in some form, the heavily unsuitable labour conditions in which women were working, especially bringing an end to their work in coal mines. The **conviction that women were not suited for certain types of work**, such as working in mines, foundries and brickyards had a positive effect on women overall. There were also some kind of moderate reforms focused on ensuring protective measures that would make industrial employment a suitable occupation for women, and thanks to their efforts, by the mid- nineteenth century legislative protection had assured factory women a recognized place in productive industry and the emancipation of women workers had definitely begun.

During this period, together with the First Report of the Children's Employment Commission were made several reports on the employment conditions of women,

resulting in a public debate on what kind of jobs were to be considered suitable for women and what should have been their role in society. Throughout the period that goes from 1870 to 1914, there was a great **expansion of women's organizations in Britain** as well as women's employment in retail and clerical sectors (Holloway, 2007). These organizations were largely concerned with expanding employment opportunities for women and protecting their rights to work and improving their employment conditions (Holloway, 2007).

To conclude, we have shown how in the United Kingdom female employment conditions were to be considered precarious and adverse long before the post-Fordist era. In fact, despite the improvement done by the First Industrial Revolution, employment conditions for women have been proven to be truly disadvantaged when compared to men's and the gendered inequalities in wages persisted (Pinchbeck, 2013). The phenomenon of precarious and under-remunerated work, therefore, was not an outlier during British history but it must be considered most likely the norm, especially concerning women's work. In the next chapter, we analyse more in depth the present situation and how women are, still nowadays, more often affected by precarious and adverse employment conditions than men in the United Kingdom.

## **1.4 Employment precariousness as a social determinant of health and well-being**

Precarious employment is agreed to be a social determinant of health and health inequalities (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner 2011; Benach et al., 2007; Benach et al., 2016; Bodin et al., 2020; Cortès-Franch et al., 2018; Kalleberg, 2009; Padrosa et al., 2022; Julià et al., 2017a). Over the past years, the interest in precariousness had led to a growing body of research on the association between negative employment conditions and both physical and mental health (Benach et al., 2014; Koranyi et al., 2018; Ronnblad et al., 2019; Utzet et al., 2020; Padrosa et al., 2022). After the Second World War, in Western countries, the combination between the economic prosperity of the post-war period and the enactment of new laws to protect the workers' bargaining rights created specific labour market norms that reflected a new type of more stable and secure employment (Tompa et al., 2007). We saw previously that these

types of long-term and secure employment relationships were prevalently performed by men, however, these types of employment relationships meant that workers and their families could **plan for their long-term financial needs**, with a beneficial effect on their well-being (Tomba et al., 2007). After Golden Age, we showed earlier, forms of precarious employment, and flexible working arrangements began to be widespread once again. The labour market had then become incredibly insecure, showing how this had **negative implications for the long-term health and well-being of the workers** (Tomba et al., 2007; Benach et al., 2000; Benach et al., 2002). The increasing erosion of employment conditions and standard working arrangements in the last years has led to a stronger and renewed interest in precarious employment on health inequalities which are affecting both individuals, families, and society (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner 2011; Benach et al., 2007).

The increasing interest in this association has led to a renovated interest in finding a comprehensive and common definition of precarious employment. Despite several attempts in the academic literature, there is **no unanimous definition of precarious employment** that transcends the socio-political and historical context in which it is developed (Jonsson et al., 2021; Bodin et al., 2020; Benach et al., 2016), nevertheless it can be theorized that has a multidimensional construct including dimensions such as employment insecurity, economic deprivation, limited workplace rights and social protection (Benach et al., 2016; Benach et al., 2014; Vives et al., 2010) Therefore, the term precarious employment represents **a continuum of employment conditions**, which goes from the best option possible, defined by a full-time, year-round, socially protected, and well-paid contract to a complete lack of these conditions on the other end (Benach et al., 2014). Consequently, it is widely agreed in the literature that using a multi-dimensional measure to study precarious employment performs better and is more likely to be a good predictor of adverse health than single items measures (Kreshpaj et al, 2020; Sverke et al., 2002; Tomba et al. 2007). It has been shown that the association between precarious employment and health is to be attributed to a broader set of cases than only the threat of job loss (Marmot et al., 2001; Tomba et al., 2007). Several studies show that only job insecurity has a limited impact on health, except for depression, and on the opposite when other indicators, such as financial insecurity, are taken into account the association with health is stronger (Tomba et al., 2007; Marmot et al., 2001; Eaton et al.,

2001). While some studies on European data have found mixed results on the association between permanent versus non-permanent and health (Benach et al., 2002; Benavides and Benach, 1999; Daubas-Letourneux and Thébaud-Mony, 2003), a large number of studies show that when we look at employment precariousness, this is associated with poorer health (Burchell et al., 2002; D'Souza et al., 2003; Matilla-Santander et al., 2019; Julià et al., 2017a). Finally, several cross-sectional studies use the multidimensional index of employment precariousness scale which found a strong association between precarious employment and poorer mental health (some examples are Julià et al., 2017c; Vives et al., 2013; Jonssen et al., 2021).

There are different possible explanations of how and why precarious employment affects health and well-being. Tompa et al. (2007), in their study, report an extensive list of different pathways in which precarious employment could be affecting health, with the intent to describe some key mediating factors to clarify the association between exposure to work-related precariousness and adverse health outcomes. **Occupational stress** is shown to be the principal factor to influence health and well-being. The undesirable employment conditions and the work-related insecurity create situations in which the individual is more prone to stress, even for prolonged periods, and this continuous stress may ultimately bear on health as human biology is not fitted to endure high levels of stress. The body subjected to a stressor, activates biological resources to confront the imminent threat and suspends several long-term biological activities until the stress ends - for example, digestion some immune functions, etc. (Tompa et al., 2007). Exposure to chronic stress is responsible for a variety of psychological and physical diseases and pathologies that could be considered less tractable than those consequential to the form of acute stress. Chronic stress can lead between the others, to anxiety, depression, increases in cholesterol, coronary heart disease and even cancer (Tompa et al., 2007). Work intensification and reduced job security have been found to cause occupational stress (Duxbury, 2003)

Stress can influence psychological and physiological health through **three main avenues**, which do not necessarily operate independently from the other (Tompa et al., 2007):

1. Stress may affect physical and mental health **simultaneously or sequentially** first physically and then mentally or the opposite way around. The stress caused by adverse employment conditions tend in general to be conditions that **persist for long**

**periods.** Therefore, stress hormones remain at high levels for a prolonged period or even for the whole duration of the employment relationship (Tomba et al., 2007). Such continuous release of stress hormones can have, as consequences, negative effect on physical and mental health. Several studies found an association between occupational stress and serious health consequences such as anxiety and depression or compromised immune function (Tomba et al., 2007).

2. Stress may impact key variables connected to well-being such as **job satisfaction or life satisfaction**, which could then have an impact on health. Several studies have demonstrated the negative effect on job satisfaction of negative employment conditions, like increased strain from work (Stacciarini and Tróccoli, 2004) or fatigue connected to high work demands. Usually life and job satisfaction are classified as distinct concepts from health (Bardasi and Francesconi, 2004), even though there is evidence of an association between job insecurity, job (dis)satisfaction and health (Tomba et al., 2007).

3. Finally stress promotes **coping behaviours** that are detrimental to physical and mental health, such as drinking, smoking or unhealthy eating (McDonough, 2000; Tomba et al., 2007). This pathway frequently overlaps with the previous pathways because compromised health and well-being may drive towards unhealthy coping behaviours. Chronic stress complemented with loss of control or feelings of powerlessness is associated with an increase of unhealthy coping mechanisms (McDonough, 2000). This includes decrease in physical activity, increase in drinking, smoking, unhealthy eating and decrease in consistent use of health care (Tomba et al., 2007).

In addition to the previous three main pathways in which occupational stress affects health, we can point out other pathways in which precarious employment conditions affect health, and in which stress is involved in secondary ways. In particular, **material derivation** has a strong effect on physical and mental health (Benach et al., 2014; Julià et al., 2017b; Padrosa et al., 2021; Lenhart 2017; Borrell et al., 2004), this is because income inadequacy can lead to various forms of material deprivation, such as poor living conditions or inadequate access to health care resources.

Finally, it needs to be pointed out the **risk of exposure to physical and chemical hazards** in the workplace. This includes more specifically exposure to physical, chemical,

biological, radioactive or other hazards that could affect the individual physical health. These kinds of risks are not equally distributed and vary depending on job assignments. There is evidence that increased exposure to the hazard is associated with precarious forms of employment, and occupational health risks, such as accidents in the workplace, are not equally distributed across occupations, gender and social groups (Tomba et al., 2007; Benach et al., 2002; McDonough, 2000). The different employment conditions among the social strata are key determinants of inequalities in health (Benach et al., 2002, Borrell et al., 2004).

The previous list of ways in which precarious employment affects physical and mental health by no means intended to be exhaustive and complete, but it indicates some of the main channels through which precarious employment undoubtedly affects health and indicates the relevant role of adverse employment conditions for the well-being of the individual, thus inviting to investigate more on this topic.

## **Conclusions**

The present chapter focused on precarious employment showing the theorization in the literature and through historicization, its gendered nature. In the specific, firstly we discuss the emergence of the notion of precarious employment in the academic literature. In the second instance, we report the historicization of precarious employment focusing on the Global South perspective and a gendered approach. In recent years, social scientists have treated precarious employment as a modern trend and a specific feature of post-industrial society, developing in the 1980s after the end of the Fordist Era (Betti, 2018). The precarious employment notion regularly began to be adopted during the nineteenth century, although the debate about precarious employment, until the 1990s, predominantly used a Euro-centric and gender-blind perspectives. This has led to the universalization of the Western capitalism model and implementation of the concept of the standard employment relationship as seen as the normality, in contraposition to precarious employment, described as the exception (Betti, 2018; Breman and Van der Linden, 2014; Munck, 2013; Neilson and Rossiter, 2008). However, in the 2000s feminist and post-colonial studies contributed to the precarious employment discussion by gendering and globalizing its analysis. These contributions played a crucial role in

condemning the mainstream periodization of precarious employment. The gendered global perspective has shown how the theorization of precarious employment as a new phenomenon and conceptualized as the exception in the post-Fordist Era have been incorrect (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013) and uncovered how precarious employment has been a continuing feature of employment, also during the period of growth such as the economic and industrial expansion of the Fordist Era of the 1950s-1960s (Betti, 2014; Betti, 2015). The diffusion of stable employment model relationship during the Golden Age, does not measure the employment conditions of women, migrants and marginal workers in the Western countries as well as the Global South workers at large, which remain excluded from this kind of employment relationship (Breman and Van der Linden, 2014). Precarious employment is revealed, therefore, to be properly conceptualized only since it started impacting the Western male breadwinner the industrial sector after the process of deindustrialization experienced in Europe and North America, during industrial capitalism (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2018). The feminist and post-colonial point of view, consequently, demonstrate that precarious employment is not a recent phenomenon but rather the norm of capitalism employment relationships (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2016; Mosoetsa et al., 2016; Breman and Van der Linden, 2014; Munck, 2013), and we might then consider different “waves of precarization” to compare diverse forms of precarious employment at different times and places (Betti, 2018). As a matter of fact, from a spatial point of view, the current historical phase of precarious employment has different characteristics from those that manifested in other phases of industrial capitalism. The spread of precarious employment in the 2000s seems, in fact, to be closely linked to the new phase of globalization, assuming a potentially planetary dimension. This has provoked a renewed interest in the topic, in addition to political actions, mobilizations and campaigns against the negative consequences of precarious employment conditions all over the world (Betti, 2014)

Moreover, in the present chapter, we reported a brief description of employment conditions for female workers, both before and after the First Industrial Revolution in the United Kingdom, especially thanks to the contribution of Pinchbeck (2013), in her work *Women Workers and the Industrial Revolution 1750-1850*. It is shown how in the United

Kingdom female employment conditions were to be considered precarious and adverse long before the post-Fordist Era. Despite the improvement done by the First Industrial Revolution, employment conditions for women have been proven to be truly disadvantaged when compared to men and the gendered inequalities and differences in remunerations have persisted over time (Pinchbeck, 2013).

Finally, is reported a brief review of the pathways in which precarious employment affects health and well-being, as precarious employment is a social determinant of health (Jonsson et al., 2021; Bodin et al., 2020; Padrosa et al., 2022). Occupational stress is shown to be the principal factor influencing health and well-being (Tompa et al., 2007). The undesirable employment conditions and work-related insecurity creates situations in which the individual is more prone to stress, even for prolonged periods, and how this may ultimately bear on health. We have indicated some of the main channels, found in the literature, through which occupational stress affects health, however, is necessary further investigation on the possible pathways in which adverse employment conditions have an impact on the individual's health and well-being. Further indications, for the analysis of employment precariousness and health is to prefer longitudinal data, to analyse the long-term effects of negative employment conditions on physical and mental health, and when made possible by the data, to use a multidimensional measure of precariousness to better estimate its effect and better comprehend the specific mechanism in which precarious employment operates (Tompa et al., 2007).



## **Chapter 2 - The Impact of Precarious Employment on Health**

### **Introduction**

Precarious employment is a growing phenomenon and often advocated by labour policies (García-Pérez et al., 2020). However, precariousness, especially if prolonged over the life course, can have detrimental effects on several individuals' life domains, such as family, well-being, and health. Extant literature on cross sectional data has consistently found that precarious employment conditions are associated with worse physical and mental health (Kalleberg, 2009; Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b). This might be because exposure to employment precariousness can lead to feelings of inadequacy towards the expectations of society, such as being independent, making projects for the future, or starting a family. Precarious employment is often associated with insufficient economic resources for family sustenance and long-term plans or investments. Thus, precarious employment can be a constant stressor in everyday life, leading to poor mental and physical health.

There is no unanimous consensus on how to measure precarious employment in the literature (Jonsson et al., 2021; Bodin et al., 2020; Benach et al., 2016), however it is generally illustrated as a multidimensional concept, which includes several dimensions such as employment insecurity, income insufficiency and economic deprivation, limited rights and social protection, and short-term contracts (Vives et al., 2010; Benach et al., 2014; Julià et al., 2017b; Julià et al., 2017c; Padrosa et al., 2021), and therefore, is found to be more accurate to measure it through a multidimensional measurement taking into consideration all these different dimensions in which precarious employment could affect the individual life and not only use unidimensional measurement of the temporariness of type of contract (Vives et al 2010; Benach et al., 2014; Julià et al., 2017b).

In this analysis, therefore, the aim is to measure precarious employment using each dimension separately estimating the different impacts on physical and mental health, and finally, in a separate model, all the dimensions are taken together to check how they affect one another. In the specific, we take into account the dimensions of temporariness, wages, rights, disempowerment, and uncertain working time, similarly on the dimensions used for the Employment Precarious Scale or also known as EPRES (Padrosa et al., 2021; Julià

et al., 2017b; Vives et al., 2010). Furthermore, the relationship between precarious employment and health differs across gender. In fact, the association between precarious employment and health seems to affect stronger women than men in the same situation (Julià et al., 2017b; Benach et al., 2016). This could be due to the double burden of paid work and household responsibility and care work (Boye 2011; Dahlin & Härkönen, 2013).

Therefore, in this chapter is estimated if the association between precarious employment and health differs across gender also in the sample selected for the analysis. An important limit with the extant literature on employment precariousness and health is that it is mostly based on cross-sectional data, therefore, this chapter aims to contribute to the topic using longitudinal data, to analyse the long-term effects of precarious employment on physical and mental health. Using panel data from Understanding Society (University of Essex, Institute for Social and Economic Research, 2022) on the United Kingdom, from 2010 to 2020, we run hybrid models to estimate the effect of being precariously employed on both physical and mental health.

## **2.1 The effects of precarious employment on health**

In the last decades there has been an increasing interest in the literature about precarious employment and non-standard employment conditions. Historically, employment conditions have changed drastically since the 1970s, with an increment of flexible employment arrangements and an increase of new employment forms characterized by higher levels of job insecurity and the erosions of the standard working arrangements and employment conditions (Benach et al., 2014; Quinlan et al., 2001; Scott, 2004). Common notions connected to the erosions of standard employment and employment conditions are extremely broad list definitions such as “atypical employment,” “casual work,” “contingent employment,” “temporary work,” “flexible employment,” and “nonstandard work arrangements” or “underemployment” and “informal work” (Benach et al., 2014). In the literature there is no unanimous definition of precarious employment that transcends socio-political and historical context in which it is developed (Jonsson et al., 2021; Bodin et al., 2020; Benach et al., 2016). Nonetheless, numerous researchers have drawn definitions of precariousness and the wider social environment it is embedded in.

To cite few, Ulrich Beck (2014), in *The New World of Work* describes precariousness as a key aspect of a wider trend towards a “*world risk society*” symbolized by a political economy of insecurity, in which Western countries progressively face characteristics related with the informal economies of poorer countries. While Benach et al. (2016), also mentioning some of their previous research (Benach et al., 2014; Vives et al. 2010) define precarious employment: “...as a multi-dimensional construct encompassing dimensions of employment insecurity, individualized bargaining relations between workers and employers, low wages and economic deprivation, limited workplace rights and social protection, and powerlessness to exercise legally granted workplace rights” (Benach et al., 2016, p.234).

Therefore, the terms **precarious employment represents a continuum of employment conditions**, which goes from the best option possible, defined by a full-time, year-round, socially protected and well-paid contract to a complete lack of this conditions on the other end (Benach et al., 2014). Nevertheless, in the literature, unidimensional measures of precarious employment are widely used, often due to the lack of more detailed labour market statistics and data (Jonsson et al., 2021; Benach et al., 2016). The increasing erosion of employment conditions and standard working arrangements has led to a stronger and renewed interest in **precarious employment as a social determinant on health** and health inequalities which are affecting both individuals, families, and society (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner, 2011; Benach et al., 2007). Aftermath, in recent years considerable amount of studies is analysing the impact of precarious employment on health, both physical and mental (Lewchuk et al., 2008; Virtanen et al., 2005; Quinlan, 1999; Quinlan and Mayhew, 2006; Matilla-Santander et al., 2019; Julià et al., 2017a). While some studies on European data have found mixed results on the association between permanent versus non-permanent and health (Benach et al., 2002; Benavides and Benach, 1999; Daubas-Letourneux and Thébaud-Mony, 2003), a large number of studies show that when we look about employment precariousness, this is associated with poorer health (Burchell et al., 2002; D’Souza et al., 2003; Matilla-Santander et al., 2019; Julià et al 2017a). Besides, physical health can be affected by the type of job performed in the case of poor working conditions, such as exposition to material hazard or excessive jobs demand that may be detrimental to physical health (Berkman et al., 2014). The World Health Organization acknowledge the

equality of access at a non-exploitative employment as a key policy option for reducing health inequalities (World Health Organization, 2008; World Health Organization Regional Office for Europe, 2014). Several prospective cohort studies found that moving to unemployment is associated with a decrease of general health, while stable employment is correlated to lower psychological distress (Virtanen et al., 2005), and that trajectories to a less secure employment situation are negatively associated with health outcomes (Ferrie, 2001; Ferrie et al., 2002; Ferrie et al., 2005). In their study, Kim et al. (2012) analysed the effect of precarious employment on health in different welfare regime finding mixed evidence for the associations between negative employment conditions and health. Other evidence from a systematic review and meta-analysis of longitudinal data, shows inconsistent evidence for the precarious employment and poorer mental health when is looked only as a temporary employment, but as significant when multidimensional measures were used (Rönnblad et al., 2019). Using a typological approach, Peckham et al. (2019) show an association between precarious employment and mental distress, similarly, Van Aerden et al. (2016) found an association with precarious employment conditions and poorer general health. A longitudinal study about the Italian population found that higher job insecurity and inequality of wages are associated with higher levels of anxiety, depression and stress, as well as a poorer perceived health (Bacci et al., 2017). Finally, several cross-sectional studies use the Employment Precariousness Scale (EPRES), or similar countries specific adaptations, which is a multidimensional index that is explain more in depth in the next paragraph, which found a strong association between precarious employment and poorer mental health (some examples are Julià et al., 2017c; Vives et al., 2013; Jonssen et al., 2021). In addition, the relationship between precarious employment and health differs between distinct groups. The ones with the most vulnerable self-related health and poor mental health are immigrants, women, lower-class and less-educated workers, which are also the categories most affected by precariousness (Julià et al., 2017b). Precarious employment is a **gendered phenomenon**, female workers perform the largest burden of it (Benach et al., 2016). Women already endure numerous levels of labour market discrimination and fall in precariousness more often than men (Menéndez et al., 2007). The substantial inequalities in the paid labour market are also strictly connected to the gendered inequalities in unpaid care work (Benach et al., 2016). Julià et al. (2017b) in their study

have shown that employment relate to health and well-being via **three main pathways**: firstly, **through psychological effects related to uncertainty**, feeling on unfairness and powerlessness; in second place because **through higher exposure to damaging the physical and psychological working conditions** (e.g. safety measures); and finally and **through material deprivation**, like low income and under-protection from social risks (unemployment, disability, maternity leave, retirement, etc.). Therefore, a worker in conditions of high precariousness - low wage, duration of the contract, renovation of the employment, worker' rights and social protection - and, possibly, with insufficient economic resources for their family sustenance and stability for long-term plans or investments, might end up feeling a sense of inadequacy towards the basic need of the human being - such being independent, making projects for the future, start a family, etc. - and therefore, being a constant stressor in the everyday life, causing to depression, poor mental health and in some case in worsening of the overall health.

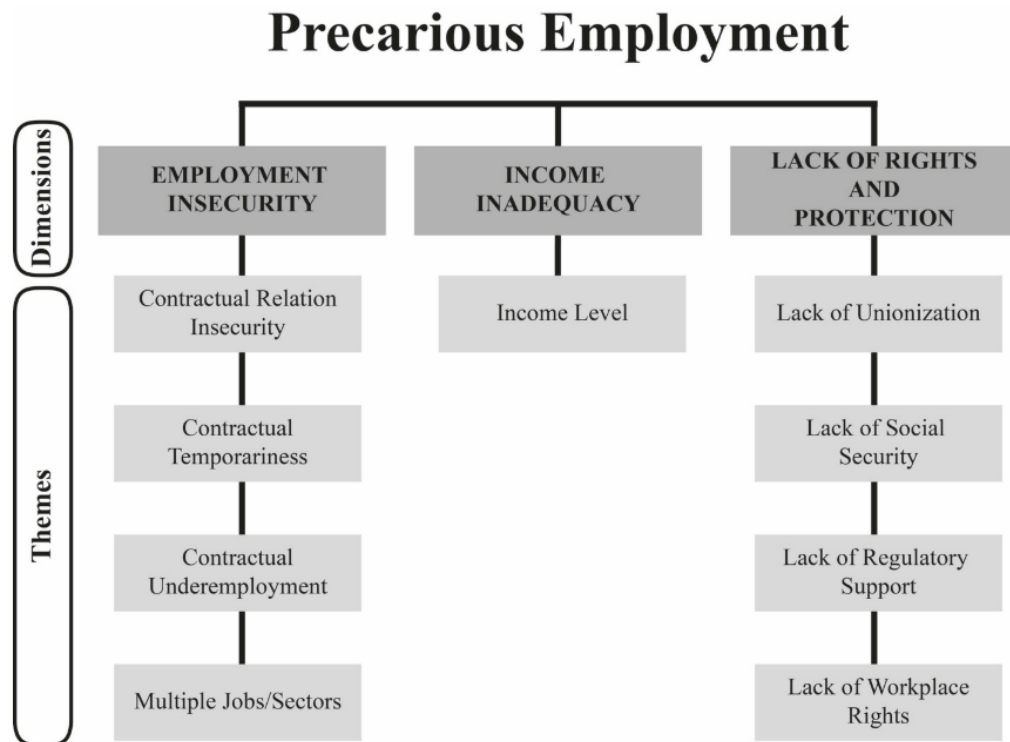
So far, we found that many studies have examined the relationship between precarious employment conditions and health but there is little evidence on what is the effect on health when we look at long-term consequences of being in precarious employment. Most studies use cross-sectional data and consequently, do not have information about causality. Moreover, many studies focus either only on physical health or mental health because of data availability, thus there is not a great deal of investigation where in the same sample of workers are analysed both physical and mental health at the same time. Drawing from the literature limitations, we aim to analyse the relation between precarious employment and health with longitudinal data on the United Kingdom, using the Understanding Society data (University of Essex, Institute for Social and Economic Research, 2022), to assess the long-term effects of precarious employment on both physical and mental health. When looking at cross-sectional data, the relationship between precarious employment and health differs between male and female workers but, again, there is not much evidence on this using longitudinal data, therefore, an additional objective of my analysis is to confirm the gender differences in both mental and physical health using panel data. Furthermore, the analysis intends to use a multidimensional approach regarding the meaning of precarious employment, breaking down this phenomenon in its most important constituent dimensions. Consequentially, in this chapter we aim to add to the strand of research by adapting the dimensions used for

Employment Precarious Scale (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010) to the Understanding Society data (University of Essex, Institute for Social and Economic Research, 2022), not only trying to estimate to what extent does precarious employment affect the health and well-being, but also what is the aspect that influences more this relation: the duration, the uncertainty, the working conditions, the vulnerability, uncertain working times, or the material deprivation.

## **2.2 Precariousness, how it has been operationalized in the literature**

Not existing yet a unanimous definition of precarious employment, this phenomenon has been addressed in different ways in the literature. As a result, in the literature precarious employment has been defined and operationalized in various ways. In their work Kreshpaj et al. (2020) make a systematic review of definitions and operationalizations of precarious employment. They find out that in many publications the definitions of precarious employment were based on the pre-existing definition used in the literature. They estimate that most of the studies in analysis, were based on at least four dimensions, showing that in most cases, when made possible on the data availability, the multidimensional approach has always been preferred by the scholars (Benach et al., 2014; Julià et al., 2017b; Kreshpaj et al., 2020; Padrosa et al., 2021; Vives et al., 2010). The most recurring dimensions shown in the systematic review were five: 1. **employment insecurity** 2. **income inadequacy**, 3. **lack of rights and protection**, 4. **work environment**, and 5. **health effects and social consequences** (Kreshpaj et al., 2020). But they exclude the last two dimensions from consideration since, based on the theoretical framework, those are indeed possible consequences of precarious employment but not as unique to or defining of such employment (Kreshpaj et al., 2020). Consequently, excluding the former two dimensions, they are left with three main dimensions which can be decomposed in several sub-themes, that we can see the most recurring in the figure above that is reported from their study (Kreshpaj et al., 2020 p.240).

**Figure 2.1** – Identified dimension and themes of precarious employment.



Source: Kreshpaj et al., 2020, p.240

An exhaustive analysis of the dimensions of precarious employment is the one made by Julià et al. (2017 b) and Benach et al. (2014) in which are pointed out seven main dimensions that are to be found when we talk about precarious employment:

1) The first dimension is **employment stability**, which includes the type of contract and the threats of continuation of employment. This is the dimension that Kreshpaj et al. (2020) is referred to as employment insecurity. Contractual temporariness, various forms of a non-standard or flexible employment contract are part of this dimension.

2) The second dimension concerns the **material rewards** connected to the job. Similarly, in Kreshpaj et al. (2020) this was called income inadequacy. The income provided by the job should provide an acceptable standard of living and is, therefore, a decent wage (Julià et al., 2017 b). Even though a lower wage is often to be found in non-standard forms of employment, it might affect also other forms of employment (Julià et al., 2017 b).

3) The third dimension consists of the **workers' rights and social protection**. This

dimension change radically from nations and sectors but include generally the “social wage” and the welfare state provision to guarantee the standard of living especially during non-work periods, such as paid leave, unemployment insurance, health insurance, pension plan, or child allowances (Scott-Marshall, 2005).

4) The fourth dimension concerns the **working time arrangements**, and includes the length and intensity of working hours, the involuntary part-time employment, the flexible working times and the hours’ schedule unpredictability (Julià et al., 2017b; Benach et al., 2014). The results can be subdivided in two categories, the first one is the **employer-induced flexibility**, since is the consequence of requests from the employer and the second one is the **employee-oriented flexibility**, because is due to the employee’s discretion and autonomy (Julià et al., 2017b). The literature is shown that the first is predominantly a feature of poorer employment conditions while the second is often found in jobs at the opposite upper end of the labour market (Julià et al., 2017b).

5) The fifth dimension is the one concerning the possibility to attend **training and possibilities or growth and increase skills**. In a labour market in which the human capital is of increasing importance, the access to training and possibilities of career growth is of greater importance, and in particular people with less training opportunities results to have less chances to move between jobs and to get out precarious employment (Eurofound, 2013).

6) The six dimension is instead the **(dis)empowerment** and refers to the employee representation, such as trade union representation and collective negotiation procedures and all general of institutionalized collective employment relations.

7) Finally, the last dimension is the **interpersonal power relations**, which describes the more informal workplace relationships between employees, superiors, colleagues, or clients. In some cases, precarious employment implicates more vulnerability towards authority, intimidation, or discrimination (Vives et al., 2010). A frequent consequence of this vulnerability is the incapacity to exercise in practice formally granted workers’ rights, for example paid leave or compensation for overtime work.

The Employment Precarious Scale - also known as EPRES - described by Padrosa et al. (2021), Julià et al. (2017 b) and Vives et al. (2010) is a multidimensional measurement instrument theory-based and constructed on a partially overlapping framework of the

previous cited dimensions. The EPRES contains six dimensions which are the employment instability or temporariness; the inadequacy of material reward; the erosion of workers' rights; the disempowerment; the workers vulnerability towards an undesirable treatment and finally workers' incapacity to exercise workplace rights. The EPRES has been widely used and adapted to other databases (some examples are Padrosa et al., 2021; Jonsson et al., 2021). In their article, Padrosa et al. (2021) develop the EPRES-E on the items available in the Sixth Wave of European Working Conditions Survey (EWCS 2015). In addition to the original version (e.g., Vives et al., 2010), they include the dimension about the uncertain working time intended as imposed unilaterally by the employer (Padrosa et al., 2021). Therefore, in their analysis the final scale is composed of the dimensions of temporariness, wages, disempowerment, vulnerability, and uncertain working times - the dimension about rights have been excluded because there were not the correct items in the EWCS 2015 to measure it.

We aimed to reproduce similar dimensions about precarious employment of those measured by the original EPRES and the EPRES-E (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010), and in order to do so, we selected in the Understanding Society (University of Essex, Institute for Social and Economic Research, 2022) the variables which were better suited to measure those dimensions. We tried to build a similar index using the confirmatory factor analysis and S.E.M. but the values produced were not fit enough to build a valid and reliable index. Therefore, we preferred to use each variable separately to check the effect of each dimension on health and subsequently together. The dimension about vulnerability had to be excluded because were not found items valid to measure it. All the main variables included were recorded as a dummy. In the following table (Figure 2.2) are summarized the main variables used to measure the employment conditions.

1) The first dimension, **temporariness** includes variables concerning whether the job is temporary or permanent, the job tenure, and the distinction between part-time and full-time, considering part-time working less than 35 hours per week, which is to be considered part-time in the United Kingdom<sup>4</sup>.

2) The second dimension, consist of the perceived **financial situation and wage**.

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<sup>4</sup> <https://www.gov.uk/part-time-worker-rights>

Similarly that in Padrosa et al. (2021) and García-Pérez et al. (2020) we recorded wages as those earning less than the 60% of the median and those earning equal or more than the 60% of the mean.

3) In the third dimension, are included having an employer who run a **pension scheme, and benefit** such as a pay which includes bonus, annual increments, or performance related pay.

4) The fourth dimension, **disempowerment** includes having autonomy over work hours and the possibility to be part of a union or staff association.

5) Finally, the last dimension consists of the presence at the workplace of **informal flexible working arrangements**.

**Figure 2.2** – Operationalization of the proposed Precarious Employment structure.

| Dimension               | Variable                | Question                                                                     | Answer categories                                                                    |
|-------------------------|-------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>1. Temporariness</b> |                         |                                                                              |                                                                                      |
|                         | Duration                | Is your job permanent?                                                       | 0 not a permanent job<br>1 permanent job                                             |
|                         | Job Tenure              | Job Tenure. How long since you started working in your current job position? | 0 1 year or less<br>1 more than 1 year                                               |
|                         | Part/Full-time          | Part/Full-time. How many hours you work per week on average?                 | 0 <35 h per week/ part-time<br>1 >= 35 hours per week/full-time                      |
| <b>2. Wages</b>         |                         |                                                                              |                                                                                      |
|                         | Financial situation     | How would you describe your financial situation?                             | 0 just getting by or finding it difficult<br>1 living comfortably or doing all right |
|                         | Median Wage             | Is your wage more or less than the 60% of the median wage in your country?   | 0 less than 60% of the median<br>1 60% or more                                       |
| <b>3. Rights</b>        |                         |                                                                              |                                                                                      |
|                         | Pension                 | Does your employer run pension scheme?                                       | 0 No<br>1 Yes                                                                        |
|                         | Performance related pay | Does your pay include performance related pay?                               | 0 No<br>1 Yes                                                                        |

|                                  |                        |                                                                       |                                       |
|----------------------------------|------------------------|-----------------------------------------------------------------------|---------------------------------------|
|                                  | Rise                   | Does your pay include annual increments or rise?                      | 0 No<br>1 Yes                         |
|                                  | Bonus                  | Does pay include bonus or profit share?                               | 0 No<br>1 Yes                         |
| <b>4. Disempowerment</b>         |                        |                                                                       |                                       |
|                                  | Union                  | Do you have a union or staff association at your workplace?           | 0 No<br>1 Yes                         |
|                                  | Autonomy               | Do you have autonomy over work hours?                                 | 0 a little or none<br>1 a lot or some |
| <b>5. Uncertain working time</b> |                        |                                                                       |                                       |
|                                  | Flexible working hours | Are informal flexible working arrangements present at your workplace? | 0 No<br>1 Yes                         |

Source: our elaboration

## 2.3 Data and Methods

### 2.3.1 Data and Design

This analysis has a longitudinal design using data on employment conditions and both physical and mental health. In the specific, we used data from Understanding Society (University of Essex, Institute for Social and Economic Research, 2022), which is an unbalanced panel household study conducted in the United Kingdom. The Understanding Society is a longitudinal survey of the members of roughly 40,000 households at the first Wave 1 in the United Kingdom (University of Essex, Institute for Social and Economic Research, 2022). Households engaged at the first round of data collection are visited each year to collect household and individual information. Therefore, the Understanding Society is to provide high-quality longitudinal data on subjects such as health, work, education, income, family, and social life aiming to provide information to understand the long-term effects of social and economic change, as well as policy interventions designed to impact upon the general well-being of the UK population (University of Essex, Institute for Social and Economic Research, 2022). For the analysis we restricted the sample to wave 2, 4, 6, 8 and 10, as some of the required information were collected every two waves. Each data collection lasted around 2/3 years; thus, the data represent

the UK population from 2010 to 2020. During the process of data cleaning, I excluded from the sample those individuals that have never being in paid employment during those 5 waves, which include mostly individuals falling in categories such as retired, unemployed, full-time students and self-employed. I excluded the former category of workers as the employment conditions are not comparable to those in paid employment. Finally, as one of the main goals was to do a panel analysis, I excluded all the individuals that had answered only once to the survey, leaving the following distribution of the survey:

|                                      |    |     |     |     |     |     |
|--------------------------------------|----|-----|-----|-----|-----|-----|
| Distribution of T <sub>i</sub> : min | 5% | 25% | 50% | 75% | 95% | max |
|                                      | 2  | 3   | 4   | 5   | 5   | 5   |

and with a total sample of 24.332 individuals for wave 2, 25.742 for wave 4, 24.672 for wave 6, 23.031 for wave 8 and 20.251 for the last wave.

### 2.3.2 Variables

In the present analysis, it is showed the effect of the previous variables on two separate dependent variables, mental health, and physical health, measured through the SF-12 Physical Component Summary (PCS) and the SF-12 Mental Component Summary (MCS). Both variables result in a continuous scale with a range of 0 (poor health) to 100 (good health). For complete details on scoring methods see Ware et al. (2001).

Precarious employment is measured as previously stated in Paragraph 2.2, using variables to describe the dimensions of temporariness (whether the job is temporary or permanent, the job tenure, and the distinction between part-time and full-time), economic rewards (percived financial situation and wage), rights (pension and benefits), disempowerment (autonomy over work hours and presence of a union or staff association), and informal flexible working arrangements.

### 2.3.3 Statistical analysis

The empirical section is divided in two: in the first part, the distribution of the variables used to describe precarious employment are shown, with the aim to check whether there

is a gendered difference in the share of people affected by precariousness. In the second part are reported the results of the models to estimate the effect of precarious employment on health. For this part of the analysis, instead of using fixed or random effect models, we opted for using hybrid models. The hybrid model is a flexible tool that separates within- and between- variation and, therefore, allows to consistently estimate the effect of time varying characteristics similarly to fixed effects (Baranowska-Rataj & Strandh, 2021). This is possible by including both the deviations from the individual-specific means of the time-varying characteristics and the person-specific means of these characteristics in the set of the model covariates. The inclusion of the person-specific means of time varying characteristics picks up any correlation between these variables and the unobserved random effects (Baranowska-Rataj & Strandh, 2021). We opted to use Hybrid models because they are more suitable to use than fixed effects when we are dealing with unbalanced panel data with a short time dimension (Bell and Jones, 2015; Wooldridge, 2019), which is the case of this study. We produce a model for each dimension, and finally we create an additive index of all dimensions all together to see the effect of all the employment conditions variables together. We estimate separate models for men and women, and we include as control variables the age of the respondent and the educational level.

## **2.4 Results**

### **2.4.1 Description of the sample**

This section provides a brief description of the sample used for the present analysis. For what concerns the distribution of gender in figure 2.3, in first records, 45% of the sample are male respondents and 55% are female respondents. Percentages are similar across waves, with a maximum of 45.7% of male respondents in wave 6 and a minimum of 44.7% in wave 10. Similarly, women range from a minimum of 54.3% of the sample in wave 6 to a maximum of 55.3% in wave 10.

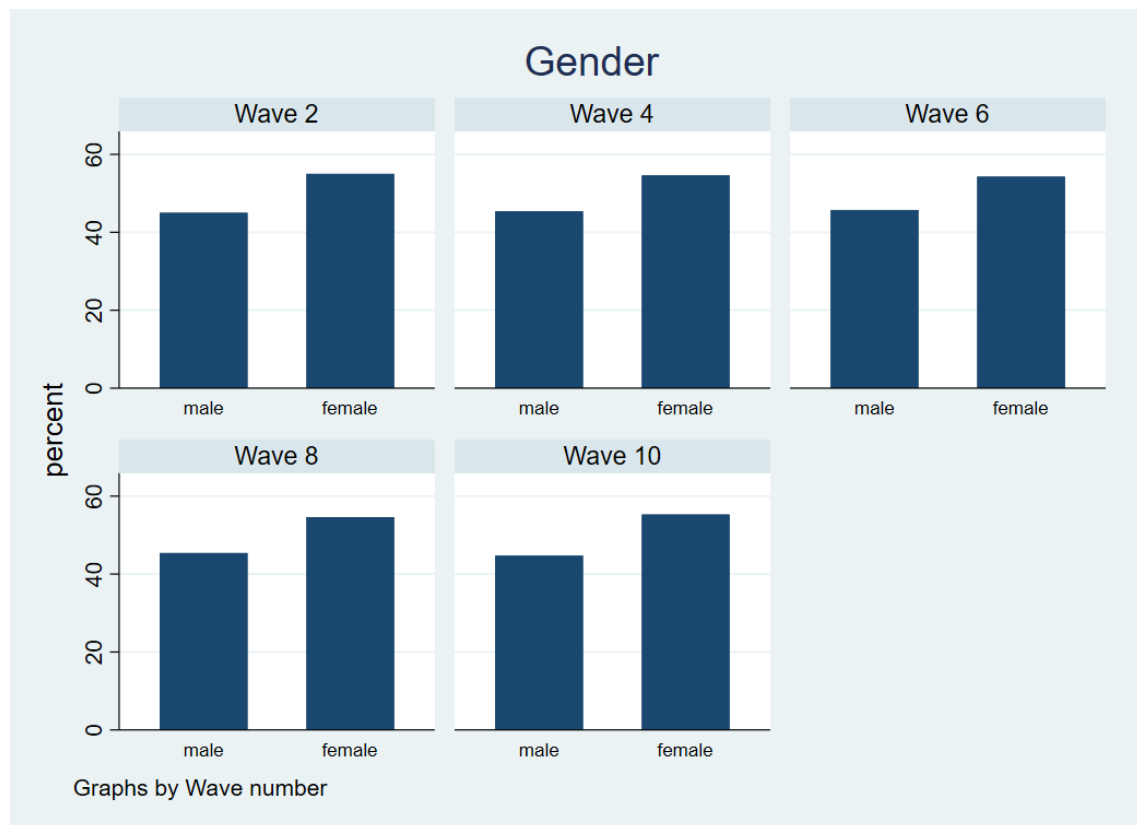
**Figure 2.3** – Distribution of Gender across waves.

|        | Wave 2 |         |       | Wave 4 |         |      | Wave 6 |         |       |
|--------|--------|---------|-------|--------|---------|------|--------|---------|-------|
|        | Freq.  | Percent | Cum.  | Freq.  | Percent | Cum. | Freq.  | Percent | Cum.  |
| Male   | 10,951 | 45.0    | 45.0  | 11,688 | 45.4    | 45.4 | 11,282 | 45.7    | 45.7  |
| Female | 13,381 | 55.0    | 100.0 | 14,054 | 54.6    | 100  | 13,392 | 54.3    | 100.0 |
| Total  | 24,332 | 100     |       | 25,742 | 100     |      | 24,674 | 100     |       |

|        | Wave 8 |         |      | Wave 10 |         |       |
|--------|--------|---------|------|---------|---------|-------|
|        | Freq.  | Percent | Cum. | Freq.   | Percent | Cum.  |
| Male   | 10,455 | 45.4    | 45.4 | 9,056   | 44.7    | 44.7  |
| Female | 12,576 | 54.6    | 100  | 11,196  | 55.3    | 100.0 |
| Total  | 23,031 | 100     |      | 20,252  | 100     |       |

**Figure 2.4** – Distribution of gender across waves.



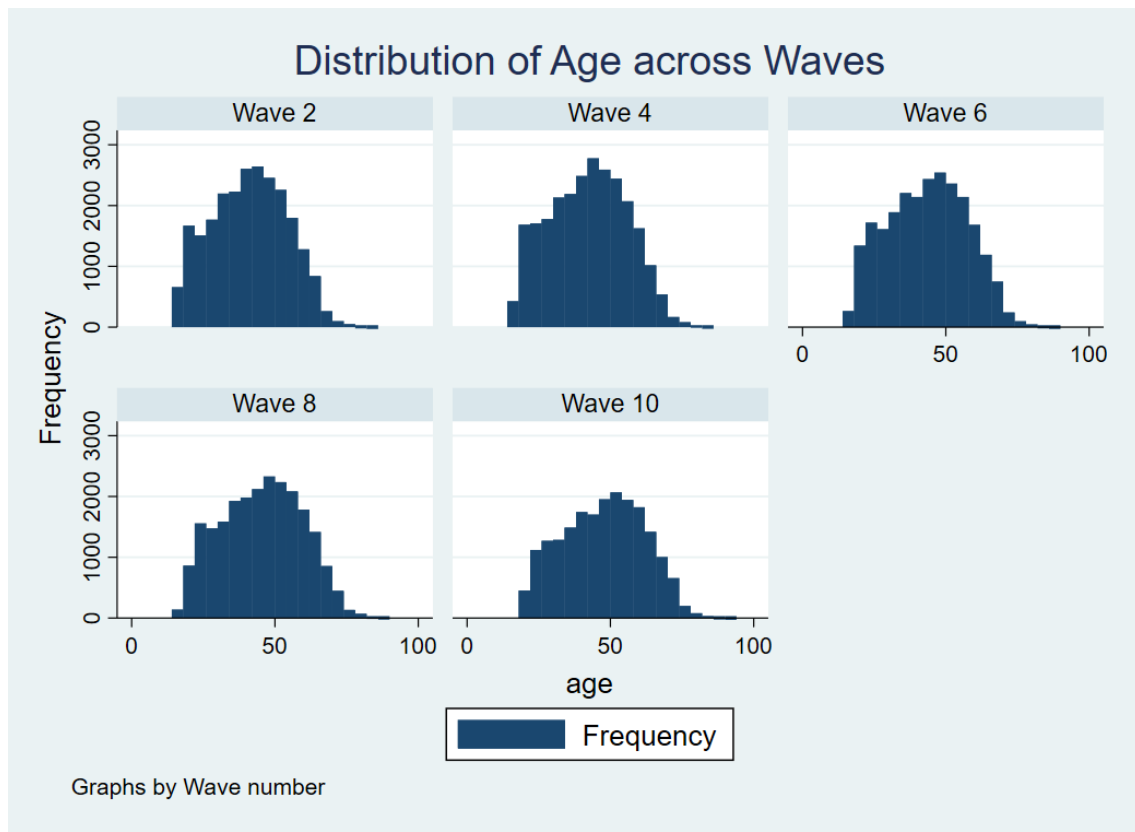
In figure 2.5 is shown the distribution of age across the sample of study. During the wave 2, the mean age in the sample is of 40.5 years old, with a minimum of 16 and a maximum of 83. During wave 4, the mean age is slightly higher of 41,7 years old and a minimum of 14 and maximum of 85. In wave 6, again, the mean age is higher than in the previous wave, and is now of 43 years, with a maximum of 87 years. In wave 8, the mean age is

44.7 and finally in the most recent record, in wave 10, the mean age of the sample is 47 with a minimum of 16 and a maximum of 91 years. In case of very high or young age, such the case of 14 years old in wave 4, we can tell that they are not necessarily employed at the time but might be in previous or in the followings waves and, therefore, are still considered in the wave sample. In the longitudinal analysis only those working at the time will be considered and during the main analysis with the hybrid models we will control for age as well as gender and educational level. In figure 2.6, the visual representation of age across waves is present.

**Figure 2.5** – Descriptive statistics of Age.

| Variable | Observations | Mean | Std. Dev. | Min | Max |
|----------|--------------|------|-----------|-----|-----|
| Wave 2   | 24,332       | 40.5 | 13.1      | 16  | 83  |
| Wave 4   | 25,742       | 41.7 | 13.5      | 14  | 85  |
| Wave 6   | 24,672       | 43.0 | 13.8      | 16  | 87  |
| Wave 8   | 23,030       | 44.7 | 14.0      | 16  | 89  |
| Wave 10  | 20,250       | 47.0 | 14.1      | 18  | 91  |

**Figure 2.6** – Distribution of age across waves.

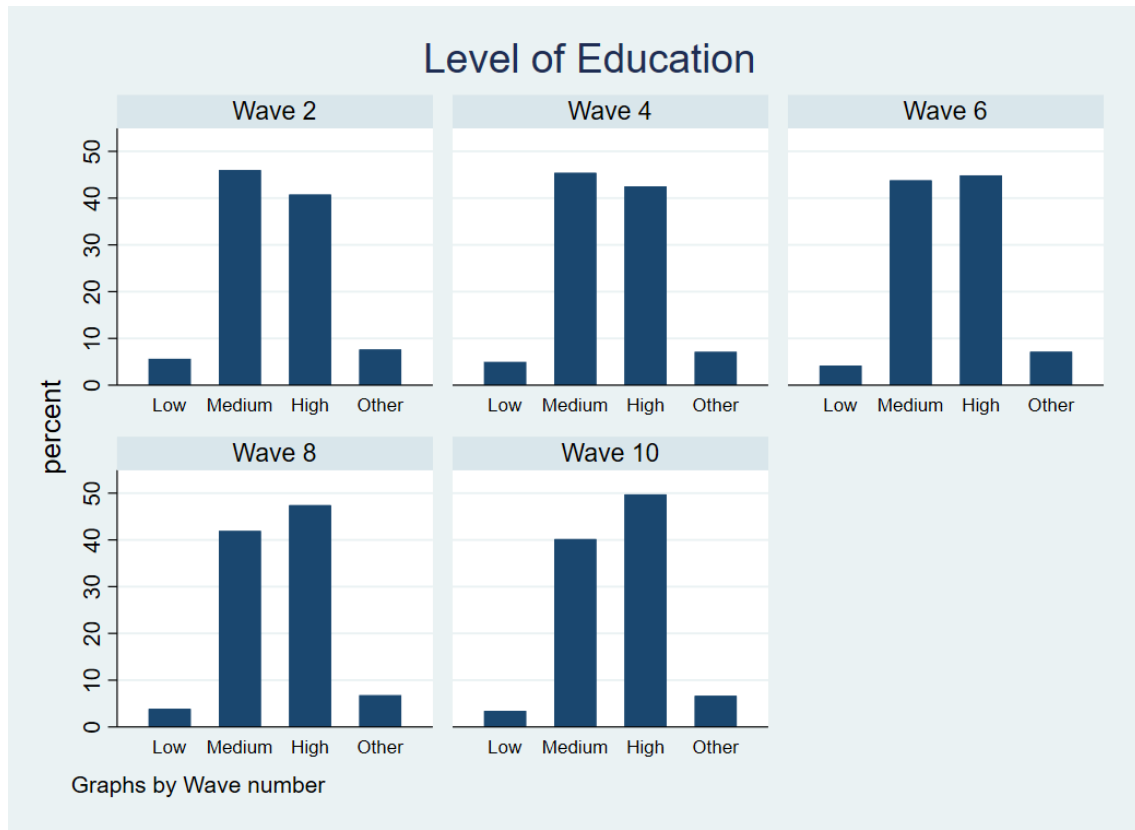


In figure 2.7 is reported the level of education. Overall there are 4.5% of the sample with a low level of education, 43.6% with a medium level, such as A-level and GCSE, and 44.8% with a high level of education, which includes those having a degree or higher.

**Figure 2.7** – Descriptive statistics of level of education.

|        | Overall |         | Between |         | Within  |
|--------|---------|---------|---------|---------|---------|
|        | Freq.   | Percent | Freq.   | Percent | Percent |
| Low    | 5226    | 4.5     | 1616    | 5.4     | 84.5    |
| Medium | 51038   | 43.6    | 14529   | 48.7    | 91.6    |
| High   | 52454   | 44.8    | 14058   | 47.1    | 92.9    |
| Other  | 8290    | 7.1     | 2358    | 7.9     | 89.3    |
| Total  | 117008  | 100     | 32561   | 109.1   | 91.7    |
|        | n       |         | 29845   |         |         |

**Figure 2.8** – Distributions of level of education across waves.



## 2.4.2 Descriptive analysis

Before showing the results of the hybrid models in the next paragraph, it is necessary to check the distributions of the main variables used. If later we test whether there are gender differences in the association between precarious employment and health, in this part we want to test if there is a gender difference in the distribution of precarious employment dimensions.

In our sample, when we look at the overall data (Figure 2.9), 92.9% of the men are in a permanent job position, while women in this situation are only 92%. The between variation tell us that 17.5% of men have been not in a permanent job at least once during the observation period (2010-2020), while women that have experienced at least once to be in a non-permanent job position are the 19.2%. On the other side, around 97% of both female and male's workers, were in a permanent job at least once. Finally, those ever not in a permanent job were not in a permanent job in 47% of the observations recorded,

while men ever in a permanent job were in permanent job in 94% of the observations. Instead, women that experienced having a permanent job were in this situation in 93.6 % of the observations.

The distribution of job tenure shows that between 95.7% for women and 94.5% for men of the overall data has been working in the present position for more than one year. When we look at the between variation, we see that 96.3% of women have experienced, at least once in the observation period, to be in a job with a job tenure longer than one year, compared to the 96% of men.

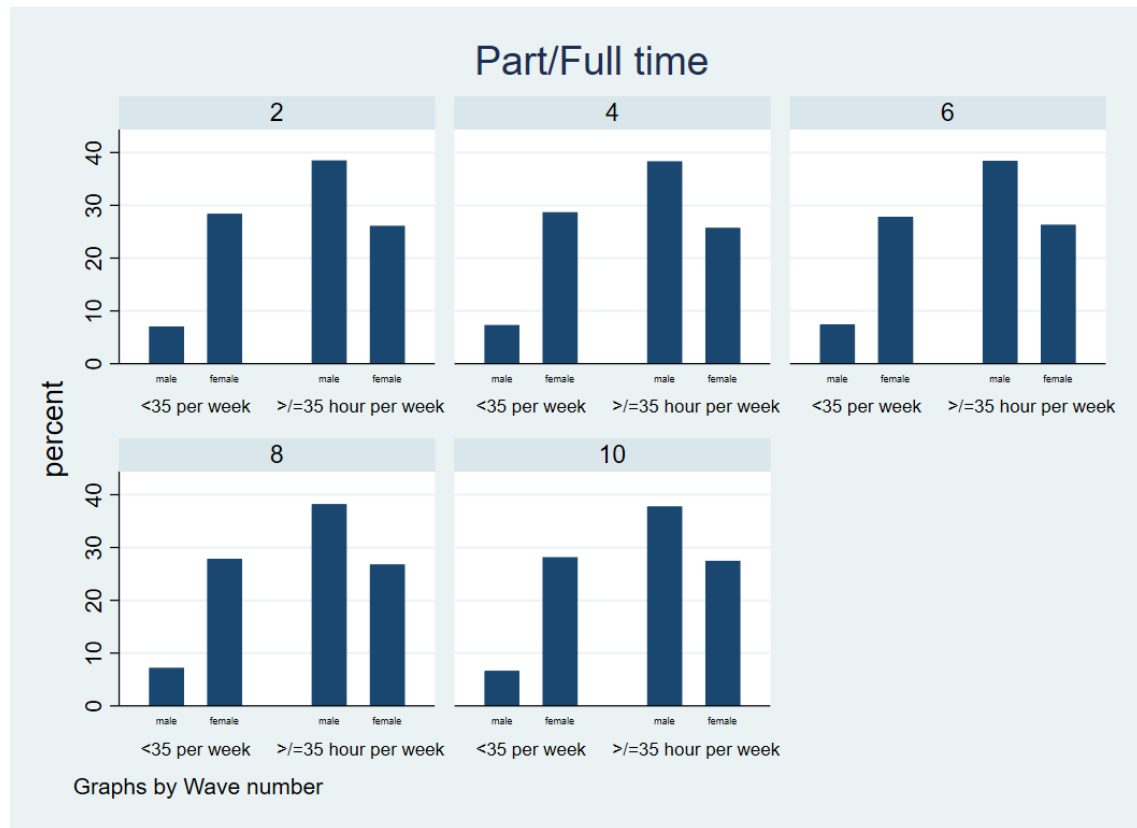
**Figure 2.9** - Descriptive statistics of temporariness dimension.

| Temporariness             | Male    |         |         |         |         | Female  |         |         |         |         |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                           | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
| Duration                  | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| not a permanent job       | 3251    | 7.1     | 2425    | 17.5    | 47.3    | 4251    | 8.0     | 3149    | 19.2    | 47.4    |
| permanent job             | 42773   | 92.9    | 13506   | 97.5    | 94.0    | 49059   | 92.0    | 15929   | 97.1    | 93.6    |
| Total                     | 46024   | 100     | 15931   | 115.1   | 86.9    | 53310   | 100     | 19078   | 116.3   | 86.0    |
|                           | n.      |         | 13846   |         |         | n.      |         | 16401   |         |         |
| Job Tenure                | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
|                           | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| 1 year or less            | 1287    | 5.5     | 1197    | 15.3    | 53.0    | 1092    | 4.4     | 1061    | 12.5    | 55.5    |
| more than 1 year          | 22051   | 94.5    | 7507    | 96.0    | 95.7    | 23984   | 95.7    | 8163    | 96.3    | 96.7    |
| Total                     | 23338   | 100     | 8704    | 111.3   | 89.8    | 25076   | 100     | 9224    | 108.8   | 91.9    |
|                           | n.      |         | 7820    |         |         | n.      |         | 8481    |         |         |
| Part/Full time            | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
|                           | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| <35 h per week/ part-time | 6570    | 15.7    | 3806    | 28.3    | 66.7    | 25927   | 51.6    | 10941   | 67.8    | 79.1    |
| >= 35 hours per week/full | 35182   | 84.3    | 11914   | 88.5    | 91.7    | 24276   | 48.4    | 9742    | 60.4    | 76.9    |
| Total                     | 41752   | 100     | 15720   | 116.8   | 85.6    | 50203   | 100     | 20683   | 128.1   | 78.0    |
|                           | n.      |         | 13462   |         |         | n.      |         | 16412   |         |         |

If until this moment the distributions were more or less similar between men and women, the situation change radically when we look at the part-time /full-time workers. When we look at the overall data, men working less than 35 hours per week, and therefore working part-time are only the 15.7% of the male sample, while women in this position on the overall data are 51.6% of the female sample. 28.3% of men have been at least once during the period from 2010 to 2020, working part-time compared to 88.5% of men who have been full-time at least once in the observation period. 67.8% of women have been at least once in a part-time job in the period that goes from 2010 to 2020, and only 60.35% of them have been at least once in a full-time position. In addition, female workers ever in part-time were doing a part-time job in 79% of the observations. In figure 2.10, is shown

the distribution of the variable Part/Full-time across waves, clearly displaying the strong gender inequalities in the distribution of part-time job which affect women more often than men.

**Figure 2.10** – Distribution of Part/Full-time across waves.



Looking at the wages dimension (Figure 2.11) overall 70% of men perceive to have a comfortable financial situation, while women living comfortably or doing all right on their financial situation are the 67.6%. Around 87% of the population has felt to be in a positive financial situation at least once, but 53.4% of men and 56.4% women on the opposite have also felt at least once, difficult or get by with their present financial situation. The distribution of wage shows a strong gender difference. Overall men earning more than 60% of the median are 91.2% compared to only 75.1% of women. The 40.3% of women have been at least once in a job that paid less than 60% of the median income, while man in this situation was only the 17.3%. On the other side, men earning more than 60% at least once during the observation period are the 92.2% of the category compared to 78.4% of women. Finally, men earning 60% or more than the median wage were in

this situation in 91.6% of the observations, while women earning 60% or more of the median were in this situation in 89.4% of the observations. Again, in figure 2.12 clearly it is shown that, across every wave, analysed women have less paid well-paid job than men.

**Figure 2.11** - Descriptive statistics of wages dimension.

| Wages                                   | Male    |            |         |             |         | Female  |             |         |             |         |
|-----------------------------------------|---------|------------|---------|-------------|---------|---------|-------------|---------|-------------|---------|
|                                         | Overall |            | Between |             | Within  | Overall |             | Between |             | Within  |
| Financial situation                     | Freq.   | Percent    | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| just getting by or finding it difficult | 15310   | 30.1       | 7397    | 53.4        | 58.6    | 20530   | 32.4        | 9249    | 56.4        | 58.8    |
| living comfortably or doing alright     | 35605   | 69.9       | 12055   | 87.0        | 78.9    | 42859   | 67.6        | 14227   | 86.7        | 77.1    |
| Total                                   | 50915   | 100        | 19452   | 140.4       | 71.2    | 63389   | 100         | 23476   | 143.1       | 69.9    |
|                                         | n.      |            | 13852   |             |         | n.      |             | 16410   |             |         |
| Median wage                             | Freq.   | Percent    | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| less than 60% of the median             | 3034    | <b>8.8</b> | 2138    | <b>17.3</b> | 68.6    | 9977    | <b>24.9</b> | 5860    | <b>40.3</b> | 74.1    |
| 60% or more                             | 31277   | 91.2       | 11383   | 92.2        | 95.6    | 30153   | 75.1        | 11396   | 78.4        | 89.4    |
| Total                                   | 34311   | 100        | 13521   | 109.5       | 91.4    | 40130   | 100         | 17256   | 118.8       | 84.2    |
|                                         | n.      |            | 12351   |             |         | n.      |             | 14529   |             |         |

**Figure 2.12** – Distribution of wage across waves.



**Figure 2.13** – Descriptive statistics of the dimension of rights.

| Rights                  | Male    |         |         |             |             | Female  |         |         |             |             |
|-------------------------|---------|---------|---------|-------------|-------------|---------|---------|---------|-------------|-------------|
|                         | Overall |         | Between |             | Within      | Overall |         | Between |             | Within      |
| Pension                 | Freq.   | Percent | Freq.   | Percent     | Percent     | Freq.   | Percent | Freq.   | Percent     | Percent     |
| No                      | 8623    | 22.1    | 5211    | 39.2        | 66.7        | 10310   | 21.4    | 6111    | 38.3        | 65.5        |
| Yes                     | 30492   | 78.0    | 11259   | 84.6        | 87.4        | 37957   | 78.6    | 13680   | 85.8        | 87.3        |
| Total                   | 39115   | 100     | 16470   | 123.7       | 80.8        | 48267   | 100     | 19791   | 124.1       | 80.6        |
|                         | n.      |         | 13311   |             |             | n.      |         | 15943   |             |             |
| Performance related pay | Overall |         | Between |             | Within      | Overall |         | Between |             | Within      |
|                         | Freq.   | Percent | Freq.   | Percent     | Percent     | Freq.   | Percent | Freq.   | Percent     | Percent     |
| No                      | 32025   | 81.0    | 12409   | 92.6        | 88.6        | 42300   | 86.5    | 15372   | 95.7        | 91.2        |
| Yes                     | 7492    | 19.0    | 4268    | <b>31.9</b> | 56.4        | 6582    | 13.5    | 3896    | <b>24.3</b> | 52.7        |
| Total                   | 39517   | 100     | 16677   | 124.5       | 80.3        | 48882   | 100     | 19268   | 119.9       | 83.4        |
|                         | n.      |         | 13397   |             |             | n.      |         | 16068   |             |             |
| Rise                    | Overall |         | Between |             | Within      | Overall |         | Between |             | Within      |
|                         | Freq.   | Percent | Freq.   | Percent     | Percent     | Freq.   | Percent | Freq.   | Percent     | Percent     |
| No                      | 24450   | 62.7    | 11113   | 83.4        | 77.2        | 27692   | 57.5    | 12892   | 80.7        | 74.4        |
| Yes                     | 14572   | 37.3    | 7548    | <b>56.6</b> | 62.9        | 20472   | 42.5    | 9839    | <b>61.6</b> | <b>65.0</b> |
| Total                   | 39022   | 100     | 18661   | 140.0       | 71.5        | 48164   | 100     | 22731   | 142.3       | 70.3        |
|                         | n.      |         | 13333   |             |             | n.      |         | 15980   |             |             |
| Bonus                   | Overall |         | Between |             | Within      | Overall |         | Between |             | Within      |
|                         | Freq.   | Percent | Freq.   | Percent     | Percent     | Freq.   | Percent | Freq.   | Percent     | Percent     |
| No                      | 26173   | 66.2    | 11246   | 83.9        | 81.4        | 38950   | 79.5    | 14757   | 91.8        | 87.7        |
| Yes                     | 13384   | 33.8    | 6507    | <b>48.6</b> | <b>65.3</b> | 10075   | 20.6    | 5360    | <b>33.3</b> | <b>58.7</b> |
| Total                   | 39557   | 100     | 17753   | 132.5       | 75.5        | 49025   | 100     | 20117   | 125.1       | 79.9        |
|                         | n.      |         | 13401   |             |             | n.      |         | 16082   |             |             |

Looking at the variables included in the third dimension (Figure 2.13), we can see that men and women have a similar score in terms of pension, overall, around 78 % of the population work in a job where the employee run a pension scheme, about 85% of the population have been in a pension scheme at least once and approximately 87.3 % of them have been in this situation all the time.

Overall, 19% of men have a job that pays performance related pay, while only 13.5% of women have been in this situation. Regarding the inclusion of annual increment of rising, is the only variable so far exanimated where female seems to be in a better position than their counterparts. 61.6% of women were at least once during the observation period working in a job which included annual increments or rise, while men in this situation were the 56.6%. Of those ever in this situation, 62.9% of men and 65% of women were in this situation all the time of our analysis. Finally, overall 33.8% of men and 20.6 % of women are performing a job in which the pay includes bonus or profit share, 33.3% of women and 48.6% of men were in this situation at least once and of that 65.3% of male workers and 58.7% of female workers were in this situation all the observations recorded.

**Figure 2.14** – Distribution of bonus across waves.



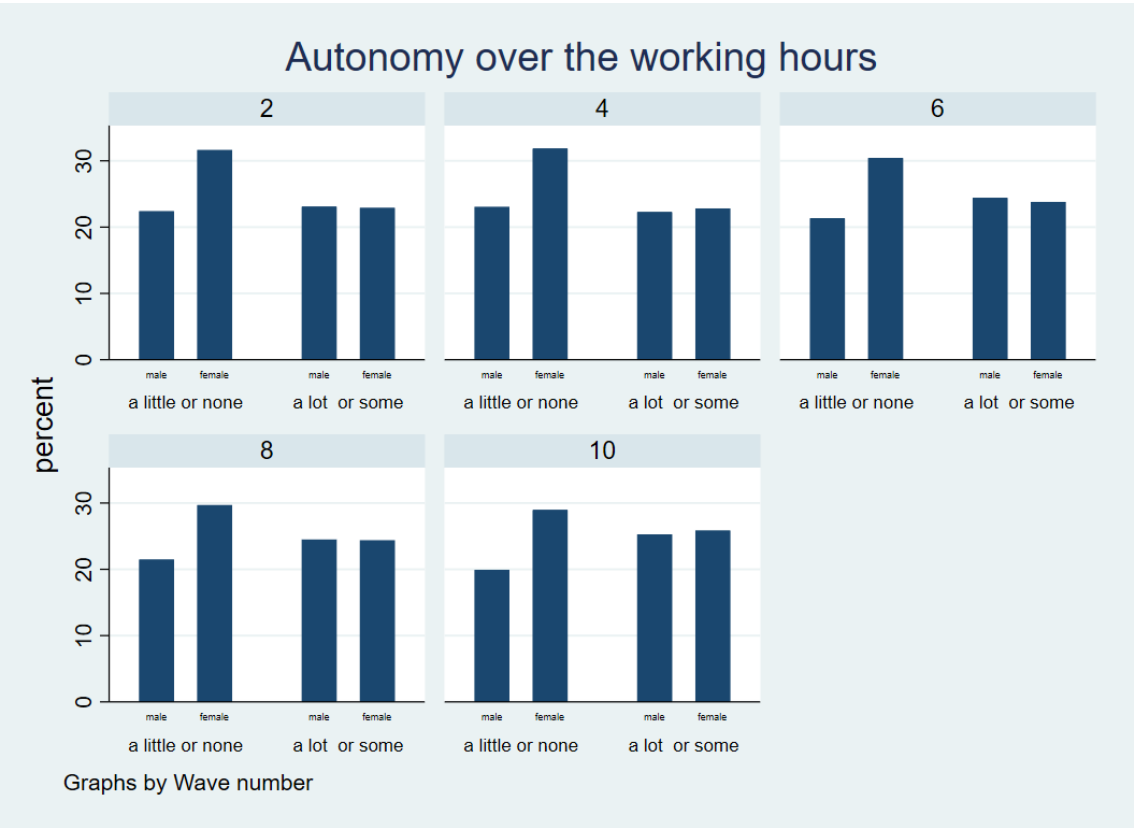
For the dimension of disempowerment (Figure 2.15), we check at information about the presence of union or staff association, and we can see that on the overall data most men (56.2%) do not have a union or staff association at their workplace while the majority of women work in a place where is present a union of staff association. Similarly, the between variation shows that 69.3% of men have been working at least once in a place where there was not a union compared to the 62% of women.

**Figure 2.15** - Descriptive statistics of disempowerment.

| Disempowerment   | Male    |             |         |             |         | Female  |             |         |             |         |
|------------------|---------|-------------|---------|-------------|---------|---------|-------------|---------|-------------|---------|
|                  | Overall |             | Between |             | Within  | Overall |             | Between |             | Within  |
| Union            | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| No               | 21723   | 56.2        | 9178    | <b>69.3</b> | 85.0    | 22134   | 46.7        | 9855    | <b>62.1</b> | 81.5    |
| Yes              | 16945   | 43.8        | 6836    | 51.6        | 79.7    | 25230   | 53.3        | 9541    | 60.1        | 82.2    |
| Total            | 38668   | 100         | 16014   | 120.9       | 82.8    | 47364   | 100         | 19396   | 122.2       | 81.8    |
|                  | n.      |             | 13251   |             |         | n.      |             | 15872   |             |         |
| Autonomy         | Overall |             | Between |             | Within  | Overall |             | Between |             | Within  |
|                  | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| a little or none | 20675   | 47.7        | 9537    | 69.1        | 72.5    | 29126   | 56.2        | 12501   | 76.5        | 75.1    |
| a lot or some    | 22670   | <b>52.3</b> | 9520    | <b>69.0</b> | 72.3    | 22691   | <b>43.8</b> | 10360   | <b>63.4</b> | 67.0    |
| Total            | 43345   | 100         | 19057   | 138.1       | 72.4    | 51817   | 100         | 22861   | 140.0       | 71.5    |
|                  | n.      |             | 13799   |             |         | n.      |             | 16334   |             |         |

As regards autonomy over the working hours, we see that men have in general more autonomy (56.2%) compared to women (43.8%). 76.5% of female workers have experienced, at least once in the observation period, little or no autonomy at all over the working hours, while 69.1% of male workers have been in the same situation at least once. In figure 2.16 is reported the distribution of autonomy over the working hours across waves.

**Figure 2.16**– Distribution of Autonomy over the working hours across waves.



**Figure 2.17**– Descriptive statistics of uncertain working time.

| Uncertain working time | Male    |           |         |             |         | Female  |             |         |             |         |
|------------------------|---------|-----------|---------|-------------|---------|---------|-------------|---------|-------------|---------|
|                        | Overall |           | Between |             | Within  | Overall |             | Between |             | Within  |
| Flexible working hours | Freq.   | Percent   | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| No                     | 13923   | 35        | 7577    | <b>56.6</b> | 65.4    | 18669   | 38.1        | 9693    | <b>60.3</b> | 64.7    |
| Yes                    | 25630   | <b>65</b> | 10699   | 79.9        | 78.9    | 30312   | <b>61.9</b> | 12787   | 79.5        | 76.7    |
| Total                  | 39553   | 100       | 18276   | 136.4       | 73.3    | 48981   | 100         | 22480   | 139.8       | 71.5    |
|                        | n.      |           | 13396   |             |         | n.      |             | 16077   |             |         |

In the last dimension (Figure 2.16) we show the ability to vary the working hours and rearrange the start or finish times based on the needs. In this case overall 64.8% of men and 61.9% of women have this opportunity at work. 79.9% of men and 79.5% of women had this opportunity at least once while 56.6% of men and 60.3% had worked at least once in an environment where it was not possible.

### **2.4.3 Mental health hybrid models**

In the first part, it is presented how each dimension of precarious employment affects the score of mental health among men and women in the United Kingdom. Each variable included is divided in two results, the within effect, the same results as a fixed effects models and the between effects, such as in a between- effects models (Figure 2.18).

In the temporariness model, it is shown that moving from a temporary to a permanent job the mental health seems to get worse even though the values are not statistically significant either for women or men. Both male and female workers who on average, throughout the observation period, had permanent jobs had better mental health. Instead, moving from a shorter-term to a longer-term contract is associated to a worsening of mental health, in the specific by almost one point in the mental health scale for men and 1.4 for women. Even more surprisingly, men who on average, throughout the observation period, had longer terms jobs had worse mental health than those with a shorter-term contract (-1.5), while the association is not statistically significant for women. These values are unexpected compared to what was previously found in the literature. For a given woman moving from a part-time to a full-time job the score of mental health score slightly get worse (-0.5).

In the dimensions of wage, individuals moving from a difficult financial situation to living comfortably or at least doing all right strongly improve mental health by almost two points. People who on average, throughout the observation, period had a better perception of their financial situation had significantly higher values on the mental score index, by 4.7 point for men and 5.6 for women.

The effect of median wage is completely different than in the previous case. Women, moving from a job paid less than 60% of the median wage to a better paid job, are associated to a worsening of mental health by -0.5. For individuals who on average,

during the observation period, had wages higher on the 60% of the median is associated a lower score of mental health of around 0.7 points less. Therefore, people who on average had better paid jobs are associated with poorer mental health.

In the third dimension, regarding the rights present at the workplace, is shown that moving from a job without a pension scheme to one with a pension scheme is associated with a worsening of women's mental health (-0.6). Men who on average, throughout the observation period, were working in a job position where there was a pension scheme have on average one point less on the mental health score, while women in the situation have 0.6 points less. Moving from a job without bonus or profit share to a job in which the pay includes bonus or profit share slightly improve mental health by 0.3 both for men and women. For people who on average, throughout the observation period, had a job in which the pay included bonus or profit share is associated an improvement of mental health. The average score of mental health of those working in a job in which the pay includes annual increments rise is higher than the average score of those who do not by 1.1 for men and 0.6 for women. Finally, for a woman moving from a job where the pay does not include the performance related pay to one who does is associated with a worsening of mental health by -0.4.

Concerning the dimension of disempowerment, we see the effect of autonomy over the working hours and the presence of a union or staff association. Moving from a job with little or any autonomy over the work hours is associated with an improvement of mental health, 0.2 points for men and as twice as much for women (0.5). Women who on average during the observation period of our analysis (2010-2020) had a job with more autonomy have an improvement of their mental health by 0.9 respect those who had a job with little autonomy, similarly, men in the same the situation had even a higher score (1). The presence of a union or staff association instead has a little negative effect. For women moving from a job in a place without a union to one with it, is associated to a deterioration of mental health, while men who on average, throughout the observation period, were employed in a workplace where staff association of union were present are reported to have worse mental health score by -0.6.

The last dimension is the one of uncertain working time. For men who on average, during the observation period, had been employed in a working environment where informal flexible arrangements were present is associated an improvement of mental health (by

0.7), than the average of men who did not have informal flexible arrangements. Women have a similar result (0.4). Moving for a job position without informal flexible working arrangements to one that has it is associated with an improvement of mental health by 0.5 for women.

In all the models we can see a substantial difference from the constant of men and women. In each model, women have lower scores in the mental health indicator than men, showing that they tend to report poorer health than men with the same conditions.

Figure 2.18 – Hybrid models precarious employment dimensions on mental health.

|                            | Mental health                    |         |          |         |         |         |                |         |                        |         |
|----------------------------|----------------------------------|---------|----------|---------|---------|---------|----------------|---------|------------------------|---------|
|                            | Temporariness                    |         | Wages    |         | Rights  |         | Disempowerment |         | Uncertain working time |         |
|                            | Male                             | Female  | Male     | Female  | Male    | Female  | Male           | Female  | Male                   | Female  |
| Duration we                | -0.2                             | -0.5    |          |         |         |         |                |         |                        |         |
| Duration be                | 1.1                              | 1.1*    |          |         |         |         |                |         |                        |         |
| Part/Full time we          | 0.2                              | -0.5*   |          |         |         |         |                |         |                        |         |
| Part/Full time be          | 0.4                              | -0.3    |          |         |         |         |                |         |                        |         |
| Job Tenure we              | -1.0*                            | -1.4*** |          |         |         |         |                |         |                        |         |
| Job Tenure be              | -1.5**                           | 0.4     |          |         |         |         |                |         |                        |         |
| Financial situation we     |                                  |         | 1.8***   | 1.9***  |         |         |                |         |                        |         |
| Financial situation be     |                                  |         | 4.7***   | 5.6***  |         |         |                |         |                        |         |
| Median wage we             |                                  |         | -0.3     | -0.5**  |         |         |                |         |                        |         |
| Median wage be             |                                  |         | -0.7**   | -0.7*** |         |         |                |         |                        |         |
| Pension we                 |                                  |         |          |         | -0.1    | -0.6*** |                |         |                        |         |
| Pension be                 |                                  |         |          |         | -1.1*** | -0.6**  |                |         |                        |         |
| Rise we                    |                                  |         |          |         | 0.1     | -0.1    |                |         |                        |         |
| Rise be                    |                                  |         |          |         | 1.1***  | 0.6**   |                |         |                        |         |
| Bonus we                   |                                  |         |          |         | 0.3*    | 0.3*    |                |         |                        |         |
| Bonus be                   |                                  |         |          |         | 0.6**   | 0.8***  |                |         |                        |         |
| Performance related pay we |                                  |         |          |         | -0.1    | -0.4*   |                |         |                        |         |
| Performance related pay be |                                  |         |          |         | 0.0     | -0.5    |                |         |                        |         |
| Autonomy we                |                                  |         |          |         |         |         | 0.22*          | 0.5***  |                        |         |
| Autonomy be                |                                  |         |          |         |         |         | 1.0***         | 0.9***  |                        |         |
| Union we                   |                                  |         |          |         |         |         | 0.0            | -0.2    |                        |         |
| Union be                   |                                  |         |          |         |         |         | -0.6***        | -0.1    | 0.1                    | 0.5***  |
| Flexible working hours we  |                                  |         |          |         |         |         |                |         | 0.7***                 | 0.4*    |
| Flexible working hours be  |                                  |         |          |         |         |         |                |         |                        |         |
| Age we                     | -0.2***                          | -0.2*** | -0.23*** | -0.2*** | -0.2*** | -0.2*** | -0.2***        | -0.3*** | -0.2***                | -0.3*** |
| Age be                     | 0.1***                           | 0.1***  | 0.1***   | 0.1***  | 0.1***  | 0.1***  | 0.1***         | 0.1***  | 0.1***                 | 0.1***  |
| Educational Level          |                                  |         |          |         |         |         |                |         |                        |         |
| Medium                     | -0.7                             | -0.3    | -1.1**   | -0.3    | -0.4    | -0.2    | -0.6           | -0.4    | -0.7*                  | -0.4    |
| High                       | -1.3*                            | -0.5    | -2.0***  | -0.9*   | -1.0**  | -0.3    | -1.3***        | -0.6    | -1.4***                | -0.5    |
| Other                      | -0.5                             | -0.4    | -0.9*    | -0.3    | -0.5    | -0.3    | -0.6           | -0.5    | -0.8*                  | -0.4    |
| Constant                   | 48.1***                          | 43.7*** | 45.7***  | 41.4*** | 47.5*** | 44.0*** | 47.5***        | 44.0*** | 47.4***                | 44.0*** |
| Legend:                    | * p<0.05; ** p<0.01; *** p<0.001 |         |          |         |         |         |                |         |                        |         |

#### 2.4.4 Physical health hybrid models

In this second part are reported the results of each dimension of precarious employment on physical health among women and men in the United Kingdom (Figure 2.19). In a similar approach to that in the previous part, the table shows both the within and between effects.

In the temporariness dimensions it is shown the first strong differences compared to the model about mental health. In this case, moving from a temporary job to a permanent one is associated to an improvement of the physical health. Men who on average, throughout the observation period (2010-2020), had permanent jobs are associated to an improvement of physical health by 1.8 points. Even though the effect is not statistically significant, moving from a short-term to a long-term contract has a positive effect on physical health with 0.5 for men and 0.2 for women, and this is more in line with what has been previously found in the literature compared to the effect found on mental health. Women who on average, throughout the observation period, had longer terms jobs, had improvement of physical health (1.3) than those who had shorter terms jobs. For a given individual entering from a part-time to a full-time job is associated an improvement of physical health. Women who on average had full-time job have slightly worse health (-0.7), instead men who on average had full-time job have better mental health (1.8) than those working part-time.

In the dimensions of wage, women who on average during the observation period had a better perception of their financial situation had an improvement of physical health by 3.5 points more while men in the same situation had an improvement of physical health by 2.3. In this case, the effect of wage is closer to what expected from previous literature. Men entering in job positions with higher wage is statistically significantly associated with an improvement of physical health of 0.6, while for men who on average, throughout the observation period had a wage higher than the 60% of the median is associated an improvement of physical health of 1.5. Similarly, for women in the same situation is associated an improvement of physical health (1.3).

Regarding the dimension of rights, for men who on average were working in a job position where a pension scheme was present is associated an improvement of physical health by 0.8, while for women in the same situation is associated an improvement of 0.8.

Entering in a job with the pay includes bonus or profit share, rise or annual increments, or performance related pay slightly improve the physical health, both for men and women. People who on average during the observation period of our analysis, had a job in which the pay included bonus or profit share is associated to improvement of physical health by 0.5 for men and by 0.7 for women. For women working in a job in which the pay includes annual increments rise is associated an improvement of physical health by 0.5, than the average of those who the pay does not includes annual increments rise. Finally, individuals who on average throughout the observation period had a job which included performance related pay have an improvement of physical health by 0.5 for men and 0.6 for women.

For women who on average throughout the observation period had a job with more autonomy is associated more positive physical health by 0.6. Similarly, for men in the same situation is associated an improvement of physical health by 0.9. Moving from a job place without a union to one with the perceived physical health of women is associated with a worsening of physical health (-0.3), while for women who on average, during the observation period, were employed in a workplace where staff association of union were present, is associated an improvement of physical health of 0.3.

In the last dimension, we see the effect of having informal flexible arrangements. Likewise with mental health, for men who on average throughout the observation period had been employed in working environment where informal flexible arrangements were present, is associated a better perception of physical health by one point, than the average of men who did not have informal flexible arrangements. Women have a similar result, even if less strong than men, (- 0.8).

In the case of physical health, the constant of men and women does not show any substantial difference. On average men and women rate similarly, the only exception is when we look at the dimension of temporariness, where women score higher than men, therefore, reporting better health than men. In all the models previously shown, a higher educational level is associated to an improvement of physical health.

**Figure 2.19**– Hybrid models precarious employment dimensions on physical health.

|                            | Physical health                  |                |               |               |               |               |                |               |                        |         |
|----------------------------|----------------------------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|------------------------|---------|
|                            | Temporariness                    |                | Wages         |               | Rights        |               | Disempowerment |               | Uncertain working time |         |
|                            | Male                             | Female         | Male          | Female        | Male          | Female        | Male           | Female        | Male                   | Female  |
| Duration we                | 0.6                              | 0.4            |               |               |               |               |                |               |                        |         |
| Duration be                | <b>1.8***</b>                    | -1.0           |               |               |               |               |                |               |                        |         |
| Part/Full time we          | 0.0                              | -0.2           |               |               |               |               |                |               |                        |         |
| Part/Full time be          | <b>1.8***</b>                    | <b>-0.7***</b> |               |               |               |               |                |               |                        |         |
| Job Tenure we              | 0.5                              | 0.2            |               |               |               |               |                |               |                        |         |
| Job Tenure be              | -0.2                             | <b>1.3*</b>    |               |               |               |               |                |               |                        |         |
| Financial situation we     |                                  |                | -0.1          | -0.2          |               |               |                |               |                        |         |
| Financial situation be     |                                  |                | <b>2.3***</b> | <b>3.5***</b> |               |               |                |               |                        |         |
| Median wage we             |                                  |                | <b>0.6**</b>  | 0.1           |               |               |                |               |                        |         |
| Median wage be             |                                  |                | <b>1.5***</b> | <b>1.3***</b> |               |               |                |               |                        |         |
| Pension we                 |                                  |                |               |               | 0.0           | -0.1          |                |               |                        |         |
| Pension be                 |                                  |                | <b>0.8***</b> | <b>0.8***</b> | <b>0.8***</b> | <b>0.8***</b> |                |               |                        |         |
| Rise we                    |                                  |                |               |               | -0.2          | 0.00          |                |               |                        |         |
| Rise be                    |                                  |                |               |               | 0.00          | 0.5**         |                |               |                        |         |
| Bonus we                   |                                  |                |               |               | -0.1          | -0.1          |                |               |                        |         |
| Bonus be                   |                                  |                |               |               | <b>0.5**</b>  | <b>0.7***</b> |                |               |                        |         |
| Performance related pay we |                                  |                |               |               | -0.1          | 0.2           |                |               |                        |         |
| Performance related pay be |                                  |                |               |               | <b>0.5*</b>   | <b>0.6*</b>   |                |               |                        |         |
| Autonomy we                |                                  |                |               |               |               |               | -0.1           | -0.1          |                        |         |
| Autonomy be                |                                  |                |               |               | <b>0.9***</b> | <b>0.6***</b> | <b>0.9***</b>  | <b>0.6***</b> |                        |         |
| Union we                   |                                  |                |               |               | 0.0           | -0.3**        | 0.0            | -0.3**        |                        |         |
| Union be                   |                                  |                |               |               | -0.1          | 0.3*          | -0.1           | 0.3*          |                        |         |
| Flexible working hours we  |                                  |                |               |               |               |               | -0.1           | -0.1          | 0.0                    |         |
| Flexible working hours be  |                                  |                |               |               |               |               | <b>1.1***</b>  | <b>0.8***</b> |                        |         |
| Age we                     | -0.2***                          | -0.3***        | -0.2***       | -0.2***       | -0.2***       | -0.2***       | -0.2***        | -0.2***       | -0.2***                | -0.2*** |
| Age be                     | -0.1***                          | -0.1***        | -0.1***       | -0.1***       | -0.1***       | -0.1***       | -0.1***        | -0.1***       | -0.1***                | -0.1*** |
| Educational Level          |                                  |                |               |               |               |               |                |               |                        |         |
| Medium                     | 1.6***                           | 1.0**          | 1.2***        | 0.9**         | 1.4***        | 1.0**         | 1.6***         | 1.2***        | 1.5***                 | 1.2***  |
| High                       | 3.3***                           | 2.3***         | 2.7***        | 1.7***        | 3.0***        | 2.1***        | 3.2***         | 2.4***        | 3.1***                 | 2.5***  |
| Other                      | 0.7                              | 0.3            | 0.7*          | 0.4           | 0.8*          | 0.2           | 0.9**          | 0.3           | 0.8**                  | 0.4     |
| Constant                   | 52.8***                          | 55.9***        | 53.6***       | 53.3***       | 55.1***       | 55.3***       | 55.5***        | 55.8***       | 55.2***                | 55.4*** |
| legend:                    | * p<0.05; ** p<0.01; *** p<0.001 |                |               |               |               |               |                |               |                        |         |

### 2.4.5 Complete Models

To conclude, four additional models are reported (Figure 2.20), one model each for mental and physical health, containing all the previous dimensions and one for each type of health using an additive index summarizing all the previous variables.

Looking at the first model about mental health, we see the effect on all the dimensions taken all together at the same time. Men who on average during the observation period had a permanent job have an improvement of mental health on average of 1.5 than men who on average had a temporary contract. Women on the same situation have an improvement of 1.5. Looking at the part-time jobs, for men who on average were employed as full-time is associated an improvement of mental health score by 1 point, while for women who move from a part-time job to a full-time job is associated a worsening of -0.5 point. Job tenure, again, is negatively associated with mental health both for men and women. Moving from a short-term contract to a longer-term contract is associated to a worsening of mental health, by 1.2 point for male workers and by 1.8 for female workers. While for men who on average have been performing job with a longer-term contract is associated a worse mental health than those who did not. Again, similarly than when taken individually, moving from a difficult financial situation to living comfortably is associated to an improvement of mental health. For people who on average, throughout the observation period had a better perception of their financial situation is statistically significantly associated an improvement of mental health, precisely, 4.6 point more for men and 5.9 for women. The financial situation is, therefore, the employment condition which most influence the mental health of those considered in the model. Again, in this case, for male workers, the effect of wage is negative associated with mental health (-1.4). When taken all together with the other variables, the rights have little effect compared to the other variables, with the exception of pension. For men who on average, during the observation, were working in a job position where there was a pension scheme is associated a worsening of mental health (-1), while for women is associated a worsening of -0.6. Working on average on a job in which the pay includes an annual rise is statistically significantly associated to an improvement of health for men. For women who on average are working in a job in which they have performance related pay is associated a worsening of mental health of -0.9 on the mental health, and for men in the same situation is associated a worsening of mental health of -0.6. Entering a job with

more autonomy is associated with an improvement of mental health both for women and men – respectively 0.6 and 0.3. Finally, moving for a job position without informal flexible working arrangements to one that has it, is associated to an improvement of mental health of 0.5. Looking at the constant of all the models, we confirm that women tend to have a more negative perception of mental health than men in the same situation. Finally, as expected, the additive index shows that for each reduction of the precariousness scale there is an improvement of mental health. When all the dimensions of precariousness are considered equally in the scale, it is shown that the less precarious is the employment the more is positively associated with an improvement of health – 0.2 for men and 0.3 for women.

Looking at physical health, when all variables are taken in consideration at the same time, for men who on average are performing a permanent job is associated an improvement of physical health by 1.4, while on the contrary, for women who on average where in this situation, throughout the observation period, is associated a worsening of their physical health (-1.4). For men who on average had full-time job is associated an improvement of physical health by one point higher than men who the average had a part-time job. The financial situation, once again, play an important role. For men, who on average, during the observation period, had being living comfortably with their financial situation is associated an improvement of their physical health by 2.3 points, than men who on average were just getting by or living difficultly with their financial situation. Similarly, for women in this situation is associated an improvement of physical health (3.2). In this case the median wage has also a positive effect. For women who on average had wage higher on the 60% of the median is associated an improvement of physical health (1.2), and for men moving from a job with lower wage to one with a higher wage is associated an improvement of physical health of 0.9 points.

Looking at the rights, the only significant values are shown for men. In the specific, for men who on average, throughout the observation period, had been working in a job position where there was a pension scheme is associated an improvement of physical health by 0.7. Instead, for men entering from a job in which includes annual increments or rise is associated a worsening of physical health

(-0.3). In addition, for men who on average, during the observation period, had been working in a job position where a union or staff association was present is associated a worsening of physical health

(-0.4). In the physical health models, the constant shows us that on average female workers tend to have better or similar physical health than their male counterpart.

Ultimately, the additive index shows that for each additional improvement on the employment conditions there is an increase in physical health, which is stronger for women – 0.4 for men and 0.5 for women - when all the dimensions are taken together and considered to have the same effect.

Figure 2.20— Complete hybrid models.

|                            | Mental helath      |                |               |               | Physical health |               |               |               |
|----------------------------|--------------------|----------------|---------------|---------------|-----------------|---------------|---------------|---------------|
|                            | Final              |                | Additive      |               | Final           |               | Additive      |               |
|                            | Male               | Female         | Male          | Female        | Male            | Female        | Male          | Female        |
| Duration we                | -0.5               | -0.5           |               |               | 0.2             | 0.2           |               |               |
| Duration be                | <b>1.5*</b>        | <b>1.5*</b>    |               |               | <b>1.4*</b>     | <b>-1.4*</b>  |               |               |
| Part/Full time we          | 0.1                | -0.5*          |               |               | -0.4            | -0.2          |               |               |
| Part/Full time be          | 1.0*               | -0.4           |               |               | 1.0*            | -0.3          |               |               |
| Job Tenure we              | <b>-1.2**</b>      | <b>-1.8***</b> |               |               | 0.6             | 0.3           |               |               |
| Job Tenure be              | -1.4*              | 1.0            |               |               | -0.3            | 0.9           |               |               |
| Financial situation we     | <b>1.5***</b>      | <b>1.8***</b>  |               |               | -0.1            | 0.1           |               |               |
| Financial situation be     | <b>4.6***</b>      | <b>5.9***</b>  |               |               | <b>2.3***</b>   | <b>3.2***</b> |               |               |
| Median wage we             | 0.7                | -0.5           |               |               | 0.9*            | 0.4           |               |               |
| Median wage be             | -1.4**             | -0.3           |               |               | 0.9             | <b>1.2***</b> |               |               |
| Pension we                 | -0.2               | -0.6*          |               |               | 0.0             | -0.2          |               |               |
| Pension be                 | -1.0**             | -0.6           |               |               | 0.7*            | 0.6           |               |               |
| Rise we                    | 0.1                | 0.0            |               |               | -0.3*           | 0.0           |               |               |
| Rise be                    | 0.7*               | 0.2            |               |               | -0.2            | 0.2           |               |               |
| Bonus we                   | 0.4**              | 0.4            |               |               | -0.2            | -0.1          |               |               |
| Bonus be                   | 0.3                | 0.4            |               |               | 0.0             | 0.0           |               |               |
| Performance related pay we | -0.3               | -0.3           |               |               | 0.1             | 0.1           |               |               |
| Performance related pay be | -0.6*              | -0.9*          |               |               | 0.4             | 0.5           |               |               |
| Autonomy we                | 0.3*               | 0.6**          |               |               | -0.2            | 0.0           |               |               |
| Autonomy be                | 0.5*               | 0.5            |               |               | 0.2             | 0.1           |               |               |
| Union we                   | 0.0                | -0.5*          |               |               | 0.1             | -0.1          |               |               |
| Union be                   | -0.9***            | -0.05          |               |               | -0.4*           | -0.4          |               |               |
| Flexible working hours we  | 0.1                | 0.5**          |               |               | -0.2            | -0.1          |               |               |
| Flexible working hours be  | -0.1               | -0.4           |               |               | 0.4             | 0.5           |               |               |
| Additive index we          |                    |                | 0.1**         | 0.0           |                 |               | 0.1***        | 0.1***        |
| Additive index be          |                    |                | <b>0.2***</b> | <b>0.3***</b> |                 |               | <b>0.4***</b> | <b>0.5***</b> |
| Age we                     | -0.2***            | -0.2***        | -0.2***       | -0.2***       | -0.2***         | -0.2***       | -0.2***       | -0.2***       |
| Age be                     | 0.1***             | 0.1***         | 0.1***        | 0.1***        | -0.1***         | -0.1***       | -0.1***       | -0.1***       |
| Educational Level          |                    |                |               |               |                 |               |               |               |
| Medium                     | -0.9               | -0.3           | -0.4          | 0.0           | 1.3**           | 0.7           | 1.3***        | 1.0***        |
| High                       | -1.7***            | -1.0           | -1.3***       | -0.5          | 2.7***          | 1.5**         | 2.7***        | 1.9***        |
| Other                      | -0.5               | -0.4           | -0.8*         | -0.2          | 0.7             | 0.2           | 0.7*          | 0.4           |
| Constant                   | 46.2***            | 40.4***        | 46.0***       | 42.3***       | 51.2***         | 53.9***       | 54.3***       | 54.2***       |
| legend:                    | p<0.05; ** p<0.01; |                |               |               |                 |               |               |               |

## Discussion and Conclusions

The present chapter contributes to the growing stand of research on the effect of precarious employment on health, using longitudinal data about the United Kingdom using data from Understanding Society Survey (University of Essex, Institute for Social and Economic Research, 2022) and focusing on both physical and mental health. In addition to this, the analysis investigates the gender differences in the effect of precarious employment on health using a multidimensional approach to measure the precarious employment.

The **effect of precarious employment on mental health** was in line with what found by Kalleberg (2009), Benach et al. (2016), Cortès-Franch et al. (2018) and Julià et al. (2017b), confirming that precarious employment has indeed a detrimental effect on mental health and there is a gender difference in this association, in fact, this effect is even stronger for women. Women have a worse mental health compared to men in the same level of precarious employment similarly than in Benach et al. (2016) and Julià et al. (2017b). In addition, the positive effect of being on average on a permanent contract is less strong than for men when we check all the dimensions at once.

An interesting result, which needs to be explained by further research, is that we found job tenure to have a negative effect on mental health. In fact, men who on average were in a longer-term contract are expected to have a poorer mental health than those who were on average on a shorter-term contract. This effect is even stronger for women. The effect of the duration of the contract is found to be similar by Julià et al. (2017b), where, in fact, unexpectedly is reported a stronger association of poorer mental health both for male and female workers with permanent employment, compared to those in temporary employment. They suggest that potential explanations might be the differences concerning the perception for the respondent employment prospects (Julià et al., 2017b; Rigotti et al., 2009). Moreover, it should be noted that the United Kingdom is characterised by a rather stable duration of employment (Faggio et al., 2011; Burgess and Rees, 1998; Burgess and Rees, 1996) and that this duration was around 16 years for an average worker in 2015, similar to that of the 1970s (Choonara 2019). In addition, in the United Kingdom, job tenure increases during economic downturns, while it decreases during recoveries (Choonara, 2020). This is due to the trend whereby, during economic

crisis, workers cling to the jobs they have, thus making the labour market stable or stagnant, while during periods of strong economic growth, workers have more prospects of seeking better employment conditions and thus create vibrant labour markets (Choonara, 2020). It can be therefore hypnotized that in some cases the higher job tenure is associated with a greater fear of job loss and to the necessity of clinging to positions even with negative employment conditions, for the scarcity of possibility to find another better suited to satisfy the worker necessities. Nevertheless more research on this matter is required, to analyse these and other potentially related interfering variables, such as household characteristics and other psychosocial risk factors (Julià et al., 2017b; Benach et al., 2016).

The financial situation is proved to be the variable which has the stronger positive effect on mental health and is proved to be even stronger for women. Once more, an unforeseen result is that we found that individuals that on average were performing a better paid job during the observation period have poorer mental health by around -0.67. In the literature is widely agreed that the material deprivation is a fundamental dimension of precarious employment and therefore is associated with a lower level of physical and mental health (Benach et al., 2014; Julià et al., 2017b; Padrosa et al., 2021; Lenhart, 2017), however we can hypothesize that our unforeseen findings are influenced by two factors. Firstly, the first indicator, financial situation, is a subjective measure in which the respondents are asked whether they are living comfortably or finding difficult to live with their present financial situation, while the median wage is an objective measurement, therefore, they could represent two different aspects of material deprivation: the first item how the respondent feels he/she can afford its basic needs, while the second the actual wage, not considering the type of expenses the person needs to cover, the number of children living in the house, etc. In second instance, there are always higher percentages of missing values for income variables in survey research that call into question the validity of the variables themselves (Padrosa et al., 2021). It has been proven that any non-random error associated with socio-economic variability in this structure is not likely to have a significant effect on the relationship between income and health (Turrell, 2000), nevertheless this may raise concerns and future research should focus on possible techniques for dealing with missing data (Padrosa et al., 2021). We found that working in a position where a pension scheme is available have a negative effect on mental health

both for men and women. We consequently can confirm that there are gender differences in some dimensions and furthermore, when checked singularly some dimensions performed differently from what expected in the literature, in particular for temporariness and the median wage which further research needs to try to explain these occurrences.

In contrast with the gender differences found in mental health, instead, there are no substantial gender differences on the value of **physical health**. Women and men score similarly on the constant and on some of the dimensions (taken together or one at time) are less positive for women. In this case, the temporariness dimension when taken alone performs more similarly than what previously found in the literature, even though being on average full-time have a negative effect of female workers' physical health. This could be due in some way to the double burden of paid work and household responsibility and care work which the women are more subjected like theorized by Boye (2011), Dahlin and Härkönen (2013) and Benach et al. (2016). Women tend more often than men to perform part-time job in order to conciliate the care work and social reproductive responsibilities so we can hypothesize that those performing a full-time job might have a higher burden of stress and less time to take care of their health leading in a longer time to detrimental effects on their health. The dimension wages, instead, is the dimension that has a stronger effect on physical health. In this case, being in a pension scheme has a positive effect on health, confirming that additional research on the unforeseen results found on mental health needs to be done. In conclusion, for physical health each dimension performs as expected by the extant literature, showing that with higher level of precarious employment is associated a poorer health (Kalleberg, 2009, Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b).

When all the variables are taken together, we see instead that being full-time and in a longer-term contract has a negative effect on women's physical health, while has a positive effect for men. Thus, we have mixed results on the gender differences in the effect of precarious employment on physical health. The gender differences are clearly being showed in the distribution on the employment conditions selected to represent precarious employment, where women tend more than men to be in precarious employment dimensions similarly of what found by Benach et al. (2016) and Menéndez et al. (2007), but the hybrid models show that the association with health produces mixed results. Ultimately, the data shows that the dimension that influences the most both

physical and mental health is the material deprivation, especially when we look at the perceived financial situation.

Regrettably, this study is not free of **limitations**. To highlight the most important, it would have been ideal to have the possibility to construct a scale more similar to the Employment Precarious Scale, both in terms of validation of the scale and comparability of the items and dimensions. Starting from EPRES and its adaptations, we selected variables fit to match similar dimensions than those highlighted in the literature (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). There can be pointed out several differences from the original scale, firstly, that the dimension vulnerability had been omitted because no valid items was found in the dataset chosen and secondly, uncertain working time is included which was not an original dimension of EPRES but was include in EPRES-E (Padrosa et al., 2021). Uncertain working times reflects the lack of control over working schedule and therefore the capacity for the employees to plan their life and relates to the asymmetrical employment power relation included in the dimension of vulnerability, disempowerment and exercise of rights (Padrosa et al., 2021; Porthé et al., 2010). In addition, it was not possible to perform CFA or SEM for the empirical part, as the results produced were not fit enough to build a valid and reliable scale. Consequently, we opted for analysing each dimension individually, then making a model with all the dimensions altogether and finally constructing an additive index. The results shows, that when looked at the United Kingdom, the outcomes are not those expected for every dimension, although the additional index had, indeed, the direction expected by the literature, meaning than having lower level of precarious employment leads to an improvement of health both physically and mentally (Benach et al., 2014; Benach and Muntaner, 2011; Benach et al., 2007; Jonsson et al., 2021; Koranyi et al., 2018; Lewchuk et al., 2008; Matilla-Santander et al., 2019; Padrosa et al., 2022; Ronnblad et al., 2019; Utzet et al., 2020; Virtanen et al., 2005). Finally, the additive index clearly indicates that when made possible by the data availability, a weighted scale has always to be preferred, especially after seeing how the dimensions included in the analysis perform differently and therefore how equally weighting every component in the scale does not truly represent the complexity of the phenomenon.

Despite these limitations and the impossibility to reproduce a scale more similar to EPRES, we can point out several **strengths** of the present analysis. It can be noted the

effort to use, nevertheless, a multidimensional measure to represent precarious employment. In the literature is widely agreed that a multidimensional measure of precarious employment is better suited to measure the concept than a single item, when this is made possible by the data (Benach et al., 2014; Julià et al., 2017b; Kreshpaj et al., 2020; Padrosa et al., 2021; Vives et al., 2010). The use of a multidimensional measurement to represent precarious employment, as we have seen previously, has made possible to uncover peculiar effects of some dimensions and to find which aspect of it influences more health and well-being. Among the other strengths of the present study, we can point out that most of the studies on precarious employment and health either focus on physical or mental health, depending on the data availability. Understanding Society data (University of Essex, Institute for Social and Economic Research, 2022) offers us the opportunity to be able to study both physical and mental health, showing the different effects of precarious employment in the sample analysed. Furthermore, another main strength of the present analysis is the use of the longitudinal data, especially because of the large time span used, from 2010 to 2020. An important limit with the extant literature on employment precariousness and health is that it is mostly based on cross-sectional data, therefore, this chapter contributes to the topic using longitudinal data, analysing the long-term effects of precarious employment on physical and mental health. In conclusion, the present analysis showed that precarious employment does indeed have a negative effect on mental health and that there is a gender difference in this association. Women, in fact, have worse mental health than men with the same level of precarity. The **perceived financial situation** is the dimension of precarity that has the strongest effect on both physical and mental health. Regarding physical health, it was found that there is an association between precarious employment and the individual's physical health. Moreover, in contrast to the association with mental health, no substantial gender differences were found here on the value of physical health. Finally, further research should be done to try to explain the peculiar effect of temporariness dimension in the Understanding Society data (University of Essex, Institute for Social and Economic Research, 2022) and to estimate whether the unpaid domestic work plays a role in explicating the partial gender differences shown by the data.



## **Chapter 3 - Social Reproduction and the double burden of paid employment and unpaid care work**

### **Introduction**

The present chapter focuses on the concept of social reproduction and its impact on women's employment and health. In the previous chapter the effect of precarious employment on health have been analysed and when gender differences are found in this association in the literature has often been hypothesized to be due by the double burden of paid employment and unpaid care work and household responsibilities (Boye 2011; Dahlin & Härkönen, 2013; Benach et al., 2016). Social reproduction represents all the activities and attitudes that permit the maintenance of life on daily basis and intergenerationally and historically it has been mostly assigned to women (Fraser, 2016b; Laslett and Brenner, 1989; Picchio, 1992). In the capitalist society is present a strong gender division between the economic production and the social reproduction (Fraser, 2016a). However, in the era of two-earner family the woman's wage is now an essential component of the family income, although there was no equal redistribution of the social reproductive labour (Picchio, 1992). Women, therefore, end up with a double burden of paid employment and unpaid care work. In addition to this, women are performing more often than men a precarious position (Benach et al., 2016; Menéndez et al., 2007). Besides, the effect of precarious employment on health seems to affect more strongly women than men in the same situation (Julià et al 2017b; Benach et al 2016). Therefore, women encounter numerous sources of disadvantage that put them in a more vulnerable position and make harder for them to access a more successful job position (Padrosa et al., 2022). To conclude, women tend to fall into precariousness more often than men and experience several other social disadvantages and inequalities such as the division of care work, and all these domains combined create a larger burden on women's mental health (Vosko et al., 2009; Young, 2010; Benach et al., 2016; Menéndez et al., 2007; Julià et al., 2017, Rosenfield and Mouzon, 2013; Padrosa et al., 2022).

In this chapter, we attempt to do a review of the most relevant literature on the topic of social reproduction, focusing on the debated *Social Reproduction Theory* and the

theoretical approach for which we are living a so-called *crisis of care*. Finally, a description of the main historical phases of social reproduction and a brief description of the *total social organization of labour* theorized by Glucksmann (1990, 1995, 2005) is made. The aim of this chapter is, therefore, to fully understand the theory behind gender differences in social reproduction, which is empirically tested in the next chapter.

### 3.1 The gendered division between reproductive and economic labour

Gender differences in the relationship among employment, health and well-being could be partly explained by the double burden both of paid work and household responsibility (Dahlin & Härkönen 2013; Boye 2011). This kind of unpaid household and care work has been addressed often in the literature as social reproduction. Before focusing on the topic of social reproduction and the *Social Reproduction Theory* it is useful to briefly consider at concept of gender. Feminist academics affirm that gender is one of the basic dimensions of all social organization, exactly like the class (Laslett & Brenner, 1989). In their work, Laslett and Brenner (1989), argue the concept of gender, which is not strictly determined, and that is the outcome of men's and women's under specific historical conditions. Gender, therefore, identify "socially constructed and historically variable relationships, cultural meanings, and identities through which biological sex differences become socially significant" (Laslett and Brenner, 1989 p. 382). Considering this definition, it is not unforeseen that the construction and maintenance of a gendered division of labour is one of the most debated topics in feminist literature and elsewhere. In fact, the social organization of gender classifies some jobs as women's work or men's work (Laslett and Brenner, 1989), which bring us to the **gendered division amongst social reproduction and economic production**. Laslett and Brenner (1989) define social reproduction all "the activities and attitudes, behaviours and emotions, responsibilities and relationships directly involved in the maintenance of life on a daily basis, and intergenerationally" (p. 382). This includes both affective and material labour, and often performed without any pay, it is indispensable to society. In the specific, social reproduction involves care, instruction and socialization of the children; the assistance to the elderly and the infirm; the social organization of sexuality; as well as the organization and instantaneous accessibility to food, shelter and clothing. Social reproduction, therefore, consists of

manual, mental and emotional work in order to supply historically, socially and biologically to the defined care required to preserve life and to replicate the next generation (Laslett and Brenner, 1989). The economy of capitalist societies would not work without the foundation of “care work” or “care economy” provided in most of the cases as an unrecognized and unpaid work (Power, 2020). Similarly, to these definitions, Fraser (2016a p.30) describes social reproduction as it follows:

“Social reproduction is about the creation and maintenance of social bonds. One part of this has to do with the ties between the generations — so, birthing and raising children and caring for the elderly. Another part is about sustaining horizontal ties among friends, family, neighbourhoods, and community. This sort of activity is absolutely essential to society. Simultaneously affective and material, it supplies the “social glue” that underpins social cooperation. Without it, there would be no social organization—no economy, no polity, no culture. Historically, social reproduction has been gendered. The lion’s share of responsibility for it has been assigned to women, although men have always performed some of it too”. (Fraser, 2016a p. 30)

In the demographic studies social reproduction also describes the social nature of procreation and the population processes in general. Feminist theorists acknowledge that procreation is not merely a biological act, but also social. They argue that social reproduction consists of much more than procreation itself, though it is a key component of it (Laslett and Brenner, 1989). Due to the gender construct and the organization of labour, social reproduction has **historically mostly been assigned to women**, although men have always performed a small part of the share too (Fraser 2016b; Picchio 1992). In addition, the rise of capitalism has intensified the gender division between economic production and social reproduction, treating them as two separate spheres; the first one considered economic and therefore, remunerated while the second one has been sentimentalized and naturalized, relegated to the private sphere, and conceived as performed for the sake of “love” and “virtue” (Fraser, 2016a). Therefore, the man has been generally in the position of breadwinner, while the woman in the position of caregiver (Lewchuk et al., 2016). In her work, Fraser claims that the gendered separation of economic production from social reproduction is creating the principal institutional basis in capitalist society for women’s subordination (Fraser, 2016a) . In one of her most appreciated works “*Social reproduction: the political economy of the labour market*,”

Picchio (1992) argues that the nature of the contrast between production/reproduction becomes evident in the context of a surplus approach to profit, in fact, social reproduction is the production of labour as a commodity, while paid work is the exchange of labour. Therefore, to be exchanged, labour must be first produced and to be used in the production of other commodities it must be produced and exchanged (Picchio 1992). Historically, women are doing the world's biggest share of unpaid care work (as well as the paid care work), as a matter of fact in his study Moreira da Silva (2019) show that 75% of unpaid care work is performed by women, while the International Labour Organization (ILO) estimates that in normal circumstances on average, around the globe, females carry out around 4 hours and half of unpaid care work a day. On the other hand, male figures work 1 hour and 23 minutes (Pozzan and Cattaneo 2020). The necessity to study social reproduction comes with the fact that performing informal care has negative and tangible effects on female's labour force participation and differences in the organisation of time, besides stress. The ILO calculates that around the world 606 million women in their working age, compared to 41 million men, are outside the labour force since they need to spend most of their time on care and family responsibility (International Labour Organization, 2018a). The unpaid care work has been addressed as social reproduction, care economy, core economy, informal care work and reproductive economy (Power, 2020). Despite being indispensable for the existence of society, social reproduction has not been recognized as proper work and therefore, is not economically rewarded and it is devalued in case it is performed by the family members or nearby community. However, this kind of task is paid, although often poorly, when it is done by people outside the household (Fraser, 2016b; Power, 2020). Women, therefore, end up with a double burden of paid employment and unpaid care work, this double load is to be considered as performing two distinct jobs but just for one wage (Picchio 1992). Woman's wage is now an essential component of the family income, meaning that men's wage is no longer enough to provide for the historical living standards of the family (Picchio 1992). However, women's paid employment is impacted by this; for example, the hours of work chosen by women, are strongly determined by the needs of the family, while rarely this is true for men (Picchio 1992).

### 3.2 Social Reproduction Theory

The *Social Reproduction Theory* is the ensemble of studies made, primarily, by feminist authors about the debated topic of social reproduction. The goal of social reproduction theory is to explore the topic of social reproduction, the disputes about value generation and to answer the set of problems that arise from the division between social reproduction and economic production. On Marx's analysis of capitalism, he recognises labour power and in specific the capacity to labour, as "special commodity" that is needed by the capitalist to make and keep the system run (Marx 1990). Labour power, in his view, has curious assets of being a source of value, since with it we create commodities and value necessary for the capitalist society to work and the appropriation of the surplus labour is the foundation of capitalist domination. Nevertheless, social reproduction theorists argued that Marx work did not analyse in depth the social reproductive work and its problematics and aim to fill in the void. Since the 1960's Marxist scholars, such as Lise Vogel, Johanna Brenner, Susan Ferguson, David McNally, Silvia Federici and Tithi Bhattacharya, etc., have tried to fill this gap by focusing their attention to this kind of indispensable but invisible and often unpaid forms of labour (Winders & Smith, 2018). The broad branch of literature covering this topic cannot be easily summarized, however, we can divide the key conceptualizations of social reproduction formulated by feminist scholars, by the discrepancy that have arisen over time (Winders & Smith, 2018).

a) The **first period** that can be recognized is that when **social reproduction is seen as unrecognized and unwaged** but is considered essential to the capitalist society and its mode of production. Social reproduction and economic production are seen as **two opposite spheres**, in terms of gender, value and spatially (Fraser, 2016b; Laslett & Brenner, 1989; Winders & Smith, 2018). During the second wave of feminism in the late 60's the debates of Marxist feminist over the origins of female's oppression begin to develop the theorization that these origins in *domestic labour* and have discussed among themselves the applicability of specific Marxist constructs to theorizing the domestic labour of working-class women in the capitalist mode of production (Dalla Costa and James, 1975). Dalla Costa and James (1972) point out that reproductive labour creates surplus value, and Vogel (2013) argue that it should be comprehended as a hidden element of necessary labour, in the Marxian sense. Instead, other authors found the origins of

women's oppression not only in domestic labour and care work as well as the intra-household relationship between women and men and the power of the formers to appropriate women's sexuality and surplus labour (Mitchell, 1966; Delphy, 1977;). These theorists have in common the view that production and social reproduction are conceptually and physically separate spheres. For them, social reproduction has value in terms of capitalist production and involves primarily the social reproduction of labour power. We can see that the relationship between social reproduction and economic production is not of mutual influence, the economic production prevails in the balance between the two. Despite the increasing amount of theoretical literature and discrepancy among the numerous feminist theories produced in that era, the common denominator to their models was the ideal of the figure of the man as the breadwinner, therefore, personifying the economic production, and the woman in the dependent position of a caregiver and housewife, thus personifying social reproduction (Winders & Smith, 2018). This imaginary implied by this first branch of social reproduction theorist projected the outspoke gendered division of labour into a **distinction between paid labour/production and unwaged domestic labour/social reproduction** (Winders & Smith, 2018). Reinforcing this binary division theoretically, politically, and often on the space dimension.

b) The **second branch** of literature on social reproduction can be seen since the 1980s and the dual system seen before becomes outdated. The **concept of social reproduction becomes broader** than in the previous shift, in which was mostly about care and *domestic work*, which was carried out at home, while in this phase it is defined (see before) by Laslett and Brenner (1989) as “the activities and attitudes, behaviours and emotions, responsibilities and relationships directly involved in the maintenance of life on a daily basis, and inter- generationally” (1989 p. 382). Social reproduction and production are thus empirical realities, and both are fundamental to women's lives (Jones, 1986). The majority of contemporary social reproduction feminists use this kind of broad conceptualization (Arruzza, 2016; Ferguson et al., 2016; Fraser, 2016b). The main difference from this extensive definition and the former is mainly in the **different geo-localization of social reproduction**. The first one spreads far beyond the house and includes the family, the community, and the welfare state. If in the past there were two separate spheres, in this case **the two spheres connect and, in some cases, overlap**

(Winders & Smith, 2018). Even though women are those mostly performing social reproduction tasks, they are now also part of the productive sphere (Winders & Smith, 2018). In addition, in some cases production and reproduction overlap when typical activities of social reproduction have been transformed in paid work and performed not only by the family and close communities but by strangers as well, such as teachers, babysitters, nursing home staffs, cleaners, etc. (Bezanson and Luxton, 2006;). This kind of jobs are in most of the cases performed also in the economic sphere by women. In this case, the distinction between the imaginary of paid/work as something separate and opposite from home/unpaid, which was typical of the first theorization, becomes a more complex relationship. In fact, there is the coexistence of women performing paid work outside the household, and inside the household, as well as women who hire other women to do (waged) care work inside their household, etc. (Ahrentzen, 1997; England, 2010; Katz, 2008; Peck, 1996; Meehan and Strauss, 2015). In contrast with the earlier debates, where the main aim was to uncover the origin of women's oppressions, in this case the feminist scholars point out the **interdependency between production and social reproduction** and the preservation of human life and aspire to acknowledge the interconnection between the economy and the social reproduction (Elson, 1989).

c) If in the second shift in social reproduction theory literature the spheres of production and social reproduction in some cases overlap, the **third shift** is embodied as a **complete fusion of the two spheres** (Winders & Smith, 2018). In this case, there is not any distinction between work and the rest of life ("*life's work*") due to the raising marketization of all domains of human existence. This era is characterized by the precarization of life and work, and therefore every individual is entitled to their destiny (Meehan and Strauss, 2015). **Social reproduction and economic production become indistinguishable and inseparable**. In this era where most households are two earner families and the State is playing more and more a marginal role on social protection, social reproduction tends to become increasingly privatized and individualized (Winders & Smith, 2018). Nowadays, in the Global North the majority of women is working both for paid employment and performing unwaged care work, while employment conditions and schedules become precarious and unstable for an increasing number of individuals (Bakker, 2003; Bakker and Silvey, 2008; Bezanson, 2006; Katz, 2001). In this imaginary, *au contraire* than the previous two scenarios already described, the man is not necessarily

the breadwinner but, nonetheless the neoliberal economy remains deeply gendered, as well as classed and racialized (England, 2010). Due to the precariousness that characterize the present economy, and facilitated by the digital technologies, people are increasingly able to work from anywhere and at any time, which in some cases tend to be most of the time (Winders & Smith, 2018). The collapse of the barriers between the different spheres bring to circumstances in which the domains of work, home, and leisure are impossible to tell apart (Mitchell et al., 2003; Bezanson, 2006). To completely understand this imaginary is necessary to consider all the key features of neoliberal capitalism. Starting from the key role played by the decentralized production along supply chains has strengthened and increased international connections in manufacturing and retailing, and cities that had come to be the centre of control in the global economy (Sassen, 1991). States' divestment in social welfare had discouraged social reproduction (Braedley, 2006; Haylett, 2003; Katz, 2001; Peck and Tickell, 2002) causing the so called "*global crisis of social reproduction*" (Kunz, 2010) or "*crisis of care*" (Fraser, 2016b, 2016a). In particular is relevant the change in employment conditions, such as **flexibility and precariousness**. Flexibility became an increasingly diffused feature, especially for females' workers, cancelling the division in space and time from paid work and home - in which we consider both care work and leisure time - (Bezanson, 2006; Ciscel and Smith, 2005; Shatkin, 2009), requiring those in flexible positions to work either constantly or be constantly available to work (Smith and Winders, 2008). The conceptual division of production and social reproduction present in the past two imaginaries becomes inexistent for the entirety of those individuals performing flexible and precarious employments. In this case time and spaces of production and social reproduction are too often converge spatially and occur simultaneously (Mitchell et al., 2003; Winders and Smith, 2018).

d) Finally, the **last imaginary** centres the debates on social reproduction **theory on the "global care chains"** (Fraser, 2016b). The **impossibility to accomplish both productive and socio reproductive tasks** bring relatively wealthy household from the Global North to **hire people, mostly migrant women from the Global South, to do the care work for them** (Fraser 2016b; Winders and Smith 2018; Douglass, 2006; Miraftab, 2011; Parreñas, 2005; Pratt, 2012). Therefore, women from the Global South care for Global North family personally, while their own family are left with a care gap, in which other people will have to fill missing 'spots' (Arat-Koc, 2006; Fraser 2016b). Thereby

the gender composition of the labour force of the Global North change by these large flows of migration, and at the same time the dynamics of international migration (Parreñas, 2005). This imaginary shows, contrary than in the previous ones, that **the household can be both the location of production and social reproduction** for different people at the same time, (Glenn, 1992), and similarly give a corrective point of view to address the transnational social reproduction performed through slavery and racial discrimination (Arat-Koc, 2006). In addition, this perspective focuses on shared gendered experiences across different class: the paid caregiver and her female employer share a similar condition as both face the fact that their paid work is incompatible with their social reproduction needs, despite enlightening strong class and race differences (Bakker, 2003).

To conclude, the terminology used in the *social reproduction theory* changed from domestic labour to social reproduction to life's work to finally care work. This nomenclature is not always consistent in the broad literature on social reproduction theory but shows the four main theoretical shifts between the different imaginaries and the different spatial conception of social reproduction (Winders & Smith, 2018).

### 3.3 Crisis of Care

Social reproduction is, therefore, indispensable to society, even though it is largely not recognized as proper labour and therefore in many cases not paid and regulated. Social reproduction as we saw, is strongly connected to a gendered division of labour and is mostly unpaid work performed by women. Social reproduction is necessary for the correct functioning of capitalist societies and therefore no society that systematically undermines it can last for long (Fraser, 2016b; Vogel 2013; Federici 2012). The uncertain and complicated position of social reproduction leads to a currently debated major topic: the “*crisis of care*”. This subject was theorized especially in North America by the 1980s feminist scholar that, prompted by the emergence of neoliberalism (Bakker 2007; Bakker and Silvey 2008; Fraser 2014; Laslett and Brenner 1989; LeBaron 2010; Mezzadri, 2021). The crisis of social reproduction is often connected to the idea of time poverty of family-work balance of modern society, even though the concept of crisis of care is not itself new.

In one of her most important works, *Contradictions of capital and care*, Nancy Fraser (2016b) points out that the crisis of care is an aspect of a more complex general crisis which includes economy, politics and ecology, and the intersection of each of these crises aggravate one another. She points out additionally that often the crisis of care is the one to be more neglected, compared to the most discussed topic such as economic and ecological dangers, however the crisis of care is indeed so central to the border crisis that none of the other previously cited can correctly understood, and the same holds true for the others crisis (Fraser, 2016b). The **deep interconnection of the different crises** is shown in her work where she claims that the crisis of social reproduction can be best understood as “a more or less acute expression of the social-reproductive contradictions of financialized capitalism” (Fraser, 2016b p.99). In her opinion, Fraser (2016b) suggests that the crisis of care have deep systematic roots in the present social order (financialized capitalism) as well as deriving from the past, so not only in capitalism’s current form but in capitalism per se. Every form of capitalist society has led to a crisis of social reproduction until readjustments. Social reproduction is a necessary condition for capitalist society per se to survive, but at the same time capitalism’s orientation to limitless accumulation lean towards a destabilization of the very process, social reproduction on which it relies. This social-reproductive contradiction of capitalist society and capitalism itself is the origin of the so-called “*crisis of care*” (Fraser, 2016b) or “*global crisis of social reproduction*” (Kunz, 2010). Despite being an intrinsic part of capitalist society, it assumes a slightly different form in each historic form of capitalism. Capitalist economy relies on the social reproduction activities, from producing and maintaining social bonds, or the care of the children and the elderly, in most cases not according to these kinds of activities to a monetized value. Historically, at least from the industrial era, the work of social reproduction has been separated from the economic production associating the first to women and the second with men, the former being remunerated, while the first only in few exceptions. This brings no doubts to a great deal of inequalities when we look at the present labour market situation. In a world where money is the primary vehicle of exchange, the unwaged and unrecognized characteristics of care work devalue its nature, nevertheless its necessary to the existence of waged work and the accumulation of surplus value and the functioning of capitalism as such (Fraser, 2016b). The capitalist economic production paradoxically, on the one hand is not self-

sustaining and strongly relies on social reproduction, and on the other hand its drive to limitless accumulation intimidates to undermine the very reproductive processes that capital needs (Fraser, 2016b). This paradox, therefore, results in a series of crises of social reproduction, which lead to the shift from one kind of capitalism to the other. These results have been forged among the balances between the principal poles of a triple movement: marketization, social protection, emancipation revising thus the double movement theorized by Polanyi (Fraser, 2016a). This three-sided conflict drove the shift in liberal competitive capitalism of the nineteenth century from separated spheres to family wage in the Fordist model (marketization and social protection) and then to the two-earner family (marketization and emancipation). Finally, in her work Fraser (2016b) hypothesized, or better aspired, that the present general crisis could anticipate another mutation of capitalist society succeeding to forge a new alliance between emancipation and social protection.

The Covid-19 pandemic has reaffirmed how the pre-existing crisis of care radically enhances during “external crises” and how the world’s economy struggles and needs to rely more than ever on the unpaid care work (Mezzadri, 2020; Power, 2020). The need of care and domestic work has increased exponentially with the closure of schools and the need to take care of the elderly and the infirm, due to the overwhelmed health services (United Nations 2020). As a result, women’s share of unpaid work is likely to have increased considerably during this time, exacerbating, moreover, the pre-existing inequalities in the gendered division of labour (United Nations 2020). Mezzadri (2020) argues that it is necessary to acknowledge the invisible and unpaid work executed by social reproduction, in particular, to understand and rethink labour policies and politics in the era of global labour informalisation. The current pandemic is likely to increase the informalization rates by the proliferation of new forms of homeworking, and at the same time creating novel health-related hazards for the many who cannot afford to labour while staying indoors. It is, therefore, necessary to recognise the perils of the current crisis of care and reconsider a labour policy able to support those working and performing care work whose times, needs and risks may increasingly overlap.

### 3.4 Historical phases of Social Reproduction

The organization of social reproduction has experienced numerous historical changes, the main phases are delineated from just as many forms of capitalism (Fraser, 2016b; Laslett and Brenner, 1989). In chronological order these forms of capitalism are the liberal competitive capitalism, state-managed capitalism, and financialized capitalism (Fraser, 2016b; Laslett and Brenner, 1989).

a) **The liberal competitive capitalism** of the nineteenth century is the regime characterized by the bourgeois ideal of the **separate spheres**, where the man has been generally in the position of breadwinner, while the woman in the position of caregiver (Lewchuk et al., 2016). Nevertheless, these principals of division would have fitted in successive historic periods. In the nineteenth century, production and social reproduction stand in direct contradiction with each other. Europe was characterized by industrial exploitation, while the peripheral countries were under the colonial subjugation. This regime tends to “leave workers to reproduce themselves ‘autonomously’, outside the circuits of monetized value” (Fraser, 2016b p.104). The regime of liberal competitive capitalism can be distinguished for the elaboration of the ideal of the “separate spheres”. As Laslett and Brenner (1989) point out, both in Europe and North America, men and women occupied separated spheres ruled by distinct and complementary norms and values, which consequently undermined the unity between production and social reproduction that had previously existed (Laslett and Brenner, 1989). In the middle-class family, as we saw before, men had the role of breadwinner and providers of the income necessary for all the family to survive, while women had growing responsibilities for the care and education of children and did not contribute economically to the family (Laslett and Brenner, 1989). Even though motherhood had always been a core characteristic of femininity, in this era it has become the main decorative trait of the bourgeois woman and being a mother has become almost a sacred quality. As Laslett and Brenner (1989) defined it as the “cult of true womanhood” which was imposed on middle-class women, to legitimize their demands of higher status, nonetheless leaving them dependent on the men and excluding them from the economy. Working class families did increasingly inhabit separate spheres but unlike middle class wives, poor women needed to participate in the economic survival of the family (Laslett and Brenner, 1989). The poor and working-class

family women and children are dragged into factories and mines as a cheaper labour force with unhealthy work conditions, long work hours and modest salary (Tilly and Scott, 1987). In this case, the women needed not only to be a good mother and take care of the domestic work but also to contribute to the family income (Tilly and Scott, 1987). This led working classes to reach a crisis between the lack of possibility to combine the economic production and the need for social reproduction that the situation threatened to collapse (Fraser, 2016b). The crisis of care that occurred was so acute that authors such as Marx and Engels theorized that capitalism had entered its final phase, and likewise women's oppression (Fraser, 2016b). By the end of the nineteenth century the separate spheres doctrine, and the gender relations expressed by it, were undermined, but not the basis of capitalist societies and male domination (Fraser, 2016b; Laslett & Brenner, 1989). In Europe, the adjustment to this crisis of care, began with the birth of protective legislation. Social reproduction was temporarily stabilized by limiting the exploitation of women and children in factories. Even though this solution was not definitive, as protective legislation could not ensure social reproduction if the working and living conditions and the wages had not reached minimum standard to permit the working-class family to survive (Fraser, 2016b). Both for the working class and the middle-class families, the separate spheres came largely at women's expenses. In Maria Mies (1982) study of Lace Makers of Narsapur, in Andhra Pradesh, India, she explores the characteristics of *housewification*. Housewification is described as the process of devaluation of women's reproductive labour inside the home and which is, thus, the source of inequalities in the labour market (Mies 1982). In her work, Bhattacharyya (2017) points out that the process of housewification is strongly racialised, as it is capitalism as a whole. In fact, Rhoda Reddock (1984), shows how this process was considerably delayed for black woman slave, as these women were denied of any rights to domesticity and childbearing, and Angela Y. Davis (1983) demonstrates an analogous situation with reference to settler colonialism in the United States. Therefore, for women, housewification is more than just a double burden, housewification is a dynamic process of devaluation of both female's social reproduction and economic production (Mezzadri, 2020). In both situations, in the periphery and the core, feminist movements had to battle to reject the separate spheres idea, while demanding equal rights and the possibility to own property. Fraser (2017), to describe the crises of care occurred from the nineteenth

century, revises the double movement theorized by Polanyi (2001) in a triple movement composed by marketization, social protection, and the new alternative, born from the feminist battles, emancipation. In this three-sided conflict all the components clashed with each other, and she asserted that this crisis of care resolved itself in an equilibrium between social protection and marketisation (Fraser, 2016b).

b) In her work, Fraser (2016) points out that this crisis of care was followed by a second capitalist regime, **the state-managed capitalism** of the twentieth century which emerged from the ashes of the Second World War and the Great Depression. Modifying the Victorian model of separate spheres, this era is characterized by the **investment by the state for social reproduction and the modern ideal of “family wage”**. The states assumed some public responsibility for “social welfare” in order to ameliorate the possibility of social reproduction and alleviate the mass unemployment (Fraser, 2016b). Some demonstration of government accountability for social reproduction can be found in the expansion of healthcare institutions, for example hospitals and public health programs (Laslett & Brenner, 1989; Morantz-Sanchez 1985). In this historical moment, capitalistic relations had infiltrated to such extent in the life of working-class families that it was no longer for them to actuate social reproduction without the public investment in health care, childcare, schools, and pension. Therefore, the social reproduction had to be partially internalized by the state and managed from the State (Fraser, 2016b). In order to ensure continued economic growth, workers were given a double duty as consumers and worker forces, thus reinventing the domestic sphere as a private space for the domestic consumption of mass-produced everyday items (Fraser, 2016b; Laslett and Brenner, 1989). The Fordist model, by combining this double task supported by the working class and social reproduction supported by the state, created a new arrangement between marketization and social protection, to the detriment of emancipation. Unlike the previous regime, the new arrangement served, though only for some individuals and for some time, to stabilize social reproduction (Fraser, 2016b).

c) The third regime is the present, the **financialized capitalism**. Like its processor, the state-managed capitalism dissolved subsequently to a crisis and was substituted by the financialized capitalism which arose during the ‘80s. Its distinguished features are the state and **private disinvestments from social welfare**, and the **enrolling females in the paid labour force**, therefore, **externalizing care work onto families and communities**

while diminishing their capacity to perform it (Fraser, 2016b). The result is a dual organization of social reproduction “commodified for those who can pay for it and privatized for those who cannot, this is because the second group provides care work in return for (low) wages for those in the first” (Fraser 2016b p.100). In this type of regime, there is a new balance between marketization and emancipation, sacrificing social protection from the equation. In this era, the ideal of a “family wage” has been replaced by the more current “**two-earner family**”. According to Fraser (2016b), the main driver of these developments is the new centrality of debt. Debt is the instrument with which global financial institutions put pressure on states in order to cut social spending, impose austerity and, in general, extract value from the countries of the South. Precarious and underpaid work replaces unionized industrial work, wages fall below the costs necessary for reproduction, thus creating the gig economy. And then through the instrument of debt that capital disciplines the states, transfers wealth from the periphery to the countries of the Global North and extracts the value from families, communities, and nature. The effect is thus to intensify capitalism’s inherent contradiction between economic production and social reproduction. Whereas states were previously authorized to subordinate the short-term interests of private enterprise to a long-term goal of sustained accumulation, this regime authorizes finance capital to bind states and the public, according to the immediate interest of private investors. This generates a configuration in which emancipation combines with marketization to weaken social protection. From here, emerges a progressive neoliberalism that celebrates diversity, meritocracy, and emancipation just as it dismantles social protections and outsources social reproduction once again. Unlike previous regimes, financial capitalism is liberal individualist and gender egalitarian. Women are considered equal to men, worthy of equal opportunities, particularly in the productive sphere. Reproduction, on the contrary, appears almost as a backward remnant, an obstacle to progress. This regime has also reduced real wages by increasing the number of hours of paid care work required to support a family, thus inducing the delegation of part of this work to other individuals. To fill the care gap, the regime imports female migrant workers from poorer countries. To do this, the migrants themselves must transfer their caregiving responsibilities to other caregivers, thus creating increasingly long “**global care chains**”. The end effect is the dislocation of care work from richer to poorer families, and from the North to the South. This has caused the

issue of social reproduction to return to the forefront of debate. In fact, the current crisis of care in addition to the difficulty of combining paid work with social reproduction includes other movements such as: the struggle for the rights of migrants, the struggles for workers' rights, maternity, parental leave, etc. These claims, for Fraser, are equivalent to the demand for a massive reorganization of the relationship between production and reproduction in order to support a social arrangement that could give the possibility to all people to combine socio-reproductive activities with a stable job. According to her, this balance could be achieved if in the triple movement we have seen, a balance between emancipation and social protection is created at the expense of marketization. In summary, the crises of care are triggered by internal contradictions within the capitalist system in all its historical forms and that the roots of the current crisis lie in the very characteristics of capitalism.

### **3.5 Total Social Organisation of Labour**

The objective of this paragraph is having an insight, by no mean exhaustive, on the *Total Social Organisation of Labour* theorized by Glucksmann (1990, 1995, 2005) with a focus on care work in the United Kingdom (Lyon & Glucksmann, 2008). Nowadays the emergence of new occupations and a different division of labour which lead to an alteration of employment relations and a reorganization of working time are only few of the changes occurring in paid employment. Moreover, to these changes there are changes equally significant in the unpaid work such as the growth of voluntary or community work in the public domain or and changes in both ways in the commodity/non commodity divide (Glucksmann, 2005). The original concept of the Total Social Organisation of Labour (TSOL) was to draw attention to the interconnections between labour undertaken under different socio-economic relations of in differing socio-economic spaces (Glucksmann 1990; Glucksmann 1995). Given that work activities may shift historically between the commodity and non-commodity sphere, or between production and distribution, the TSOL do not want to establish a classification but aims to describe the articulation of the interconnected work activities recognising the variability and multiplicity of connections (Glucksmann, 2005). As Glucksmann (2005) report:

“The TSOL is thus a relational conception focusing on modes of linkage and connection, articulations, intersections, configurations, patterns, networks and so on. Transformations over time between different organisations of labour are a central concern. By analytically unpicking and rejoining connections and relations it becomes evident that explanation of the distribution of labour across spheres and boundaries cannot be internal to any one sphere but must refer to the higher level of how labour is organised across and between them.” (p.21)

The TSOL explores different modes of interconnections between work activity and distinguish four main dimensions (Glucksmann, 2005). The **first dimension** looks out for the **interconnection of work** across the process of provision, production, distribution exchange and consumption and the emergence of new occupations, skills and different organisation of work associated with them.

The **second dimension** instead describes the **interconnections about boundaries** between paid and unpaid work, market and non-market and formal and informal sector. In addition to paid employment, we can find that work is performed in a variety of ways, some of which are unpaid and performed inside the household, community or in the public formal sphere. For Glucksmann (2005) it is unhelpful to counterpose the dualism of paid employment and unpaid household labour as she points out unpaid labour may be performed in a numerous place other than the household and paid work can be undertaken as formal employment or on the basis of informal exchange, and in the commodity or non-commodity sector. This second dimension of socio-economic mode problematizes the relation between of work focusing on interaction across boundaries and shifts of work activities between modes. An example of this can be care work, which is interconnected across and shifts between formal and informal provision. Paid and unpaid work is changing drastically during time and across countries. For example, in the United Kingdom there was a reduction of the state support in the 1980s and the care work was transferred mostly onto family, and especially women, who assumed the responsibility but were not paid to perform it (Glucksmann, 2005).

The **third dimension** instead addresses the **interpretation, and boundaries between work and non-work process**, and it arise from questioning what is work. The multidimensionality of the labour activity can be distinct in three research area, and which are: **embeddedness versus differentiation, emotion work and aesthetic labour, and consumption work**. The embeddedness versus differentiation concerns the forms of

labour that are relatively undifferentiated from non-work activities or relationship, in particular characteristic of care and the household. In fact, domestic labour, care of the children and of the elderly is the most obvious examples of where work is combined with a broad variety of emotions and relationships (Glucksmann, 2005). Embeddedness affects the experience of work, in case of unpaid labour, those undertaking it may consider it as an expression of love and not consider it as proper work. Instead “consumption work” would investigate the work engaged in practices of consumption such as routine practices like shopping, driving, appreciating cultural goods, etc. that may be interpreted as work, consumption, leisure, or a combination of the previous (Glucksmann, 2005).

Finally, the **fourth dimension is the interconnection of temporalities of work**. Temporality interconnects the previous three dimensions. It indicates the organisation of time in cycles, sequences durations etc. In the recent years, there has been an increasing interest in the attention to worktime, both in itself and in relation to non-work time, the erosion of standard working time, the disappearance of the normal working day the work life balance etc. These dimensions are overlapping and inseparable. So, in addition to being considered separately on their own account, they are also to be analysed in combination in relation to each other (Glucksmann, 2005).

In their work Lyon and Glucksmann (2008), use the Total Social Organization of Labour framework proposed in Glucksmann (1990, 1995, 2005) to explore the dynamic interdependence and interaction between the different socio-economic mode of work in the present society, focusing in particular on elder work, as this field change drastically over time and across countries. For this purpose, in their article, they report four modes of provision - state/public; family/community; voluntary/ not for profit; market/for profit- which can be an example of four contrasting configuration of care in different countries analysed: Italy, the Netherlands, Sweden and the United Kingdom.

In particular, what they point out is that the countries are distinctive features of their elder care provision, in fact in the United Kingdom there is a dominance of the private sector, while in the Netherlands of the voluntary sector, in Sweden of public services and in Italy of migrant labour (Lyon & Glucksmann, 2008). In particular, in the United Kingdom there has been interconnection between the activities of the state and the voluntary sector for elder care. From 1834 and the Poor Law reform the state had control over those who it was thought could work but would not - the “undeserving poor” - while the voluntary

sector gave assistance to those that could not work because too old, or young or sick to work, the “deserving poor” (Lyon & Glucksmann, 2008). Then in 1940s thanks to the social reforms, the public sector came to dominate the funding of social welfare, and many voluntary organizations were absorbed into the welfare state (Lyon & Glucksmann, 2008). However social care was never foreseen as a universal social service, and no provision was made for the non-institutionalized elderly or children who remained a main concern of their family (Land and Lewis, 1998). At the end of the 1980s the provision of services was dominated by the private sector, social services departments turn into “enablers”, engaging with the independent sector instead than direct providers of care (Land and Lewis, 1998). Finally, the “**care in the community**” increased the responsibilities and woks of informal carers, which are often the family of the assisted (Lyon & Glucksmann, 2008). For long time, the United Kingdom has been described by a high level of informal care of the elderly performed mostly by daughters and spouses of the infirm. The government continues to be a substantial financial of care for those considered eligible, even though there is a tendency for Local Authorities to give more intensive services to fewer households (Soule et al., 2005). Given the substantial shift from public to private providers is still the state that at a local level contract with these providers and new jobs have been created in regulation and administration (Lyon & Glucksmann, 2008). More than 70% of the social care providers are reported to be in the *market*, and the private sector employment in elder care accounts for two thirds of care workers (Eborall, 2005). In addition, about 90% of care workers are females and the United Kingdom is nowadays the “largest importers of professional health care workers in the world” (Wanless et al., 2006). Moreover, the Black or ethnic minority workers are overrepresented in care in the United Kingdom (Lyon & Glucksmann, 2008). Finally, the voluntary and not-for-profit sector is characterized with a numerous range of organization, which goes from a more professionalized that offer a variety of services such as residential or sheltered housing or day care, to informal organization and local community groups (Lyon & Glucksmann, 2008).

## Conclusions

The present chapter focused on the theoretical concept of social reproduction and the main theories connected to it. Firstly, we focused on the definitions of social reproduction made by Laslett and Brenner (1989) and Fraser, (2016a) and saw how social reproduction has historically mostly been assigned to women (Fraser 2016b; Picchio 1992). The rise of capitalism has intensified the gender division between economic production and social reproduction, treating them as two separate spheres; the first one considered economic and remunerated while the second one has been sentimentalized and relegated to the private sphere, and conceived as performed for the sake of “love” (Fraser, 2016a), making men generally in the position of breadwinner, while women in the position of caregiver (Lewchuk et al., 2016).

Then some of the most relevant approaches on the debated *Social Reproduction Theory* were reported, as well as a description of the main historical phases of social reproduction and of the theories of the *crisis of care* (Fraser, 2016b) or *global crisis of social reproduction* (Kunz, 2010). These theories point out that social reproduction is a necessary condition for capitalist society per se to survive, but at the same time capitalism’s orientation to limitless accumulation lean towards a destabilization of the very process, social reproduction on which it relies. Finally, it was reported a brief description of the *Total Social Organisation of Labour Theory* (Glucksmann 1990; Glucksmann 1995; Glucksmann 2005), which draw attention to the interconnections between labour undertaken under different socio-economic relations of in differing socio-economic spaces, focusing on the United Kingdom’s care work situation (Lyon & Glucksmann, 2008).

All the theories shown are necessary to understand the enormous debate on social reproduction, and how the care work have an enormous impact on women’s life. Women, in addition to be the one performing in most of the cases informal care work (Fraser 2016b; Laslett and Brenner, 1989; Picchio, 1992), are encountering more often than men more adverse employment conditions. In fact, women result to have more often precarious position than men (Benach et al., 2016; Menéndez et al., 2007). In addition, the effect of precarious employment on health seems to affect more strongly women than men in the same situation (Julià et al., 2017b; Benach et al., 2016). Therefore, women

encounter numerous sources of disadvantage that put them in a more vulnerable position (Padrosa et al., 2022) and experiencing several disadvantages and inequalities such as the division of care work, creating a larger burden on women's mental health (Vosko et al., 2009; Young, 2010; Julià et al., 2017; Rosenfield and Mouzon, 2013; Padrosa et al., 2022). In the literature, it has been theorized that the stronger effect of the precarious employment on mental health of the female population could be explained by the double burden of paid employment and unpaid care work and household responsibilities (Boye, 2011; Dahlin & Härkönen, 2013; Benach et al., 2016). Nonetheless, so far limited production has explored the gender differences in precarious employment taking in consideration the unpaid care work empirically, therefore, in the next chapter we aim to test whether the gender inequalities in the burden of unpaid care responsibilities explain the gender differences found on mental health and partly explain the association found between precarious employment and mental health in Chapter 2. The analysis is conducted using longitudinal data about the United Kingdom.



## **Chapter 4 - Social Reproduction and gender differences: the effect on Precarious Employment and Mental Health**

### **Introduction**

The increasing erosion of employment conditions and standard working arrangements has led to a renewed interest in precarious employment and in particular as a social determinant of both physical and mental health (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner, 2011; Benach et al., 2007), in fact extant literature has consistently found that precarious employment is associated with a worsening of mental health (Kalleberg, 2009; Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017a). Moreover, precarious employment is a gendered phenomenon, where women are more affected by precariousness than men (Benach et al., 2016; Menéndez et al., 2007) and adding to this the association between precarious employment and health seems to affect stronger women than men in the same situation (Julià et al., 2017b; Benach et al., 2016). This phenomenon is hypothesized to be due to the double burden of paid work and household responsibility and care work which the women are more subjected (Boye, 2011; Dahlin & Härkönen, 2013; Benach et al., 2016). Women encounter several sources of social disadvantage that leave them in a vulnerable position that make harder to get access to the labour market and get a successful job (Padrosa et al., 2022). The cumulative effect of the social disadvantages generates numerous mechanisms that slow down and impede the women's opportunities for career progression (Padrosa et al., 2022). An example are the gendered division of work and employment (Barnett and Hyde, 2001) and the gendered segregation of occupations, both vertical and horizontal (Christofides et al., 2013; Padrosa et al., 2022). Therefore, women tend to fall into precariousness more often than men (Vosko et al., 2009; Young, 2010; Benach et al., 2016; Menéndez et al., 2007; Cortès-Franch et al., 2018; Julià et al., 2017) and in addition, women experience several other social disadvantages and inequalities such as the division of care work, and all these domains combined create a larger burden on women's mental health (Rosenfield and Mouzon, 2013; WHO Commission on Social Determinants of Health & World Health Organization, 2008; Padrosa et al., 2022). Consequently, among women it is observed a larger incidence of both precarious employment and poorer mental health. This leads

them to an a more adverse social position and because of this same reason they may encounter many other difficulties in addition to worse employment conditions that will negatively affect their mental health (Padrosa et al., 2022). Gender has widely been recognized as a significant determining factor of social inequalities (Marmot and Wilkinson, 2005; Padrosa et al., 2022) and it has been extensively pointed out the role of female unpaid work on social reproductive labour, and how this burden influences both their career opportunities and their health (Benach et al., 2016; Boye, 2011; Dahlin & Härkönen, 2013). Nonetheless, so far limited production has explored the gender differences in precarious employment taking in consideration the unpaid care work and all the tasks and activities that could fall into the definition of social reproduction.

Therefore, in this chapter we aim to study whether the differences in the burden of unpaid care work explain the gender differences found on mental health and the association between precarious employment and mental health (results of the analysis made in Chapter 2) is partly explained by the time spent performing care work. Using panel data from Understanding Society (University of Essex, Institute for Social and Economic Research, 2022), the analysis is based on a sample of United Kingdom population from 2010 to 2020. Precarious employment is included in the analysis as previously done in Chapter 2, using the multidimensional approach based on The Employment Precarious Scale (EPRES) and its adaptations (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). To replicate similar dimensions of those used for EPRES, we selected in the Understanding Society database variables appropriate to measure the dimensions of temporariness, wages, rights, disempowerment, and uncertain working time. The empirical section is divided in two: in the first part, the distributions of the variables about care work and social reproduction are shown, with the aim to check whether there is a gendered division in the share of work performed by women. In the second part are reported the results of the hybrid models to estimate the effect of hours spent performing care work on the relationship between mental health and precarious employment, that we have found in the previous chapter.

## **4.1 Gender differences in Precarious Employment and social reproductive tasks**

In extant literature precarious employment is found to be a social determinant of health and health inequalities (Benach et al., 2016; Bodin et al., 2020; Cortès-Franch et al., 2018; Kalleberg, 2009; Padrosa et al., 2022; Julià et al., 2017a), and over the past years the interest over this thematic had led to a growing body of studies on the association between adverse employment conditions and both physical and mental health (Benach et al., 2014; Koranyi et al., 2018; Ronnblad et al., 2019; Utzet et al., 2020; Padrosa et al., 2022). Precarious employment was already widespread during the Industrial Revolution until the twentieth century in which, in the now-developed economies, there was an increased government regulation on the labour market as well as changed in technology which favour more stable work relations (Quinlan et al., 2001; Menéndez et al., 2007). Precariousness, however, is nowadays prevalent in most of the developing economies and has become yet again predominant in the developed economies (Houseman & Osawa, 2003; Menéndez et al., 2007). In fact, the labour market has become more segmented and new type of non-standard and flexible working arrangements have become predominant (Benach et al., 2002; Menéndez et al., 2007). Precarious employment consequently is recognized in the literature as a social determinant of health and health inequalities (Menéndez et al., 2007; Quinlan et al., 2001; Sverke et al., 2002; Virtanen et al., 2005). To an erosion of employment conditions is associated a worsening of the workers' health, and this results to have a stronger impact for female workers which are already disproportionately affected by precariousness (Annandale & Hunt, 2000; Hagemann et al., 2006; Menéndez et al., 2007). The dominating male power structure and the gendered division of labour encourage the gendered occupational discrimination, and further labour market mechanisms that are particularly detrimental to women (O'Campo et al., 2004; Padrosa et al., 2022). Therefore, women tend to fall in precariousness more often than men (Annandale & Hunt, 2000; Benach et al., 2016; Hagemann et al., 2006; Menéndez et al., 2007; Padrosa et al., 2022) and, also when they are in a similar job position as men, usually they are more frequently exposed to poorer employment conditions such as the gender pay gap (International Labour Organization, 2018b; Padrosa et al., 2022) and the lower autonomy over deciding their working hours schedule (Puig-Barrachina et al.,

2014). The need for a gender-sensitive perspective is, therefore, crucial; nevertheless, gender health inequalities related to precarious employment have gone largely untested (Valero et al., 2021; Padrosa et al., 2022).

Additionally, in regarding the **study of health, gender biases** are present in two main ways. First of all, the **male pattern of health has been taken as the reference** in the literature and medicine and thus female health specific problem are frequently undetectable and, on a second instance, **female health is thought to be connected almost exclusively to the reproductive health** (Valero et al., 2021). In addition to this, **women are underrepresented in health research and clinical trial** (Coen and Banister, 2012; Valero et al., 2021), and also in occupational health epidemiology, indeed men tend to be taken as reference for all workers, and many **studies have focused on occupation and type of jobs that mostly affect men**, probably because of the widespread belief that women perform generally safe working activities (Artazcoz et al., 2007; Messing and Stellman, 2006; Valero et al., 2021). Consequently, when looking at the context of occupational health research and, in particular, at the effect of unfavourable employment conditions as a social determinant of health, the gender sensitive perspective is especially important given the inequalities in access and participation to the labour market (Menéndez et al., 2007). The aspects that may influence this relationship may be summarized in the following points:

a) **The gendered division of labour, the breadwinner/housekeeper ideology and the patriarchy** values that push women into unemployment and precarious forms of employment more often than men. Even though the growth of females' employment in the developing countries over the last decade, this increase has mostly occurred in non-standard work arrangements (Franco & Winqvist, 2002), involuntary part-time work (Cranford et al., 2003; Menéndez et al., 2007) and other precarious form of employment. The decreasing of minimal wage contributes to the difficulties faced by the precariously employed. Female workers may adjust to declining labour market conditions by accepting worse working condition such as shorter working hours (Menéndez et al., 2007).

b) **The male power structure** encourages the occupational gender segregation so that women are assigned to a limited selection of “female occupations”. Most gendered

job changed over time but gender segregation within the labour market is still very widespread, and this tend to exclude women from job of better prestige and with better employment conditions. Therefore, women in the end tend to suffer from several layers of employment discrimination, such as low pay, insecure contract, precarious employment condition, lack of training etc. (Menéndez et al., 2007). In addition, women are overrepresented in paid care work (home care workers, nurse assistants), which are often forms of non-standard work characterized by unfavourable employment and working conditions and are often expected to work overtime and tolerate the cases of abuse from clients because of the selfless and giving, nurturing nature of caretaking labour (Geiger-Brown et al., 2004).

c) The effect of gender and employment is mediated by **class inequality and ethnicity**. To truly estimate the effect of precarious employment on health by gender is necessaire to consider the potential interaction with social class and ethnicity. While some employment progresses have been made by some categories of women this not necessarily apply to working class and ethnic minority women for whom unemployment is higher and employment conditions are worse (Menéndez et al., 2007).

d) A fourth aspect is the one this study is focusing, the **unpaid informal care work**. Women more often than men gave to bear the great burden of housework responsibility and informal care work. For informal care work we define all the activities connected to caring for the elderly, sick or disabled people, etc. without this being recognized as paid job and therefore not being remunerated. Unconditionally from their occupational status, women are expected to perform a higher share than men of domestic labour and care for the elderly, sick and children (Fraser, 2016a; Lewchuk et al., 2016; Menéndez et al., 2007; Moreira da Silva, 2019; Pozzan and Cattaneo, 2020). Hence, women suffer of discrimination in the workplace for their role of care giver (part-time, termination of the contract, etc) and thus the household division of labour weakens women's position in the labour market in addition to the burden of several hours of unpaid care work. This condition makes it exceedingly difficult to balance work and care responsibilities, with potential consequences for the women's mental health.

e) Finally, often the **labour leadership** has frequently focused on white male occupations and full-time permanent position, neglecting, non-white, women, and people employed in precarious job, which are less probably covered by a collective agreement or protected by a trade union. The lack of representation of this type of employment lead to a lack of representation of women's interest and the lack of power of them in the process of collective bargaining. This strengthens the women disadvantages in the labour market (Menéndez et al., 2007).

Therefore, work tasks tend to be segregated, and even when men and women share the same labour sector, often, they perform different tasks often allocated based on gender stereotypes, and consequently, they are exposed to different social and environmental factors that may influence mental and physical health (Valero et al., 2021). The dual presence of women in the labour market and on the social reproductive labour impose them to find a balance between work and family that might be overwhelming and negatively affecting their health (Valero et al., 2021). However, this topic has been largely discussed in the theoretical literature, there is little empirical research on the relationship between paid and unpaid work and the impact on mental health (Jung et al., 2019; Valero et al., 2021). In their study Valero et al. (2021) make a gender sensitive review of the literature on the impact of precarious employment on mental health. They found that only 40.7% of the papers selected in their study is stratified the analysis by gender, and only 5.4% of the total stratified both for sex and other variables of household composition while only 33.3% incorporated an intersectional perspective. None considered the distribution of domestic work and only a quarter (25.9%) approached the study and interpreted the results in terms of gender. Therefore, that too few studies so far have focused on the gender sensitive perspective and consequently this could imply a biased interpretation of the precarious employment and its impact on health (Valero et al., 2021). Their review highlights how none of the selected studies analyses the distribution of domestic work in their studies, despite mentioning the importance of understanding how women participate in the labour market (Valero et al., 2021). This is possible because effective information to quantify time and effort spent by men and women performing household tasks and informal care is rarely collected in surveys. Studying the composition of informal care workers and their distinctive features is extremely relevant as Western

countries are rapidly facing a growing aging of population, leading to an increasing long-term care demand which is often provided through informal care, provided recurrently by kin and family members.

Various studies reveal the negative impact of informal care on the caregivers' health; indeed, the effects are not the same for all the individuals, and change drastically by age, the intensity of care provided, and the other responsibilities performed such employment etc. (Bom and Stöckel, 2021; Bom et al., 2019; Pinquart and Sorensen, 2011). Besides, there are the country-level factors that play a role; the **welfare state** generosity and the **cultural norms of a specific country influence how informal care impact caregivers' health** and burden (Brandt, 2013). The country specific context influences impact on health of those providing informal care in several different ways. To begin with, country specific components might impact the sort and intensity of provided care (Brandt, 2013). The *specialization theory* hypothesizes that the division of labour between formal and informal caregivers is higher in nations with a liberal and generous welfare state (Motel-Klingebiel et al., 2005; Igel et al., 2009; Bom and Stöckel, 2021).

In the United Kingdom, this formal long-term care is organized in a mixed system that combines universal and mean-tested benefits (Bom and Stöckel, 2021). Others long-term care elements, for instance nursing care, are provided through the National Health Service (NHS) for free of charge and the local authorities are responsible for home care, day care and nursing care (Colombo et al., 2011; Glendinning, 2013). Moreover, another way in which the country context might impact the relation among informal care and caregivers' health are the social norms and expectations about the role of the family in meeting the care demand. There are countries in which caregiving is deemed to be a duty of family members, and therefore the caregivers are more pressured to perform it and might end up feeling being obliged to provide care even though it might influence their health (Verbakel, 2014; Bom and Stöckel, 2021). This is the case of United Kingdom where, in fact, the UK citizens consider **elderly care the responsibility of the family** (Eurobarometer, 2007). In the United Kingdom, indeed, long-term care is, frequently performed informally, as OECD (2019) reports about 17–18% of the 50+ population identified him/herself as an informal caregiver. According to the European Social Survey of 2014, 17% of the UK caregivers provides more than 20 hours of care per week. This higher number of intensive informal caregivers in the United Kingdom seems to mirror

the country's strong dependence on informal caregivers, which might be an outcome of only publicly funding non-health related formal long-term care in case of low wealth and income and with the results of principally directing formal care at people who do not receive informal care (Comas-Herrera et al., 2010). Besides, the United Kingdom offer a broad variety of support to informal caregivers and is among the few countries that have a national policy aimed for informal caregivers, and under different regulations some sort of financial support, respite care, training, and counselling for caregivers (Courtin et al., 2014; Bom and Stöckel, 2021).

To conclude, in the last decades there has been an increasing participation of women in the labour force, but their role of housekeeper and care giver often has not been resigned, and it has become harder for them to achieve a balance between the paid work and the reproductive labour (Esteban- Gonzalo et al., 2018; Moreno et al., 2011), affecting how they participate in the labour market (e.g. precarious employment) and how informal care this impact their health (Artazcoz et al., 2004; Bom and Stöckel, 2021; Valero et al., 2021). In a framework of an increasingly precarious labour market, introducing a gender sensitive perspective into occupational health research can improve the understanding of the impact of employment conditions on health. Including informal care work to this relationship would help to identify whether this is an intermediate factor that relates precarious employment and mental health and likewise contributes to the development of preventive measures and of more suitable solutions to deal with workers' health problems and possibly promoting the reduction of gender inequalities in health (Valero et al., 2021).

## **4.2 Data and Methods**

### **4.2.1 Data and design**

The present analysis has a longitudinal design, using data from Understanding Society (University of Essex, Institute for Social and Economic Research, 2022). In the specific, the sample is the same used in the previous Chapter 2, where information about the distribution of the precarious employment dimensions, and an extensive analysis of the relationship between precarious employment and health can be found. In addition, a brief description of the sample, the same used for the present analysis, can be found in

paragraph 2.4.1. The Understanding Society is an unbalanced household panel conducted in the United Kingdom (University of Essex, Institute for Social and Economic Research, 2022). For the analysis, the data has been restricted to wave 2, 4, 6, 8 and 10, as some of the required information were collected every two waves. Consequently, the data represent the United Kingdom population from 2010 to 2020. As mentioned previously in Chapter 2, we excluded from the sample those cases where individuals have never been in paid employment during the observation period, and those who answered only once to the survey.

#### 4.2.2 Variables

In the first part, the distributions of several variables that could be considered part of social reproduction are reported. These variables are not included in the hybrid models because they are part of different modules of the Understanding Society questionnaire (University of Essex, Institute for Social and Economic Research, 2022), and thus are asked only under certain conditions. The universe of the variables is consequently different and including them all in the main analysis would have restricted the sample only to a few individuals. The variables selected for the descriptive part are divided in three subgroups. The **first one is about caring**; all the population of analysis is asked whether they have to care for sick or disabled or elderly that lives within or outside his/her household, and whether caring prevents or partly prevents paid employment and the hours per week spent for informal care work. The information about hours spent caring is later used in the hybrid models to see whether the time spent caring - in this case only for elderly, sick or disabled people, because it was not present a variable about caring which also included the time spent for childcare, housework and all the other aspects of social reproduction - has a moderating effect on the relationship between mental health and precarious employment. The **second group of variables** is regarding the **use of childcare and other arrangements for child caring**. These variables are asked only to individuals with children younger than 15 years old. Finally, the **third group** of variables is about the **domestic division of labour** and the questions are asked only to married couples, those in a civil partnership or cohabitating with a partner which is coresident in the household. The information shown are about who mostly does grocery shopping, cooking,

cleaning, washing, and ironing clothes, who is responsible for the childcare and of the household financial decisions, and the hours spent per week performing housework. Instead, in the hybrid models' section is analysed the effect of hours spent per week spent performing unpaid care work in the association between precarious employment and mental health. As previously done in Chapter 2, **mental health** is measured through the SF-12 Mental Component Summary (MCS). The variable is a continuous scale with a range of 0 (poor mental health) to 100 (good mental health), for complete details on scoring methods see Ware et al. (2001). Precarious employment is included in the analysis as previously done in Chapter 2. To study **precarious employment**, we used the multidimensional approach similar than the one used in Padrosa et al. (2021), Julià et al. (2017b), Vives et al. (2010). To reproduce similar dimensions of those used for EPRES and its adaptations, we selected in the Understanding Society variables (University of Essex, Institute for Social and Economic Research, 2022) suited to measure the dimensions of temporariness, wages, rights, disempowerment, and uncertain working time (for additional information see Chapter 2, section 2.2). Finally, the **unpaid care work** is described using the items "How many hours per week do you spend caring for a sick/disabled/ elderly person?" and its answer categories range from 0 to 4 hours, from 5 to 9 hours per week, 10 to 19 hours, and more than 20 hours per week. The age and level of education of the respondent are used as control variables.

#### 4.2.3 Statistical analysis

In this chapter the empirical section is divided in two: in the first part is shown the distributions of the variables about care work and social reproduction, with the aim to check whether there is a gendered division in the share of work performed by women. In the second part, the results of the hybrid models are reported to estimate the effect of hours spent performing care work in the association between precarious employment and mental health, that we have found in the previous chapter (Chapter 2). Finally, in order to test, with a different procedure, whether the informal care work have a different effect on women in the association between precarious employment and mental health, is reported the interaction between hours of care work and gender. To be able to introduce an interaction, in this case, instead of making two different model for male and female, is

necessary to have a single model for both men and women. Consequently, on the side of this model are reported two additional models showing the effect of precarious employment conditions on mental health both for men and women taken together and one model considering the hours of care work, where the gender is only included as a control variable.

Hybrid models were preferred than fixed effect or random effect models, similar to Chapter 2. Again, hybrid models were chosen for their propriety of being a flexible tool that makes possible to separate the within- and between- variation and permit to consistently assess the effect of time varying characteristics comparably to fixed effects models (Baranowska-Rataj & Strandh, 2021). In addition, hybrid models are more suitable than fixed effect models when we need to deal with unbalanced panel data with a short time dimension, as in the present analysis (Bell and Jones, 2015; Wooldridge, 2019).

## **4.3 Results**

### **4.3.1 Descriptive analysis**

#### **4.3.1.1 Caring for a sick/disabled/elderly**

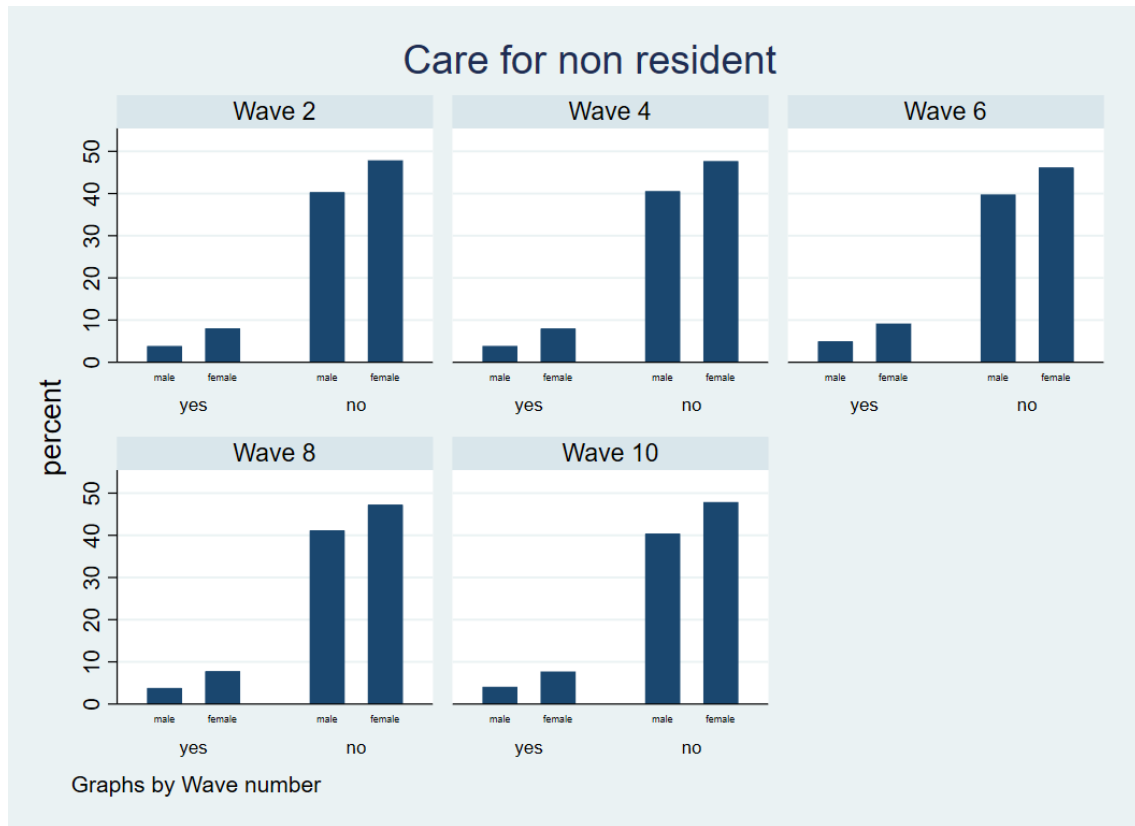
In the present analysis looking at the distributions of caring for a sick or disabled or elderly in the household, it is shown that when we look at the overall data (Figure 4.1) the percentage of men and women having to care for a sick person in the house is similar, 5.7% both for men and women. We found a 11% of the individuals in the sample that have experienced at least once to have to care for a sick person in the house. Finally, those ever caring for a sick person in the household where in this situation in 52% of the observations, on the period that goes from 2010 to the beginning of 2020. For this variable there are not major differences for men and women, but this changes once we look at the information about caring about a person outside the household.

**Figure 4.1** - Descriptive statistics of caring for someone in the household, caring for someone non-resident, caring prevent paid employment and hours per week performing informal care work.

|                                                    | Male             |              |                  |             |                   | Female           |              |                  |             |                   |
|----------------------------------------------------|------------------|--------------|------------------|-------------|-------------------|------------------|--------------|------------------|-------------|-------------------|
|                                                    | Overall<br>Freq. | Percent      | Between<br>Freq. | Percent     | Within<br>Percent | Overall<br>Freq. | Percent      | Between<br>Freq. | Percent     | Within<br>Percent |
| <b>Care for sick/disabled/elderly in household</b> |                  |              |                  |             |                   |                  |              |                  |             |                   |
| Yes                                                | 2658             | 5.7          | 1444             | 11.1        | 52.0              | 3299             | 5.7          | 1717             | 11.0        | 52.7              |
| No                                                 | 44299            | 94.3         | 12729            | 97.8        | 96.3              | 54174            | 94.3         | 15231            | 97.8        | 96.3              |
| Total                                              | 46957<br>n.      | 100<br>13015 | 14173            | 108.9       | 91.8              | 57473<br>n.      | 100<br>15567 | 16948            | 108.9       | 91.9              |
| <b>Care for sick/disabled/elderly non resident</b> |                  |              |                  |             |                   |                  |              |                  |             |                   |
| Yes                                                | 4617             | 9.2          | 2705             | <b>19.5</b> | 43.3              | 9180             | 14.6         | 4741             | <b>28.9</b> | 47.9              |
| No                                                 | 45695            | 90.8         | 13611            | 98.3        | 93.1              | 53511            | 85.4         | 15842            | 96.6        | 89.2              |
| Total                                              | 50312<br>n.      | 100<br>13844 | 16316            | 117.9       | 84.9              | 62691<br>n.      | 100<br>16406 | 20583            | 125.5       | 79.7              |
| <b>Caring prevents paid employment</b>             |                  |              |                  |             |                   |                  |              |                  |             |                   |
| unable to work at all                              | 97               | 4.2          | 76               | 5.7         | 64.8              | 296              | 9.9          | 224              | 13.9        | 67.4              |
| unable to do as much paid work as you might        | 241              | 10.3         | 184              | <b>13.9</b> | 67.5              | 670              | 22.3         | 467              | <b>28.9</b> | 68.4              |
| or this doesn't prevent you from working?          | 1996             | 85.5         | 1205             | 91.1        | 95.4              | 2039             | 67.9         | 1282             | 79.4        | 89.3              |
| Total                                              | 2334<br>n.       | 100<br>1323  | 1465             | 110.7       | 90.3              | 3005<br>n.       | 100<br>1615  | 1973             | 122.2       | 81.9              |
| <b>Hours per week spent caring</b>                 |                  |              |                  |             |                   |                  |              |                  |             |                   |
| 0 - 4 hours                                        | 3248             | 49.7         | 2275             | <b>63.4</b> | 85.5              | 4656             | 41.2         | 3223             | <b>57.2</b> | 79.8              |
| 5 - 9 hours                                        | 1388             | 21.2         | 1091             | 30.4        | 66.6              | 2634             | 23.3         | 1997             | 35.5        | 64.1              |
| 10 - 19 hours                                      | 788              | 12.1         | 656              | 18.3        | 59.9              | 1663             | 14.7         | 1332             | 23.7        | 56.5              |
| more than 20 hours                                 | 1111             | 17.0         | 724              | 20.2        | 72.6              | 2340             | 20.7         | 1434             | 25.5        | 71.7              |
| Total                                              | 6535<br>n.       | 100<br>3590  | 4746             | 132.2       | 75.6              | 11293<br>n.      | 100<br>5632  | 7986             | 141.8       | 70.5              |

The overall percentage of women caring about a sick person outside the household is the 14.6% of the female sample, compared to the 9.2% of the men. 19.5% of men have experienced at least once to have to care for a sick person outside the household, while 28.9% of women were in this situation at least once during the observation period. In figure 4.2 we can see the distribution across waves of this variable.

**Figure 4.2** – Distribution of Care for a sick/disabled/ elderly non-resident across waves.

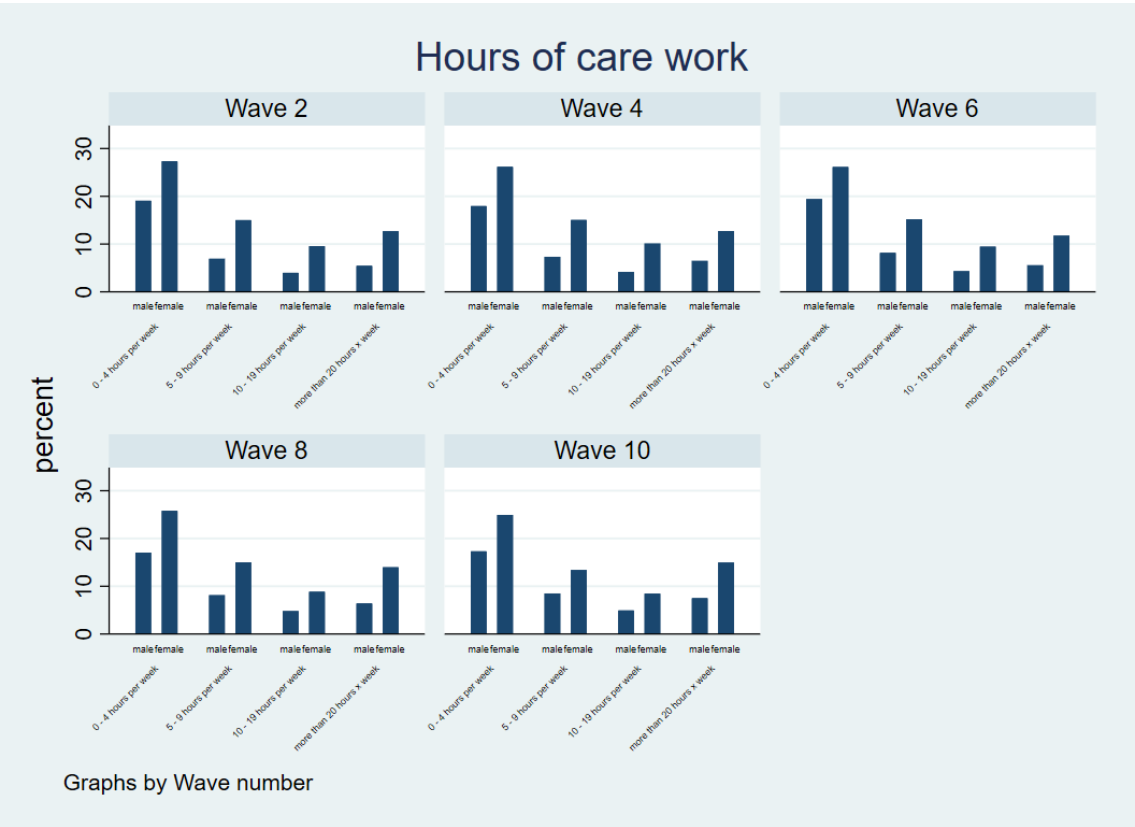


In figure 4.1 we see also how those who are taking care of a sick or disabled kin are prevented in participating in paid employment. Overall, 4.2% of men were unable to work at all because of the caring responsibilities, while the 10.3% of men were not able to do as much paid work as desired. When we look at women, 9.9% of them were unable to work at all and the 22.3% were unable to do as much paid work as desired. In addition, 5.7% of men were at least once unable to work at all due to the caring responsibilities, compared to 13.9% of women. Women who at least once during the observation period of 2010-2020 were unable to work as much as desired are the 28.9% of the female in the sample, compared to only 13.9% of men. Women than experienced at least once to be in the situation of not being prevented in any way to perform paid work due to the informal caring work are only the 79.4%, while men in this situation are 91%.

The respondents who previously answered to take care of a sick or disabled person in the household or a non-resident were asked how many hours per week spent caring. During the observation period, 63.4% of men and 57.2% of women at least once spent on average

between 0 and 4 hours per weeks caring; 30.4% of men at least once spent between 5 and 9 hours per week caring comparing to almost 35.5% of women. Similarly, we see that increasing the hours of caring per week, the percentage of women performing it is higher of the one of men. In figure 4.3, is shown the distribution of the variable hours per week of care work across the observation period analysed.

**Figure 4.3** – Distribution of hours per week performing care work across waves.



### 4.3.1.2 Childcare

Social reproduction also includes the care of the children, when present. In figure 4.4, is shown that when people responsible for children aged under 15 were asked if they used childcare, intended as formal and informal childcare arrangements, only 32.9 % of men answered yes, compared to 50.5% of women. 40.8% of men have experienced at least once during the observation period of 2010/2020 the necessity to use childcare, women in this situation during the observation period are the 66%. To those who are not using childcare and are in paid employment, was asked what are the arrangements for the children whilst they are working. Overall, 50.3% of the male answered that the child or children are looked after by the husband/wife/partner and 56.1% of the male sample as experienced at least once this situation, and that they were in this situation in 92.9% of the observations. Only 32% of women are in the position in which is mostly the partner to look after the children, and around 33% of the female sample experienced at least once. Another interesting answer category is the one in which the respondent is only working during the school hours. Overall, 25.7% of women are in this situation, while only 6.4% of men are in the same condition. Women that at least once had to work exclusively during the school/kindergarten hours are 32.3%, while men in this situation at least once during the observation period are 7.7%.

**Figure 4.4** – Descriptive statistics of uses of childcare, and arrangements for child whilst working.

|                                                                          | Male          |         |               |             |                | Female        |         |               |             |                |
|--------------------------------------------------------------------------|---------------|---------|---------------|-------------|----------------|---------------|---------|---------------|-------------|----------------|
|                                                                          | Overall Freq. | Percent | Between Freq. | Percent     | Within Percent | Overall Freq. | Percent | Between Freq. | Percent     | Within Percent |
| <b>Uses child care</b>                                                   |               |         |               |             |                |               |         |               |             |                |
| yes                                                                      | 191           | 32.9    | 146           | 40.8        | 76.6           | 10966         | 49.5    | 4765          | 66.0        | 69.3           |
| no                                                                       | 390           | 67.1    | 277           | 77.4        | 88.9           | 11197         | 50.5    | 5486          | 76.0        | 71.3           |
| Total                                                                    | 581           | 100     | 423           | 118.2       | 84.6           | 22163         | 100     | 10251         | 142.1       | 70.4           |
|                                                                          |               |         | 358           |             |                |               |         | 7216          |             |                |
| <b>Other arrangements for child whilst working</b>                       | Overall Freq. | Percent | Between Freq. | Percent     | Within Percent | Overall Freq. | Percent | Between Freq. | Percent     | Within Percent |
| looked after by husband/wife/partner old enough to look after themselves | 165           | 50.3    | 138           | <b>56.1</b> | <b>92.9</b>    | 2754          | 32.0    | 1857          | 38.8        | 77.6           |
| I only work during school hours                                          | 92            | 28.1    | 81            | 32.9        | 84.3           | 2149          | 25.0    | 1735          | 36.2        | 75.8           |
| I work at home                                                           | 21            | 6.4     | 19            | 7.7         | 78.1           | 2207          | 25.7    | 1549          | <b>32.3</b> | 72.0           |
| other type of arrangement                                                | 14            | 4.3     | 12            | 4.9         | 72.2           | 298           | 3.5     | 227           | 4.7         | 64.6           |
|                                                                          | 36            | 11.0    | 33            | 13.4        | 78.8           | 1191          | 13.9    | 1064          | 22.2        | 72.8           |
| Total                                                                    | 328           | 100     | 283           | 115.0       | 86.9           | 8599          | 100     | 6432          | 134.2       | 74.5           |
|                                                                          | n.            |         | 246           |             |                | n.            |         | 4792          |             |                |

### 4.3.1.3 Domestic Division of Labour

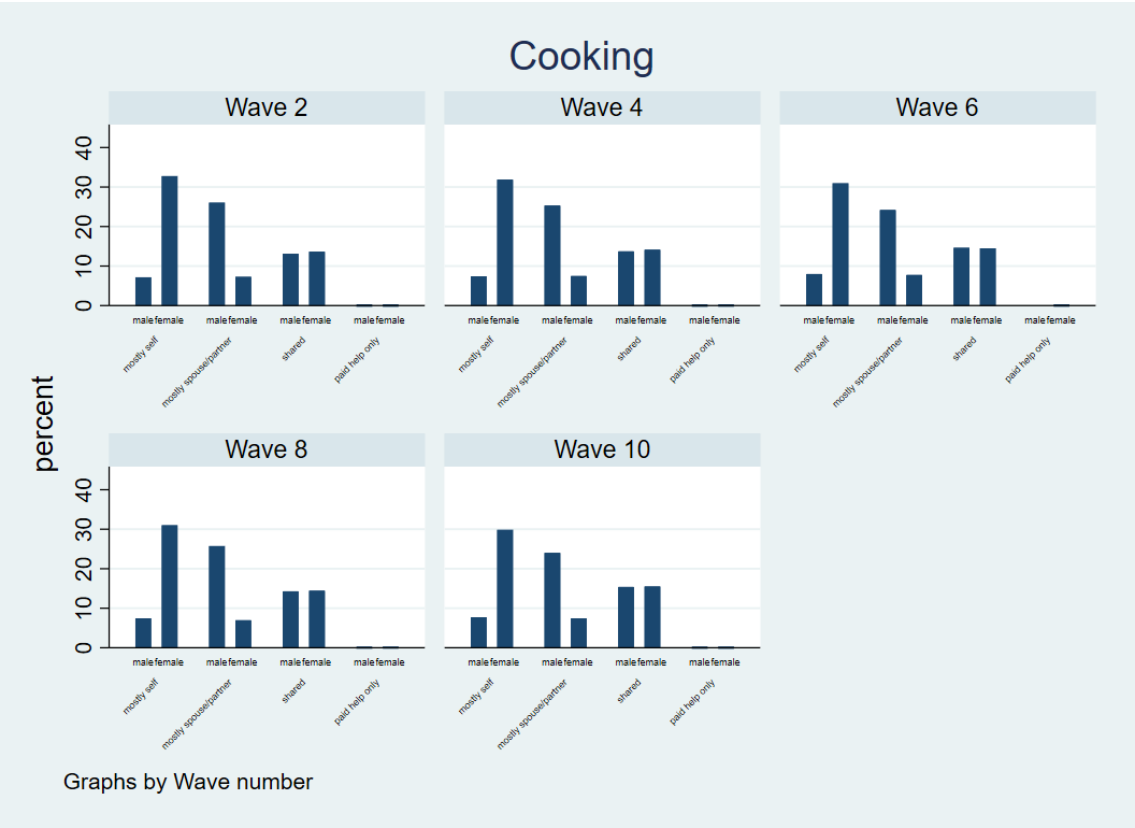
The distribution of the domestic division of labour is now shown (Figure 4.5). This module takes in consideration only the married couples, those in a civil partnership or cohabitating with a partner which need to be coresident in the household. For men, the grocery shopping is overall mostly done by the spouse/partner (43.1%), followed by being shared with the partner (41.1%), and only the 15.7% of men declare to do it mostly by themselves. The between variation tell us that 64.5% of men had shared grocery shopping at least once during the observation period that goes from 2010 to 2020, 60.7% of men have declared at least once that their partner is in charge of the grocery shopping and 26.81% had at least once declared to be the one. Finally of those ever declaring that the partner was doing the grocery shopping were in this situation in 70.2% of the observations. For women, instead, overall grocery shopping is done mostly by themselves (53.2%), followed by shared with the partner (34.7%) and only 12.1% by their partner.

**Figure 4.5** - Descriptive statistics of grocery shopping, cooking and cleaning.

|                         | Male    |             |         |             |         | Female  |             |         |             |         |
|-------------------------|---------|-------------|---------|-------------|---------|---------|-------------|---------|-------------|---------|
|                         | Overall |             | Between |             | Within  | Overall |             | Between |             | Within  |
| <b>Grocery shopping</b> | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| mostly self             | 5561    | 15.7        | 2767    | 26.8        | 57.4    | 21466   | 53.2        | 7934    | <b>69.3</b> | 75.6    |
| mostly spouse/partner   | 15329   | 43.1        | 6260    | <b>60.7</b> | 70.2    | 4876    | 12.1        | 2526    | 22.1        | 53.4    |
| shared                  | 14618   | 41.1        | 6660    | 64.5        | 64.9    | 13992   | 34.7        | 6554    | 57.2        | 62.5    |
| paid help only          | 26      | 0.1         | 26      | 0.3         | 33.0    | 25      | 0.1         | 24      | 0.2         | 34.8    |
| Total                   | 35534   | 100         | 15713   | 152.3       | 65.7    | 40359   | 100         | 17038   | 148.8       | 67.2    |
|                         | n.      |             | 10319   |             |         | n.      |             | 11452   |             |         |
|                         | Overall |             | Between |             | Within  | Overall |             | Between |             | Within  |
|                         | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| <b>Cooking</b>          |         |             |         |             |         |         |             |         |             |         |
| mostly self             | 5717    | 16.1        | 2731    | 26.4        | 59.5    | 23776   | 58.9        | 8394    | <b>73.3</b> | 79.9    |
| mostly spouse/partner   | 19043   | 53.6        | 7096    | <b>68.7</b> | 78.3    | 5597    | 13.9        | 2707    | 23.6        | 59.3    |
| shared                  | 10771   | 30.3        | 5212    | 50.4        | 60.4    | 10944   | 27.1        | 5396    | 47.1        | 58.1    |
| paid help only          | 22      | 0.1         | 21      | 0.2         | 38.2    | 26      | 0.1         | 25      | 0.2         | 35.8    |
| Total                   | 35553   | 100         | 15060   | 145.8       | 68.6    | 40343   | 100         | 16522   | 144.3       | 69.3    |
|                         | n.      |             | 10333   |             |         | n.      |             | 11450   |             |         |
|                         | Overall |             | Between |             | Within  | Overall |             | Between |             | Within  |
|                         | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent |
| <b>Cleaning</b>         |         |             |         |             |         |         |             |         |             |         |
| mostly self             | 3657    | <b>10.3</b> | 2180    | 21.1        | 49.2    | 23987   | <b>59.6</b> | 8762    | 76.5        | 77.1    |
| mostly spouse/partner   | 17902   | 50.5        | 7180    | 69.5        | 71.9    | 3075    | 7.6         | 1871    | 16.3        | 47.1    |
| shared                  | 12748   | 36.0        | 6223    | 60.2        | 60.9    | 11702   | 29.1        | 5889    | 51.4        | 57.8    |
| paid help only          | 1158    | 3.3         | 651     | 6.3         | 47.9    | 1500    | 3.7         | 836     | 7.3         | 49.2    |
| Total                   | 35465   | 100         | 16234   | 157.1       | 63.7    | 40264   | 100         | 17358   | 151.5       | 66.0    |
|                         | n.      |             | 10336   |             |         | n.      |             | 11456   |             |         |

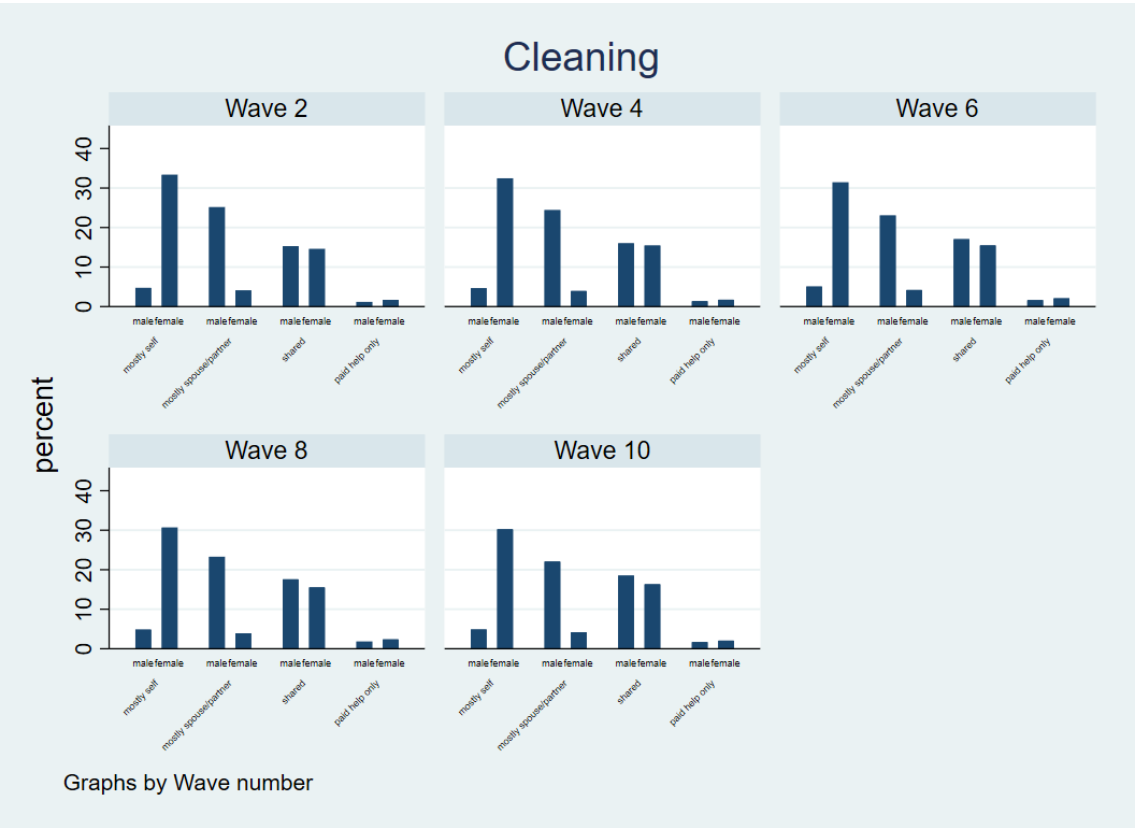
Women that at least once during the observation period were in charge of the grocery shopping are the 69.3% of the female sample, while the percentage of women that declared that their partner was doing the shopping at least once during the observation period is the 22.1%. Finally, of those ever declaring that their partner was doing the grocery shopping, they were in this situation in 53.4% of the observations. When looked at the task of cooking, again we see a strong gender difference. Overall, 59% of women declare to be the main cook at home, while only 16.1% of the men does, the percentage of declaring that both are sharing the task is similar around 30%. Women declare that 13.9% of their partner is the main cook at home while men declare that 53.6% is their partner to do so. In the case of men, the 68.7% of men has been at least once in the position in which their partner oversees cooking, and of those in they have been in this situation in 78.3% of the observations. Similarly, we see that women that declare to have been at least once the main cooker at home are the 73.3% and of those, the ones in this situation have been in this situation in 79.9% of the observations. Figure 4.6 shows the distribution of the cooking tasks across the waves.

**Figure 4.6** – Distribution of cooking across waves.



Cleaning the house, again, is a task performed mostly by women. Women that overall perform this task alone are the 59.6% of the sample compared to only the 10.3% of men. Women affirm to share this task with partner are 29% of the female sample, and men who share cleaning with their spouse or partner are the 36%. Men that have stated at least once that their partner is taking care of the cleaning of the house are the 69.5%, while women that have declared at least once that their partner is to only one cleaning the apparent are the 16.3%. In figure 4.7 is reported the distribution of the cleaning duties across waves.

**Figure 4.7** – Distribution of cleaning across waves.

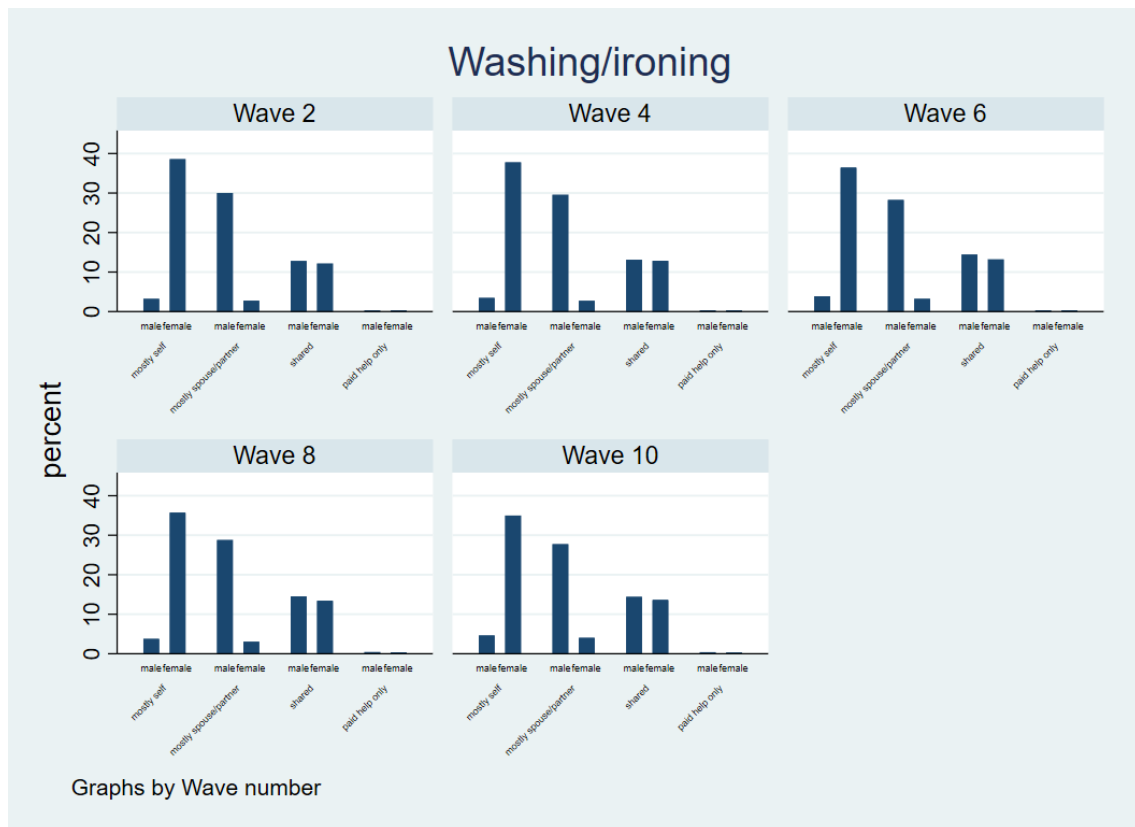


**Figure 4.8** - Descriptive statistics of washing/ironing, childcare and household financial decision.

|                                     | Male             |            |                  |             |                   | Female           |         |                  |             |                   |
|-------------------------------------|------------------|------------|------------------|-------------|-------------------|------------------|---------|------------------|-------------|-------------------|
|                                     | Overall<br>Freq. | Percent    | Between<br>Freq. | Percent     | Within<br>Percent | Overall<br>Freq. | Percent | Between<br>Freq. | Percent     | Within<br>Percent |
| <b>Washing/ironing</b>              |                  |            |                  |             |                   |                  |         |                  |             |                   |
| mostly self                         | 2848             | <b>8.0</b> | 1848             | 17.9        | 46.3              | 27839            | 69.1    | 9488             | <b>82.9</b> | 82.3              |
| mostly spouse/partner               | 21894            | 61.7       | 7971             | 77.2        | 78.7              | 2367             | 5.9     | 1531             | 13.4        | 45.0              |
| shared                              | 10469            | 29.5       | 5168             | 50.0        | 60.5              | 9868             | 24.5    | 4984             | 43.5        | 58.0              |
| paid help only                      | 249              | 0.7        | 184              | 1.8         | 42.0              | 227              | 0.6     | 170              | 1.5         | 37.1              |
| Total                               | 35460            | 100        | 15171            | 146.9       | 68.1              | 40301            | 100     | 16173            | 141.2       | 70.8              |
|                                     | n.               |            | 10329            |             |                   | n.               |         | 11452            |             |                   |
| <b>Responsible for childcare</b>    |                  |            |                  |             |                   |                  |         |                  |             |                   |
| mostly self                         | 470              | 2.8        | 349              | <b>5.9</b>  | 45.9              | 9817             | 53.0    | 4502             | <b>70.8</b> | 74.4              |
| mostly spouse/partner               | 7584             | 45.1       | 3866             | <b>65.1</b> | 69.1              | 654              | 3.5     | 492              | <b>7.7</b>  | 45.4              |
| shared                              | 8658             | 51.4       | 4250             | 71.6        | 71.5              | 7918             | 42.8    | 4007             | 63.0        | 67.8              |
| paid help only                      | 122              | 0.7        | 110              | 1.9         | 62.3              | 131              | 0.7     | 111              | 1.8         | 65.3              |
| Total                               | 16834            | 100        | 8575             | 144.5       | 69.2              | 18520            | 100     | 9112             | 143.3       | 69.8              |
|                                     | n.               |            | 5936             |             |                   | n.               |         | 6360             |             |                   |
| <b>Household financial decision</b> |                  |            |                  |             |                   |                  |         |                  |             |                   |
| respondent                          | 6123             | 17.2       | 3286             | 31.8        | 56.1              | 5407             | 13.4    | 3091             | 27.0        | 54.5              |
| partner/spouse                      | 3948             | 11.1       | 2365             | 22.9        | 50.7              | 6285             | 15.6    | 3271             | 28.6        | 54.6              |
| both have equal say                 | 25494            | 71.7       | 9064             | 87.8        | 80.4              | 28665            | 71.0    | 9975             | 87.1        | 80.0              |
| Total                               | 35565            | 100        | 14715            | 142.5       | 70.2              | 40357            | 100     | 16337            | 142.7       | 70.1              |
|                                     | n.               |            | 10327            |             |                   | n.               |         | 11452            |             |                   |

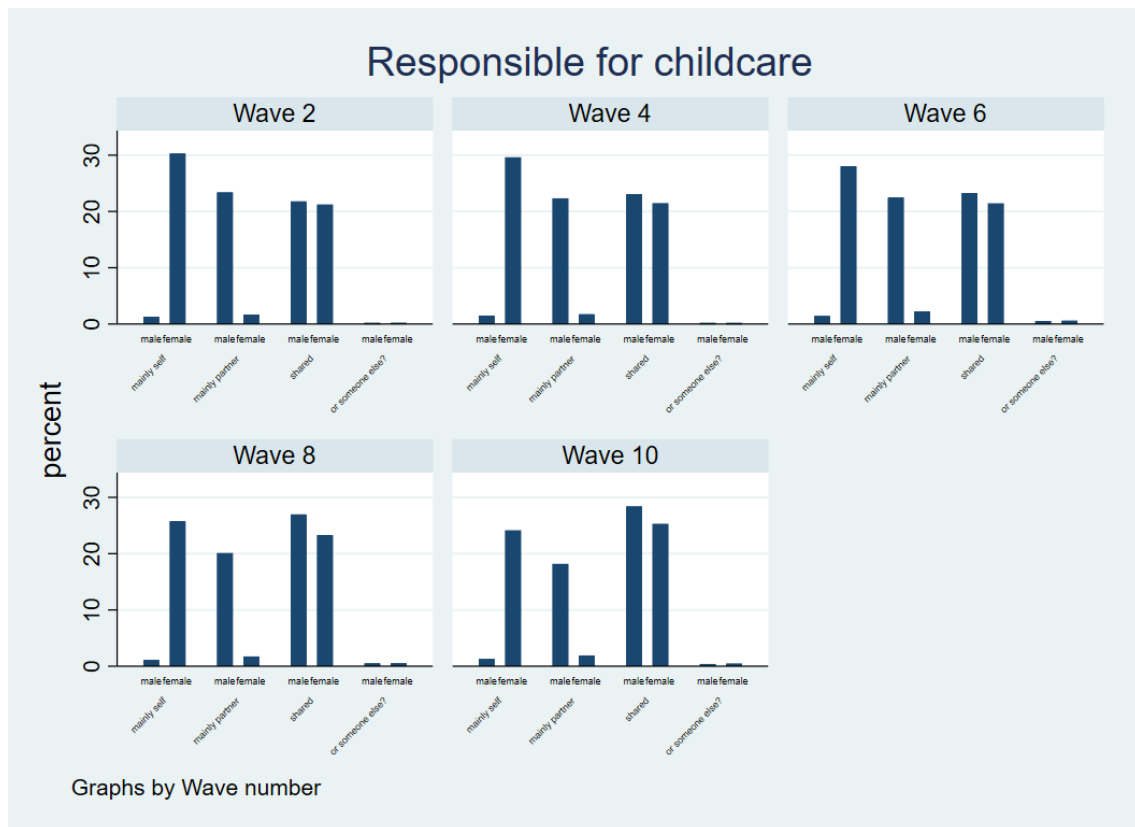
Similar results can be seen when looked at the task of washing the clothes or ironing (Figure 4.8). Overall, 61.7% of men is declaring that the partner takes care of this task, 29.5% share the task with the partner and only 8% does the task himself. But 20% of the male sample has shared washing and ironing at least once with the partner, and 77.2% of them have at least once been in the situation where is the partner to do so. Overall, 69.1% of women is doing the washing and ironing alone, 24.5% of them is sharing with the partner and 5.9% have a partner that does all the washing and ironing. The vast majority of women have been at least once in the situation where the task of washing and ironing was only done by themselves (82.9%), while 43.5% of them have at least once during the observation period shared the tasks with their partner. In figure 4.9 is reported the distribution across waves.

**Figure 4.9** – Distribution of doing the washing the clothes and ironing across waves.



When a child is present in the house and the respondents are asked who is responsible for childcare (Figure 4.8), overall 51.4% of men and 42.8% of women share this task with the partner. However, during the observation period 65.1% of the male sample at least once answered that the partner takes care of the children, on the same line 71.6% of female at least once was the only caretaker of the child. Only 5.9% of men answered at least once that they are the one mostly responsible for childcare, while women in this situation are the 70.8% of the female sample. In figure 4.10 is reported the distribution of who is responsible for childcare across waves.

**Figure 4.10** – Distribution of who is responsible for childcare across waves.



Regarding the financial decision (Figure 4.8), more than 71% of the sample have equal say with the partner in the household financial decisions and at least 87% of the sample has been at least once in the position to share the financial decisions with the partner, both for men and women. During the observation period that goes from 2010 to 2020, 31.8% of the male sample at least once declare to oversee the decisions on the finance of the household, while 27% of females sample are in this situation. 22.9% of the men assert at least once that the partner is the one in charge of the financial decision regarding the household, compared to 28.6% of the female sample. Finally, if we look at the hours spent on average performing housework per week (Figure 4.11), we see again a strong difference in the distribution between men and women. Overall, almost 50% of men perform only between 0 and 4 hours of housework, and 75.8% of them has been at least once in this category during the observation period. Overall, women in this situation are 18.5% of the female sample and during the observation period almost 39% of women have been in this category. During the observation period, almost 70% of women have been at least once performing housework for 10-19 hours a week. For more than 20 hours

**Figure 4.11** - Descriptive statistics of hours per week spent performing housework.

**Figure 4.12** – Distribution of hours per week spent on housework across waves.



### 4.3.2 Hybrid models

In this part, the results of the hybrid models are reported to estimate the association between hours spent performing care work on the relationship between mental health and precarious employment.

In first instance, for descriptive purpose, a model on the association between the hours spent performing care for elderly, sick or disabled people and mental health is reported (Figure 4.13). Two separate models are shown for male and female to better estimate the effect depending on the gender, similar to Chapter 2. It is shown that for a given female moving from a lower number per hours spent performing informal care work to a higher number of hours is statistically significantly associated to a worsening of mental health by -0.7. For men who on average, during the observation period from 2010 to 2020, had higher number of hours of unpaid care work is associated a worse mental health score (-0.9). Similarly, for women who on average during the observation period had a higher burden of care responsibilities is associated a worsening of mental health by -1.1 points.

**Figure 4.13** – Hybrid models of informal care work on mental health.

|                   | <b>Male</b>                      | <b>Female</b> |
|-------------------|----------------------------------|---------------|
| Care work we      | -0.2                             | -0.7***       |
| Care work be      | -0.9***                          | -1.1***       |
| Age we            | -0.3***                          | -0.2***       |
| Age be            | 0.1***                           | 0.1***        |
| Educational Level |                                  |               |
| Medium            | -0.5                             | 0.4           |
| High              | -1.0                             | 0.4           |
| Other             | -1.1                             | 0.3           |
| Constant          | 45.4***                          | 43.0***       |
| legend:           | * p<0.05; ** p<0.01; *** p<0.001 |               |

In the following models (Figure 4.14) the main analysis is reported. First are shown the models divided by gender of precarious employment and health as a reference, followed by the two models divided by gender once the hours of care work are included in the analysis. For a given female worker moving from a lower number of hours spent on unpaid care work to a higher number of hours is associated to a worsening of the mental health by -0.9. Once care work is taken in consideration, is shown that moving from a short-term contract to a longer-term contract is associated with a worsening of mental health by -3.4 point for female workers. While in the model with only precarious employment, job tenure was associated with a worsening of mental health both for men and women, respectively by 1.2 and 1.8.

Once care work is included in the analysis, we see that for those moving from a difficult financial situation to living comfortably is associated with a strong improvement of mental health, by 1.5 for men and 2.6 for women. In the previous model on the association between precarious employment and mental health, moving from a difficult financial situation to living comfortably was associated to an improvement of mental health, by 1.5 for men and 1.8 for women. Both male and female workers who on average, throughout the observation period, had a better perception of their financial situation had better mental health, by 4.3 for men and by 6.8 for women. Median wage again shows a peculiar effect. When care work is included in the analysis, we found that for men that during the observation period had wage above the median wage, the mental health got worse by -3.4. While in the models with only precarious employment, men that had wage above the median wage had worse mental health by -1.4, compared to men with lower wages.

In the model with care work, for women, entering a job with more autonomy is associated to an improvement of mental health by 1.2. Before including care work, entering a job with more autonomy was associated to an improvement of mental health both for men and women, respectively by 0.3 and 0.6. Finally, the presence of a union or staff association is associated to a worsening of mental health. Men who on average, throughout the observation period, were employed in a workplace where staff association of union were present, are reported to have worse mental health score by -1.8.

**Figure 4.14** – Hybrid models: models with precarious employment and models with care work.

|                            | Models with precarious employment |         | Models with hours of care work |                |
|----------------------------|-----------------------------------|---------|--------------------------------|----------------|
|                            | Male                              | Female  | Male                           | Female         |
| Care work we               |                                   |         | -0.3                           | <b>-0.9***</b> |
| Care work be               |                                   |         | -0.4                           | -0.4           |
| Duration we                | -0.5                              | -0.5    | -0.5                           | -0.7           |
| Duration be                | 1.5*                              | 1.5*    | -1.3                           | 2.3            |
| Part/Full time we          | 0.1                               | -0.5*   | -0.4                           | -1             |
| Part/Full time be          | 1.0*                              | -0.4    | 1.9                            | -0.9           |
| Job Tenure we              | -1.2**                            | -1.8*** | 0.5                            | <b>-3.4**</b>  |
| Job Tenure be              | -1.4*                             | 1       | -2.4                           | -3.2           |
| Financial situation we     | 1.5***                            | 1.8***  | <b>1.5*</b>                    | <b>2.6***</b>  |
| Financial situation be     | 4.6***                            | 5.9***  | <b>4.3***</b>                  | <b>6.8***</b>  |
| Median wage we             | 0.7                               | -0.5    | 2.3                            | 0.1            |
| Median wage be             | -1.4**                            | -0.3    | <b>-3.4*</b>                   | -0.1           |
| Pension we                 | -0.2                              | -0.6*   | -0.9                           | -0.6           |
| Pension be                 | -1.0**                            | -0.6    | -0.9                           | -1.3           |
| Rise we                    | 0.1                               | 0       | 0.2                            | -0.2           |
| Rise be                    | 0.7*                              | 0.2     | 1.2                            | -0.5           |
| Bonus we                   | 0.4**                             | 0.4     | 0.2                            | 0.1            |
| Bonus be                   | 0.3                               | 0.4     | 0.6                            | 0.6            |
| Performance related pay we | -0.3                              | -0.3    | -0.6                           | -0.3           |
| Performance related pay be | -0.6*                             | -0.9*   | -1.2                           | 0.4            |
| Autonomy we                | 0.3*                              | 0.6**   | 0.6                            | <b>1.2**</b>   |
| Autonomy be                | 0.5*                              | 0.5     | 0.1                            | 0.9            |
| Union we                   | 0                                 | -0.1*   | -0.3                           | 0              |
| Union be                   | -0.9***                           | -0.1    | <b>-1.8*</b>                   | -0.4           |
| Flexible working hours we  | 0.1                               | 0.5**   | -0.2                           | 0.4            |
| Flexible working hours be  | -0.1                              | -0.4    | 0.6                            | -1             |
| Age we                     | -0.2***                           | -0.2*** | -0.3***                        | -0.1           |
| Age be                     | 0.1***                            | 0.1***  | 0.1***                         | 0.1***         |
| Educational Level          |                                   |         |                                |                |
| Medium                     | -0.9                              | -0.3    | -0.9                           | -1.3           |
| High                       | -1.7***                           | -1      | -1.5                           | -1.8           |
| Other                      | -0.5                              | -0.4    | 0.4                            | -1.1           |
| Constant                   | 46.2***                           | 40.4*** | 48.3***                        | 45.2***        |
| legend:                    | * p<0.05; ** p<0.01; *** p<0.001  |         |                                |                |

Finally, we report three additional hybrid models (Figure 4.15). From the previous results we suspect to be an interaction between gender and the number of hours spent performing care work, hence it is shown a model in which is possible to assess this hypothesis. To do so more clearly, it is needed a single model with male and female together, therefore, this model is placed side by side with the precarious employment model and the model with care work in which gender is included as a control variable. In model 1, women's mental health is on average worse than men's by 1.9 points. While in model 2, when care work is taken in consideration, women's mental health is on average worse than men's by 1.5 points. A given man (reference category), in model 2, moving from a lower burden of hours spent caring for an elder or sick person to a higher amount is associated with a worsening of the mental health score by -0.7, and men who on average during the observation period had to perform a higher number of hours per week caring had a worse mental health by -0.4 for increments of hours. In model 3 are introduced interactions between the amount of care work and the gender, showing the difference between man and women who were performing the smaller number of hours of care work (between 0 and 4 hours per week), showing that women's mental health is on average worse than men's by 1.5 points. In addition, for women, higher care duties lead to a higher worsening of mental health compared to men, moving by each additional unit of care duties (from 5 to 9 hours per week, 10 to 19 hours, and more than 20 hours per week) is associated with -0.8 points of mental health for women, whereas only 0.4 for men (not statistically significant). Also, women who on average throughout the observation period have higher care duties have worse mental health than women with less care duties, by -0.4 for each extra unit of care duty. This difference is smaller and not statistically significant for men. So essentially, the gender divide in mental health widens by amount of care duties performed. Once the informal care work is included in the analysis, is shown that part of the gender differences on mental health are explained by the hours spent performing informal care work, as the coefficient of gender decreases from model 1 to model 2, and in particular that gender differences are the lowest among people without care duties and increase the higher the care duties. In addition, both in model 2 and with the interactions in model 3, when care work is included, most employment conditions lose the significance they had in the previous model, showing how care work partly explains the association between some precarious employment characteristics and mental health.

**Figure 4.15** – Hybrid models: Precarious employment, care work on mental health and interactions.

|                            | <b>Model 1</b>                   | <b>Model 2</b>   | <b>Model 3</b>      |
|----------------------------|----------------------------------|------------------|---------------------|
|                            | <b>Precarious employment</b>     | <b>Care work</b> | <b>Interactions</b> |
| Care work we               |                                  | <b>-0.7***</b>   |                     |
| Care work be               |                                  | <b>-0.4*</b>     |                     |
| Care work#Male we          |                                  |                  | -0.4                |
| Care work#Male be          |                                  |                  | -0.3                |
| Care work#Female we        |                                  |                  | <b>-0.8***</b>      |
| Care work#Female be        |                                  |                  | <b>-0.4*</b>        |
| Gender - Female            | <b>-1.9***</b>                   | <b>-1.7***</b>   | <b>-1.5*</b>        |
| Duration we                | -0.5                             | -0.5             | -0.6                |
| Duration be                | 1.5**                            | 1.3              | 1.3                 |
| Part/Full-time we          | -0.3                             | -0.8             | -0.8                |
| Part/Full-time be          | -0.1                             | -0.3             | -0.3                |
| Job Tenure we              | <b>-1.5***</b>                   | -1.8             | -1.8                |
| Job Tenure be              | -0.2                             | <b>-3.0*</b>     | <b>-3.0**</b>       |
| Financial situation we     | 1.7***                           | 2.2***           | <b>2.2***</b>       |
| Financial situation be     | 5.3***                           | 5.9***           | <b>5.8***</b>       |
| Median wage we             | -0.2                             | 0.5              | 0.5                 |
| Median wage be             | -0.5                             | -0.6             | -0.6                |
| Pension we                 | -0.4                             | -0.7             | -0.7                |
| Pension be                 | <b>-0.8**</b>                    | -1.2             | -1.2                |
| Rise we                    | 0.1                              | -0.2             | -0.2                |
| Rise be                    | 0.4*                             | 0.3              | 0.3                 |
| Bonus we                   | 0.4**                            | 0.1              | 0.1                 |
| Bonus be                   | 0.3                              | 0.5              | 0.5                 |
| Performance related pay we | -0.3                             | -0.4             | -0.4                |
| Performance related pay be | <b>-0.7**</b>                    | -0.3             | -0.3                |
| Autonomy we                | 0.5***                           | 1.1**            | <b>1.1**</b>        |
| Autonomy be                | 0.5**                            | 0.5              | 0.5                 |
| Union we                   | -0.3                             | -0.2             | -0.2                |
| Union be                   | <b>-0.5*</b>                     | <b>-1*</b>       | <b>-1*</b>          |
| Flexible working hours we  | 0.3**                            | 0.2              | 0.2                 |
| Flexible working hours be  | -0.3                             | -0.4             | -0.4                |
| Age we                     | <b>-0.2***</b>                   | <b>-0.2***</b>   | <b>-0.2***</b>      |
| Age be                     | 0.1***                           | 0.1***           | 0.1***              |
| Educational Level          |                                  |                  |                     |
| Medium                     | -0.6                             | -1.3             | -1.3                |
| High                       | <b>-1.4***</b>                   | <b>-1.9*</b>     | <b>-1.9*</b>        |
| Other                      | -0.4                             | -0.4             | -0.4                |
| Constant                   | 44.4***                          | 47.0***          | 46.9***             |
| legend:                    | * p<0.05; ** p<0.01; *** p<0.001 |                  |                     |

## Discussion and Conclusions

The aim of this analysis was to show the gender differences in social reproductive tasks and to test whether the gender inequalities in the burden of unpaid care responsibilities explain the gender differences found on mental health and if they play a role in the association between precarious employment and mental health, using longitudinal data about the United Kingdom, in a time span of 10 years, from 2010 to 2020. Following the growing body of literature studying the effect of precarious employment on health (Benach et al., 2014; Benach and Muntaner, 2011; Benach et al., 2007; Jonsson et al., 2021; Koranyi et al., 2018; Lewchuk et al., 2008; Matilla-Santander et al., 2019; Padrosa et al., 2022; Ronnblad et al., 2019; Utzet et al., 2020; Virtanen et al., 2005), we analysed this relationship focusing on the gender differences, the effect of informal care work and trying to contribute to the extant literature using longitudinal data (University of Essex, Institute for Social and Economic Research, 2022) and using a multidimensional approach to measure precarious employment.

In the present analysis the main results found in the descriptive part were that when we look at the social reproductive tasks, most of the time there is a strong gender difference in the distributions.

For what concerns the **caring for a sick, disabled or elderly**, we found that when a person with necessity of care is present in the household, the care is often a shared between men and women, even if not necessarily by not the same number of hours. Instead, when the unpaid care is necessary for someone who is living outside the household the task is more often given to a woman than to a man. In addition, we found that with increasing the hours of caring per week, the percentage of women performing it is higher of the one of men. Finally, for those who are taking care of a sick or disabled kin and which are prevented in participating in paid employment is necessary to specify that due to the sample selection opted for the main analysis, in which we consider only those who have worked at least once during the 5 waves, the data do not represent those who were completely prevented to be in paid employment, for all the observation period, due to the caring responsibilities. This chapter aims to see the gender difference in the unpaid care work in relation to the employment condition and mental health, therefore, it was necessary to our analysis to exclude those who never worked. Said so, the data still

clearly shows an interesting pattern. Yet again, women have higher percentage of being more affected from the burden of the caring responsibilities, women who at least once during the observation period of 2010-2020 were unable to work as much as desired are the 28.9% of the female in the sample, compared to only 13.9% of men.

**People with children**, when asked which are the arrangements for the children whilst working, report that overall, 50% of the male answered that the children are looked by the partner compared to only 32% of women which are in the position in which is mostly the partner to look after the children. Same sex marriages and adoption by gay couples is possible in the whole United Kingdom but being the number undeniably smaller than for heterosexual couples, we can possibly value the previous information as in most cases, both when asked at the male and female sample, women are the one most in charge of childcare. In addition, overall 25.7% of women affirm to work only during the school hours, while only 6.4% of men affirm to be in the same condition. Women that at least once during 2010-2020 had to work exclusively during the school hours are 32.3%, while men in this situation at least once are the 7.7%.

Finally, when couples are asked the **domestic division of labour** is always confirmed that women are doing the biggest share of it, with the only exception to the financial decisions of the house. In this part was shown that the majority of the tasks related to social reproduction is performed by a larger part by women, with the only exception of taking the household financial decision, similarly that what was found in Moreira da Silva (2019), Pozzan and Cattaneo (2020) and Fraser (2016b).

Finally, in the hybrid modes was found, as hypothesized, that the **time spent on care work** is associated to a worsening of mental health, and that once the informal care work is included in the analysis of the association between precarious employment and mental health, is shown that part of the gender differences on mental health are explained by the hours spent performing informal care work. In the specific, gender differences are the lowest among people with little care duties and increase the higher the care duties.

In addition, we found that both for men and women some precarious employment dimensions that previously, in the analysis of the association between precarious employment and mental health, were shown to have an effect are not statistically significant anymore like duration of the contract, the pension, the flexible working arrangements, to have a salary which includes performance related pay and bonuses, and

being full-time, while for some variables - like the financial situation, job tenure, and autonomy - it exacerbates the effect. Yet again the **financial situation** is the employment condition which most influences the mental health of those considered in the model. Consequently, it can be said that the number of hours spent on unpaid care work explains part of the association between some of the characteristics of precarious employment and mental health.

Similarly to what was found by Benach et al. (2016), Menéndez et al. (2007), Boye (2011) and Dahlin and Härkönen (2013), we found that women, indeed, fall more often than men into precariousness and perform a higher burden of care work and task related to social reproduction. In addition, we found similar results like is shown by Bom and Stöckel (2021), informal care and the number of hours spent performing it have often a detrimental effect on women's health. Finally, in our analysis it was possible to confirm that care work partly explains the gender difference found in mental health as similarly found in Benach et al. (2016), Menéndez et al. (2007), Boye (2011) and Dahlin and Härkönen (2013).

Regrettably, this study is not free of **limitations**. To highlight some of the most important ones, it would have been ideal to have the possibility to construct a scale more similar to EPRES, both in terms of validation of the scale and comparability of the items and dimensions. In fact, from the dimensions EPRES we had to exclude vulnerability, because there were not present items valid to measure it in the data. In addition, a more similar scale would have made possible to compare this analysis with the other studies using EPRES and its adaptations and other data from other countries (Julià et al., 2017b; Jonsson et al., 2021; Padrosa et al., 2021; Vives et al., 2010). Furthermore, it would have been preferable to have more specific information on the time spent providing informal care. In fact, the first answer category of the variable is 0-4 hours per week. Although less than 4 hours per week it can be considered a small number of hours performing caring responsibilities, it would have been most useful to have information to distinguish those who perform few hours of care work per week from those who did not perform it at all. Finally, the main findings on informal care work are certainly noteworthy although the great limitation of the variable used to indicate care work is evident. In fact, this variable only indicates time spent carrying out the care of a sick, elderly, or disabled person, and does not take into account all other important aspects of social reproduction, like caring

of the children and all the social reproductive tasks as cooking, cleaning, etc. This analysis, therefore, does not have the ambition to be exhaustive on this front, precisely because of a lack of specific data, but it is intended to contribute and to give an initial perspective, in which the expected results are confirmed, and provides incentives for further studies both of analysis of existing data and of collecting more precise and timely statistical data to measure care work and social reproduction.

Nonetheless the present analysis has **several strengths**. The first one that can be noted is the use of a multidimensional measure to represent precarious employment. In the literature, in fact it is widely agreed that a multidimensional measure of precarious employment is better suited to measure the concept than a single item, when this is made possible by the data (Benach et al., 2014; Julià et al., 2017b; Kreshpaj et al., 2020; Padrosa et al., 2021; Vives et al., 2010), therefore, we tried to replicate an adaptation of The Employment Precarious Scale and its versions validated on different surveys and countries (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). Regrettably, it was not possible to build a similar scale with the data used, and therefore each dimension selected was used individually. Lastly, the use of longitudinal data, need to be considered one of the main strengths of this analysis especially because of the large time span and the lack in the literature of study this topic using longitudinal data. However, it is desirable that future research would have the possibility to analyse an even longer time span covering the post-pandemic to be able to take in consideration the effects of the pandemic in depth.

In conclusion, our analysis shows that with the increase of hours of unpaid care work is associated a worsening of mental health, especially for women. Informal care work, in addition to be performed by the larger part by women, has been confirmed to also have a negative effect on mental health of the female workers, partly explaining the gender differences found in mental health, in addition to moderating the association between precarious employment dimensions and mental health.



## **Chapter 5 - Informal Care Work and Precarious Employment during the Covid-19 outbreak**

### **Introduction**

The ongoing pandemic of Covid-19 and the economic downturn that derived from it, have had strong repercussions on employment conditions worldwide and people in precarious employment are among those mostly affected by the Covid-19 pandemic (Cubrich et al., 2022; Matilla-Santander et al., 2021).

Precarious employment is a social determinant of health, which is associated with several detrimental of health outcomes (Bodin et al., 2020; Benach et al., 2014), moreover precarious employment is not equally distributed across groups and is more widespread among disadvantaged and vulnerable groups (Matilla-Santander et al., 2021). Therefore, it is essential to understand on the impact of the Covid-19 pandemic on precarious employment and how new forms of precariousness are affected by the current crisis and how this impacts the health and well-being of workers.

Furthermore, the ongoing pandemic of Covid-19 showed us that we are not only witnessing a health crisis but also an economic crisis and a crisis of care. It is argued that the crisis of care is usually closely connected with a broader general crisis (Fraser, 2016b). Yet long before the pandemic, care work was already ripped out and priced out for many of those in need, hospitals got their funds cut off and care privatized, meanwhile multinational corporation made profits financialising care home, while the work in the care sector was performed by precarious employed (Chatzidakis et al., 2020). These transformations have left many countries health systems unprepared to cope with a crisis such as a pandemic. Consequently, the Covid-19 has exacerbated the pre-existing gender differences in social reproduction and increased for women the burden of informal care work (Stevano et al., 2021). Emerging data on the impact of Covid-19 suggest that women's lives are being affected more than men's lives (Stevano et al., 2021). In fact, there are three main scenarios in which women are most affected: employment status, infection risk and reproductive work. On the one hand, women outnumber men in occupational positions that are more exposed to contagion, such as in the health sector, nursing and care institutions, and old people's homes. Globally, women make up 77% of

the health workforce and are therefore more likely to be frontline health workers, in addition, they are also the majority of service staff in health facilities and as such are more likely to be exposed to the virus (United Nations, 2020). Furthermore, women are disproportionally overrepresented in precarious employment worldwide (Young, 2010; Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b; Matilla-Santander et al., 2021). The recession, caused by the current crisis, has been therefore renamed “*shecession*” because of the stronger impact on women (Kim et al., 2022).

The global Covid-19 crisis has again shown how the world economy is based on the invisible and unpaid work of social reproduction or care work. The burden of domestic and care work has increased exponentially over the past years, due to the closure of schools, which has brought the need for childcare, home-schooling, but also a greater need for care of elderly and sick relatives, and domestic work due to the inability, in many cases, to access external care services. Women, who, as we have seen, tend to have to perform this type of task more often than men, may in fact have had a greater problem reconciling work and care work, especially as they are also more often affected by precariousness and therefore more expendable than those with more stable and well-paid jobs.

The aim of the present analysis is to show how, during the Covid-19 outbreaks, the restriction imposed by the government to limit the spread of the virus, had an effect on precarious employment conditions, informal care work and the division of housework and to test whether possible the effects of mental health and how these effects changed between women and men. Using panel data from Understanding Society, the analysis is based on a sample of United Kingdom population (University of Essex, Institute for Social and Economic Research, 2021; University of Essex, Institute for Social and Economic Research, 2022). For the present analysis five waves of the Covid-19 data are selected, going from July 2020 to September 2021, which was connected to Wave 10 of the main survey with information before the start of the pandemic (2018-2019). The empirical section is divided in two, in the first part the distribution of the variables regarding precarious employment, the time per week spent performing informal care work, housework and childcare is shown, while in the second part, the hybrid models on the effect of hours spent performing informal care work on mental health are reported.

## 5.1 The effect of the Covid-19 outbreaks on Precarious Employment

The ongoing pandemic of Covid-19 and the economic downturn that derived from it, had repercussions on employment conditions worldwide, however people in precarious employment have been affected harder than those with a more stable employment (Cubrich et al., 2022; Matilla-Santander et al., 2021). According to ILO (2020a), during September 2020, 90% of the global workforce was impacted from the mandatory or recommended workplace closure and a countless number of individuals faced layoffs or reduction in their working hours. In addition, ILO (2020a) estimates an increase of individuals following in work-poverty due to the coronavirus crisis. The pandemic showed a clear distinction for workers: 1) those that can be defined as predominantly **white-collar**, that had the possibility to **work virtually** and thus maintain employment; 2) those seemed **essential**, who were therefore required to work outside, being consequently **more exposed to the risk of contagion**; 3) and finally, those considered **non-essential whose employment was terminated or reduced to the minimum** (Loustaunau et al., 2021, Cubrich et al., 2022).

It can be pointed out that there are at least five ways in which the ongoing pandemic will affect people in precarious employment and that will be felt globally:

1) Firstly, the precarious employment increased during the first months of the pandemic and will undoubtedly increase in the years after as similarly observed during the 2008 financial crisis. Therefore, as a consequence of precarious employment expansions, workers will be facing **long-term labour market disadvantages** (Matilla-Santander et al., 2021).

2) Precarious employment itself is going to get worse, leading workers in precarious employment to become eventually more precarious than ever. Indeed, precarious employment is characterised by limited bargaining power, making workers more exposed to **unfair treatment and exploitation** (Matilla-Santander et al., 2021).

3) Many people in precarious employment will become **unemployed without being officially dismissed**, e.g. because their contract is not renewed or their working hours are reduced to zero, making them ineligible for unemployment benefits (Matilla-Santander et al., 2021).

4) People in precarious employment will be exposed to more serious stressor and dramatic life changes that may lead to a rise in **stress, anxiety and depression**. Examples of such can be increasing difficulties to access healthcare, obtaining adequate health insurance (ILO, 2020b), maintaining adequate housing conditions, etc. (Matilla-Santander et al., 2021).

5) Finally, precarious employment might be a factor influencing the control over **generating new Covid-19 spreads** and people with a precarious employment are affected disproportionately by Covid-19 (ILO, 2020c). This was particularly true during the first waves of Covid-19 and before the arrival of the vaccines but is somehow still actual in most precarious employments nowadays. It has been pointed out that over half of low wage workers are either the primary earners or the sole earners of their household (Cubrich et al., 2022), and in addition, people in precarious employment do not have often proper access to paid sick leave and therefore feel pressured to still go to work while sick to avoid losing the income or the job – *presenteeism* (Cubrich et al., 2022; Matilla-Santander et al., 2021). This accelerates the unequal spread of Covid-19 (Ahmed et al., 2020) leading people in precarious employment and their families to be more subjected to the virus. In addition, people in precarious employment are often more exposed to a lack of appropriate safety measures and social distancing (ILO, 2020d; Matilla-Santander et al., 2021).

The pandemic and the present structure of labour market that from this have derived, has generated new shades in the definition of precariousness. Indeed, modern precarity has expanded to sectors that once were seen as secured - e.g., manufacturing, retail, and management consulting (Blustein et al., 2020; Cubrich et al., 2022). It is pointed out that precarity is non transient condition or a specific set of employment conditions, but rather a prevailing characteristic of the world labour force (Cubrich et al., 2022; Kalleberg, 2018). The Covid-19 outbreak has led us to the necessity to change our understanding of precarious employment and how to deal with it in the future (Cubrich et al., 2022). As pointed out by Loustaunau et al. (2021) people in precarious employment in their study have developed three additional effects connected to precarity: a) the **precarious stability**, or an increase in the predictability of hours and schedules followed by an increase in the unpredictability of tasks, b) increased **threats to body integrity/contagion** of the virus and c) **anxiety, fear and emotional labour** connected to the employment

conditions (Loustaunau et al., 2021). Emotional labour has been for long time a foundation of precarious employment, but the pandemic has introduced new and intensified emotions to precariously employed workers (Cubrich et al., 2022).

People in precarious employment are between those most affected by the Covid-19 (Cubrich et al., 2022; Matilla-Santander et al., 2021), being already challenged by low wages, lack of stability, no or small access to benefits and resources, and now facing the new challenges emerged from the crisis, impacting even more the health and well-being of the individual (Cubrich et al., 2022). As previously mentioned, precarious employment is a social determinant of health, which is associated with several detriment of health outcomes (Bodin et al., 2020; Benach et al., 2014). Moreover, as seen before, precarious employment is not equally distributed and is more widespread among marginalized and vulnerable groups (Matilla-Santander et al., 2021). The social categorization of marginalized groups, such as race, class, gender, sexuality, ethnicity, and ability are interconnected and therefore united to create unique forms of disadvantages and inequalities through overlapping system of power and oppression (Collins, 2015; Cubrich et al., 2022). For these people, the **inequalities add one to the another**, generating systematic differences in health and well-being outcomes in already disadvantaged clusters (Bodin et al., 2020; Matilla-Santander et al., 2021). In fact, several studies called attention on the unequal economic impact of the Covid-19 on lower wage workers, and how it this has introduced additional challenges for workers of colour, women, immigrants, people with disabilities, and others belonging to marginalized groups (Cubrich & Tengesdal, 2021; Cubrich et al., 2022; Kantamneni, 2020; Mishra & Cousik, 2021). Therefore, it is necessary to look at precarious employment during the pandemic from an intersectional point of view (Cubrich et al., 2022). The Covid-19, as an example, has called out attention to the already existing systematic inequalities and prejudice based on race, in fact China was the epicentre of Covid-19 by many and during the first period of the pandemic Chinese people and people with Asian traits faced heightened level of discrimination in Europe and USA (Cubrich et al., 2022; Kantamneni, 2020). As an example, in the early pandemics nearly 30% of Americans blamed China and Chinese descended for the emergence of the virus (IPSOS, 2020). As a results, people with Asian traits reporter an increase of discrimination in the workplace (Cubrich et al., 2022). In addition, the Covid-19 brought different economic impact on for people of another

ethnicity. In the US, Black people and Latinos people are disproportionally represented in sector most impacted by social distancing such as restaurant, bars, etc. (Bureau of Labor Statistics, 2022; Cubrich et al., 2022). This leads to experience higher rates of unemployment and wage reduction than for the white workers.

In addition, gender inequality across a variety of domains has been intensified because of the Covid-19. Some examples are health and well-being, burden of care work and childcare, work, wages, relational violence (Fisher & Ryan, 2021; Cubrich et al., 2022). Women are affected more than men by the pandemic because are more often than men employed in precarious positions. The asymmetrical job loss experienced is partly due to the fact that women are being overrepresented in the industries that have been hardest hit by the pandemic (Milliken et al., 2020). However, those who have young children are particularly affected and experience a magnified version of those negative influences on health at home, as such have lost their jobs more often than men with young children (Cubrich et al., 2022; Dias et al., 2020) and need to perform more childcare hours than men (Johnston et al., 2020). These effects results even stronger for single mothers which are more vulnerable to the consequences of job loss (Milliken et al., 2020). The improvements towards gender equality in the job market slowly conquered were quickly delated because of the pandemic, especially for Black women (Cubrich et al., 2022). The recession, caused by the current crisis, has already been baptised with the neologism “*shecession*,” to emphasise the ‘female face’ of the current recession, as opposed to, the 2008 crisis that affected male-dominated sectors: finance, real estate, construction, and then manufacturing (Kim et al., 2022). Mothers of young children are reported to spend as much as twice the hours than before the pandemic performing childcare, intensifying the existing gap, with men that were performing less than half of the time of them in childcare even before the pandemic (Johnston et al., 2020). Frequently, those additional hours of childcare are subtracted from the worktime. Collins et al. (2021) shows how mothers have experienced weekly reduction of working hours, while instead working hours of fathers have been largely unaffected (Collins et al., 2021). They estimated the gender gap in work hours was of 20-50% (Collins et al., 2021). Therefore, we find it necessary to study precarious employment during the pandemic focusing on the gender differences and using an intersectional point of view. As pandemics are predicted to become more likely in the

coming years is increasingly important to understand how new forms of precariousness are impacted by crisis and how this impacts the health and well-being of workers.

## 5.2 The Crisis of Care during the Covid-19 pandemic

Historically, women are doing the largest share of unpaid care work prior the onset of Covid-19 (Fraser 2016b) and is widely argued that the present crisis and the subsequent shutdown we experienced, have resulted in increasing this burden (Power, 2020). This will likely have negative impact on women lives for several years without proactive intervention (Power, 2020). In fact, the world economy would not function without the informal and unpaid care work. We have seen that the social reproduction or care economy is often describes as the work necessary to maintain everyday life such as the creation and maintenance of social bonds, taking care of the children, caring for the elderly, cleaning, cooking, etc. (Fraser, 2016a; Laslett & Brenner, 1989), and can be divided into the formal and therefore paid care work, and the informal care work performed without an economic remuneration in return. Most of this work has been historically assigned to women, it is estimated that globally 75% of unpaid care and domestic work is performed by women (Power, 2020). In addition, unpaid care work has a negative impact on women participation to the labour market. It is estimated that 41% of those currently recorded as inactive are not part of the labour market because of their unpaid care responsibilities (Power, 2020). To participate in the labour market, women are often employed in flexible employment such as part-time jobs which make it a more manageable to combine the labour market participation and informal care work (Power, 2020).

Nancy Fraser (2016b) theorises that we are living a crisis of care produced by financial capitalism. In fact, financial capitalism the state serves the interest of the private sector resulting in an intensification of the contrast between economic production and social reproduction. This has led **the household to be the responsible for the provision of welfare**, as the state is not sufficiently providing affordable to everyone care anymore (Cooper 2017; Razavi 2011). The **privatization of long-term social reproduction** is strictly connected to the privatization and marketization of healthcare systems (Stevano et al., 2021). The state privatizations increased the cost of health and education, increasing

the burden of reproductive work that need to be performed inside the households. This can be called a process of *(re)privatization of social reproduction* (Bakker 2007). There is an additional gendered inequalities in the healthcare provisioning that has produced a disproportionate impact on women that have been more affected by the negative consequence of healthcare privatization (Gideon 2008). The **crisis of care** was already in the acute phase in the last forty years, as governments accepted neoliberal capitalism' of profit making in the sector. In fact, since the 1980s, most notoriously under Margaret Thatcher in the United Kingdom, was established that care in all its forms was mostly a matter of the individuals (Chatzidakis et al., 2020). During the pandemic we saw how **the (re)privatization of social reproduction has led to reduce the ability to contain the pandemic**, especially in hospital and nursing homes leaving health workers deprived of the most essential personal protective equipment need. Consequently, the undermine of care work has a long history, devaluing the care work both formal and informal, which is, in both ways, mostly performed by women (Chatzidakis et al., 2020). The pandemic of Covid-19 has exposed the pillage perpetuated by neoliberal markets, with the result that the majority of the population was **less able, at the very same time, to provide and be provided care**. These transformations have left many countries health systems unprepared to cope with a crisis such as a pandemic. Consequently, the Covid-19 has exacerbated the critical situation in terms of social economic inequalities and increased the burden for women of social reproduction (Stevano et al., 2021). These transformations of care and essential welfare support were responsible for the calamitous impact of the pandemic in the United Kingdom (Chatzidakis et al., 2020). In the United Kingdom are estimated to be, currently, 1.5 million older people deprived of the care service they would need, in addition to an increase rate of suicide and waiting time for mental health therapy, despite more funding being available (Chatzidakis et al., 2020). The ongoing pandemics, in fact, has forced the right-wing UK government to provide additional forms of social support, however the deepen inequalities present have made it inevitable that those already in the most vulnerable categories, particularly the elderly, women, the poor and the disabled, were hit the hardest (Chatzidakis et al., 2020). The exponential privatisation of health has catastrophic consequences, not only in the unreadiness for the spread of Covid-19 but is also a problem for democracy. In fact, these caring arrangements are untrustworthy and discriminatory, producing further inequalities. Indeed, the nuclear

family should not be considered as the basic unit of care, nor the solution is found in the market outsourcing, as in both cases women are the most affected ones, contributing to the exponential growth of gender inequalities in both paid and unpaid care work (Chatzidakis et al., 2020). In the United Kingdom, women and ethnic minorities are disproportionately affected by the crisis due to the pandemic, this is because they are overrepresented among essential workers. Data shows that 77% of healthcare workers in the UK are women, 77% of high-risk labour force are women, in addition of being 98% of those classified at high-risk in low-paid jobs, using the Jobs at Risk Index, which assesses which workers are more at risk in terms of exposure to the disease and physical proximity to others (Stevano et al., 2021). In addition, during the early stage of the pandemic the amount of unpaid care work has increase and with children out of school, the increased necessity for care services for elderly and the overwhelmed health service, these will weight burden more on female “shoulders.” For those with the privilege to work remotely, the Covid-19 has not only highlighted the importance of housing inequalities, access space and silence, internet connection but also the possibility to delegate or perform the childcare or care work (Cubrich et al., 2022). Even those remotely faced strong inequalities in the distribution of care work and childcare with strong impact on their employment production and stability (Cubrich et al., 2022). Dual-earner couples have to decide which one take the burden to care the children, and this usually fall on the person with the lower rewarding and stable job, which is usually the female (Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b, Matilla-Santander et al., 2021). Thus, childcare has been falling more heavily on women because of the persistence of traditional gender roles and the structure of female labour participation. In fact, women are more likely to be performing part-time jobs and have less remunerative employment than men (United Nations, 2020). The additional caring responsibilities reduce productivity impacting future promotion and incomes and the gendered consequences of the pandemic enhance other existing inequality. In consequence, women in the United States are reported to be more often laid off, furloughed or received a pay cut since the beginning of the pandemic and the situation for women of colour seems even more challenging (Power, 2020). According to a large study in the United Kingdom, working mothers with two children were found under pre-pandemic condition to be 40% more stressed than the average person (Chandola et al. 2019). The stress during the pandemic

as increased in fact in the United States 32% of fathers report a worsening of their mental health compared to 57% of mothers, showing how women bear a larger burden of it (Power, 2020). Consequently, family with children or people in need for care services are inexorably hit hardest (Stevano et al., 2021). To prevent further deepening of gender inequality, it is necessary and possible to take account of the additional unpaid care burden on women during and after the pandemic, especially considering that we are still experiencing higher level of care burden than in the pre-pandemic period (Power, 2020).

## **5.3 Data and methods**

### **5.3.1 Data and design**

The present analysis has a longitudinal design, using data collected during the Covid-19 outbreak from Understanding Society (University of Essex, Institute for Social and Economic Research, 2021). The University of Essex collected the data from April 2020 to September 2021 to cover the changing impact of the pandemic on the welfare of UK individuals, family and community. The short web and telephone survey was administered on a subsample of the main survey of Understanding Society (University of Essex, Institute for Social and Economic Research, 2022), that was used in Chapter 2 and 4. This made possible to connect the data about the pandemic to the last waves of the main survey. For this analysis were selected from the Covid-19 data: wave 4 collected in July 2020, wave 6 collected during November 2020, wave 7 from January 2021, wave 8 from March 2021 and wave 9 collected during September 2021, which were connected with the information of Wave 10 of the main survey which has information about the 2018-2019 (and the first months of 2020 for a small part of the sample). The decision to exclude the other waves of the Covid-19 survey was made because they did not include suitable variables about informal care work. The result is, therefore, an unbalanced household panel conducted in the United Kingdom (University of Essex, Institute for Social and Economic Research, 2021; University of Essex, Institute for Social and Economic Research, 2022).

### 5.3.2 Variables

In the descriptive part of the analysis, the variables selected are divided in three subgroups. The first one is the one about **precarious employment**. In the data collected there are only few variables used for measuring the precarious employment, therefore it was not possible to measure the effect of precarious employment on mental health as previously done in Chapter 2 and Chapter 4. Following the dimensions of the original Employment Precarious Scale (EPRES) and the EPRES-E (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010), in the data are present variables to describe the job tenure, whether the job is full-time or part-time, the subjective financial situation, the wage, and the presence of flexible working arrangements at work. There is not any valid information to measure the dimensions of rights, vulnerability and disempowerment which are instead present in the EPRES and EPRES-E (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). All the variables previously listed are present in wave 10 of the main survey about 2018/2019 (University of Essex, Institute for Social and Economic Research, 2022) while some of them are not collected in each wave of the Covid-19 data (University of Essex, Institute for Social and Economic Research, 2021). For job tenure we have the information in wave 7, 8 and 9 of the Covid-19 data; part/full-time and the wage is present in all waves selected, while the financial situation is present in wave 4, 6, 8 and 9. Finally the information about flexible working arrangements is present only in wave 7, in addition to the main survey (University of Essex, Institute for Social and Economic Research, 2022). In figure 5.1, is reported in which waves each variable is present. The first dimension, temporariness includes variables concerning whether the job is part-time or full-time and the job tenure. Job tenure is recorded in two year or less and more than two years, to take into account those who started doing a new job during the pandemic. Part-time and full-time, considering part-time working less than 35 hours per week, which is to be considered part-time in the UK<sup>5</sup>. The second dimension, consist of the perceived financial situation and wage. Similarly to what was done in chapter 2 and 4 and in Padrosa et al. (2021), and García-Pérez et al. (2020) we recorded wages as those earning less than the 60% of the median and those earning equal or more than the 60% of the mean. The

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<sup>5</sup> <https://www.gov.uk/part-time-worker-rights>

financial situation is coded “just getting by or finding it difficult” and “living comfortably or doing all right.” Finally, the last dimension consists of the presence at the workplace of informal flexible working arrangements.

**Figure 5.1** – First group of variables.

|                                | Wave 10 M.S.<br>2018-2019 | Wave 4<br>July 2020 | Wave 6<br>November 2020 | Wave 7<br>January 2021 | Wave 8<br>March 2021 | Wave 9<br>September 2021 |
|--------------------------------|---------------------------|---------------------|-------------------------|------------------------|----------------------|--------------------------|
| <b>First group</b>             |                           |                     |                         |                        |                      |                          |
| Job tenure                     | x                         |                     |                         | x                      | x                    | x                        |
| Part/full-time                 | x                         | x                   | x                       | x                      | x                    | x                        |
| Subjective financial situation | x                         | x                   | x                       |                        | x                    | x                        |
| Wage                           | x                         | x                   | x                       | x                      | x                    | x                        |
| Flexible working arrangements  | x                         |                     |                         | x                      |                      |                          |

The second group of variables includes how **home-schooling, and childcare** changed employment hours and work patter, and in cases of those working from home reporting a **fall of productivity** in their job, to what caused. These variables are only collected in wave 7, however it still can be of some use to see the distributions of such variables explaining the changing in employment during the Covid-19. Figure 5.2 reports in which waves each variable of the second and third group is present.

The third group of variables includes the hours spent per week performing respectively **childcare, housework and informal care** for a sick or disabled or elderly that lives within or outside the household. The first variable listed is included only in wave 7 collected in January 2021, the second in the data regarding 2018/2019 and wave 7, while the time spent performing care work is present in all the waves included. For these variables, the answer categories are “from 0 to 4 hours per week”, “from 5 to 9 hours”, “10 to 19 hours”, and “more than 20 hours per week”. In addition, is reported the distribution of whom is mostly in charge of childcaring during the observation period.

Finally, in the **hybrid models**, mental health is measured using the Subjective Wellbeing (GHQ) present in the data, which is a widely used scale to measure mental health in the literature. This measure converts valid answers to 12 questions of the General Health Questionnaire (GHQ-12) to a single scale by recoding so that the scale for individual variables runs from 0 to 3, and then summing, giving a continuous scale with a range from 0 which represent the least distressed to 36 - the most distressed (Cox et al., 1987). Similarly to the previous analysis done in Chapter 2 and Chapter 4, all the individuals

that have never been in paid employment during the observation period, and those who answered only once to the survey were excluded from the present analysis. The age and level of education of the respondent are used as control variables.

**Figure 5.2** – Second and third group of variables.

|                                               | Wave 10 M.S.<br>2018-2019 | Wave 4<br>July 2020 | Wave 6<br>November 2020 | Wave 7<br>January 2021 | Wave 8<br>March 2021 | Wave 9<br>September 2021 |
|-----------------------------------------------|---------------------------|---------------------|-------------------------|------------------------|----------------------|--------------------------|
| <b>Second group</b>                           |                           |                     |                         |                        |                      |                          |
| Employment hours changed due to homeschooling |                           |                     |                         | x                      |                      |                          |
| Work pattern changed due to homeschooling     |                           |                     |                         | x                      |                      |                          |
| Fall in productivity working at home          |                           |                     |                         | x                      |                      |                          |
| <b>Third group</b>                            |                           |                     |                         |                        |                      |                          |
| Responsible for childcare                     |                           |                     |                         | x                      |                      |                          |
| Hours per week on childcare or homeschooling  |                           |                     |                         | x                      |                      |                          |
| Hours per week on housework                   | x                         |                     |                         | x                      |                      |                          |
| Hours per week performing care work           | x                         | x                   | x                       | x                      | x                    | x                        |

### 5.3.3 Statistical analysis

The empirical part is divided in two, firstly the distribution of the variables regarding precarious employment, the time per week spent performing informal care work, housework and childcare, and some additional information on how the restrictions due to Covid-19, the homeschooling, etc. impacted the employment conditions is shown. In the second part, are reported the results of the hybrid models of the effect of the hours spent performing informal care work on mental health. Similarly to the Chapter 2 and Chapter 4, two separate models are shown for male and female to better estimate the effect depending on the gender. The variables about precarious employment, housework and childcare are not included in the hybrid models because are part of different modules of the Understanding Society questionnaire (University of Essex, Institute for Social and Economic Research, 2021), and thus are asked only under certain conditions, and in some cases only in certain waves. The universe of the variables is consequently different and including them all in the main analysis would have restricted the sample to few individuals.

## 5.4 Results

### 5.4.1 Description of the sample

This section provides a brief description of the sample used for the present analysis. For what concerns the distribution of gender in figure 5.3, in first records about 2018-2019, 39.5% of the sample are male respondents and 60.5% are female respondents. Percentages are similar across waves, with a maximum of 39.5% of male respondents in wave 10 of the Main Survey and wave 4 and a minimum of 39% in wave 7. Similarly, women range from a minimum of 60.5% of the sample in wave 10 of the Main Survey and in wave 4 to a maximum of 61.1% in wave 7.

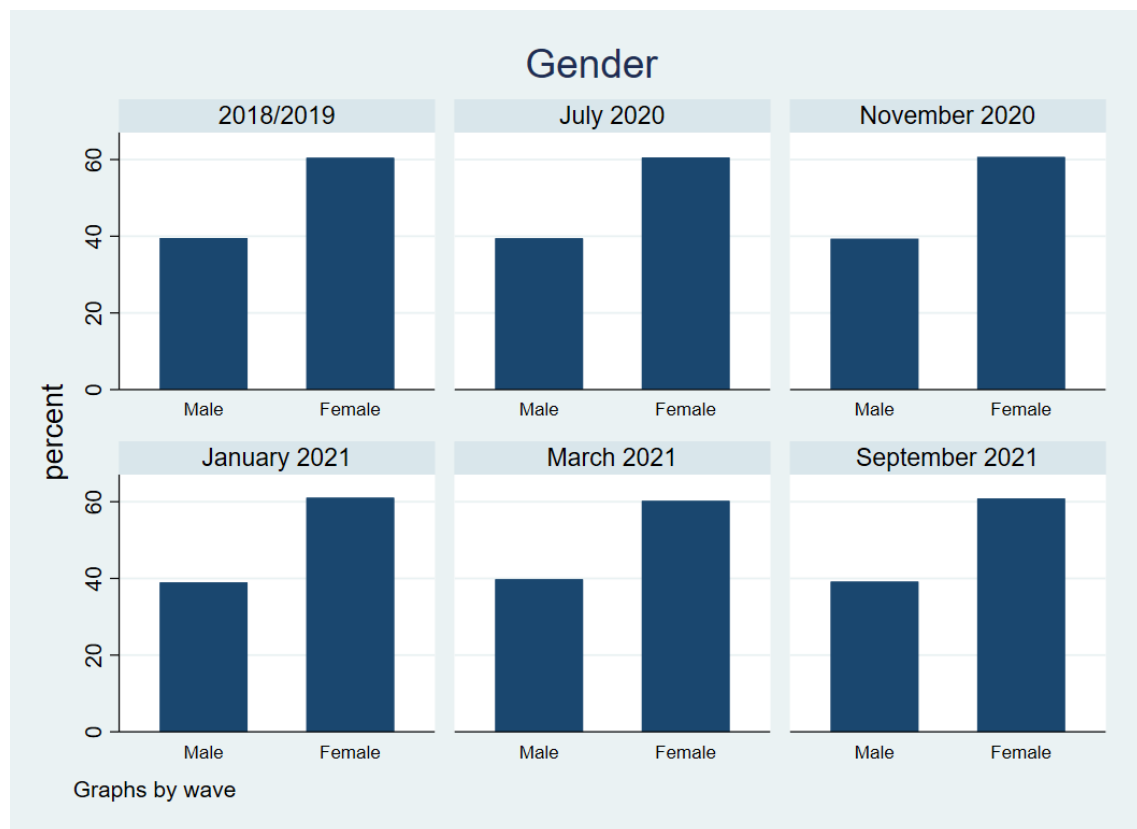
**Figure 5.3** – Distribution of gender across waves in the Covid-19 data.

|        | Wave 10 M.S. 2018-2019 |         |      | Wave 4 July 2020 |         |       | Wave 6 November 2020 |         |      |
|--------|------------------------|---------|------|------------------|---------|-------|----------------------|---------|------|
|        | Freq.                  | Percent | Cum. | Freq.            | Percent | Cum.  | Freq.                | Percent | Cum. |
| Male   | 3,415                  | 39.5    | 39.5 | 2,935            | 39.5    | 39.5  | 2,511                | 39.3    | 39.3 |
| Female | 5,222                  | 60.5    | 100  | 4,501            | 60.5    | 100.0 | 3,872                | 60.7    | 100  |
| Total  | 8,637                  | 100     |      | 7,436            | 100     |       | 6,383                | 100     |      |

|        | Wave 7 January 2021 |         |      | Wave 8 March 2021 |         |      | Wave 9 September 2021 |         |      |
|--------|---------------------|---------|------|-------------------|---------|------|-----------------------|---------|------|
|        | Freq.               | Percent | Cum. | Freq.             | Percent | Cum. | Freq.                 | Percent | Cum. |
| Male   | 2,470               | 39.0    | 39.0 | 2,720             | 39.8    | 39.8 | 2,754                 | 39.2    | 39.2 |
| Female | 3,871               | 61.1    | 100  | 4,118             | 60.2    | 100  | 4,277                 | 60.8    | 100  |
| Total  | 6,341               | 100     |      | 6,838             | 100     |      | 7,031                 | 100     |      |

**Figure 5.4** – Gender across waves in the Covid-19 data.

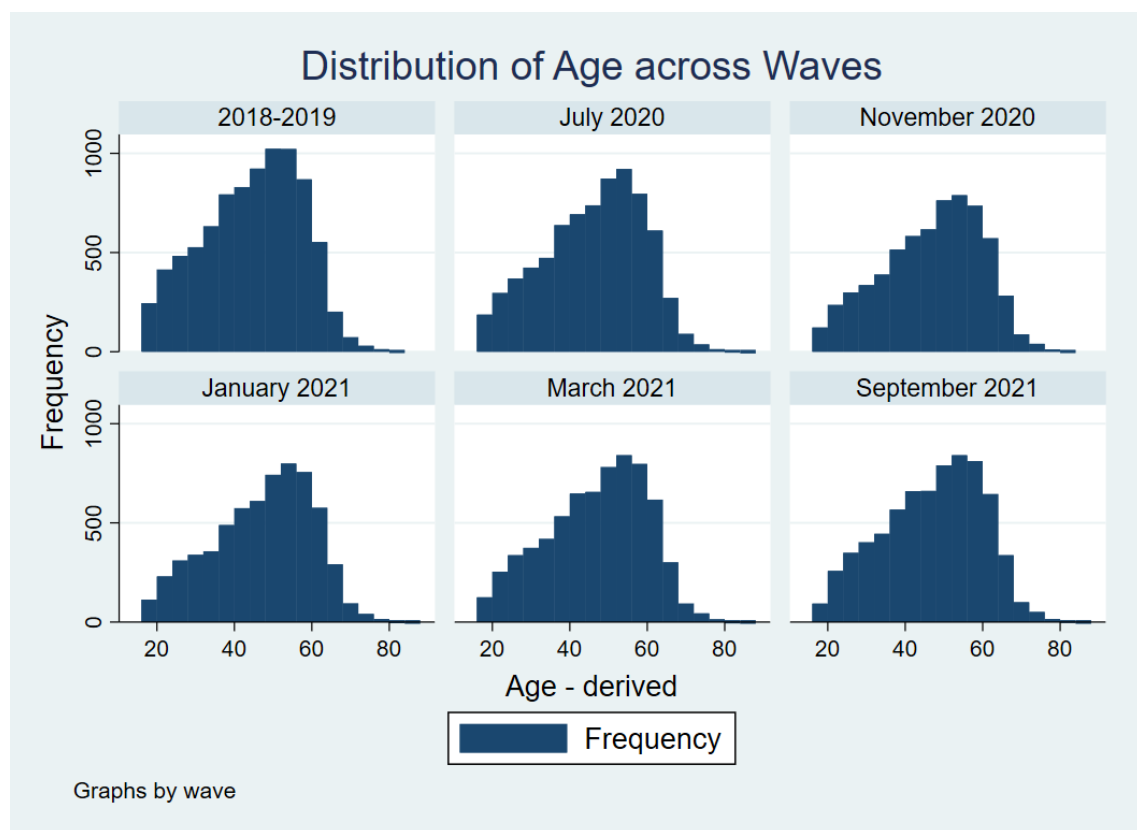


**Figure 5.5** – Age across waves in the Covid-19 data.

| Variable                  | Obs.  | Mean | Std. Dev. | Min | Max |
|---------------------------|-------|------|-----------|-----|-----|
| Wave 10 M.S.<br>2018-2019 | 8,635 | 43.9 | 12.7      | 16  | 83  |
| Wave 4<br>July 2020       | 7,436 | 45.4 | 12.9      | 16  | 85  |
| Wave 6<br>November 2020   | 6,383 | 46.3 | 12.8      | 16  | 81  |
| Wave 7<br>January 2021    | 6,341 | 46.5 | 12.9      | 16  | 85  |
| Wave 8<br>March 2021      | 6,838 | 46.2 | 12.9      | 16  | 85  |
| Wave 9<br>September 2021  | 7,031 | 46.4 | 12.9      | 17  | 86  |

In figure 5.5 is shown the distribution of age across the sample of study. During the wave 10 of the main survey, the mean age in the sample is of 43.9 years old, with a minimum of 16 and a maximum of 83. During wave 4 the mean age is slightly higher, of 45.4 years old and a minimum of 16 and maximum of 85. In wave 6 again the mean age is higher than in the previous wave, and is now of 46.3 years, with a maximum of 81 years. In wave 7 the mean age is 46.5 and in wave 8 the mean age is 46.2. Finally, in the most recent record, in wave 9, the mean age of the sample is 46.4 with a minimum of 17 and a maximum of 86 years. In figure 5.6, the visual representation of age across waves is shown.

**Figure 5.6** – Distribution of Age across waves in the Covid-19 data.



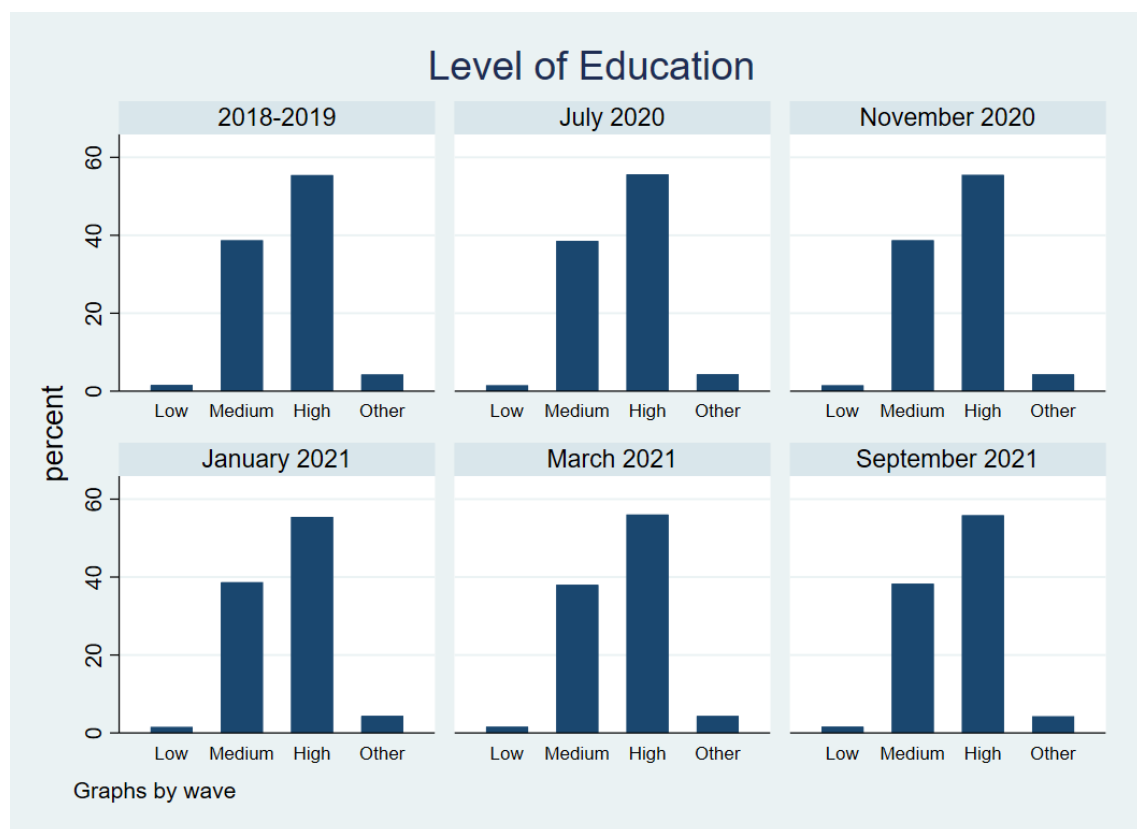
In figure 5.7 the level of education is reported. Overall, there are 1.6% of the sample with a low level of education, 38.5% with a medium level, such as A-level and GCSE, and 55.6% with a high level of education, which includes those having a degree or higher.

There is no within variation in any categories showing that none of the respondents changed their status in terms of level of education during the observation period.

**Figure 5.7** – Level of education in the Covid-19 data.

|        | Overall |         | Between |         | Within  |
|--------|---------|---------|---------|---------|---------|
|        | Freq.   | Percent | Freq.   | Percent | Percent |
| Low    | 631     | 1.6     | 135     | 1.6     | 100     |
| Medium | 15721   | 38.5    | 3322    | 38.7    | 100     |
| High   | 22718   | 55.6    | 4758    | 55.4    | 100     |
| Other  | 1761    | 4.3     | 367     | 4.3     | 100     |
| Total  | 40831   | 100     | 8582    | 100     | 100     |
|        | n.      |         | 8582    |         |         |

**Figure 5.8** – Level of education across waves in the Covid-19 data.



## 5.4.2 Descriptive statistics

### 5.4.2.1 Precarious employment during the Covid outbreak

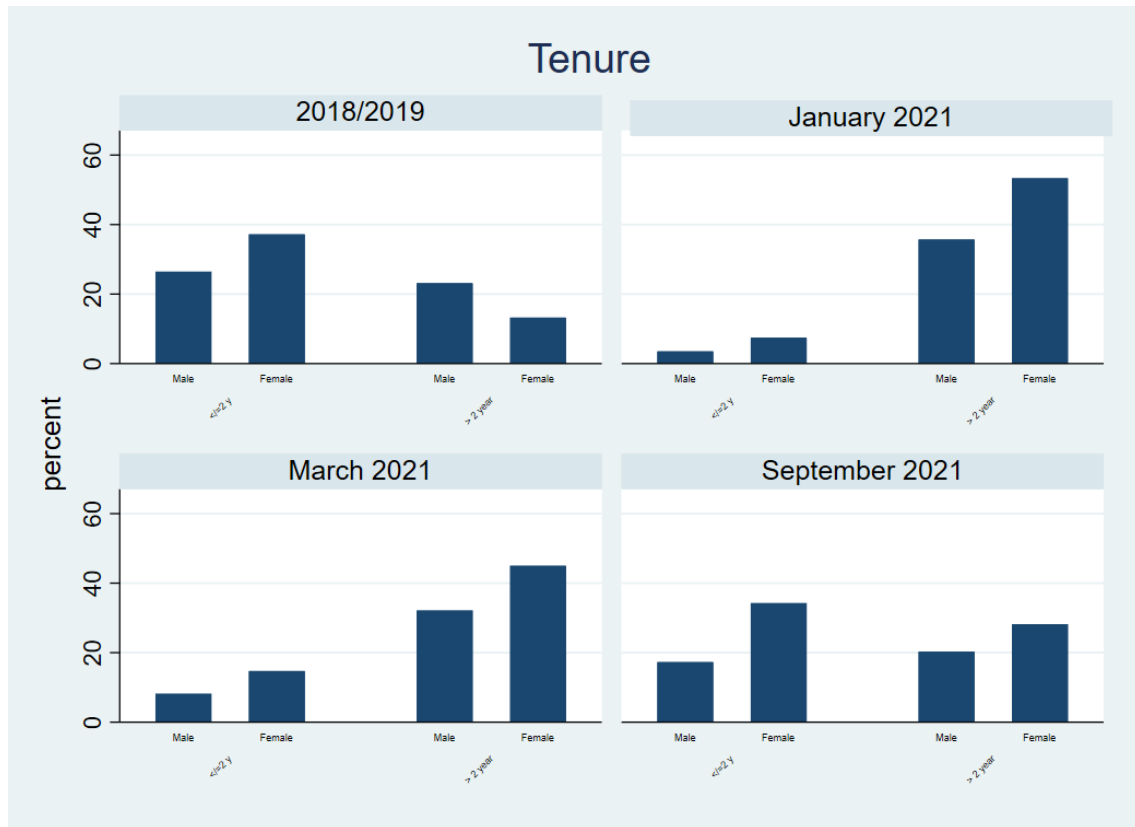
In figure 5.3, for the job tenure, the overall data shows that between 82.2% for men and 77.5% for women have been working in the present position for more than two years. When we look at the between variation, we see that 88.5% of men have experienced at least once in the observation period to be in a job with a job tenure longer than two years, compared to the 84% of women.

**Figure 5.3** – Descriptive statistics of job tenure and part-time/full-time contracts.

| Temporariness             | Male    |             |         |             |         | Female  |             |         |             |             |
|---------------------------|---------|-------------|---------|-------------|---------|---------|-------------|---------|-------------|-------------|
|                           | Overall |             | Between |             | Within  | Overall |             | Between |             | Within      |
| Job Tenure                | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent     |
| 2 year or less            | 614     | 17.8        | 563     | 18.0        | 82.0    | 1208    | 22.5        | 1096    | 22.7        | 85.5        |
| more than 2 year          | 2844    | <b>82.2</b> | 2775    | <b>88.5</b> | 96.3    | 4151    | <b>77.5</b> | 4050    | <b>84.0</b> | 96.0        |
| Total                     | 3458    | 100         | 3338    | 106.5       | 93.9    | 5359    | 100         | 5146    | 106.7       | 93.7        |
|                           | n.      |             | 3135    |             |         | n.      |             | 4824    |             |             |
| Part/Full-time            | Overall |             | Between |             | Within  | Overall |             | Between |             | Within      |
|                           | Freq.   | Percent     | Freq.   | Percent     | Percent | Freq.   | Percent     | Freq.   | Percent     | Percent     |
| <35 h per week/ part-time | 3330    | <b>21.6</b> | 1407    | <b>39.4</b> | 57.9    | 12244   | <b>52.2</b> | 3816    | <b>69.8</b> | <b>76.6</b> |
| >= 35 hours per week/full | 12091   | 78.4        | 3165    | 88.6        | 87.1    | 11217   | 47.8        | 3369    | 61.6        | 75.6        |
| Total                     | 15421   | 100         | 4572    | 128.0       | 78.1    | 23461   | 100         | 7185    | 131.4       | 76.1        |
|                           | n.      |             | 3572    |             |         | n.      |             | 5470    |             |             |

In figure 5.4, we can see the different distribution of job tenure across waves. Unexpectedly, we can see a peculiar distribution in 2018/2019. Analysing the data more in depth, it was found that the distribution in this wave before being merged to the Covid-19 data, is in line with the other distributions. However, once the different data are merged and cleaned, excluding, consequently, those only present in 2018/2019 and not in the Covid-19 data, the distribution changes drastically. Therefore, this distortion can be ascribed to a selection bias, for which a higher number of those with a shorter job tenure in 2018/2019 were casually selected and answered to the Covid-19 questionnaire.

**Figure 5.4** – Distribution of job tenure across waves.



When we look at the part-time/full-time workers (Figure 5.3), the overall data shows that men working less than 35 hours per week are the 21.6%, while women in this position on the overall data are 52.2% of the female sample. 39.4% of men have been at least once working part-time during the observation compared to 88.6% of men who have been full-time at least once during the observation period. 69.8% of women have been at least once during the observation period in a part-time job, and only 61.6% of them have been at least once in a full-time position. In addition, female workers ever in part-time were doing part-time job in 76.6% of the observations. Figure 5.5 shows a similar distribution across waves, with a higher percentage of part-time arrangements both for female and male in July 2020, which could be probably ascribed to the period of first national lockdown, which lead to temporary reductions of working hours in many jobs. Across wave we can clearly see that women are being more employed in part-time job than men.

**Figure 5.5** – Distribution of part-time / full-time contracts across waves.



Looking at the wages dimension (Figure 5.6), overall 78.5% of men perceive to have a comfortable financial situation, while women living comfortably or doing all right on their financial situation are the 76.2%. Around 90% of men have felt to be in a positive financial situation at least once, compared to 88.7 of women, but 37% of men and 41.2% women on the opposite have also felt at least once, difficult to get by with their present financial situation. The distribution of wage shows that overall men earning more than 60% of the median are 91.7% compared to only 74.7% of women. The 37.1% of women have been at least once in a job that paid less than 60% of the median income, while man in this situation was only the 15.6%. On the other side, men earning more than 60% at least once in the observation period are the 93.8% of the category compared to 80% of women. Finally, men earning 60% or more than the median wage were in this situation in 95.6% of the observations, while women earning 60% or more of the median were in this situation in 89.9% of the observations showing that men have a stronger economic stability.

**Figure 5.6** - Descriptive statistics of financial situation and median wage.

|                                         | Male    |         |         |         |         | Female  |         |         |         |         |
|-----------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Wages                                   |         |         |         |         |         |         |         |         |         |         |
| Financial situation                     | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
|                                         | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| just getting by or finding it difficult | 3039    | 21.5    | 1326    | 37.1    | 59.5    | 5128    | 23.8    | 2260    | 41.2    | 59.7    |
| living comfortably or doing alright     | 11087   | 78.5    | 3221    | 90.0    | 86.6    | 16405   | 76.2    | 4862    | 88.7    | 85.0    |
| Total                                   | 14126   | 100     | 4547    | 127.1   | 78.7    | 21533   | 100     | 7122    | 129.9   | 77.0    |
|                                         | n.      |         | 3579    |         |         | n.      |         | 5481    |         |         |
| Median wage                             | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
|                                         | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| less than 60% of the median             | 1167    | 8.6     | 523     | 15.6    | 66.1    | 5083    | 25.3    | 1904    | 37.1    | 75.8    |
| 60% or more                             | 12354   | 91.4    | 3137    | 93.8    | 95.6    | 15039   | 74.7    | 4103    | 80.0    | 89.9    |
| Total                                   | 13521   | 100     | 3660    | 109.4   | 91.4    | 20122   | 100     | 6007    | 117.1   | 85.4    |
|                                         | n.      |         | 3346    |         |         | n.      |         | 5132    |         |         |

In the last dimension (Figure 5.7), flexible working hours, we show the possibility to vary the working hours and rearrange the start or finish times based on the needs. In this case overall 71.7% of men and 68.4% of women have this opportunity at work. 76.8% of men and 74.5% of women had this opportunity at least once while 34.5 % of men and 38.6% had worked at least once in an environment where it was not possible.

**Figure 5.7** - Descriptive statistics of flexible working hours.

| Male                   |         |         |         |         |         | Female  |         |         |         |         |
|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Uncertain working time |         |         |         |         |         |         |         |         |         |         |
| Flexible working hours | Overall |         | Between |         | Within  | Overall |         | Between |         | Within  |
|                        | Freq.   | Percent | Freq.   | Percent | Percent | Freq.   | Percent | Freq.   | Percent | Percent |
| No                     | 1474    | 28.3    | 1139    | 34.5    | 83.7    | 2531    | 31.6    | 1949    | 38.6    | 83.0    |
| Yes                    | 3740    | 71.7    | 2537    | 76.8    | 92.7    | 5484    | 68.4    | 3759    | 74.5    | 91.2    |
| Total                  | 5214    | 100     | 3676    | 111.2   | 89.9    | 8015    | 100     | 5708    | 113.1   | 88.4    |
|                        | n.      |         | 3305    |         |         | n.      |         | 5047    |         |         |

#### 5.4.2.2 The effects of homeschooling on employment and the effect of working from home on productivity

In addition to these dimensions of precarious employment, in January 2021 were collected information about if and how employment hours changed due to homeschooling for those having a child. Being these information present only in wave 7 is not possible to treat the data as longitudinal. In January 2021, 10.5% of men and 12.5% of women had employment hours change due to homeschooling. For 25.9% of men the working pattern

had to change due to homeschooling, while women in this situation are the 29.5% of the sample.

**Figure 5.8** – Descriptive statistics of employment hours and work pattern changed due to homeschooling.

| <b>Employment hours changed due to homeschooling</b> | <b>Male</b> |         |       | <b>Female</b> |         |       |
|------------------------------------------------------|-------------|---------|-------|---------------|---------|-------|
|                                                      | Freq.       | Percent | Cum.  | Freq.         | Percent | Cum.  |
| Yes                                                  | 95          | 10.5    | 10.5  | 172           | 12.5    | 12.5  |
| No                                                   | 809         | 89.5    | 100.0 | 1,208         | 87.5    | 100.0 |
| Total                                                | 904         | 100     |       | 1,380         | 100     |       |

| <b>Work pattern changed due to homeschooling</b> | <b>Male</b> |         |       | <b>Female</b> |         |       |
|--------------------------------------------------|-------------|---------|-------|---------------|---------|-------|
|                                                  | Freq.       | Percent | Cum.  | Freq.         | Percent | Cum.  |
| Yes                                              | 234         | 25.9    | 25.9  | 406           | 29.5    | 29.5  |
| No                                               | 671         | 74.1    | 100.0 | 971           | 70.5    | 100.0 |
| Total                                            | 905         | 100     |       | 1,377         | 100     |       |

In addition, the pandemic of Covid-19 has influenced the productivity at work. For those working at home was asked whether they had a fall in productivity and in case what was the main cause (Figure 5.9). In most of the cases, we see that the fall of productivity was due to the necessity to provide childcare or caring for the others; the lack of motivation and the less work to do or other unspecified reasons. However the motivations of the productivity fall at work are the same, the distribution between gender are strongly different. In fact, “other reasons” and lack of motivation have similar percentage of men and women (around 21% for lack of motivation and around 15.7% for other reasons). Instead, men report to have less work to do than women (15.4% of men and 13.3% of women) while only 16.2% of men complaint to have had a fall in productivity due to childcare or homeschooling. Women that had a reduction of productivity due to childcare and homeschooling are 24.6% of the female sample.

**Figure 5.9** – Descriptive statistics of fall in productivity working at home.

| <b>Fall in productivity<br/>working at home</b>                                          | <b>Male</b> |             |       | <b>Female</b> |             |       |
|------------------------------------------------------------------------------------------|-------------|-------------|-------|---------------|-------------|-------|
|                                                                                          | Freq.       | Percent     | Cum.  | Freq.         | Percent     | Cum.  |
| I have had to provide<br>childcare/homeschooling and/or<br>care for others while working | 75          | <b>16.2</b> | 16.2  | 194           | <b>24.6</b> | 24.6  |
| The equipment, software and/or<br>internet connection I use limits what<br>I can do      | 26          | 5.6         | 21.9  | 42            | 5.3         | 30.0  |
| I have had to share space and<br>equipment                                               | 7           | 1.5         | 23.4  | 11            | 1.4         | 31.4  |
| I have had less work to do                                                               | 71          | 15.4        | 38.7  | 105           | 13.3        | 44.7  |
| I have been interrupted by noise<br>made by others/distractions at home                  | 23          | 5.0         | 43.7  | 18            | 2.3         | 47.0  |
| Other reasons                                                                            | 72          | 15.6        | 59.3  | 126           | 16.0        | 62.9  |
| Need to be at the workplace to do<br>my job                                              | 46          | 10.0        | 69.3  | 73            | 9.3         | 72.2  |
| Lack of motivation, hard to focus<br>or concentrate at home                              | 97          | 21.0        | 90.3  | 164           | 20.8        | 93.0  |
| Ill health, tiredness                                                                    | 18          | 3.9         | 94.2  | 25            | 3.2         | 96.2  |
| Lack of contact and interaction<br>with work colleagues                                  | 27          | 5.8         | 100.0 | 30            | 3.8         | 100.0 |
| Total                                                                                    | 462         | 100         |       | 788           | 100         |       |

#### 5.4.2.3 Childcare, housework and informal care work

Figure 5.10 shows how childcare is divided inside the couple during January 2021. Only 0.5% of men answer that childcare relies always on them, compared to 10% of women falling in the same situation. Similarly, 5.2% of men affirm to be usually the ones doing most of the childcare. Females answering to be usually the person in charge of childcaring are instead 40%. The percentage of those sharing equally is 44.7% for men and 38.1% for women.

**Figure 5.10** - Descriptive statistics of responsible for childcare.

| <b>Who is responsible for childcare</b>          | <b>Male</b> |            |       | <b>Female</b> |             |       |
|--------------------------------------------------|-------------|------------|-------|---------------|-------------|-------|
|                                                  | Freq.       | Percent    | Cum.  | Freq.         | Percent     | Cum.  |
| Always me                                        | 4           | <b>0.5</b> | 0.5   | 99            | <b>10.1</b> | 10.1  |
| Usually me                                       | 38          | <b>5.2</b> | 5.7   | 394           | <b>40.0</b> | 50.1  |
| Me and my partner about equally                  | 329         | 44.7       | 50.4  | 375           | 38.1        | 88.2  |
| Usually partner                                  | 294         | 40.0       | 90.4  | 38            | 3.9         | 92.1  |
| Always partner                                   | 20          | 2.7        | 93.1  | 6             | 0.6         | 92.7  |
| Always or usually other person in the household  | 2           | 0.3        | 93.3  | 3             | 0.3         | 93.0  |
| Children look after themselves                   | 36          | 4.9        | 98.2  | 48            | 4.9         | 97.9  |
| Not applicable                                   | 9           | 1.2        | 99.5  | 16            | 1.6         | 99.5  |
| Always or usually other person in support bubble | 4           | 0.5        | 100.0 | 5             | 0.5         | 100.0 |
| Total                                            | 736         | 100        |       | 984           | 100         |       |

When asked about how many hours of childcare they perform a week (Figure 5.11), 53.3% of men perform between 0 and 4 hours a week of childcare during January 2021. Women in the same situation are only 41.4%. Similarly, there is a higher percentage of men performing 5-9 hours of childcare (16% of men compared 11.7% of men) however this becomes the opposite when we look at the distribution of those performing more than 20 hours per week. Only 14.6% of men is performing such number of hours of childcare, when 30.5% of women is performing more than 20 hours per week.

**Figure 5.11** - Descriptive statistics of hours per week on childcare or homeschooling.

| <b>Hours per week spent on childcare or homeschooling</b> | <b>Male</b> |         |       | <b>Female</b> |         |       |
|-----------------------------------------------------------|-------------|---------|-------|---------------|---------|-------|
|                                                           | Freq.       | Percent | Cum.  | Freq.         | Percent | Cum.  |
| 0 - 4 hours per week                                      | 482         | 53.3    | 53.3  | 593           | 41.4    | 41.4  |
| 5 - 9 hours per week                                      | 145         | 16.0    | 69.3  | 168           | 11.7    | 53.1  |
| 10 - 19 hours per week                                    | 146         | 16.1    | 85.4  | 235           | 16.4    | 69.5  |
| more than 20 hours x week                                 | 132         | 14.6    | 100.0 | 437           | 30.5    | 100.0 |
| Total                                                     | 905         | 100     |       | 1,433         | 100     |       |

**Figure 5.12-** Descriptive statistics of hours per week spent on housework.

| Hours per week spent on housework | Male    |             |       |             |         | Female  |             |       |             |         |
|-----------------------------------|---------|-------------|-------|-------------|---------|---------|-------------|-------|-------------|---------|
|                                   | Overall | Between     |       | Within      |         | Overall | Between     |       | Within      |         |
|                                   | Freq.   | Percent     | Freq. | Percent     | Percent | Freq.   | Percent     | Freq. | Percent     | Percent |
| 0 - 4 hours per week              | 2270    | <b>40.2</b> | 1725  | <b>49.9</b> | 81.2    | 1651    | 18.9        | 1353  | 25.4        | 75.5    |
| 5 - 9 hours per week              | 1764    | 31.2        | 1494  | 43.2        | 72.5    | 2385    | 27.3        | 2020  | 37.9        | 72.6    |
| 10 - 19 hours                     | 1338    | 23.7        | 1114  | 32.2        | 72.8    | 3298    | <b>37.7</b> | 2656  | <b>49.8</b> | 75.1    |
| more than 20 hours                | 279     | 4.9         | 253   | <b>7.3</b>  | 64.4    | 1416    | 16.2        | 1159  | 21.7        | 73.9    |
| Total                             | 5651    | 100         | 4586  | 132.7       | 75.4    | 8750    | 100         | 7188  | 134.7       | 74.3    |
|                                   | n.      |             | 3456  |             |         | n.      |             | 5337  |             |         |

The information of hours spent performing housework (Figure 5.12) is present in for the 10<sup>th</sup> wave of the main survey (2018/2019) and wave 7, January 2021. We see again in this case, a strong difference in the distribution between men and women. Overall, almost 40.2% of men perform only between 0 and 4 hours of housework per week, and almost 50% of them has been at least once in this category during the observation period. Overall women in this situation are 18.9% of the female sample and during the observation period almost 25.4% of women have been in this category. Overall, almost 31% of men performed between 5 and 9 hours of housework, compared to 27.3% of women, and 23.7% of men performed between 10 and 19 hours per week, when women in this position have been the 37.7% of the sample. During the observation period almost 50% of women have been at least once performing housework for 10-19 hours a week. For more than 20 hours a week of housework the percentage overall decrease, but the work is still done mostly by females, 21.7% of women has worked at least once for more than 20 hours, while men than where at least once in this situation are only the 7.3% of the male sample.

**Figure 5.13 -** Descriptive statistics of hours per week spent performing care work.

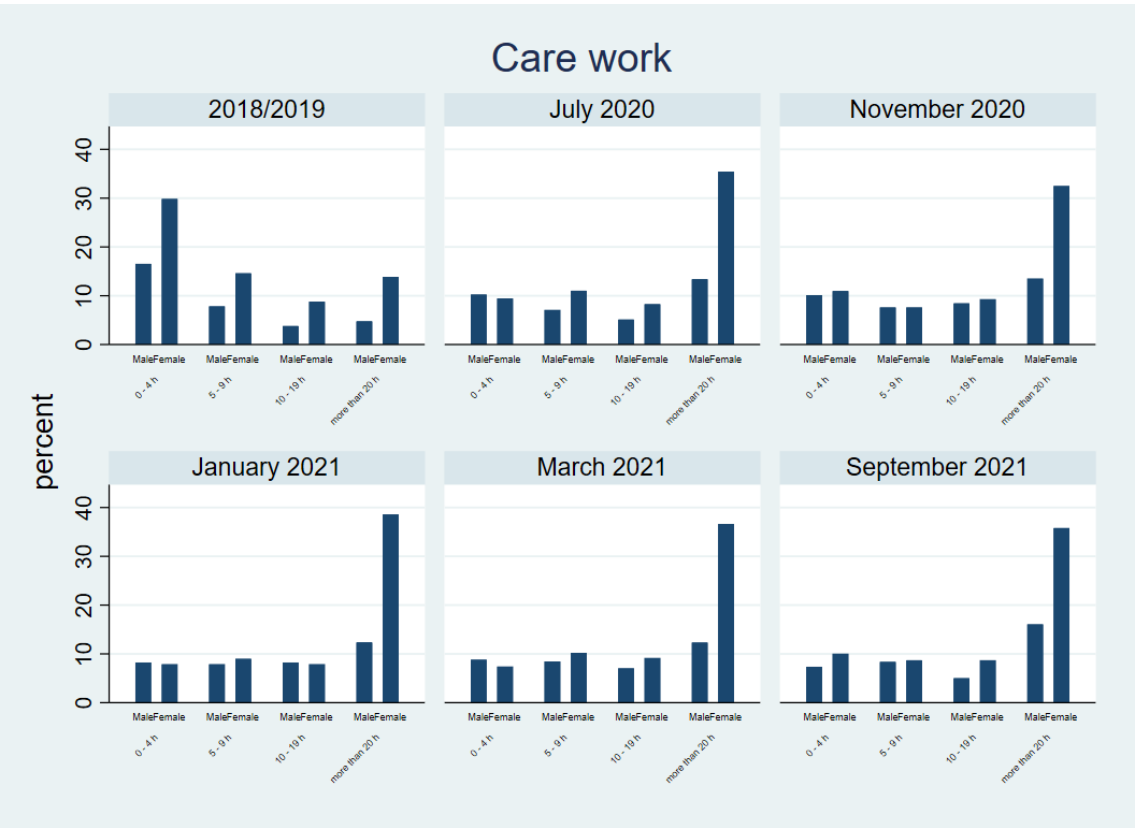
| Hours per week spent performing care work | Male    |         |       |             |         | Female  |         |       |             |         |
|-------------------------------------------|---------|---------|-------|-------------|---------|---------|---------|-------|-------------|---------|
|                                           | Overall | Between |       | Within      |         | Overall | Between |       | Within      |         |
|                                           | Freq.   | Percent | Freq. | Percent     | Percent | Freq.   | Percent | Freq. | Percent     | Percent |
| 0 - 4 hours                               | 324     | 36      | 255   | 49.3        | 91.3    | 492     | 29.4    | 432   | 42.8        | 91.2    |
| 5 - 9 hours                               | 203     | 22      | 155   | 30.0        | 79.3    | 306     | 18.3    | 253   | 25.1        | 85.6    |
| 10 - 19 hours                             | 137     | 15      | 90    | 17.4        | 73.8    | 225     | 13.4    | 179   | 17.7        | 75.6    |
| more than 20 hours                        | 241     | 27      | 116   | <b>22.4</b> | 81.8    | 653     | 39.0    | 304   | <b>30.1</b> | 86.6    |
| Total                                     | 905     | 100     | 616   | 119.2       | 83.9    | 1676    | 100     | 1168  | 115.8       | 86.4    |
|                                           | n.      |         | 517   |             |         | n.      |         | 1009  |             |         |

Finally, the distribution of hours spent performing informal care work of a sick, elderly or disabled person in the household or a non-resident is reported (Figure 5.13). This

information was collected in all analysed waves. Overall, 35.8% of men perform between 0 and 4 hours of informal care work a week, while the 29.4% of women are in a similar situation. Instead, women overall performing more than 20 hours a week of informal care work are almost the 39% of the female sample, while only 26.6% of the male sample is performing overall the same number of hours of care work a week.

During the observation period, almost 50% of men and 42.8% of women at least once spent on average between 0 and 4 hours per weeks caring; 30% of men at least once spent between 5 and 9 hours per week caring comparing to almost 25% of women. In contrast, only 22.4% of men have been performing more than 20 hours per week, at least once during the observation period, while women that have been at least once in this situation are 30.1%. The information about hours spent caring is later used in the hybrid models to see whether the time spent caring has an effect on mental health during the period of observation. In figure 5.14, we can see the different distribution of hours of informal care work across waves.

**Figure 5.14** – Distribution of hours per week spent performing care work across waves.



### 5.4.3 Hybrid Models

In figure 5.15, are reported the hybrid models analysing the association between the hours spent on care work and mental health using GHQ measure in the period from 2018/2019 to September 2021. Men moving from a lower number of hours spent on unpaid care work to a higher number of hours is significantly associated to a worsening of mental health (0.8). However, women moving from a lower number of hours spent performing care work to higher number of hours have not a statistically significant effect on mental health. Men who on average, throughout the observation period, had higher number of hours of unpaid care work responsibilities have a worsening of the perceived mental health (0.7). Similarly, for women who on average, throughout the observation period, had a higher burden of informal caring responsibilities is associated a worsening of their mental health (0.9).

**Figure 5.15** -Hybrid models Care work on GHQ.

|                   | Male                             | Female  |
|-------------------|----------------------------------|---------|
| Care work we      | 0.8**                            | 0.5     |
| Care work be      | 0.7**                            | 0.9***  |
| Age we            | 0.4*                             | 0.7***  |
| Age be            | 0.0                              | -0.1*** |
| Educational Level |                                  |         |
| Medium            | 1.8                              | 1.9     |
| High              | 1.7                              | 1.5     |
| Other             | 0.0                              | 1.3     |
| Constant          | 10.8***                          | 13.6*** |
| legend:           | * p<0.05; ** p<0.01; *** p<0.001 |         |

## Discussion and Conclusions

The aim of this chapter was to show the preliminary effect of the Covid-19 pandemics on precarious employment, social reproductive tasks and childcare. In addition, the aim was to test whether the amount of informal care work is associated with a worsening of mental health and how these effects changed between women and men. Using longitudinal data from the United Kingdom it was shown how those conditions varied from before the start of the pandemic (2018/2019) to the period that goes from July 2020 to September 2021 (University of Essex, Institute for Social and Economic Research, 2021; University of Essex, Institute for Social and Economic Research, 2022).

The data about **precarious employment** shows that women are more affected than men by precarious employment also during the pandemic, similarity of what was found in the literature, about the pre-pandemic situation (Annandale & Hunt, 2000; Benach et al., 2016; Cortès-Franch et al., 2018; Hagemann et al., 2006; Menéndez et al., 2007; Julià et al., 2017b; Padrosa et al., 2022; Young, 2010). Indeed, the distribution of part-time and full-time work demonstrates that women also are performing more often than men part-time jobs during the pandemic. The distribution of wage shows a strong gender difference, men are earning more than the 60% of the median more often than women and more than 37% of women have been at least once during the observation period in a job that paid less than 60% of the median income, while man in this situation was only the 15.6%. Another interesting result found is the one concerning the reasons for the fall of productivities of those working from home. In the majority of the cases, we see that the fall of productivity was due to the necessity to provide **childcare or caring** for the others, but only 16.2% of men complaint to have had a fall in productivity due to this situation occurring while women in this situation are 24.6% of the sample. Also on the division of childcare, during January 2021 it is shown that men who perform childcare exclusively or most of the time are minority, less than 6% of the male sample, while women that are the sole or the most in charge of childcare are more than half of the female sample. Also, on the amount of hours per week of childcare is demonstrated that women are performing the biggest share. Similarly for **time spent performing housework** is possible to see again, a strong difference in the distribution between men and women. The majority of the male sample is performing only between 0 and 4 hours of housework, and, while

overall women in this situation are only 18.9% of the female sample. So far, the data confirmed that there is a gender difference in the distribution of tasks and of the amount of time to perform social reproductive tasks, showing that the majority of the tasks related to social reproduction is performed by a larger part by women similarly that what was found in Moreira da Silva (2019), Pozzan and Cattaneo (2020) and Fraser (2016b). Unfortunately, this information cannot be compared to the previous chapters because of the limitations of the present analysis and different samples size.

Finally, the hybrid models, analysing the association between **hours spent performing informal care work and mental health** during the Covid-19 outbreak, show that in the period from 2018/2019 to September 2021, moving to a higher amount of time spent performing care work is associated to a worsening of mental health for men. In addition, performing on average more hours is associated with a worsening of mental health both for men and women. Men who on average, throughout the observation period, had higher number of hours of unpaid care work responsibilities have a worsening of the perceived mental health by 0.7 for each extra unit of care duty, while women in the same situation report to have a worsening of their mental health by 0.9 for each additional unit of care work. Hence, those who do more hours of care work are associated to worse health, but it is not so much the change from fewer hours to a higher number to impact on health but is rather those who do more hours on average, hence the long-term effect of being an intensive informal caregiver.

Our results are in line with what found by Bom and Stöckel (2021), that is that the number of hours spent performing care work have a detrimental effect on health and that the Covid-19 has exacerbated the pre-existing gender differences in social reproduction and increased for women the burden of informal care work (Stevano et al., 2021).

The data used, collected during the Covid-19 outbreaks has several **limitations** that need to be pointed out: firstly, due to the global situation when the data was collected, the survey did not focus on collecting in depth information present as the main survey, but fewer items on each topic and often information to try to measure extraordinary situation we were experiencing, such as the effect on families with children of homeschooling. Secondly, the sample that answered to the Covid-19 questionnaire is smaller (between 7.500 to 6.300 individuals) than the data collected for the main survey. The sample was drowned from the main survey but due to the situation only a smaller part of the

population managed to participate, therefore is not possible to generalize the results as the sample of the survey is not representative of the composition of the UK population, because of selection bias. Therefore, with the present data it is not possible to make a comparison with the analysis previously done in Chapter 2 and Chapter 4 or to affirm that the results found are representative for the United Kingdom. In addition, as previously stated in the methodology, the data collected by Understanding Society does not provide enough information to measure precarious employment as done by the EPRES or its adaptations (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010), or as done in Chapter 2 and chapter 4. However, it can still be of some use to see the distribution of the few variables present in the dataset regarding precarious employment collected during the Covid-19 outbreak, showing indeed that precarious employment dimensions are differently distributed across gender also during the pandemic.

Nonetheless, the present analysis has several **strengths**. First of all, being the Covid-19 such a recent event, it is a great opportunity to have several waves of data collected during the first months of the pandemic, gathering information on the extraordinary event lived during those months. Therefore, this kind of information shown in the chapter can be of same use for further research to study the long-term effects of the Covid-19 on precarious employment, social reproduction and mental health.

An additional strength, is the use in most of the analysis on consistent longitudinal data, showing how the effect changed from during the different waves of the virus. The information of hours of informal care work is collected in several waves and clearly shows how the number of hours has increased during the pandemic, especially for female workers. Finally, this analysis does not have the intent and ambition to be exhaustive or representative but aim to test whether in the preliminary data collected during the pandemic is possible to find some discrepancy in the distributions of precarious employment and social reproductive tasks and whether in the sample, care work is associated with a worsening of the perceived well-being and mental health of the individual.

To conclude, the results of the descriptive analysis are in line with what expected by the literature and the relationship between time spent performing care work and mental health shows how performing on average more hours, and therefore being a long-term caregiver, is associated with a worsening of mental health and how this effect is even stronger for

women. Therefore, the present study provides incentives for further research both of analysis of existing data and of collecting more precise and timely statistical data to measure the impact of the Covid-19 Pandemic.



## Concluding Remarks

Ultimately, we can only conclude the present doctoral thesis by briefly summarising the main findings of the analysis, as well as attempting to identify how these results fit in the academic debate and to suggest possible insights for further research, starting above all from the limitations found in the present empirical work.

The foremost purpose of this dissertation is to provide a contribution to the academic research on the relationship between precarious employment, social reproduction and health. The present research intends to embed itself by studying this topic in the United Kingdom using longitudinal data.

This research is in clear continuity with some branches of research on precarious employment as a social determinant of health (Jonsson et al., 2021; Benach et al., 2014; Benach and Muntaner 2011; Benach et al., 2007; Benach et al., 2016; Bodin et al., 2020; Cortès-Franch et al., 2018; Kalleberg, 2009; Padrosa et al., 2022) and on the theoretical contribution of the historicization of precarious employment (Betti, 2018; Betti, 2016; Betti, 2015; Betti, 2014; Van Der Linden, 2014), and the social reproduction theories (Arruzza, 2016; Bhattacharya, 2017; Dalla Costa and James, 1975; Dalla Costa and James, 1972; Federici, 2012; Ferguson et al., 2016; Fraser, 2016a; Fraser, 2016b; Laslett & Brenner, 1989; Picchio, 1992; Vogel 2013; Winders and Smith, 2018).

The originality of the present research, however, lies in having included in the present analysis in first instance in the use of a multidimensional measure to represent precarious employment similarly to the Employment Precarious Scale and its adaptations (Padrosa et al., 2021; Julià et al., 2017b; Vives et al., 2010). Indeed, in literature is widely agreed that a multidimensional measure of precarious employment is better suited to measure the concept than a single item, when this is made possible by the data (Benach et al., 2014; Julià et al., 2017b; Kreshpaj et al., 2020; Padrosa et al., 2021; Vives et al., 2010). In addition, the Employment Precarious Scale (EPRES) is a multidimensional measurement instrument theory-based widely used in the literature and adapted to several others database (Padrosa et al., 2021; Jonsson et al., 2021; Julià et al., 2017b; Vives et al., 2010). Even though, it was not possible to reproduce a more similar adaptation of EPRES both in terms of validation of the scale and comparability of the items and dimensions, it can be

noted the effort to use, nevertheless, a multidimensional measure to represent precarious employment.

In second instance, we can point out the use of longitudinal data to analyse the long-term effects of precarious employment conditions on physical and mental health using the Understanding Society data about the United Kingdom (University of Essex, Institute for Social and Economic Research, 2022; University of Essex, Institute for Social and Economic Research, 2021). An important limit with the extant literature on precarious employment and health is, in fact, that it is mostly based on cross-sectional data and consequently, most studies do not have information about causality (Tomba et al., 2007). Many studies have examined the relationship between precarious employment conditions and health but there is little evidence on what is the effect on health when we look at long-term consequences of being in precarious employment therefore, this chapter aims to contribute to the topic using longitudinal data about the United Kingdom.

In addition, it needs to be noted that the present dissertation includes in the analysis of precarious employment and mental health the in-depth study on gender differences in social reproduction and in particular on the role of unpaid care work on mental health. There is little empirical research in the theoretical literature on the relationship between paid and unpaid work and how this affects mental health (Jung et al., 2019; Valero et al., 2021). Finally, the present dissertation contributes to the strand of research concluding with a chapter on the preliminary effects of the Covid-19 pandemics on precarious employment, social reproductive tasks and childcare.

The research unfolds in five distinct sections. As we have seen, each chapter is intended to stand alone, although overall it relates to subsequent chapters, following a sequential order to the research questions of the thesis.

We started focusing on the concept of precarious employment and, through historicization, saw the phenomenon's true origins. The concept of precarious employment has been used regularly since the nineteenth century. However, until the 1990s, the debate on precarious employment was largely Eurocentric and gender blind. In the 2000s, feminist and postcolonial studies contributed to the discussion on precarious employment through the gendering and globalizing of its analysis. As a result, these viewpoints demonstrate that precarious employment is not a recent phenomenon, but rather the norm of capitalist employment relations (Hammer and Ness, 2021; Munck et

al., 2020; Betti, 2016; Mosoetsa et al., 2016; Munck, 2013; Breman and Van der Linden, 2014). Precarious employment is revealed, therefore, to be properly conceptualized only since it started impacting the Western male breadwinner the industrial sector after the process of deindustrialization experienced in Europe and North America, during industrial capitalism (Hammer and Ness, 2021; Munck et al., 2020; Betti, 2018). We can then consider different “waves of precarisation” to compare diverse forms of precarious employment in different times and places (Betti, 2018). Indeed, from a spatial standpoint, the current historical phase of precarious employment has different characteristics from those manifested in other phases of industrial capitalism. Indeed, the spread of precarious employment in the 2000s seems to be closely linked to the new phase of globalisation, taking on a potentially planetary dimension. The first chapter therefore contributes to the understanding of precarious employment by showing its development in the history of industrial capitalism and by historicising and highlighting the gendered nature of precarious employment.

From this starting point, it is developed the first empirical part of the thesis with the intent to analyse the relationship between precarious employment and workers’ health. The aim is to test quantitatively the detrimental effects of precarious employment on health, both physical and mental, and, moreover, identifying which aspect most influences this relationship. The effects found of precarious employment on mental health are in line with the findings of Kalleberg (2009), Benach et al. (2016), Cortès-Franch et al. (2018) and Julià et al. (2017b), confirming that precarious employment is indeed associated to a deterioration of mental health and this association is even stronger for women. In fact, women result to have worse mental health than men with the same level of precariousness, similar to Benach et al. (2016) and Julià et al. (2017b). One interesting finding, which needs to be explained by further research, is that we found that having been employed for longer time appears to affect mental health. Indeed, men with longer contracts on average are expected to have poorer mental health than those with shorter contracts on average, and this is even stronger for women. The effect of contract duration is found to be similar by Julià et al. (2017b), which unexpectedly reports a stronger association with poorer mental health for both male and female workers employed on a permanent basis compared to those employed on a temporary basis. They suggest that possible explanations could be related to differences in the perceived employment prospects of those interviewed

(Choonara, 2020; Julià et al., 2017b; Rigotti et al., 2009). Nevertheless, further research on this topic is needed to analyse these and other potentially related confounding variables, such as household characteristics and other psychosocial risk factors (Julià et al., 2017b; Benach et al., 2016).

Unlike the gender differences found for mental health, there are no significant gender differences in the association between precarious employment and physical health. In the case of physical health, the temporariness dimension alone is more similar to what was previously found in the literature, even though full-time work on average is associated to a deterioration of physical health for female workers. This could somehow be due to the double burden of paid work and household and care responsibilities women face, as theorised by Boye (2011), Dahlin and Härkönen (2013) and Benach et al. (2016). Regarding physical health, each dimension of precarious employment analysed performs as expected by the existing literature, which shows that higher levels of precarious employment are associated with worse health (Kalleberg, 2009, Benach et al., 2016; Cortès-Franch et al., 2018; Julià et al., 2017b).

Finally, the data show that the dimension that most influences both physical and mental health is material deprivation. This is particularly the case when we look at perceived financial situation. The evidence is that financial situation is the variable which has the strongest impact on mental and physical health, and the evidence is that this effect is even stronger for women. There is widespread agreement in the literature that material deprivation is in fact a fundamental dimension of precarious employment and is therefore associated with lower levels of physical and mental health (Benach et al., 2014; Julià et al., 2017b; Padrosa et al., 2021; Lenhart, 2017).

We hypothesise that the time spent on unpaid care work and social reproductive work plays a role in explicating the partial gender differences shown by the data. Therefore, in chapter 3, we proceed with a review of some of the most relevant contributions to the concept of social reproduction, with a focus on the *Social Reproduction Theory* and the theoretical approach for which we are living a *crisis of care*.

Capitalist society reinforces the gendered division between economic production and social reproduction, treating them as two separate spheres: the former is considered economic and remunerated, while the latter is sentimentalised, relegated to the private sphere and conceived as performed for the sake of ‘love’ (Fraser, 2016a). Historically,

men have been responsible for economic production, while women have been responsible for social reproduction (Lewchuk et al., 2016). Theories of the *crisis of care* (Fraser, 2016b) or the *global crisis of social reproduction* (Kunz, 2010) point out that social reproduction is a necessary condition for the survival of capitalist society per se, but at the same time capitalism's orientation towards limitless accumulation tends to destabilise the very process, social reproduction, on which it relies. Not only are women more likely than men to perform informal care work (Fraser 2016b; Laslett and Brenner, 1989; Picchio, 1992), but they are also more likely than men to experience adverse employment conditions. Women are more likely than men to have precarious employment (Benach et al., 2016; Menéndez et al., 2007) and the impact of precariousness on health seems to affect women more than men in the same situation (Julià et al., 2017b; Benach et al., 2016). Therefore, women face numerous sources of disadvantage that put them in a more vulnerable position (Padrosa et al., 2022). They experience several disadvantages and inequalities, such as the division of care work, which places a greater burden on women's mental health (Vosko et al., 2009; Young, 2010; Julià et al., 2017; Rosenfield and Mouzon, 2013; Padrosa et al., 2022).

This leads us to an empirical analysis of the impact of care work and the social reproduction task in our sample, where we attempt to assess the extent to which gender inequalities are determined by time spent on unpaid care work (chapter 4), based on the gender differences found in the analysis of the effects of precarious employment on mental health. This analysis was designed to show gender differences in social reproduction tasks and to test whether gender differences in unpaid care responsibilities explain gender differences in mental health, and whether these differences are related to precarious employment and mental health.

In this part, the main findings are as follows: when we look at social reproductive tasks, there are strong gender differences in the distributions and women are more likely than men to spend more hours performing care work, childcare and doing housework. And more often than men, women find themselves unable to work as much as desired because of caring responsibilities, or only during school hours because, or the time required to look after children. Finally, similar to what has been found in Moreira da Silva (2019), Pozzan and Cattaneo (2020) and Fraser (2016b), when couples are asked about the

division of labour in the household, it is always confirmed that women do the largest share of the work, with the only exception of household financial decisions.

Ultimately, as hypothesised, time spent on care work is associated with poorer mental health. When informal care work is included in the analysis of the association between precarious employment and mental health, it is shown that part of the gender gap in mental health is explained by the time spent on informal care work. Specifically, gender differences are lowest for those with low caring responsibilities and increase with higher caring responsibilities. In addition, we found that for both men and women, some precarious employment dimensions that were previously shown to have an effect in the analysis of the association between precarious employment and mental health are no longer statistically significant, suggesting that hours spent on unpaid care work partly explains the association between some precarious employment characteristics and mental health. Furthermore, we found that informal care and the number of hours spent on it often have a negative impact on women's health, similar to the findings of Bom and Stöckel (2021). We were able to confirm that care work partly explains the gendered difference in mental health found in our analysis.

Finally, the final empirical part of the thesis (chapter 5) examines the impact of unpaid care work on mental health during the first months of the Covid-19 pandemic, looking at gender inequalities in precarious employment, care work and childcare during the peak of the pandemic. The data on precarious employment shows that women are more affected by precarious employment than men even during the pandemic, which is similar to what was found in literature on the pre-pandemic situation (Annandale & Hunt, 2000; Benach et al., 2016; Cortès-Franch et al., 2018; Hagemann et al., 2006; Menéndez et al., 2007; Julià et al., 2017b; Padrosa et al., 2022; Young, 2010). Also on the division of childcare, in January 2021 it is shown that men who exclusively or most of the time perform childcare are a minority, less than 6% of the male sample, while women who exclusively or most of the time perform childcare are more than half of the female sample. As regards the number of hours per week spent on childcare, it is also clear that the majority of this is done by women. Similarly, the time spent doing housework again shows a strong gendered difference. So far, the data confirm that there is a gender difference in the distribution of tasks and in the amount of time spent on social reproduction tasks. It shows that the majority of tasks related to social reproduction are performed by a larger share of

women, similar to what was found in Moreira da Silva (2019), Pozzan and Cattaneo (2020) and Fraser (2016b). Finally, when analysing the association between hours spent on informal care work and mental health during the Covid-outbreak, a move to a higher number of hours spent on care work is associated with a worsening of mental health for men. In addition, for both men and women, performing more hours of care work on average is associated with worse mental health. Thus, those who do more hours of care work are associated with worse health, but it is not so much the change from fewer to more hours that affects health, but rather those who do more hours on average, hence the long-term effect of being an intensive informal carer. Our findings are consistent with those of Bom and Stöckel (2021), that the increasing number of hours spent in care work is associated to a detrimental effect on health and that the Covid-19 has exacerbated pre-existing gender differences in social reproduction and increased the burden of informal care work for women (Stevano et al., 2021).

From the beginning of this thesis, the aim has been to shed light on the pathway through which health and well-being are influenced by precarious employment and social reproduction work. Although this study is not without its limitations, we can say that we have been successful in our attempt to show that there is a link between precarious employment, social reproduction and health and well-being, and to demonstrate that the gender differences that are present are related both to the sphere of economic production and to the one of social reproduction. Nevertheless, further research on these topics with more detailed data is needed to explore these associations in-depth and to uncover the ways and the extent in which precarious employment and social reproduction influence both health and well-being.

The present analysis is not without limitations. To name just the most important, the data used have allowed a longitudinal study of the issue, however, it would have been ideal to be able to construct a scale more similar to the Employment Precarious Scale, both in terms of scale validation and comparability of items and dimensions. Several differences from the original scale can be noted: firstly, the vulnerability dimension was omitted because no valid items were found in the selected dataset; secondly, uncertain working time is included, which was not an original dimension of EPRES but was included in EPRES-E (Padrosa et al., 2021). Furthermore, since the results obtained were not fit enough to construct a valid and reliable scale, it was not possible to carry out CFA or

SEM for the empirical part. We therefore decided to analyse each dimension separately, then to build a model with all the dimensions together and finally to construct an additive index. The additive index, once used, clearly shows that a weighted scale is always to be preferred when data availability allows, especially after seeing how the dimensions included in the analysis behave differently and therefore how an equal weighting of each component in the scale does not truly represent the complexity of the phenomenon. A more similar scale would have made possible to compare this analysis with the other study using EPRES and its adaptations and other data from other countries.

With regard to another of the main variables, it would have been ideal to have more specific information on social reproduction. The variable on the number of hours per week spent on informal care work in the first response category of the variable records people who answered “0-4 hours per week”. Although less than 4 hours per week can be considered as a small number of hours spent on caring tasks, it would have been ideal to have information to distinguish between those who do few hours of caring work per week and those who do none at all. Furthermore, the main findings on informal care work are certainly noteworthy, however the great limitation of the variable used to indicate care work is obvious. In fact, this variable does not take into account all the other important aspects of social reproduction, such as caring for children and all the social reproduction tasks such as cooking, cleaning, etc., but only the time spent caring for a sick, elderly or disabled person.

Finally, it can still be useful to see the distribution of the few variables present in the data set on precarious employment collected during the Covid-19 outbreak, but the data used has several limitations that need to be highlighted. Firstly, due to the global situation at the time the data was collected, the survey did not focus on collecting as much in-depth information as the main survey, but rather fewer items on each topic and often information to try to measure the exceptional situation we were experiencing, such as the impact of homeschooling on families with children. Secondly, compared to the data collected for the main survey, the sample that responded to the Covid-19 questionnaire is smaller. As a result, it is not possible to generalise the results as the sample is not representative of the composition of the UK population due to selection bias. It is therefore not possible to make a comparison with the previous analysis or to claim that the results are representative of the United Kingdom.

Clearly, there are many areas of research that remain unresolved in this contribution. Starting from the limitations of this research as well as from the possibilities that the research itself has revealed, we can suggest in particular three explorations for further empirical research, which have only been partially considered here. First, we need to consider the limitations imposed by the data, which we have already highlighted. The data used have several strengths, including detailed information and the possibility of conducting longitudinal studies. However, the limitations found in our study provide incentives for further research, in the collection of more precise and timely statistical data to measure precarious employment in a way that is more similar to EPRES, and also to allow for easier comparison across countries. Care work, both formal and informal, and social reproduction are once again widely discussed in the current literature, due to the debate on life-work balance and the COVID-19 pandemic, therefore similar incentives are needed for further study both of the analysis of existing data and of the collection of more precise data, on care work and social reproduction in general, with the aim of measuring each aspect of the topic more in depth.

Secondly, in first part of the empirical research we studied the association between precarious employment and both physical and mental health. It would be ideal if this type of study could be extended and deepened with the intention of understanding whether and how precariousness and physical and mental health interact, the direction of this relationship and whether the deterioration of one is linked in a knock-on effect to the deterioration of the other.

Finally, our study found an unusual influence, especially in the case of mental health, of the job tenure (temporariness dimension) and of wage, as previously said, there are possible explanations for these effects, but it would be interesting to explore them more closely in future analyses.

To our knowledge, this is the first longitudinal study about the United Kingdom to examine the relationship between precarious employment, social reproduction and health. The results show that precarious employment is indeed associated to a detrimental effect on health and that this effect is even stronger for women when we look at mental health. Furthermore, time spent on caring is associated with poorer mental health. Specifically, gender differences are lowest among those with low care responsibilities and increase with higher care responsibilities. Those who provide more hours of care are associated

with worse health, but it is not the change from fewer to more hours that affects health, but rather those who provide more hours on average, hence the long-term effect of intensive informal care. This calls for further research to try to better explain the specific factors associated with the gender differences found and highlighted the need for policy and social action to try to promote equality and reduce gender differences in mental health.

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