

How Maternity Leave Affects Female Employment in the UK?

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Abstract. Maternity leave (ML) is the period during which a woman is legally allowed not to work during the weeks before and after childbirth. In the UK, the policy with ML not only includes a woman's legal right to take leave during childbirth, but also emphasises the right to receive financial benefit during the leave and return to work after childbirth. It is undeniable that ML allows women sufficient time to recover physically and psychologically after childbirth, and stay with their children. However, a body of evidence suggests that the impact of ML on women's employment is ambiguous. When the ML can encourage women to enter the labour market, the ML is also associated with lower wages for women, increased unemployment and reduced opportunities for promotion. Faced with this confusing evidence, how to clarify the impact of maternity leave on women's employment in the UK and how to find out the reasons why maternity leave affects women's employment becomes the main task of this study. After comparing the data for the treatment group (who would be affected by the law) and the control group (who would not be affected by the law) before and after the ML came into force. This study found that although the ML did not increase the wage gap between men and women, it discouraged women from entering the labour market, reduced female employment and was detrimental to women's wage development. Furthermore, the negative effects of the ML on women's employment can be attributed mainly to the too long leave duration.

Keywords: Maternity leave; Women; Labour market; employment.

1. Introduction

How the employment situation for women could be improved has been a hot topic of discussion for almost two centuries (The United Nations Human Rights Office, 2022). Different countries and international organizations have demonstrated their determination to support women in the workplace. For example, in the Convention on the Elimination of All Forms of Discrimination against Women, the United Nations General Assembly (1979) stresses that "States Parties shall take all appropriate measures to eliminate discrimination against women in the field of employment to ensure the same rights based on equality of men and women. Moreover, the role of women in childbirth shall not be the basis of discrimination."

As a party to this treaty, the UK has made many efforts during the 20th and 21st centuries to promote gender equality in the workplace and defend women's labour rights. Specifically, to reduce the likelihood of a woman losing her job due to pregnancy, the Employment Protection Act 1975 emphasised, for the first time, that an employer cannot dismiss an employee because she is pregnant or for any other reason related to her pregnancy. To do so would be considered an unfair dismissal (UK Government, 1975). The Employment Protection Act 1975 also mentioned that employees had the right to return to work at any time up to 29 weeks after giving birth (UK Government, 1975). For equal pay in the workplace for work of identical or similar value, the Equality Act 2010 prohibits disadvantageous treatment of women compared to men in terms of income (Mason and Minerva, 2020); the Equality Act 2010 also protects women from harassment at work, with harassment potentially including unwelcome physical contact, obscene comments and offensive emails (UK Government, 2010).

These policies have made progress. For example, the employment rate for women of 'working age' (25-54 years) rose from 57% in 1975 to 78% in 2017; the proportion of working-age mothers in paid employment increased from 50% in 1975 to 72% in 2015; and the number of women in full-time work rose from 29% in 1985 to 44% in 2017 (Roantree and Vira, 2018). However, an analysis of several labour market data (FLFPR, female employment rate and unemployment rate, the proportion

of females dropping out of the labour market) shows that inequality is still reflected in the fact that women's employment rate (72.2%) is still lower than men's (78.8%); women are paid less than men (median pay for women is 15.4% lower than for men); women are three times more likely than men to work part-time (38% of women work part-time compared to 13% of men); women are more likely to drop out of the labour market to take care of their families (7.6% of women and 1.1% of men); and women have limited access to top leadership positions, etc. (Francis-Devine and Booth, 2022; Murphy et al., 2022).

Meanwhile, a survey of 1,000 working-age women in the UK in 2021 revealed that 65% believed that prejudice and discrimination prevented women from getting a job, and more than two in five (41%) women were concerned that their gender was a barrier to finding new employment (PA News Agency, 2021).

Despite the British government's efforts to improve women's job positions, gender inequality in the workplace continues to be a persistent problem. This study begins with the idea that not all policies positively affect women's employment.

Consider the the ML, which is directly associated with women's rights. It is undeniable that the original purpose of ML was to protect the health of mothers and children, relieve families of the burden of childbearing by providing appropriate medical care and attention during childbirth, and guarantee women's rights to return to work after giving birth (UK Government, 2006). However, some inappropriate regulations in ML, such as excessively long leave duration, may exacerbate women's employment struggles. For example, Uribe, Vargas and Bustamante (2019) found in their study of the 2011 amendments to the Colombian Labour Code that extending the duration of ML from 12 to 14 weeks increased the likelihood of inactivity among women aged 18-30 compared to women aged 40-55; women aged 18-30 were more likely to be informal and self-employed compared to women aged 40-55; and women aged 18-30 were more likely to be unemployed compared to men aged 18-30, while their wages decreased. At the same time, the government's requirement that employers take full responsibility for paying financial benefits to female employees during they on leave may increase the difficulty of women entering the labour market (Baum II, 2003).

Excessive leave duration and inappropriate forms of financial benefits can adversely impact women's employment because, when an employee is pregnant, the employer has to hire a replacement worker for the duration of the leave to keep the job running. The longer period of leave means that the position is vacant for a more extended time. Per national legislation, firms are also required to provide a specified remuneration to female employees and workers (currently, the statutory maternity pay in the UK is 90% of ordinary income) (Government Digital Service, 2015a). These additional costs increase the expenses of women's employment (Baum II, 2003). Employers are reluctant to recruit women who have or plan to have children soon because they fear that their maternity roles may affect the company's costs and performance (Le and Pham, 2021). Le and Pham (2021) similarly mention in their study that although ML emphasise women's rights to return to work after childbirth, many respondents witnessed their colleagues returning to work after giving birth and receiving lower-paid positions or dismissals.

Overall, a review of existing literature verifies the validity of the previously stated premise, namely that not all initiatives have a favourable effect on female employment. With this premise in mind, this paper argues for a discussion on the impact of ML on women's careers to be completed based on a comparison of data before and after the law came into force, using the 2006 Act as the subject. In the process of this discussion, Chapter 2 will first explain some necessary information. This will include how ML in the UK has developed since ML was first enacted in 1975; and how the length of ML, the form of financial assistance during ML (by insurance or with the blessing of the employer), the amount of financial aid, and the range of people protected by ML have undergone changes.

Chapter 2 will also discuss the reasons for selecting the 2006 Act as the primary subject of this study. A literature review on 'ML' and 'female employment' will appear in Chapter 3 which includes a compilation of the results and reasons why ML affects women's employment, as well as hypotheses about the 2006 Act. Chapter 4 contains a description of the research methodology while Chapter 5

will respond to each of the hypotheses. The studies of Uribe et al. (2019) informed the research methodology of this paper, as well as Le and Pham (2021) and Vu and Glewwe (2022). The effect of ML on female employment is explored by contrasting the data before and after the implementation of the 2006 Act on the groups more affected by the law (the treatment group) and the group comparatively untouched by the law (the control group). In setting the treatment and comparison groups, this study expects that the ML will significantly impact women with a higher likelihood of getting pregnant than women with a lower likelihood of getting fertility. Considering that, on average, the fertility rate for women between 18 and 34 years old was around 28.5% over the period analyzed (1975 to 2008), while women over 35 years old had a fertility rate of about 0.68%. So women between 18 and 34 can be the treatment group, and women over 40 are the control group. Employers frequently take this into account when evaluating the expected value of recruiting women from this age bracket, as women of higher fertility are more likely to become pregnant soon. Men can also serve as the study's control group. This group of men was unaffected by the change in the law and, barring any gender discrimination, shared the same job experience and other characteristics as the women in the treatment group of this study, making them comparable.

This study then advocates using data from the Office for National Statistics (ONS) (Office for National Statistics, 2022) for secondary research, given the credibility of official data and comprehensiveness. The research method mentioned in Chapter 4 allows the specific data analysis process, which Chapter 5 reveals. Then, Chapter 6 discusses the results and gives future policy recommendations. The discussion about the result of research will explain why this research sometimes offered a conflicting information from other researchers. Finally, Chapter 7 will conclude the key information of this study.

The line of research in this study may help subsequent authorities or scholars to develop a more robust model for both. When a systematic model of ML and the data on female employment is created, those in power can readily find the length and conditions of ML, the number of financial benefits, and the mode of provision that best suits the national context and the needs of the population, based on the data of the region (Süsser et al., 2021).

2. Background

2.1 ML

According to the Cambridge Dictionary (2022), ML is the period during which a woman is legally allowed not to work during the weeks before and after childbirth. Currently, ML is available in most countries (Addati, Cassirer, & Gilchrist, 2014). In addition to guaranteeing women's right to ML, some countries also emphasise in their laws on ML that women have the right to obtain financial benefits during their leave and return to work after childbirth (Government Digital Service, 2015a). In the UK, the origins of ML can be traced back to the Factories and Workshops Act 1891, which proposed that factory and workshop owners should be prohibited from employing women during the first four weeks after childbirth to protect the health of the mother after delivery (Dumbill, 2021). 20 years later, the National Insurance Act of 1911 introduced the idea of Maternity Allowance (MA). It said that working women and the wives of insured men who had paid into the system could get a lump sum of 30 shillings when they took time off to have a child (Policy Navigator, 2015). Subsequently, the Employment Protection Act 1975 introduced a form of maternity pay parallel to the MA scheme. Under this new scheme, female employees were entitled to Statutory Maternity Pay (SMP) for the period they were absent from work due to pregnancy or childbirth. The Employment Protection Act 1975 also emphasises that the employer cannot dismiss an employee because she is pregnant or for any other reason related to her pregnancy; otherwise, it will be considered an unfair dismissal. In addition, employees had the right to return to work at any time up to 29 weeks after giving birth (Queen's Printer of Acts of Parliament, 1994).

The introduction of these rights is undeniably essential for the future development of female employment and has had many positive effects, including an increase in the labour force participation

rate (Hanel, 2012) and an increase in the average female wage (Schönberg & Ludsteck, 2014). Their limitations, meanwhile, were clear. For instance, an educational site named Striking Women (2022) emphasises that only half of working women were qualified to participate in the Employment Protection Act of 1975, highlighting the Act's coverage restrictions. As a result, the UK government amended the Act several times over the decades to give women's rights a more thorough level of protection. The content and purpose of these changes will be summarised below.

2.1.1 Right to take Leave

The Factories and Workshops Act of 1891, which was the prototype of ML, suggested that factory and workshop owners should be prohibited from employing women during the first four weeks after childbirth to protect the mother's health. Though temporary, this Act was one of the first regarding the right to take leave after delivery of a baby (Dumbill, 2021). However, this provision was short-lived, and the formal concept of ML remained off the agenda until 1975.

The Employment Protection Act 1975 is an Act relating to the employment rights of individuals. The Act, as the first legislation of ML in the UK, regulated the concept of ML and highlighted the primary conditions under which ML could be granted. Under the Act, a female employee is entitled to 29 weeks ML if she has worked for the same employer on a full-time basis for two years or a part-time basis for five years by the 11th week before the expected week of childbirth. However, the limitations of this Act are reflected in the somewhat limited coverage, with approximately only half of working women being eligible (Striking Women, 2022). This is the reason why the Trade Union Reform and Employment Rights Act 1993 emphasises that all pregnant women, regardless of their previous employment status, are entitled to 14 weeks of statutory ML; during the leave, they are protected from termination or other forms of discrimination on the grounds of pregnancy. Since then, the UK government has continued to change the details of maternity-related policies in line with local trends. Also, the length of ML has been extended on several occasions, including the Employment Relations Act 1999, which extended statutory ML from 14 weeks to 18 weeks; the Employment Act 2002, which extended it from 18 weeks to 26 weeks; and the 2006 Act from 26 weeks to 52 weeks (Equality and Human Rights Commission, 2010; SPLASH-DB, 2022).

Today, women are entitled to 52 weeks of ML if they notify their employer of their pregnancy at least 15 weeks before the projected delivery date and of the leave's intended start and end dates. Female employees can terminate their ML earlier than male employees; however, the minimum ML accessible to the typical female employee is two weeks. In contrast, women working in factories need a minimum of four weeks (Government Digital Service, 2015b).

2.1.2 MA and SMP

While MA and SMP provide monetary support to mothers, the two have different mechanisms. For example, the UK received maternity benefits before statutory maternity pay. MA was initially introduced in the National Insurance Act of 1911, which stipulated that employed women and wives of insured men who had paid premiums were eligible for a lump sum payment of 30 shillings when they took ML (Striking Women, 2022). Subsequently, the Employment Protection Act 1975 introduced a form of maternity pay parallel to the MA scheme. Under this new scheme, female employees were entitled to SMP for the period they were absent from work due to pregnancy or childbirth (UK Government, 1975). Secondly, MA is paid by the government (Government Digital Service, 2015a), whereas employers pay SMP. However, they can claim most of the money back from HM Revenue & Customs (Government Digital Service, 2015b). Thirdly, they differ in amount as well as eligibility to receive them. Table 1 records the main changes in MA and SMP since 1911. When the SMP focuses on whether the woman had ensured that she started working for the same employer before becoming pregnant and whether her earnings meet the minimum amount (the requirements vary yearly). MA is available if a woman changes jobs during pregnancy, does not earn enough to qualify for SMP, or is unemployed or self-employed while pregnant (Government Digital Service, 2015a).

Nowadays, the SMP is paid for up to 39 weeks, including: 90% of female average weekly earnings for the first six weeks; £156.66 or 90% of your average weekly earnings (whichever is lower) for the next 33 weeks. If the women do not meet the qualifications for SMP, they are eligible for a MA of 39 weeks, but the amount may vary. Women who are employed or have recently ceased work will receive £156.66 per week or 90% of their average weekly earnings. A self-employed person will receive between £27 and £156.66 per week (depending on whether the mother was previously insured and the number of weeks she paid in).

Table 1 The main changes in MA and SMP

Year	MA	SMP
1911	A lump sum payment for childbirth in the amount of 30 shillings was introduced.	None
1946	An MA of 13 weeks was implemented for insured females. The lady must have been working or self-employed for a minimum of 26 weeks and have paid National Insurance contributions for a minimum of 50 weeks in the year preceding the 13th week before giving birth.	None
1975	No change	Introduction of SMP
1986	No change	The duration of SMP has been extended to 18 weeks. If an employee has worked for an employer for at least two years, she is entitled to 90% of her weekly earnings for six weeks and a flat rate benefit for the remaining 12 weeks.
1993	If an employee does not qualify for SMP, she is eligible for MA if she was employed or self-employed for 26 weeks during the 66 weeks before the birth of her child.	The conditions for receiving SMP become less stringent. Women who have worked full or part-time for the same employer for at least 26 weeks before the 15th week before the start of the expected week of childbirth are eligible.
1999	The rules governing MA that do not meet the statutory conditions for SMP have changed.	The conditions for a woman to receive SMP remain essentially the same, except that her average weekly earnings must be higher than £67 for the last eight weeks before the leave begins.
2002	No change	SMP extended from 18 weeks to 26 weeks. For the first six weeks, the woman received 90% of her average weekly earnings; for the remaining 20 weeks, she received 90% earnings or £100.
2006	The period of MA extends to 39 weeks, but there were no significant changes to eligibility or payment conditions.	The conditions for receiving SMP remain the same; the period extends to 39 weeks.
2014	A woman will be disqualified from receiving MA if she is engaged in any work for more than 10 days during the period of MA, whether she has worked continuously or not within this period.	No change

2.1.3 Work Protection

The Employment Protection Act 1975 emphasises for the first time that an employer cannot dismiss an employee because she is pregnant or for any other reason related to her pregnancy; otherwise, it will be considered an unfair dismissal. In addition, employees have the right to return to work at any time up to 29 weeks after giving birth (SPLASH-DB, 2022). Supposing a person believes they are a victim of discrimination due to pregnancy or childbirth, in that situation, they can take their case to an employment tribunal, regardless of how long the employee or worker has been employed (ACAS, 2018). Discrimination includes dismissal, not giving them work, changing their pay or other terms, forcing them to work while on ML, and preventing them from returning to work because they are breastfeeding (ACAS, 2018).

2.2 The 2006 Act

In fact, in addition to ML, parental leave, paternity leave, and adoption leave are also available regarding childbirth and child-rearing in the UK. Using the 2006 Act as an example, which this study will address, this law initially expanded ML and SMP and modified the monetary benefits. Then a new provision was introduced for employers to provide employees with additional paternity leave (APL) and additional paternity pay (APP) for the second six months of the 12-month ML (UK Government, 2006). This will allow the father to take time off for childcare when the mother returns to work after ML. The most significant difference between APL and ML is that the beneficiaries of the policies are different (International Labour Office et al., 2014). The beneficiaries of ML are only the mothers, but the recipients of APL are decided by mutual agreement between the parents. There is no denying that the original intention of paternity leave was to involve fathers in the parenting process, not to make mothers solely responsible for childcare (Petts, 2018). However, as the Women's Budget Group (2018) states, the use of paternity leave by citizens in the UK, as in most other countries, is highly gendered. Data from Chanfreau et al., (2011) shows that in 2008, 90% of mothers took more than 26 weeks of ML, while 70% of fathers took less than two weeks of paternity leave. This paper, therefore, argues that the change in female employment data as a result of the 2006 Act is mainly attributable to the shift in ML and not to other components.

Apart from the advantage that much of the 2006 Act relates to ML, another critical point is that the various provisions relating to ML have undergone several changes over the past decades. However, the main elements of ML, including the timing and calculation of ML and financial benefits, have not changed since 2006. This can be explained by the fact that the 2006 Act is sufficiently comprehensive and reasonable to be of interest for research purposes.

In summary, this section examines the history of ML in the United Kingdom and the rationale for selecting the 2006 Act as the primary study subject. The following section will better collate the existing literature on ML to identify the Act's impact on women's employment. The aim is to build on the current theoretical and empirical evidence to establish hypotheses relating to the 2006 Act.

3. Literature Review

The term 'maternity leave' is not a new research term in the UK. However, most of the research has focused on the effects of ML on children. Examples include the impact of ML on children's health (Strang & Broeks, 2017); ML and children's cognitive behavioural development (Baker & Milligan, 2014); the relationship between ML and duration of breastfeeding (Hawkins et al., 2007) or childcare services and female employment postnatal employment (Fagan & Norman, 2012), and others (Zabel, 2009). Therefore, there is a need to extend the scope of the literature to the world.

Table 2 Attitudes of different scholars for ML

Keyword	Positive	Negative
Women's labour force participation rate	Well-designed maternity leave policies can induce women to enter the labour market (Hanel, 2012)	Employers may be reluctant to hire women who have or plan to have children in the near future (Le and Pham, 2021)
Gender norms	More generous provisions of ML can increase gender equality in household economic decision-making and improve work-related gender norms. (Chai et al., 2021)	Women-only ML entrenches old gender roles and expectations (Hideg et al., 2018)
Mental health	Taking ML can promote a reduction in depressive symptoms and reduce the likelihood of major depression (Borrell et al. 2013; Chatterji & Markowitz, 2008; Dagher et al. 2013)	Taking ML is a source of tension, stress and feelings of injustice at work (Maxwell et al., 2018)
Economic treatment	ML provides economic security for women and their families and encourages new ways of valuing women's economic contributions (Chai et al., 2021)	The longer the leave is taken, the more pronounced the penalty effect of postnatal pay (Baker, 2011)
Employment development	Extended the duration of ML encourages women to move from informal work (e.g. farm or off-farm domestic work) to private formal employment (Vu & Glewwe, 2022)	Many respondents witnessed their colleagues returning to work after childbirth either being placed in lower paid positions or being laid off (Le and Pham, 2021)

However, another problem arises when scholars in various countries discuss the impact of ML on female employment as they have different research strategies and bring similar or opposite conclusions. For example, while Aisenbrey et al. (2009) use cross-country data for quantitative analysis and demonstrate the negative impact of extended leave on women's career development, Vu and Glewwe (2022) focus their study on a single country, Vietnam, and conclude that extended the leave duration does not increase the gender employment gap. While some scholars have demonstrated that ML can induce women to enter the labour market (Hanel, 2012), others have argued that because of ML, employers may be reluctant to hire women who have children or who intend to have them soon (Le and Pham, 2021). Similar differences also appear in the literature related to women's economic treatment, gender norms, and employment choices (see Table 2).

At the same time, similar provisions from ML may have diverse impacts in different countries. For example, in the same case of extended the duration of ML, Uribe et al.'s (2019) study in Colombia found that it increased the probability of women within working age dropping out of the labour market. However, Vu and Glewwe's (2022) study in Vietnam found that extended duration of ML encouraged a shift from unofficial work (such as domestic or farming work) to private official work for women. Therefore, it is unrealistic to confirm the impact of the Act 2006 on UK female employment simply by collating the existing literature. The usefulness of the literature review is that findings from individual countries can help this paper to build hypotheses about the Act 2006 in the UK. In addition to this, this chapter will summarise the research methods in the relevant literature in order to find a suitable methodology for this study.

3.1 Impact of ML on female employment

Before discussing the impact of ML on women's employment, it is worth emphasising that different data represent different meanings. For example, the female labour force participation rate (FLFPR) is not the same as the employment rate; a woman being unemployed does not mean she is out of the labour market. It is useful to know the definition of each figure to better analyse the reasons for the impact of ML on women's employment. Specifically, the FLFPR represents the proportion of a country's working-age population actively participating in the labour market by working or seeking work (ILO Department of Statistics, 2015). This can be explained by the fact that the FLFPR is calculated to include not only women who are already employed, but also unemployed women who

are temporarily unemployed but actively seeking work and willing to work. Conversely, women who have not looked for work in the last four weeks and/or are unable to start work in the next two to six weeks would drop out of the labour market (UK Government, 2021). In addition to this, the average weekly earnings (AWE) for women and the gender pay gap (GPG) represent different concepts. If the AWE can be used as the main indicator of changes in women's earnings (Office for National Statistics, 2019), the GPG is more concerned with the average earnings gap between men and women (White, 2021). Therefore, when discussing the impact of ML on female employment, the FLFPR, employment rate, unemployment rate, AWE, and GPG should all be discussed separately and not lumped together.

Table 3 Data that May be Relevant to Female Employment

Keywords	Definition	Calculation Formula
Labour force participation rate (economically active rate) (ILO Department of Statistics, 2015)	The proportion of a country's working-age population actively participating in the labor market by working or seeking work	$\text{LFPR (\%)} = \frac{\text{Persons employed} + \text{unemployed}}{\text{Working-age population}} \times 100$
Economic inactivity rate (Office for National Statistics, 2021; UK Government, 2021)	Proportion of working-age (16-64 years) population who were not looking for work in the last 4 weeks and/or were unable to start work in the next 2 weeks.	100 minus the labour force participation rate
Employment rate (Office for National Statistics, 2021)	The number of people in paid work as a proportion of the population.	$\text{Employed population} / \text{working age population} \times 100$
Unemployment rate (OECD, 2022).	The percentage of the total labour force that is unemployed but actively seeking work and willing to work.	The number of unemployed people divided / the economically active population
Average weekly earnings (Office for National Statistics, 2019)	The average weekly earnings for any given month is the ratio of the estimated total wages for the economy as a whole divided by the total number of employees.	
GPG (White, 2021)	The difference between average hourly earnings (excluding overtime) of men and women as a proportion of men's average hourly earnings (excluding overtime).	
The percentage of part-time employment (Office for National Statistics, 2022).	Full-time is defined as employees working more than 30 paid hours per week (or 25 or more hours for the teaching professions). Part-time is defined as employees working less than or equal to 30 paid hours per week (or less than or equal to 25 hours for the teaching professions).	$\frac{\text{Number of part-time workers}}{\text{Number of employed}}$

3.1.1 FLFPR

The available empirical evidence on the impact of ML on FLFPR after childbirth, during childbirth, and in the long term is mixed (Schönberg & Ludsteck, 2007; Miller, 2014; Low & Sánchez-Marcos, 2015). There is no denying that well-set ML can induce women to enter the labour market (Hanel, 2012). For example, the UK government requires female employees to meet a minimum of 26 weeks of continuous work for their employer when claiming SMP (Government Digital Service, 2015b); Spain's eligibility for paid ML requires that women work at least 180 days in the seven years prior to the child's expected date of birth or 360 days throughout their working life (Instituto Nacional de la Seguridad Social, 2021). These regulations have increased the likelihood that women will enter the labour market before giving birth, thereby increasing female labour force participation (Hanel, 2012). Besides, for women who want to return to work after childbirth, employment protection reduces the search costs for re-entering the labour market and facilitates the development of female participation rates (Smeaton, 2006; Low & Sánchez-Marcos, 2015).

However, the negative effects of some inappropriate provisions of ML, such as too long or too short, on women's labour force participation may override these positive effects mentioned above. Specifically, research suggests that if mothers are provided with unpaid leave or shorter paid leave (less than 12 weeks), women may have to quit their jobs to take time off to care for young children, or they may even leave the labour market altogether (Keck & Saraceno, 2013). Moreover, when women leave the labour market, their employment opportunities decrease with the time they have been out of work (Schönberg & Ludsteck 2014), which makes it more difficult for them to re-enter the labour market (Manchester, Leslie and Kramer, 2013; Keck & Saraceno 2013). Meanwhile, ML with longer duration (longer than six months) may have a negative impact on the rate at which mothers return to work (Del Boca et al., 2008; Olivetti & Petrongolo, 2017; Canaan et al., 2022), as longer leave duration increases labour costs for women. Specifically, the increase in labour costs refers to the fact that when an employee is pregnant, employers must hire replacement workers to keep the job running during the leave period (UK Government, 2020), and the extended leave means that the position remains vacant for a longer period of time. Furthermore, when employers are required to pay wages or other financial benefits during women on leave with no or little government contribution (Karshenas et al., 2014), these additional costs all lead to increased employment expenses for women (Del Boca et al., 2008; Low & Sánchez-Marcos, 2015). Considering the costs associated with ML, employers may be reluctant to hire women who have children or who intend to have them soon (Le and Pham, 2021), this will prevent women from entering the labour market.

The effect of ML on women's health can also bring changes to FLFPR. On the one hand, ML with financial benefit and an appropriate duration is associated with maternal health after childbirth (Chatterji & Markowitz, 2008; Borrell et al., 2013; Dagher et al., 2013; Jou et al., 2017). For example, Chatterji and Markowitz (2008) found that taking more than 12 weeks of ML reduced maternal depression symptoms by 15% on the Centre for Epidemiological Studies Depression Scale. Kornfeind and Sipsma (2018) conducted a multivariable logistic regression on responses to a health questionnaire among 177 full-time working women in the US who had returned to work after giving birth. A multivariable logistic regression analysis also supports the finding that ML of 12 weeks or more is associated with a reduction in the likelihood of postnatal depressive symptoms. Also, ML reduced the probability of maternal hospitalisation after delivery by almost 50% (Jou et al., 2017). Physical and psychological well-being is generally associated with increased labour force participation (Mushtaq et al., 2013).

On the other hand, long periods of leave may instead increase the psychological stress of women at work. In the case of mothers who work on the police force, for example, Langan et al., (2016) note in their study that police mothers are not only asked to be good mothers, i.e. to take on most of the planning, management and provision of household and childcare in line with the gender division of labour in the home; they are also asked to be good police officers, prioritising work over family. When prolonged leave can expand the responsibilities of mothers in family childcare (Hideg et al., 2018), the family-work conflict faced by police mothers can also be exacerbated. On top of this, while a policewoman is on ML, her workload is undertaken by other police officers; no additional agency is designated to replace her. This situation may breed resentment among her peers and deepen the negative perceptions initiated or intensified by the pregnancy announcement as the length of leave grows. This explains why Maxwell et al., (2018) mentioned in their study that respondents felt or were perceived to be responsible for the complications they caused for their colleagues and workplace when taking ML. This sense of responsibility is a source of tension, stress and feelings of injustice (Maxwell et al., 2018). Le and Pham (2021) mention that female employees' attitudes in the face of ML were negative as many respondents witnessed their colleagues returning to work after childbirth either being placed in lower paid positions or being dismissed. These psychological pressures may accelerate women's withdrawal from the labour market. Overall, the length of ML is key, whether the impact of ML on labour force participation rates is analysed in terms of employment costs or in terms of the physical and mental health of mothers.

Although the optimal duration for increasing female labour force participation is debated, most studies point to the disadvantages of an excessive leave duration and highlight the inverted U-shaped relationship between the duration of ML and FLFPR (Akgunduz & Plantenga, 2012; Del Rey et al., 2020; Steiber & Haas, 2012). Specifically, Del Rey et al.'s (2020) quantitative study of FLFPR during 1994, 2004 and 2011 in 159 countries/territories demonstrates that the threshold of ML length is, on average, between 25 and 34 weeks. Below this threshold, increasing leave duration will increase FLFPR; while above this threshold, increasing the length of ML may lead to a decrease in FLFPR. Other studies have also shown that 30 weeks of paid leave has the most positive impact on labour market participation (Akgunduz & Plantenga, 2012). ML would bring a more positive impact if the financing received by women during their leave came from the government rather than from their company (Amin, 2019). However, in the 2006 Act, the UK government extended the duration of ML from 26 weeks to 52 weeks; the SMP and MA would be extended from six to nine months. The law also states that employers must pay employees 90% of their average weekly earnings (before tax) as SMP (UK Government, 2006). Therefore, this paper's hypothesis 1 is that:

The 2006 Act reduced the FLFPR.

3.1.2 Employment and Unemployment Rates

There is no denying that most ML have provisions related to protecting women's employment during and after childbirth. For example, many countries explicitly prohibit employers from discriminating against women during pregnancy or breastfeeding (The U.S. Equal Employment Opportunity Commission, 2015; Maternity Action, 2021), which reduces the likelihood of women losing their jobs due to childbirth. In addition, the job protection provisions in the ML emphasise the right of female employees to return to exactly the same job under the same terms and conditions as before the ML (Maternity Action, 2021). The effect of this provision has been demonstrated in Germany, the USA and Sweden: during an eight-year observation window, 81% of women in the USA were in the same or similar job after childbirth; the corresponding figures were 80% in Germany and 75% in Sweden (Aisenbrey et al., 2009). Thus, for women who want to return to work after childbirth, the ML help them continue the employment. However, this set of provisions may not have had the desired employment protection effect in practice. Specifically, longer leave reduces women's employment rates because employers may be reluctant to hire women who have children or who intend to have them soon as the cost of employment increases (Le and Pham, 2021).

In addition to this, prolonged duration of ML increases female unemployment. Part of the evidence comes from qualitative studies of female employment. For example, Olivetti and Petrongolo (2017) show that when a woman takes a longer leave of absence, she is less likely to progress in her career upon returning to work and also faces a greater risk of dismissal or demotion. Le and Pham (2021) mention in their study that female employees' attitudes towards ML are negative, as many respondents who witnessed their colleagues returning to work after childbirth were either placed in lower paid positions or dismissed. Also, a quantitative study by Uribe et al. (2019) states that the Colombian Government's decision that extending ML from twelve to fourteen weeks increased the likelihood of women become unemployed when they are childbearing age. Based on this research, this paper's hypothesis 2 is that:

The 2006 Act is detrimental to female employment.

3.1.3 AWE and GPG

Cerise et al., (2013), Hallward-Driemeier and Gajigo (2015), and International Monetary Fund. (2018) argue that the decision by the government or employers to provide financial security for women and their families during ML enhances women's status and decision-making power within the family. The introduction of maternity pay or maternity benefits can also increase women's wages during childbirth (Schönberg & Ludsteck, 2014). However, taking ML, especially for long periods, has a significant negative impact on mothers' postnatal wages (Schönberg & Ludsteck, 2007; Olsen et al., 2010). On average, mothers' wages are lower than those of women without children (Budig & England, 2001; Sigle-Rushton & Waldfogel, 2007). This negative effect on wages due to childbirth

is also known as the motherhood penalty effect (Gough & Noonan, 2013; Kahn et al., 2014). The association between maternal wage penalties and ML is mainly reflected in the evidence from several countries that the longer the leave is taken, the more pronounced the postnatal wage penalty effect is (Baker, 2011). In Germany, for example, the wage penalty increases with the length of leave (around 1% for each month beyond the statutory length of paid maternity leave) and this penalty effect is also present eight years after the birth (Schönberg & Ludsteck, 2007). In the UK, a 1% penalty on average wages has been found for every time a woman leaves work to take up family care work, and the impact on long-term earnings is even greater (Olsen et al., 2010). In Australia, Baker (2011) found that women who returned to work within 12 months of taking leave suffered a wage loss of almost 7% in the first year of returning to work, increasing to almost 12% in the second year. This loss continues into the third year of returning to work. Human capital theory can explain how longer leave has a greater impact on mothers' postnatal wages, specifically an increase in a person's stock of knowledge or human capital raises her human capital endowment - the skills and abilities that a person uses for productive purposes (OECD, 2021) - and thus increases earnings (Schönberg, 2007). Similarly, the longer an individual spends on education or training, the higher the expected wage (Dearden et al., 2006). Thus, career interruptions due to ML may lead to disengagement and human capital depreciation for female employees (Dechter, 2014), with longer leave periods representing longer career interruptions. Second, in some human capital-intensive positions (e.g. doctors and professors), prolonged ML may lead to mothers finding that the education she acquired in school and the skills, knowledge and expertise she built up on the job are devalued upon her return to work (Grimshaw & Rubery, 2015). Furthermore, the employment trajectory of many mothers after childbirth is precarious, regardless of their level of education (STEWART, 2013). These mothers may lose skills as they return to a different occupation or job, and their human capital endowment becomes lower as a result (Dechter, 2014). Therefore, this paper can make the hypothesis 3:

The 2006 Act reduces the female AWE.

The female-only nature of leave in ML increases the GPG between men and women. For example, when the significant positive impact of ML on increasing fertility and reducing infant mortality is demonstrated (Ahmed & Fielding, 2019; Raute, 2019), mothers' wages decrease with the birth of a child, but fathers' wages remain the same or even increase (Aranda & Glick, 2013; Luhr, 2020). This is because, according to human capital theory, ML provided for women only represents a market exit that mothers have to take before and after childbirth, but fathers do not. When women are out of the labour market for longer periods and their careers are affected by the leave, men's careers remain largely unchanged. This explains why Kleven et al, (2018) highlight in their paper that in the decades following the birth of a child, fathers and non-parents earn roughly the same amount, but there is a large gap between the wages of them and mothers. This is because the human capital depreciation borne by mothers as a result of childbearing is much more severe than that borne by fathers.

It is worth noting that the 2006 Act is not a women-only law. It introduced a new statutory right to provide employees with additional paternity leave (APL) and additional paternity pay (APP) for the second six months of the 12-month ML. This will allow the father to "take time off for childcare" when the mother of the child returns to work after ML. However, as Women's Budget Group (2018) states, in the UK, as in most other countries, the use of paternity leave is highly gendered. According to the statistics, in 2008, 90% of mothers took more than 26 weeks of ML, while 70% of fathers took less than two weeks of paternity leave. Therefore, it is possible to make the hypothesis 4:

The 2006 Act has increased the GPG

3.1.3 Full-time and part-time job

Childbirth usually implies a broader change in women's labour market behaviour than just a longer break from work. Instead, in seeking to achieve an adequate work-family arrangement, women may choose to continue their careers in a more mother-friendly environment, even at the cost of lower wages (Tomlinson, 2006). Among these, part-time work is popular with women because of its flexibility, and it allows them to combine work with family responsibilities (Renda et al., 2009). Data from the UK Household Panel Survey showed that less than 10% of women continued to work full-

time after having children (Harkness, 2016). There is no denying that working part-time as opposed to not working not only ensures that mothers return to the labour market, build human capital and increase household income but also saves on childcare costs between the end of maternity leave and the child's third birthday (Hill et al., 2004). However, part-time work represents low income, low stability and low continuity compared to full-time work (Hill et al., 2004; Renda et al., 2019). A qualitative study of women's postnatal employment options mentioned that "companies will not take seriously those who give up full-time work because of other commitments"; and that "part-time work of less than three days a week is a problem" (Baird & Charlesworth, 2007). The UK Government Equalities Office has also described the change of mothers who are unemployed, working part-time or in lower status jobs after giving birth as a 'downgrading' of mothers' careers (Harkness et al., 2018). Therefore, if maternity leave facilitates the transition from full-time to part-time work, it can be argued that the impact of maternity leave on women's employment choices is negative. Firstly, maternity leave increases women's responsibilities in childcare tasks (Ryder, 2014), thus contributing to women's choice to work part-time after childbirth. Women are already more likely than men to be identified as homemakers and primary caregivers of children in industrialised economies (Eagly & Wood, 2012; Lyonette, 2015). In granting 'generous' leave rights to mothers, the law reinforces old gender stereotyping and expectations (Hideg et al., 2018; OHCHR, 2021). Women may be seen, and perceive themselves, as providing better care for their children (Ryder, 2014) and thus take up childcare on their own initiative. Secondly, the impact of ML on women's employment choices is also related to the maternal wage penalty mentioned above. This is because when both parents' leave ends, someone in the household has to be responsible for childcare. Mothers are more likely to withdraw from the labour market or choose part-time work with more flexible hours to take on childcare responsibilities than fathers who earn more. This choice is a compromise between the mother and the reality of the situation, in order to secure the family's financial resources as much as possible while raising their children. At the same time, the negative impact of maternity leave on mothers' wages increases as the length of leave increases (Baker, 2011). Therefore, it can be simply reasoned that an increase in leave time increases the general parental wage gap, thus increasing the likelihood that mothers will choose to work part-time. Thus, the hypothesis 5 is that:

The 2006 Act encourages women to choose part-time job.

3.2 Review of research methods

When discussing the relationship between ML and female employment, different scholars have various research strategies and directions. Some of these scholars tend to use cross-country data, although the scope of the data chosen by different scholars may differ. For example, Aisenbrey et al., (2009) use labour data from three countries with different provisions for ML (the United States offers the shortest protected leave; Sweden offers long and financially well-compensated leave; and Germany offers longer but less generous leave) to demonstrate the negative impact of long leave periods on women's career progression: an increasing risk to career upward mobility and reducing chances of upward mobility. A similar argument emerges in Del Rey et al. (2020), a study of 159 countries, which found an inverted U-shaped relationship between leave duration and female participation and that female labour force participation decreases with longer ML when it exceeds 34 weeks. However, this view is contrary to the results of Amin (2019), whose analysis of firm-level survey data from 66 predominantly developing countries shows a strong positive relationship between ML and the proportion of female employees in the firm. Specifically, the team's conservative estimates suggest that each additional week of ML increases the proportion of female employees in the private sector by 2.6 percentage points. The association between ML and female workers was more positive when ML was funded by the government, rather than paid for by firms (Amin, 2019). All discuss the impact of extended leave, but different scholars produce different findings, which may be due to significant national differences in women's decisions regarding labour market participation. National differences stem from cultural factors as well as welfare characteristics across countries, beyond what can be captured by the analysis of the study (Brugiavini et al. 2013). Findings based on

large, cross-country datasets give readers little insight into what is happening in a particular country within a specific policy context.

As a result, a subset of scholars has also chosen to focus their research on a particular region and discuss the impact of ML' duration on female employment by comparing data differences before and after policy changes in that region between groups that are more affected by the legislation (treatment group) and those that are relatively unaffected by it (control group). This approach takes into account the differences in labour markets and regulations across regions. For example, Uribe et al. (2019) found in their study of the 2011 amendments to the Colombian labour code that extending the length of leave from 12 to 14 weeks increased the likelihood of inactivity, informality and self-employment among women aged 18-30 compared to women aged 40-55; and that women aged 18-30 were more likely to be unemployed compared to men of the same age.

Le and Pham's (2021) research in Vietnam offers a different perspective. By comparing the formal employment rates of different characteristics of people surveyed by the Vietnam Household Living Standards Survey in 2008, 2010, 2014, and 2016, Le and Pham (2021) conclude that although the gender wage gap is greater for women with babies than for women without, the employment gap between men and women was not exacerbated by the expansion of ML from four to six months in the 2012 labour law. This conclusion is supported by Vu and Glewwe (2022) who argue that the extension of ML' length from four to six months has encouraged women to move from informal work (such as farm or non-farm domestic work) to private formal employment. This shift occurred mainly in manufacturing, where formal employment was more prevalent than in other sectors, and the impact was also concentrated on medium-skilled occupations such as machine operators, factory workers, craft workers, and clerks (Vu & Glewwe, 2022).

Table 4 Treatment and control groups in different studies

Authors	Study keywords	Treatment group	Control group 1	Control group 2
(Uribe et al., 2019)	Economic inactivity, unemployment, employment options, wages	Females of age associated with high fertility (18 to 30 years)	Females of age associated with low fertility (40 to 55 years)	Males of the same age as the treatment group (18 to 30 years)
(Le and Pham, 2021)	Employment rate, earnings, gender wage gap	Women with infants	Women without infants	Men in similar conditions
(Vu & Glewwe, 2022)	Employment options	Women of childbearing age of 25-54 years	Women aged 45-54 years	Men in the same age group

In addition to the two quantitative methods of analysis, qualitative analysis is popular when discussing women's experiences of returning to work after childbirth. This is because qualitative research tools such as interviews can appropriately capture the complex range of emotions experienced by respondents, including apprehension, sadness, panic, fear, depression, moodiness, uncertainty, but also excitement and anticipation about returning to work (Spiteri & Xuereb, 2012). For example, in Costantini et al.'s (2022) study for the nurse who returned to work after ML, the nurses interviewed described themselves as "more patient and calm" and "feeling good" to show their change of returning with greater sensitivity and better understanding of others; with "I felt ashamed" and "I was surprised" to report doubts and uncertainties about their expertise after returning to work. However, qualitative research related to ML may be more inclined to discuss working women's feelings about pregnancy, taking ML and returning to work (Langan et al., 2016; Maxwell et al., 2018), rather than directly discussing the impact of ML on women's employment. For example, Maxwell et al. (2018) noted in the study that ML is a law relevant to women, but that it is often constructed as a burden to be handled by their leader, which has the further effect of shifting the burden onto the women themselves. Interviewees felt or were perceived to be responsible for the complications their absence created for their colleagues and work units, and this sense of

responsibility was a source of tension, stress and perceived injustice (Maxwell et al., 2018). Qualitative research has the advantage of recording much information that is not expressed in the data, as well as emotions, but it is difficult to be used directly to construct a relationship between ML and female employment. Some scholars also use mixed methods, such as mixing quantitative surveys with the results of in-depth interviews with pregnant women and mothers of babies aged 0-11 months (Nguyen et al., 2022), among others.

Of these four methods, the second research method that used for Uribe et al. (2019) and Le and Pham's (2021) research is the most appropriate for examining the impact of the 2006 Act in the UK. Because both Uribe et al. (2019) , and Le and Pham's (2021) research are focus on a single specific area, this is suit for the research in UK. Meanwhile, the choice that only focus the research on one area will reduces the impact of cultural and economic differences in the comparison of data. Beyond this, the sections on setting up treatment and control groups and the selection of data will be explained in the next section.

4. Methodology

4.1 Research Methods

This paper provides a critical analysis of ML in the UK from the perspective of changes in the data from several occupations held by females. The design and methodology of this study is more exploratory and interpretive rather than measuring social and cultural phenomena. It aims to discover the direct impact of ML on women's employment, rather than limiting itself to describing the details and objectives of ML developed by the government. To achieve the aims of this study, the author advocates using the research methodology of Uribe et al. (2019), whereby the impact of ML is analysed by comparing data from groups that are more affected by the legislation (the treatment group) with those that are not (the control group).

Specifically, there are three reasons for choosing this approach. Firstly, the quantitative approach can deal with larger populations and quantifiable data compared to the qualitative approach. There is no denying that qualitative analysis can directly document the experiences and thoughts of female employees when conducting research on topics related to female employment and maternity leave policies. However, the limitations of qualitative methods are reflected in the fact that the qualitative approach produces information or descriptions of situations, events, people, interactions and observed behaviours (Sutton & Austin, 2015). The quality of the research depends heavily on the personal skills of the researcher and is more susceptible to the personal biases and idiosyncrasies of the researcher (Anderson, 2010). In contrast, the quantitative research produces numerical data (McLeod, 2019) that enables generalisation and objectification of results (Polit & Beck, 2010). When dealing with larger populations and quantifiable data, quantitative methods are better able to measure something or test a hypothesis (Bridgmon & Martin, 2012). In addition to this, the advantage of quantitative research is its predictability. It means that the research team can use quantitative research to draw relationships between variables and make recommendations for future policy development based on the data available. The primary objective of quantitative research is to ensure that causality predictions are based on precise, reliable, and generalizable metrics (Apuke, 2017).

Secondly, Uribe et al.'s (2019) research is a secondary study of national data. Unlike a primary study where the researcher obtains data directly from the original source, a secondary study involves the collection, synthesis and analysis of data previously generated and collected through primary research methods (Vartanian, 2010). The greatest advantage of secondary research is that in most cases the data is easily accessible, especially when collected from online sources. In addition, secondary research avoids the issue of research ethics (Tripathy, 2013).

Finally, the aim of this study is to discuss the impact of ML in the UK. This is in line with Uribe et al.'s (2019) approach, which emphasises that keeping focus on single specific region. Following the methodology, it was necessary to select the appropriate data sources; set up the control and

treatment groups; and process the data collected into what is needed for the study in order to provide comprehensive and reliable results for the data analysis in the next section.

4.2 Data Sources

All the data for this study is taken from the Office for National Statistics (ONS) in the UK. This is because, firstly, the ONS has a high level of credibility as the official data statistical authority in the country. Secondly, the ONS has a wide range of data, with data on FLFPR, AWE, GPG and female part-time employment all being included in the database, although they may fall into different categories. For example, FLFPR and female part-time employment are sourced from the Labour Force Survey, a survey of households (ONS, 2022a; ONS 2022b). AWE and GPG are sourced from the Annual Survey of Hours of Work and Earnings (ONS, 2021a; ONS, 2021b).

4.3 Control and Treatment Groups

The new law applies to the entirety of the country's territory. Therefore, it was difficult to locate geographically distinct treatment and control groups throughout the research. However, in my opinion, creating a comparison group is a valid option for interpreting the differential impact experienced by women of childbearing age.

In order to identify the groups affected by the legislation, this study expected the maternity leave legislation would affect women in the higher childbearing age group more than women in the lower childbearing age group. This is due to the prevailing social perception that women in the higher childbearing age group are likely to become pregnant in the near future. This perception is often taken into account by employers when calculating the expected value of employing women from this group. Table 5 shows the fertility rates for different age groups in the UK as reported by the Office for National Statistics (CLOSER, 2021). There are clear differences in fertility rates for some groups (e.g. 25-29 versus 40 and over) and less clear differences for others (e.g. 25-29 versus 30-34).

Table 5 Age-specific Fertility Rates, 2001 to 2012

Year	Under 20	20 to 24	25 to 29	30 to 34	35 to 39	40 and over
2001 to 2012	25.2	71.6	99.0	103.3	53.5	11.7

Given that the ONS Labour Force Survey and the Annual Survey of Hours and Earnings have different age grouping criteria, there is a slight difference when setting the control and treatment groups for different data. Specifically, in the Labour Force Survey, which records FLFPR and the number of part-time workers, age groups include 18-24, 25-34, 35-49 and 50+. Therefore, women between the ages of 18 and 34 can be the treatment group, and women over 35 are the control group. On average, the fertility rate for the treatment group hovered around 29.9% over the period analysed (2001 to 2012), compared to around 0.65% for the control group. The age grouping rules for the Annual Survey of Hours of Work and Earnings, which includes data on average earnings and the gender wage gap, are 18-21, 22-29, 30-39 and 40-49, among others. Therefore, when discussing the impact of policies on women's average earnings and gender wage gaps, women aged 18 to 39 can be in the treatment group and women aged 40 and over in the control group. Between 2001 and 2012, the fertility rate for the treatment group was 35.2% compared to 0.11% for the control group. However, regardless of the age range of the treatment and control groups, the key is that one is affected by legislation and the other is not.

This study also includes men as a control group. This group of males is not affected by the legislative changes and, gender discrimination aside, has similar work experience and other characteristics that would make them a close substitute for the females in the treatment group of this study.

4.4 Data Processing

Considering that the 2006 Act came into force on 1 April 2007 (UK Government, 2006), the average data from April 2004 to March 2007 can therefore represent data prior to the law becoming effective. Correspondingly, the average data for April 2007-March 2010 represent data after the law came into force. If some data are not recorded in months, the average for 2004 to 2006 represents the situation before the law took effect and the average for 2007 to 2009 represents the situation after the law took effect.

For example, in order to obtain the average FLFPR for the control and treatment groups before and after the law came into force, the first step in the data processing was to calculate the total population of each age group for each year. For the working age population, they have only two states, economic activity and inactivity (ILO Department of Statistics, 2015). This means that the number obtained by combining the active and inactive levels for each age group is the total population for that age group. Based on this principle, it is easy to calculate that, in January-March 2002, there were 2,493,000 women aged 18-24 and 4,170,000 women aged 25-34 in the UK. From this, it is calculated that there were 6,663,000 UK females aged 18-34 at this time.

Table 6 The female labour market situation in January-March 2002

18-24				25-34			
Activity		Inactivity		Activity		Inactivity	
level	rate (%)	level	rate (%)	level	rate (%)	level	rate (%)
1,756	70.4	737	29.6	3,117	74.7	1,053	25.3

The formula is that:

$Labour\ Force\ Participation\ Rate\ (LFPR) = (Labour\ Force \div Non-Institutional\ Civilian\ Population) \times 100.$

Base on the formula, it can be calculated that the LFPR for females aged 18-34 is $(1756 + 3117) / 6663 \times 100 = 73.1\%$. Following this idea, it is possible to calculate the LFPR data for females aged 18-34 years and those aged 35+ for each month from 2002-2011. This resulted in the calculation of average data for April 2004 to March 2007 and April 2007 to March 2010.

Due to space constraints, the process of calculating the four relevant data (FLFPR, AWE, PGP, Employment rate) will be omitted from this paper. The results of the calculations are presented in the next section, in addition to an analysis of the changes in the data before and after the law came into force, based on the results of the calculations.

5. Findings

By analysing data on female employment before and after the 2006 Act came into force, this chapter presents some findings in relation to the FLFPR, AWE, GPG, employment rates and the proportion of women working part-time.

5.1 FLFPR

Figure 1 reports the trends in FLFPR by age group from 2002 to 2011 in the UK. Indeed, the proportion of women participating in the labour force is highest for those aged 35-49 years, remaining at around 80%. No significant change in FLFPR for most age groups except for the 35+ age group which showed a significant upward trend (from 67.8% in 2002 to 72.8% in 2012) and the 18-24 age group which showed a significant downward trend (70.9% to 66.1%).

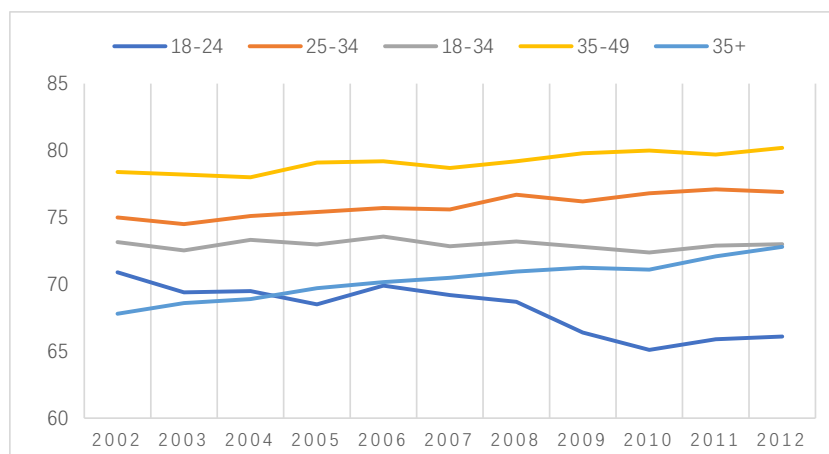


Figure 1 Trends in FLFPR by age group, UK, 2004-2010

In order to more clearly compare the differences in data between high-fertility women aged 18-34 and low-fertility women aged 35+ before and after the 2006 Act came into force, this study advocates using April 2007 (when the law took effect) as the cut-off point, and using the average data from April 2004 to March 2007 to represent the data before the law came into force. Correspondingly, the average data from April 2007 to March 2010 represents the data after the law came into effect. Table 7 illustrates the labour market situation for the treatment and control groups for the period 2004-2007. In general, a lower proportion of women aged 35 and over entered the labour market than women aged 18-34, either before or after the law came into force. Although the number of women aged 18-34 entering the labour market increased from 4,916,000 to 5,062,000, the FLFPR tended to decline (approximately 73.15% before the policy came into force and 72.90% after). Conversely, the treatment group maintained an upward trend both in terms of the number of people entering the labour market (before 8,440,000 and after 8,828,000) and the economic activity rate (before 69.56% and after 70.73%).

Table 7 Labour market situation in the treatment and control groups during 2004-2007

		Females aged 18-34 years (treatment group)	Females aged 35 + (control group)
2004.04-2007.03	Number of people activity (thousands)	4916	8440
	FLFPR (%)	73.15	69.56
2007.04-2011.03	Population (thousands)	6720	10735
	Number of people activity (thousands)	5062	8828
	FLFPR (%)	72.90	70.73
	Population (thousands)	6944	11039

It is undeniable that the number of people entering the labour market gained positively for women of different ages in both groups. However, the FLFPR of the two groups showed different trends. In brief, after the 2006 Act entered effect, the FLFPR of the treatment group (women aged 18-34) decreased by 0.25% while that of the control group (women aged 35+) increased by 0.13%. Considering that the control group represents the labour market situation of women who are relatively unaffected by ML because of their low fertility. The rising FLFPR in the control group is therefore indicative of the overall encouraging environment for women to enter the labour market in the UK around 2006. Thus, the decline rather than the rise in FLFPR in the treatment group suggests that the 2006 Act is not conducive to women of childbearing age entering the labour market.

5.2 Employment and Unemployment Rates

Table 8 shows the statistics on the number of employed, the employment rate, the number of unemployed and the unemployment rate for the treatment and control groups from April 2004 to March 2007. In general, women aged 18-34 had fewer people employed; more people unemployed;

and higher unemployment rates than women aged 35+, both before and after the new law became effective. Undeniably, before the new law came into force, the employment rate was higher in the treatment group (68.33%) than in the control group (67.55%), but after the new law came into force, the employment rate was lower in the treatment group (66.55%) than in the control group (68.01%). The reason for this result is that, although the average number of employed women aged 18-34 rose from 4,596,000 before the new law came into force to 4,622,000 after it came into force, the corresponding employment rate fell from over 68.33% to 66.55%. At the same time, women in the control group show a steady upward trend in both the number of employed persons (from 8,200,000 to 8,489,000) and the employment rate (from 67.55% to 68.01%).

Table 8 Employment and unemployment rates during 2004-2011

	Females aged 18-34 years (treatment group)	Females aged 35 + (control group)
2004.04- Number of people employed (thousands)	4,596	8,200
2004.04- Employment rate (%)	68.33	67.55
2007.03 Number of people unemployed (thousands)	324	244
2007.03 Unemployment rate (%)	6.58	2.89
2007.04- Number of people employed (thousands)	4,622	8,489
2007.04- Employment rate (%)	66.55	68.01
2011.03 Number of people unemployed (thousands)	442	341
2011.03 Unemployment rate (%)	8.71	3.85

Faced with the fact that the unemployment rate for both groups of women increased after the new law came into force, this study proposes to compare the impact of the new law by calculating the extent of the change in the female unemployment rate. The extent of the change in the unemployment rate can be calculated as:

$$(\text{Changed unemployment rate} - \text{Original unemployment rate}) / \text{Original unemployment rate}.$$

Table 9 Extent of change in unemployment rate

	Females aged 18-34 years (treatment group)	Females aged 35 +(control group)
Extent of change	0.32	0.33

Table 9 shows the calculated results for the treatment and control groups. The larger numbers representing a more significant change in the unemployment rate. In fact, the extent of change in the unemployment rate is almost the same for both groups. Thus the new law did not bring about a significant change in the unemployment rate of women. However, compared to the control group, the employment rate in the treatment group tended to decrease significantly after the new law came into force.

5.3 AWE

Table 10 reports the changes in average wages for the treatment and control groups before and after the 2006 Act entered into force. This data comparison chose to use the average data for 2004-2006 to represent the data before and the average data for 2008-2010 to represent the data after the law became effective. The reason for this choice is that the 2006 Act went live in April 2007 and the annual wage statistics are conducted at the end of the year. This means that the 2007 average wage survey covers both before and after the law took effect. Therefore, this study advocates the exclusion of 2007 data from the data comparison process and chooses to use data from 2004-2006 and 2008-2010.

In general, women aged 40+ with low fertility had higher average wages than women aged 18-39 with high fertility, both before and after the 2006 Act came into force. Women aged 18-39 as a treatment group saw their average wages rise from £285.33 in the three years before the 2006 Act became effective to £320.90 in the three years after the law came into force. Meanwhile, the average

wage for women aged 40 and over, the control group, rose from £293.31 to £346.81. Faced with the fact that the average wage in both groups maintained an upward trend, this study argues for the introduction of a new figure, namely the rate of wage growth.

Table 10 Change in AWE (£)

	Females aged 18-39 years (treatment group)	Females aged 40 + (control group)
2004-2006	285.33	293.31
2008-2010	320.90	346.81

The wage growth rate gives a more accurate picture of the percentage of wage increase, based on:

*The wage growth rate = (average wage after the law came into force - average wage before the law came into force) / average wage before the law came into force * 100.*

The wage growth rate for the treatment group was 12.46%, while the wage growth rate for the control group was 18.24%. This represents a higher level of wage growth for low-fertility women than for high-fertility women after the 2006 Act came into force.

5.4 GPG

The GPG is calculated as the difference between the average hourly earnings (excluding overtime) of males and females as a proportion of the average hourly earnings (excluding overtime) of males. For example, a GPG of 4.0% means that women earn on average 4.0% less per hour than men. Conversely, a negative 4.0% GPG means that women earn on average 4.0% more than men. A larger figure for the gender gap implies a greater inequality in earnings between men and women. Table 11 shows GPG data for the UK from 2004 to 2010 at all ages. In general, the wage gap faced by women gets worse as they get older. Although the trend from 2004 to 2010 is a downward trend in GPG for most age groups. But the 24.2% GPG for the 50-59 age group in 2010 still means that in 2008, men aged 50-59 had nearly a quarter more wages than women of the same age. And, the GPG for the 16-17 age group is the only negative figure of all age groups.

Table 11 GPG from 2004 to 2010

	2004	2005	2006	2007	2008	2009	2010
16-17	2.0	-6.3	-3.2	-3.4	5.1	7.0	-4.4
18-21	6.1	4.3	3.2	5.2	5.9	5.6	6.9
22-29	7.8	4.1	5.6	5.4	4.7	4.2	3.1
30-39	18.0	11.9	19.2	15.3	15.5	14.3	13.5
40-49	28.0	21.9	30.0	27.4	28.6	26.4	24.9
50-59	28.1	20.2	27.5	25.6	26.2	25.3	24.2

Table 12 shows the GPG before and after the 2006 Act became effective. In general, women over 40 face greater wage inequality than women aged 18-39, both before (27.3% vs. 9.7%) and after (25.9% vs. 8.2%) the law took effect. While the gender wage gap in the low-fertility age group fell from 27.3% in 2004-2006 to 25.9% in 2008-2010, the gender wage gap in the high-fertility age group also fell from 9.7% to 8.2%. In fact, the 2006 Act did not increase the gender wage gap faced by women of high fertility age, and even the gender wage gap fell faster in the treatment group compared to women of low fertility in the control group.

Table 12 Change in GPG (%)

	Females aged 18-39 years (treatment group)	Females aged 40 years and over (control group)
2004-2006	9.7	27.3
2008-2010	8.2	25.9

5.5 Full-time & Part-time job

To better illustrate the change in the proportion of women working part-time, Table 14 shows the number of people in employment in the UK from April 2004 to March 2011, as well as the number of people working part-time and full-time. Both before and after the 2006 Act came into force, firstly, there were over 2000 thousand more men than women in employment. Secondly, the total number of women in employment rose from 133, 320, 000 to 136, 39, 000, while the number of men in employment rose from 15, 584, 000 to 15, 713, 000. This means that over the same period of time, employment has grown faster than that of men, although the number of women employed is relatively small. Thirdly, full-time female workers grew from 7, 627,000 to 7, 831,000, while full-time male workers fell from 13,932 ,000 to 13,818,000. Fourthly, whilst the proportion of women working part-time fell from 42.75% to 42.60% between 2004 and 2011, the proportion of men working part-time rose from over 10.6% to 12.06%. However, the proportion of women working part-time is still four times higher than that of men. Meanwhile, although the percentage of women working part-time only produced a change of -0.15% before and after the 2006 Act became effective.

Table 13 The number of people in employment, working part-time and full-time

	Females (treatment group)	Males (control group)
Total in Employment (Thousands)	13,320	15,584
2004.04- People working full-time (Thousands)	7,627	13,932
2007.03 people working part-time (Thousands)	5,694	1,652
Part-time Rate (%)	42.75	10.60
Total in Employment (Thousands)	13,639	15,713
2007.04- People working full-time (Thousands)	7,831	13,818
2011.03 People Working part-time (thousands)	5,809	1,895
Part-time Rate (%)	42.60	12.06

Overall, by setting up different treatment and control groups and comparing the changes in data between the treatment and control groups before and after the 2006 Act came into force, the following findings can be basically established: First of all, a higher proportion of women aged 35+ enter the labour market than women aged 18-34; the 2006 Act reduced the women with high fertility' s FLFPR. Secondly, although the new law brought a similar change in unemployment rates for the treatment and employment groups, the employment rate for the treatment group fell significantly and the employment rate for the control group rose after the new law came into effect. Thirdly, women in the control group had higher average wages than women in the treatment group, both before and after the law went into effect. And the new law reduces average earnings for treatment groups. Then, the new law does not aggravate GPG, but GPG increases as women get older; 16-17 years is the only age group where the GPG is likely to be less than 0. Finally, compared to men, the new law does not encourage women to choose part-time work. Meanwhile, between 2004 and 2011, the number of women in employment grew faster than men. However, the proportion of women working part-time is still nearly four times that of men.

6. Discussion

Before discussing the impact of the new law on women's employment, it is worth discussing the finding that the proportion of women participating in the labour force is highest for those aged 35-49 years, remaining at around 80%. This can be explained by the fact that 35-49 years old women, as a low-fertility (only 5%) group of women, are more popular with employers in the labour market. The fact that women with low fertility are less affected by the gap in ML and more popular with employers proves that the idea of having a treatment and control group in this paper is largely correct. With this in mind, the findings in Chapter 5 are interpreted further in this section.

In fact, most of the findings in the previous chapter coincide with the hypotheses presented in Chapter 3. For example, by comparing labour force participation rates before and after the 2006 Act

came into effect, this study finds that the FLFPR of the treatment group (women aged 18-34) decreased by 0.25% after the new law came into effect, while the FLFPR of the control group (women aged 35+) increased by 0.13%. This finding is consistent with Hypothesis 1 that the 2006 Act, which reduced the FLFPR in the UK at the time. Although there is no direct evidence in this study to explain why the 2006 Act affects FLFPR, it is possible to speculate, based on studies by Akgunduz and Plantenga (2012); Del Rey et al. (2020), that the main reason for the negative impact of the 2006 Act on FLFPR was its decision to increase the duration of ML from 26 to 52 weeks. Because Akgunduz & Plantenga (2012) found in a study of 16 European countries that the reduction in labour force participation was associated with an increase in the length of leave; Del Rey et al. (2020) also highlight in their study that there is an inverted U-shaped relationship between the length of ML and female labour force participation: when ML is greater than 34 weeks, an increase in the length of ML may lead to a decrease in female participation.

Secondly, after comparing the number of employed, unemployed, the employment rate and the unemployment rate for women aged 18-34 and 35+, the second hypothesis previously proposed in this study was also confirmed, with the new law is detrimental to women's employment. The negative impact of the new law on women's employment was reflected in the fact that the employment rate in the control group increased significantly while the employment rate in the treatment group decreased significantly after the new law came into effect. The concept of labour costs can be used to explain why the 2006 Act is not beneficial to women's employment. Specifically, as the labour costs for women increase, employers may be reluctant to hire women who are pregnant or expect to get pregnant in the near future (Le and Pham, 2021). The 2006 Act not only increased the cost to employers of finding replacement employees by increasing the duration of leave, but also increased the number of weeks of SMP paid by employers. It is therefore plausible that the 2006 Act led to a decrease in the employment rate of women with high fertility rates of 18-34.

In addition, hypothesis 3, that the new law reduces the AWE of women, is also supported by the data. This is because, as illustrated by the AWE data before and after the implementation of the new Act, the wage growth rate for the treatment group was 12.46 %, while the wage growth rate for the control group was 18.24 %. This represents a higher level of wage growth for women with low fertility rates than for women with high fertility rates after the Act came into force in 2006. It can thus be demonstrated that the new Act did not favour the growth of women's average wages. This finding is consistent with those from Germany and Australia (Schönberg & Ludsteck, 2007; Baker, 2011). The common findings in all three countries can be explained by human capital theory. According to human capital theory, an employee's wage is related to the skills and abilities that the individual uses to be productive. The more time an individual spends on education or training, the higher the expected wage (Dearden et al., 2006). Correspondingly, ML causes a disruption in human capital and a reduction in training time, which affects women's earnings. In addition to the hypotheses being confirmed, the paper finds an expected result. Specifically, the average wages of women in the control group were higher than those of women in the treatment group both before and after the new law came into force. The reason for this finding being considered 'expected' is related to human capital theory, as women over 35+ generally have more hours of work and experience than women aged 18-34.

However, the available data suggest that the new law does not aggravate GPG, which is different from the Hypothesis 4. Specifically, based on the literature review in Chapter 3, this study establishes a ML-AWE-GPG link based on human capital theory. This link can be explained by the fact that ML provided for women only represents a mandatory exit from the market for mothers around the time of childbirth, but not for fathers. This means that while women are out of the labour market for a longer period of time and their careers are affected by the leave, men's careers remain largely unchanged. Therefore, ML reduces women's AWE and thus increases GPG. But the truth is that men's AWE is not a variable in the logic originally set out in this study that ML leads to a reduction in women's AWE and thus an increase in GPG. This means that if there were other factors that caused a decrease in male AWE at the same time as the 2006 Act affected female AWE, then there could be

a decrease in female AWE but an increase in GPG. This also explains why hypothesis 3, that the new law reduces female AWE, is valid, but hypothesis 4, that the new law increases GPG, is not.

Meanwhile, by analysing the data on GPG, this study found that GPG increased with female age; 16-17 years was the only age group where GPG was likely to be less than 0, which means that women have a higher AWE than men. The former is similar to the findings of Goldin (2014) and Kleven et al. The latter can be explained by the fact that the reproductive gender roles between men and women are unclear until the age of 18. At this stage, employees' earnings depend only on the knowledge they have accumulated at school and the experience they have accumulated at work.

Finally, although the percentage of women working part-time produced a change of only -0.15% before and after the 2006 Act came into force, this represents a non-starter for Hypothesis 5, that the percentage of women working part-time has increased since the 2006 Act came into force. In my opinion, the reason for the discrepancy between the hypothesis and the results is not that the hypothesis is wrong, but that the data currently used is not comprehensive enough. This is because the fact that women are more likely than men to choose to work part-time in order to reconcile work and family life is acknowledged by most people. In hypothesising the impact of the new law on the probability of women working part-time, this study first highlights the impact of ML on FLFPR, AWE and GPG, and then emphasises the impact of this series of data on the probability of women working part-time. For example, increasing ML reduces female AWE so that when a parent is faced with having to choose a career compromise, it is less costly to the overall family income for the mother to choose to work part-time rather than the higher wage father. Therefore, when discussing the effect of ML on the proportion of women working part-time, the treatment and control groups for the female part-time data should be similar to the discussion of FLFPR, AWE and GPG, in order to collate the interactions between the different factors more fluidly. However, because of data limitations, ONS did not provide data on female employment (part-time or full-time) grouped by both sex and age. This led to the present study having to set all women as the treatment group and all men as the treatment group when discussing data on the number and proportion of women working part-time. Admittedly, the summary data provide a clear and unambiguous picture of male and female employment in different years, but this does not bode well for this study. However, the summary data means that in addition to the possible impact of the 2006 Act on women with high fertility rates, the impact of other external factors such as education policy, economic development and pension policy on the employment choices of women of different ages is also recorded. So by analysing data for all men or women only, rather than for each age group, it is possible that the results of data comparisons are inconsistent with hypothesis 5.

Despite these results demonstrate the negative impact of the 2006 Act on women's employment. The problem remains that the current research does not systematically account for the mechanisms of how ML affects women's employment in the UK. As mentioned above, this paper uses human capital theory as the core to propose a relationship between ML by affecting AWE and thus PGP; using the concept of labour costs to explain why prolonged the duration of ML reduces FLFPR as well as employment, but these are simple deductions. While Akgunduz and Plantenga (2012) and Del Rey et al., (2021) both discuss the impact of ML on the labour market by constructing relevant theoretical models, this type of model is more applicable to large scale data analysis with a cross-country perspective. Le & Pham (2021) in Vietnam and Uribe et al. (2019) in Colombia also construct models when discussing the impact of extended leave on women's employment, but Vietnam and Colombia have different cultural contexts and policy than the UK. Therefore, these theoretical models can only be used as supporting evidence in discussing the impact of ML on female employment in the UK. In my opinion, a more comprehensive discussion of the impact of ML on women's employment in the UK (not just in terms of FLFPR, AWE and GPG), and a more systematic theoretical model of the impact of ML on women's employment in the UK, should be the next step in the research.

7. Conclusion

The discussion of the impact of ML on women's employment is the central element of this study. In examining the impact of ML on women's employment, this paper has firstly reviewed the background to ML in the UK and selected the 2006 Act as the centrepiece of this study. The reason why selected the 2006 Act is its content shows a high relevance to ML. Although this Act introduces paternity leave for fathers in addition to extending the period of ML and SMP available to women only. However, the Women's Budget Group (2018) highlighted that the usage of paternity leave by UK residents, like in the vast majority of other nations, is profoundly sexist. The data from Chanfreau et al., (2011) shows that in 2008, 90% of mothers took more than 26 weeks of ML, while 70% of fathers took less than two weeks of paternity leave. Consequently, this research suggests that the change in female employment data brought about by the 2006 Act is primarily attributed to the shift in ML, as opposed to other factors. Following confirmation that the 2006 Act will be the key to discussing the impact of ML on female employment in this study, this paper briefly reviews the research methods associated with ML or female employment. Based on the results of the literature review, Uribe et al.'s (2019) research methodology in Colombia is relatively the most appropriate for this study.

Uribe et al.'s (2019) research method involves judging the impact of the law by comparing the difference in data between the treatment group which is affected by the law and the control group which is not affected by the law, before and after the law comes into force. Building on this line of research, this study uses data from ONS and advocate using the average data prior to April 2007 (when the 2006 law came into effect) to representative of the data before the law became effective; the data after April 2007 is representative of the data after the law came into force. The advantage of this method is that it can responds well to the hypothesis made in this paper based on previous research, including: 1. The 2006 Act does not encourage female labour market entry; 2. The 2006 Act is detrimental to female employment; 3. The 2006 Act reduces the average income of women; 4. The 2006 Act has increased the GPG; 5. The 2006 Act encourages women to choose part-time jobs.

Specifically, the mainly reason why this paper developed a hypothesis about ML and FLFPR is that ML can impacts FLFPR in many ways. For example, long duration of ML will increase women's labour costs and thus makes women unpopular in the labour market (Del Boca et al., 2008; Low & Sánchez-Marcos, 2015); long periods of leave may increase the psychological pressure on women at work and, as a result, increase the likelihood that women will drop out of the workforce after giving birth. The research from Akgunduz and Plantenga (2012) and Del Rey et al. (2020) also highlight that when the duration of ML exceeds 30 weeks, the FLFPR decreases as the duration of leave increases. So faced with the fact that the 2006 Act extended the duration of ML from 26 weeks to 52 weeks. This paper presents hypothesis 1, that the 2006 Act is detrimental to women's entry into the labour market. By comparing the data from the treatment group and the control group, this study found that the FLFPR of the treatment group (women aged 18-34 years) decreased by 0.25%, while the FLFPR of the control group (women aged 35 years +) increased by 0.13% after the 2006 Act came into force, therefore, hypothesis 1 holds true.

Then, based on Le and Pham's (2021) argument that employers may be reluctant to hire women who are pregnant or expect to get pregnant in the near future, this paper proposes hypothesis 2. To test the veracity of hypothesis 2, this study compares data on the number of people employed and the employment rate related to the treatment and control groups. The comparison of the data showed that the employment rate in the control group increased significantly after the 2006 Act came into effect, while the employment rate in the treatment group decreased significantly. This result means that the hypothesis 2 is valid.

The third hypothesis relates to evidence from Germany and Australia (Schönberg & Ludsteck, 2007; Baker, 2011). First, Schönberg and Ludsteck's (2007) study in Germany confirms that the negative effect of childbirth on mothers' earnings grows with the length of leave; this negative effect will be retained until eight years after the birth of the child. Then, Baker's (2011) research in Australia mathematically calculated the relationship between leave duration and women's postnatal wages: the

loss of leave wages within 12 months of a woman returning to work was nearly 7% of the first year of return to work, increasing to nearly 12% in the second year. Therefore, based on these two findings, it is reasonable to assume that the 2006 Act, which includes provisions such as extended maternity leave, would be detrimental to women's wage development. By analysing earnings data for women with different characteristics, this study found that the control group had a higher rate of wage growth than the treatment group after the 2006 Act took effect. Therefore, hypothesis 3 is established. In the process of data analysis, this study also found that women over 35 years of age (control group) had higher average wages than women aged 18-34 years (treatment group), both before and after the 2006 Act entered force. This finding is in line with the human capital theory, which states that an employee's wage is related to the skills and abilities that an individual uses to be productive; women over 35 years of age usually have more hours and experience than women aged 18-34.

It is worth mentioning that in addition to the three proven hypotheses mentioned above, there are two hypotheses that did not yield the expected results in this study. The reason why hypothesis 4 does not work could be explained that this paper ignores the impact of the external environment on male AWE. If male AWE had declined between 2004 and 2011 due to other external factors such as the country's level of economic development, and even at a faster rate of decline than female AWE; it would appear the result that when female AWE declined, GPG also declined. The discrepancy between Hypothesis 5 and the data results is largely caused by the lack of comprehensiveness of the data currently used. Unlike the data like FLFPR, AWE, or GPG, the ONS does not provide data on female employment (part-time or full-time) by gender and age groups. As a result of this, this study had to use all females as the treatment group and all males as the treatment group when discussing data on the number and proportion of females in part-time employment. Admittedly, the aggregated data provide a clear and unambiguous picture of male and female employment in different years, but this is not the most suitable data for this study. Because the aggregated data means that in addition to the possible impact of the 2006 Act on women with high fertility rates, the impact of other external factors such as education policy, economic development and pension policy on the employment choices of women of different ages is also documented. Therefore, if data are analysed for all men or women only, rather than for each age group, there is a risk that the results of data comparisons will not be consistent with Hypothesis 5.

Overall, by comparing the changes in data before and after the 2006 Act, this study has largely identified the causes as well as the outcomes of ML affecting women's employment. However, the lack of data led to the results of the data analysis in this study being different from other studies when discussing the impact of ML on women's employment choices. Therefore, how to select more comprehensive and accurate data should be a task that future studies should consider. In addition to this, this paper does not systematically examine the mechanisms by which the 2006 Act affects women's employment. This limitation is reflected in the fact that although this paper uses human capital theory as the core to explain why ML affects AWE and PGP; and uses the concept of labour cost to explain why prolonging the duration of ML reduces FLFPR and employment; these are all logical inferences made in this paper based on past empirical evidence rather than theoretical model building. It is not denied that both Akgunduz and Plantanga (2012), and Del Rey et al, (2021) discuss the impact of ML on the labour market by constructing relevant theoretical models, but such models are more applicable to large-scale data analysis with a cross-country perspective. Le & Pham (2021) in Vietnam and Uribe et al. (2019) in Colombia also construct models when discussing the impact of extended leave on women's employment, but the cultural contexts and policies in Vietnam and Colombia are different from those in the UK. Therefore, in my opinion, a theoretical model that allows for a more comprehensive, UK-based contextual discussion of the impact of ML on female employment should be key to the next step of the study.

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