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Working Paper 152: The Underemployed: Evidence from the UK Labour Force Survey

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ABSTRACT

Specific analyses of underemployment are largely absent from the academic debate in Britain, and workers in such positions remain under-researched. This article explores socio-economic predictors of underemployment. We analyse Labour Force Survey data, using logistic regression modelling to identify the segments of underemployed workers. The results suggest that underemployment is affected by a range of demographic and work-related factors considered. Households with a cohabiting couple and dependent children, for example, moderate the likelihood of underemployment among women, whereas they raise the likelihood among men. The evidence also points to a work-status inconsistency: Higher-ranking occupations diminish underemployment across both sexes, but higher educational attainments show no impact on men whilst having an opposite effect on women.

KEY WORDS

Underemployment, gender, recession, precarious work

Introduction

This paper focuses on time-related underemployment rather than credentials underemployment –the gap between qualifications and jobs (Batenburg and De Witte, 2001). Underemployment is occasionally defined in a subjective way as it refers to workers' perceptions (Glyde, 1977; Jensen and Slack, 2003). Even so, some 'objective' benchmarks have been introduced in official definitions. The EU Working Time Regulations which were ratified by the UK in 1998 (HMSO, 2012) specify a constructed underemployment by excluding those who are working more than forty-eight hours per week (the threshold is forty hours for those younger than eighteen years old). Such a definition should be treated with caution for ignoring certain individuals' perceptions arbitrarily (Hussmans, 2007). Even so, this definition is regarded as an operable tool by academic discussants as well as policy makers (Walling and Clancy, 2010).

On the basis of constructed definition, it is possible to say that there has been an increase in underemployment since the beginning of the recession, from circa 7% of all in employment in 2007 to 11% in the first quarter of 2012. The number of such workers has risen by almost one million in this period, reaching just above three and half a million (LFS, 2007 & 2012). It is important to underline that the extra hours of work demanded by people are by no means residual. Almost 70% of the underemployed, for example, wished to have longer than eight extra hours per week in 2012 (LFS, 2012). Further pressures on job markets are also expected amid the widening cuts in public spending and cost-reduction strategies in the private sector (Hogarth *et al.,* 2009). From a pragmatist point of view, underemployment is conventionally considered by policy makers to be a trade off with job retention (Lallement, 2011). The recent surge, however, caused concerns among trade unions. The general secretary of the Trades Union Congress, Brendan Barber warned the government about the difficulties of finding long-enough hours of work (Barber, 2012).

It has been long pointed out that underemployment undermines labour productivity (Sullivan, 1978). International studies have also produced systematic evidence in line with such an argument by showing the detrimental impacts of underemployment on workers (Wilkins, 2007). It mitigates against,

for example, job satisfaction (Johnson and Johnson, 1995; Wooden *et al.,* 2009) and wage incentives (Watson, 2002). Underemployment was further related to commitment problems (Abrahamsen, 2010). Although Böheim and Taylor (2004) also showed that underemployment urges the British workers to look for other jobs, there is a dearth of systematic research on underemployment in the UK.

Analysing the case of British labour market may offer some specific contributions to the debate because of a distinctively higher proportion of part-time employment. Around 30% of workers in the UK are employed on part-time contracts (LFS, 2010) whereas the average figure is below 18% among the G7 countries (OECD, 2010). Research evidence from, for example, Denmark (Lind and Rasmussen, 2008) and Norway (Kjeldstad and Nymoen, 2012) suggests that part-time jobs accommodate higher levels of underemployment. Similarly, it is very high among part-time employees in Britain, 22%, compared to 6% of full-time workers (LFS, 2012). As will be discussed in the following section, this also has implications for gender debates because of women's disproportionate location in part-time jobs. Over 45% of British women are in part-time jobs whereas the average is one in four among the G7 countries (OECD, 2010).

Due to lack of systematic research on underemployment in Britain, we will largely benefit from a number of international studies in order to analyse socio-economic influences on underemployment. We will also make specific references to the literature in relevant areas including involuntary part-time work (Glyde, 1977; Walling and Clancy, 2010) and overemployment (Golden and Gebreselassie, 2007). Such debates in general have been much informed by demographic and work-related issues.

Demographic Issues

In Britain, various studies emphasised the benefits of shorter working times for women (Hakim, 1997; Massey, 1994; Siltanen, 1994). Hakim (1997) influentially argued that part-time jobs were typically chosen voluntarily by women for the sake of 'marriage career'. It was also reported that women part-time employees had more job satisfaction than men owing to a better work-life balance in, for example, Australia (Booth and Ours, 2009) as well as in the UK

(Bonney, 2005). Accordingly, the British women in part-time jobs present a lower tendency toward involuntariness (Cam, 2012), as defined by being unable to find a full-time job (Bednarzik, 1976).

Female part-time workers are also less likely to be underemployed than their male counterparts, 17% and 27% respectively (Table 1). However, the role of gender becomes complicated when full-time workers are taken into consideration. Women's underemployment was historically similar to men's in general. It was, for instance, roughly 6% at the beginning of the millennium (Simic, 2002). This was also consistent with the evidence over the limited effect of gender on overemployment –characterised by a desire to work less (MacInnes, 2005). Even so, the gender difference was important among those who wanted to work longer. The reason for this was because the British women underemployed wished to have significantly longer extra works than men (Stier and Lewin-Epstein, 2003). Further, since the beginning of the recession, women's underemployment has gradually begun to overtake men's. In 2012, female underemployment (11%) was marginally higher, compared to roughly 8% for men (LFS, 2012). This confirms research findings from various countries such as Australia (Wooden *et al.,* 2009), the USA (Reynolds and Aletraris, 2010) and Norway (Kjeldstad and Nymoen, 2012).

As another demographic factor, the impact of dependent children on preferences for working times was illustrated in the case of involuntary part-time work. Having dependent children was reported to have been inversely related to involuntariness for part-time work among American (Leppel and Clain, 1988) and Australian women (Walsh, 1999). Evidence from the international studies has further proved the importance of age and marriage specifically for underemployment. Ruiz-Quintanilla and Claes (1996), for example, highlighted a higher risk of underemployment among younger workers. An aggregated analysis mostly over the EU and other developed countries also stressed the contribution of marriage to diminishing the likelihood of underemployment (Stier and Lewin-Epstein, 2003).

Work-related Issues

Various workplace characteristics were related to working time perceptions through involuntary part-time work and overemployment as well as underemployment in the international literature. A study in the USA, for example, referred to the less likelihood of involuntariness among part-time female employees in private companies since they were motivated to take part-time jobs for economic reasons rather than personal or professional edification (Caputo and Cianni, 2001). In the case of underemployment, the public/private sector division was also related to structural factors such as financial fluctuations and difficulties that firms might face. Nosal (1998), for example, underlined that the public sector could keep underemployment at bay amongst its employees by deploying vast fiscal resources.

Industrial differences regarding their influences on the mismatching of working times were addressed as well. For example, Cam (2012) underlined that involuntary part-time work in Britain was more pronounced in low-pay industries such as hotels and restaurants. In terms of underemployment, Yotopoulos (1965) historically argued that as the rate of wages to productivity changed from one industry to another, underemployment displayed industrial variations. The evidence from Norway further demonstrated that underemployment was more common in female-dominated industries such as sales, services and care industries (Kjeldstad and Nymoen, 2012).

Another workplace characteristic related to employees' discontent with working times is the size of establishments. One of the main reasons for this is the financial constraints on smaller companies largely owing to their spatial dependency on local trade (Edwards and Ram, 2006). In Britain, Stewart and Swaffield (1997) studied the impact of establishment size on overemployment, and they showed that the likelihood of employees wishing to work less was higher in smaller companies, compared to larger ones. This appears to be in line with the concerns over the disadvantages that employees experience in small and medium-sized companies with regard to overtime as well as some other issues such as family-friendly provisions (Dex and Scheibl, 2001). Even so, Kjeldstad and Nymoen (2012) evidenced that the likelihood of

underemployment was also higher in small Norwegian companies than it was in larger firms.

Research findings point to the importance of trade union membership with regard to unbalanced length of working times. In Canada, for example, Schellenberg (1995) evidenced that membership predicted a lower likelihood of involuntariness among part-time workers. Another investigation on Canadian workers in the early 1980s had also underlined that union membership helped reduce the likelihood of underemployment (Ham, 1982). Investigating the impact of membership on underemployment in the UK has become particularly important after recent calls for a revision of trade unions' interventions in work-life balance. Research evidence has begun to generate doubts about the benefits of unions' support for family-friendly initiatives (Gregory and Milner, 2009; Rigby and Smith, 2010).

Research in Britain documented that temporary workers had a higher propensity toward working in part-time jobs for not being able to find full-time jobs (Cam, 2012). Empirical findings in the international literature also linked temporary jobs specifically to underemployment. In the USA, for example, Rogers (2001) showed that temporary employment of assistant teachers had direct implications for underemployment because of the lay-off spells during quieter periods in return for offsetting the cost of labour. Likewise, evidence from Norway (Kjeldstad and Nymoen, 2012) unveiled that temporary workers often turn out to be underemployed as a response to their low pay.

Academic explorations into the relation of work-status to overemployment have been undertaken both in the UK and international literature. International research evidence, for example, brought out that the desire for fewer hours was most common among employees who hold high-ranking occupations (Clarkberg & Moen, 2001; Golden & Gebreselassie, 2007; Jacobs & Gerson, 2004). In Britain, MacInnes (2005) also suggested that this might be because such workers could afford to cut down their hours. In particular, the evidence from Norway indicated that underemployment was more pronounced in low skill occupations (Kjeldstad and Nymoen, 2012).

Education is a strong indicator of people's occupational positions at work (Brown *et al.,* 2004). However, the implications of education for involuntary part-time work are not consistent. For example, after the rise of involuntary part-time employment to 16 million amid the economic turbulence of the early 1970s, Bednarzik (1976) singled out education and skills as the key predictors in the USA. Walsh (1999), on the other hand, reported that education did not have a strong effect on involuntariness among Australian female part-time workers. Even so, research in the USA evidenced that higher education together with high-raking occupations gave employees a better chance to resolve the problem of underemployment (Reynolds and Aletraris, 2010). Another aggregated result from developed countries also highlighted that higher education repressed the likelihood of underemployment (Stier and Lewin-Epstein, 2003).

Considering the debates and research findings reviewed so far, it is possible to sum up the most commonly used variables under the broad frame of five categories: demographic profiles including gender, household types and age; work-place characteristics in terms of industries, public/private sectors and establishment size; flexible work including part-time and temporary contracts; trade union membership and finally work-status indicators (occupations and education). Accordingly, we will explore how these socio-economic correlates are related to underemployment through comparative analyses between men and women in order to rectify the lack of systematic research in Britain.

Methods

Data

Data is analysed from the UK Labour Force Survey, a large household-based survey conducted by the Office for National Statistics (ONS). To make sure that our analyses are informed by the most recent developments, we used the data from the final quarter (between October and December) of 2011, the latest survey asking the trade union membership question. Even so, available data from the other quarters were also checked, but no substantial difference was found from the results reported in this paper.

LFS deploys a multi-stage sampling design to achieve a probability sample of households and individuals in Britain for the exploration of employees' labour market status in general and temporary employees who could not find permanent jobs, in particular (ONS, 2011). The major data collection instruments were face to face and telephone interviews with a small amount of postal surveys. Research is conducted with a worker or the representative of sample households on behalf of the workers investigated (proxy interview). Participants answered questions with their own descriptions of work activities as temporary or permanent jobs. A total of 106,643 questionnaires were filled. The LFS typically achieves a response rate in the region of 85% due to the burden of questionnaire completion (ONS, 2011). However, non-response is only a source of bias to the extent that those who respond are different from those who do not with respect to characteristics of interest. Various studies have shown that non-responders in surveys cannot be identified according to any socio-demographic factor, indicating that any biases introduced by non-response are not strongly related to commonly used explanatory variables (Chatzitheochari and Arber, 2009). We analysed a subsample of 2,538 male and 3,108 female underemployed workers (out of 30,605 male and 30,748 female employees in total). We employ the individual level ungrossed-weight which corrects for non-response.

Dependent variable: wishing to work longer

The Labour Force Survey asks participants about the extra hours they wish to work. For the specific purpose of this paper, first we have selected all respondents who wish to work longer (Jenkins and Laux, 1999). Then, we filtered out those who are under 18 years old but working more than 40 hours per week, as well as the ones working more than 48 hours. In doing so, we tailored our sample into the constructed definition of underemployment (HMSO, 2012). These are our 'underemployed workers'.

However, two limitations should be borne in mind regarding the dependent variable of underemployment. It is based on the self-definitions of participants in LFS. Therefore there is no consistency across the sample. The second constraint is that it is not possible to pin down how strongly people want to

have extra hours (Hussmans, 2007). This is particularly important in a recessionary economy in which people may adjust their work expectations to tighter job markets (ONS, 2011).

Independent variables

In broader terms, the models developed in this study control the relation of underemployment to the five categories hitherto stipulated: demographic profiles, workplace characteristics, flexible work, union membership and work-status nominators.

Among the demographic variables, household type refers to the presence, or absence, of spouse/partner and dependent children (younger than 19 years old). The second demographic variable, age, is measured by recoding working age population (from 16 to 64 years old) into four brackets in line with common practices (Blanden and Machin, 2003), whilst excluding those over 64 years old due to small sample size.

Workplace characteristics (as well as flexible work and work-status variables) refer to main jobs. The industry variable is based on the standard international classification of industries, SIC-2010 at two-digit level (i.e. *Industry Sectors*). Within 'manufacturing, energy and construction' as opposed to services, 'energy' refers to mining, quarrying; electricity, gas, and water supply. Due to the small sample size, we excluded agriculture, forestry and fishing, whilst collapsing public administration, education and health together. The second variable within workplace characteristics is a dichotomous variable of respondents' self-report as to whether they work in the public or private sector. The third variable in this group, establishment size, refers to the number of co-workers reported by respondents, and it is collapsed into three bands: small (<50), medium (50-249) and large (≥250) companies (Forth *et al.,* 2006).

Flexible work variables are produced by breaking down respondents into part-time/full-time and temporary/permanent jobs. In the late 1970s, the official definition of part-time work based on working hours had been abandoned because of a perceived bias generated by the arbitrary determination of hours, although it is still utilised in some countries such as US (Lee and Mowry,

2009). Part-time work is currently based on the self-definitions of participants in LFS. So is temporary employment. Therefore, there is no consistency across the sample.

Two caveats should be borne in mind regarding our independent variable of union membership. First, because the membership question is asked by the LFS only in the final quarter of each year, it is not possible to measure quarterly changes. Second, the wording of membership question refers to the membership of both trade unions and associations, although interviewers actually aim to find out trade union membership (Brook, 2001).

Among work-status nominators, occupations are derived from the standard international classification of occupations, SOC-2010 at one-digit major level. We have used education levels as an indicator of work-status in order to shed more light into the impact of one's position at work on underemployment. Even so, because education is part of demographic characteristics, we first run our statistical analyses taking it within demographic factors specified above. However, the results were not significantly different from the ones presented in this paper. The education variable is based on the highest qualification obtained, with five main categories from 'no qualification' to 'degree or equivalent'.

Analytical technique

The analysis uses logistic regression, which is widely employed when modelling binary outcomes and for predicting the probability of an event. The dependent dichotomous variable is whether or not participants wish to have extra hours of work. The binary response is yes/no. The logistic models predict the probability of wishing to work longer.

Separate and joint logistic regression models are specified for male and female employees in order to examine the differential effects of demographic and work-related circumstances on underemployment. Statistical tests enable evaluation of the significance of the inclusion of an explanatory variable in the model.

In logistic models, independent variables are successively added to the model in sequential blocks, which allows the observation of changes in the predictors' relationship to the outcome variable and assessment of the relative importance of each predictor in the model. These blocks are designed to cover the five broader categories of independent variables: demographic profiles (household types and age), work-place characteristics (industry, public/private sectors and establishment size), flexible work (part/full-time and temporary/permanent jobs); trade union membership and finally work-status variables (educational attainments and occupations). Neither the order of variables within the blocks nor that of blocks within the models makes a significant difference to the results. However, using household types and age for Model 1 and then adding work-place characteristics in Model 2 proved better than other combinations for the goodness of fit.

Results

Descriptives

Table I illustrates chi-square results for the variations between male and female workers' underemployment by demographic profiles, workplace characteristics, flexible work, trade union membership and work-status indicators.

Household types reveal little variations between men and women in terms of underemployment: Among single parents with dependent children, for example, the underemployment of men is just below 14% and that of women is just above 15%. The proportions converge at circa 5% among couples without dependent children. Age, on the other hand, points to a gender difference with some significance, but this only applies to those aged from 34 to 49 years old: 8% for men and slightly over 12% for women.

Table I: The Underemployed

	Men		Women	
	N†	‡	N†	%‡
Demographic Profiles				
Household type				
Single without dep. child	1035	10.9	999	11.4
Single with dep. child	412	13.7	860	15.4
Couple without dep. child	447	5.0	481	5.7
Couple with dep. child	632	8.4	756	10.7
Age bands				
I6-24	607	17.0	657	16.9
25-34	579	11.2	572	9.5
35-49	750	8.0	1195	12.2 **
50-64	566	6.2	659	7.5
Workplace Characteristics				
Sector				
Private sector	2180	11.3	2192	14.9 *
Public Sector	349	9.7	900	11.6
Industries				
Manufacturing, energy and construction	581	8.5	130	7.6
Distribution, hotels and restaurants	708	17.4	867	19.8
Transport and communication	273	9.6	97	10.5
Banking and finance	374	9.7	376	10.7
Public administration, education and health	395	10.2	1339	12.9 *
Establishment Size				
Small	1135	12.5	1714	16.5 **
Medium	586	8.8	777	11.8 *
Large	243	7.3	264	7.3
Flexible Work				
Full/part-time Work				
Full-time Work	1440	5.9	759	4.8
Part-time Work	1092	26.5	2347	17.2***
Permanent/Temporary Jobs				
Permanent Job	1673	9.6	2440	12.8 *
Temporary Job	286	27.0	332	25.6
Trade Union membership				
Members	281	6.9	531	9.9 *
Not members	1843	11.9	2105	15.3 *
Work-status variables				
Education				
Degree or equivalent	541	7.9	669	8.9
Higher education	198	7.8	310	9.4
GCE A Level or equiv	672	9.1	741	12.8 *
GCSE grades A-C or equiv	586	10.9	864	12.0
No qualification	185	7.9	183	7.5
Occupations				
Managers, Senior Officials & Professional occupations	399	5.6	422	6.8
Associate Professional, Technical	293	8.6	298	10.7
Administrative & Secretarial Services	119	11.1	445	10.6
Skilled Trades Occupations	472	10.6	71	14.5 **
Personal Service	131	17.9	661	18.2
Sales and Customer Service	290	23.7	497	20.6 *
Process, Plant & Machine Operatives	281	11.1	51	13.8 *
Elementary Occupations	552	21.6	663	26.8***

*$p < 0.05$, ** $p < 0.01$, ***$p < 0.001$

†: Number of underemployed workers

‡: Underemployed workers as % of all employees in each category

Source: LFS Autumn 2011, weighted

As for workplace characteristics (sectors, industries and establishment size), private companies accommodate a relatively higher proportion of underemployment for female employees (15%), compared to men (just above 11%). Gender disparity, however, disappears in the public sector because of a decline in the proportion for women down to 11%. Nor do industrial variations inform a substantial gender gap since the highest difference between men and women comes in the public administration, education and health, 10% and 13%, respectively. Although nearly 20% of women reported underemployment in distribution, hotels and restaurants, this does not amount to a significant gender gap as the portion for men also emerges above 17%. When companies are taken on the basis of establishment size, the figures for men and women become more differentiated, especially in smaller workplaces (almost 13% of men and 17% of women). To a lesser extent, the underemployment of men and women also vary in medium-sized companies, 9% and 12%, respectively.

Reviewing part-time/full-time and temporary/permanent jobs comparatively gives further insight into the underemployment of men and women in flexible jobs. There is little difference between full-time working men's and women's underemployment (circa 5%) –unlike the hitherto mentioned gap among part-time working men (27%) and women (17%). Men's underemployment remains unchanged in temporary works, but the proportion for women also goes up to a similarly high level in such jobs (26%). In permanent works, on the other hand, a residually significant difference becomes evident as the proportion for men goes down to below 10%, compared to 13% for women.

Likewise, trade union membership suggests a residually significant difference between male and female workers' underemployment (7% and 10%, respectively). Underemployment rises more or less proportionately among non-member men (12%) and women (15%).

Finally, we can have a look at the gender difference by work-status variables, education and occupations. The only noticeable gender difference on the basis of educational attainments was observed at the GCSE A level or equivalent: 9% of men and 13% of women with such qualifications are underemployed. However, the gender divide becomes more salient in lower-ranking

occupations. Circa 10% of men in skilled trade occupations are underemployed whereas the proportion is almost 15% for their female counterparts. The divide remains conspicuous whilst underemployment increases as we go down to the bottom category of occupations in the table: 22% of men and 27% of women are underemployed in elementary jobs.

Overall, although underemployment is slightly higher among women compared to men, this occurs with a varying degree of influence across the demographic and work-related benchmarks considered. The gender disparity also reverses in sales and customer services as well as in part-time jobs.

Logistic regression models

Both separate and joint logistic regression models to examine the differential effects of demographic and work-related circumstances on men's and women's underemployment are provided in Table II. For each predictor variable, the last category in bivariate analyses is defined as the reference category.

Model 1 includes demographic profiles in terms of household types and age brackets. Household types are strong predictors of underemployment regardless of gender. Singles without dependent children, for example, present a higher likelihood of underemployment (OR = 1.39, $p < 0.001$), compared to couples with dependent children –the reference category (Table II). Couples without dependent children, on the other hand, display a less likelihood (OR = 0.71, $p < 0.001$).

Model 1 also evidences a significant age effect, but it comes in a linear fashion only among male employees ($p < 0.001$). Those who are younger than the reference category of 50-64 years old are more likely to become underemployed with the exception of women aged from 25 to 34 years old.

Table II: The underemployed

	Odds Ratios for All					Odds Ratios for Men					Odds Ratios for Women				
	Model I	Model II	Model III	Model IV	Model V	Model I	Model II	Model III	Model IV	Model V	Model I	Model II	Model III	Model IV	Model V
Demographic profile															
Household Type	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
Single without dep. child	1.13***	1.23***	1.73***	1.72***	1.57***	1.09	1.22***	1.18***	1.17***	1.05	1.13***	1.15***	2.19***	2.19***	2.03***
Single with dep. child	1.39***	1.55***	1.33***	1.31***	1.28***	1.21***	1.25***	0.88	0.85	0.96	1.40***	1.59***	1.69***	1.68***	1.56***
Couple without dep. child	0.71***	0.74***	0.90	0.87***	0.86 **	0.76***	0.83***	0.76***	0.74***	0.75***	0.64***	0.64***	0.99	0.95	0.92
Couple with dep. child	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Age Bands	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***
I6-24	2.16***	1.83***	1.73***	1.69***		2.67***	2.50***	1.81***	1.71***		1.84***	1.47***	1.66***	1.68***	
25-34	1.27***	1.17***	1.49***	1.45***	1.45***	1.60***	1.54***	1.95***	1.89***	1.98***	1.03	0.94	1.32***	1.29***	1.25***
35-49	1.35***	1.20***	1.51***	1.51***	1.51***	1.20***	1.09	1.46***	1.41***	1.53***	1.45***	1.24***	1.66***	1.72***	1.62***
50-64	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Workplace characteristics															
Private Sector										0.78***					
Establishment Size		***	***	***	***		***	***	***	***		***	***	***	***
Small		1.93***	1.62***	1.59***	1.39***		1.58***	1.33***	1.32***	1.28***		2.18***	1.87***	1.83***	1.51***
Medium		1.38***	1.30***	1.30***	1.13***		1.16 **	1.05	1.07	1.02		1.55***	1.51***	1.50***	1.20***
Large		I	I	I	I		I	I	I	I		I	I	I	I
Industries		***	***	***	***		***	***	**			***	***	***	***
Manuf, energy and const		0.52***	0.91	0.83***	0.74***		0.64***	0.97	0.87			0.53***	0.65***	0.64***	0.60***
Dist, hotels and restaurants		1.29***	1.26***	1.15***	0.93		1.45***	1.24***	1.11			1.34***	1.11***	1.02	0.90
Transport and communic		0.70***	1.07	1.02	0.80		0.84***	1.05	1.00			0.78 **	0.87	0.82	0.74 *
Banking and finance		0.64***	0.83***	0.76***	0.76***		0.73***	0.91	0.83*			0.66***	0.73***	0.66***	0.68***
Public adm, educ & health		I	I	I	I		I	I	I			I	I	I	I
Flexible Work															
Part-time work			5.26***	5.26***	4.54***			9.09***	9.09***	8.33***			5.26***	5.26***	4.76***
Temporary Work			1.88***	1.88***	2.27***			2.00***	1.96***	2.22***			1.66***	1.69***	2.17***
Union Membership				0.82***	0.81***				0.78***	0.63***				0.86***	
Work-status variables															
Education															***
Degree or equivalent															1.50***
Higher education															1.47***
GCE A Level or equiv															1.41***
GCSE grades A-C or equiv															1.41***
No qualification															I
Occupations					***					***					***
Managers, Sen Official & Prof.					0.37***					0.47***					0.27***
Assoc. Prof, Technical					0.47***					0.59***					0.37***
Admin & Secret					0.44***					0.72 **					0.40***
Skilled Trades Occupations					0.76***					0.81					0.67 **
Personal Service					0.79***					1.31					0.68 **
Sales and Customer Service					0.66 **					0.97					0.64 **
Proc, Plant & Mach Ops					0.86					0.91					1.01
Elementary Occupations					I					I					I
Δ df	6	8	8	8	8	6	8	8	8	8	7	8	8	8	8
−2 LLR	35487.9	25487.9	22842.0	19311.3	13789.4	16308.4	11137.8	9677.1	8117.6	5597.7	19064.4	14237.8	12933.6	10995.7	8025.1
Δ -2 LRR		10000.0	2645.9	3530.7	5521.9		5170.6	1460.7	1559.5	2519.9		4826.6	1304.2	1937.9	2970.6
Significance of Δ −2 LRR			***	***	***		***	***	***	***			***	***	***

Source: LFS Autumn 2011, weighted

Significance of difference from reference category *$p < 0.05$, ** $p < 0.01$, ***$p < 0.001$

Model 2 brings in workplace characteristics, public/private sectors, establishment size and industries. This model failed to detect a significant difference between the public and private sectors in terms of explaining the likelihood of underemployment. However, the latter two workplace characteristics turned out to be strong predictors for both men and women. The likelihood of wishing to work for longer hours, for example, is almost twice higher in smaller establishments than it is in the larger ones (OR = 1.93, $p < 0.001$). Although to a lesser extent, the likelihood is also significantly higher in distribution, hotels and restaurants, compared to public administration, education and health (OR = 1.29, $p < 0.001$). The tendency toward underemployment, on the other hand, is lower in various industries such as manufacturing, energy and construction (OR = 0.52, $p < 0.001$) as well as banking and finance (OR = 0.64, $p < 0.001$).

It is worth mentioning that one needs to take workplace characteristics on board in order to assess demographic influences more accurately: Model 2 significantly consolidated the impact of being single without dependent children whilst weakening that of being aged from 35 to 39 years old for men (see the change in log-likelihood ratio in Table II).

Model 3 incorporates flexible employment into the analysis through part-time/full time and temporary/permanent jobs. The model evidences that flexible works predict a higher likelihood of involuntariness regardless of gender ($p < 0.001$). In particular, the likelihood of underemployment is nearly twice higher in temporary jobs than it is in permanent jobs (OR = 1.88). Part-time work, however, is a stronger factor as it means more than five times higher likelihood of underemployment for male workers (OR = 5.26) and almost twice as much as that for male participants (OR = 9.09), compared to full-time jobs.

Model 3 eradicated the significance of some demographic and workplace-related factors, indicating that they were basically a reflection of flexible work. For men, these factors include being single with dependent children and

working in manufacturing, energy, construction, transport, communication, banking, finance and medium-sized establishments. In the case of women, the same can also be said of being coupled without dependent children and working in transport and communication. The model, on the other hand, unconcealed the significance of being aged from 35 to 49 years old for men and from 25 to 34 years old for women.

Model 4 adds trade union membership which implies a lower likelihood of underemployment for both male (OR = 0.78, $p < 0.001$) and female participants (OR = 0.86, $p < 0.001$), compared to non-members. The inclusion of trade union membership eradicated the significance of working in distribution, hotels and restaurants for both men and women. It, however, rendered being a couple without dependent children significant in the joint model.

Model 5 includes work-status indicators to examine how the constraints stemmed from the educational and occupational profiles impinge upon the chances of employees to acquire well-balanced working hours. The model puts all independent variables into the analysis together. We originally failed to find a significant relationship between educational attainments and the likelihood of underemployment among participants. Then, we exhausted various combinations to avoid missing out educational influences. To control the dilution of education's effect by (the schooling) age in particular, we re-run the model without the youngest age bracket (16-24 years old). Our efforts were to no avail in the case of male participants, but isolating the youngest group brought out the impact of education on women (with no significant change on any other result presented in Table II): Female workers who have GCSE grades A-C or above are more likely to become underemployed, compared to those who have no qualifications.

As for the occupational influences, when employees gain access to higher-ranking occupations, the likelihood of becoming underemployed declines ($p < 0.001$). In managerial, senior official and professional groups, for example,

both men (OR = 0.47) and women (OR = 0.27) are exposed to a considerably smaller risk of underemployment, compared to the ones in elementary occupations.

Finally, the inclusion of occupations eradicated the significant influence of distribution, hotels and restaurants in the joint model and that of union membership in women's model. It, on the other hand, shed light on the role of private sector in diminishing men's desire to work longer.

Conclusions

To rectify the lack of systematic research in Britain, we explored socio-economic predictors of underemployment. The likelihood of wishing to have extra hours of work is significantly affected by a range of correlates we considered. In general, women's underemployment turns out to be higher than men's, but it is moderated by a contradictory situation in female dominated work-settings. The results also unveil a work-status inconsistency in terms of the implications of higher occupational and educational levels for underemployment.

This study failed to back those who suggested more preparedness among women for less work due to, among others, family commitments and self-fulfilment (Hakim, 1997; Massey, 1994; Siltanen, 1994). Our evidence does not prove less tendency toward underemployment among women, compared to men and, if anything, it is somewhat the other way around. However, the gender discrepancy has emerged only after the beginning of the recession. Some demographic findings can arguably be related to such a result. Being single together with dependent children, for example, heightens women's desire for extra work probably as a reflection of limited state support for childcare (Forry and Hofferth, 2011). The evidence also points to the importance of work-related factors: Notably, private sector companies (Caputo and Cianni, 2001; Nosal, 1998) and trade union membership (Ham, 1982) lower men's underemployment significantly, but not women's. The former is partly a function of the prominence of men's overemployment (41%) in the

private sector, compared to 32% of women (LFS, 2012). The latter corresponds with female members' limited chance to benefit from union agreements with management (Cam, 2011).

The gender difference in relation to underemployment is limited by its conditionality. That is, sometimes it is the specific circumstances which determine whether men or women would have a significantly higher level of underemployment. Indeed, women-dominated work settings contradict the overall situation (Kjeldstad and Nymoen, 2012). In part-time jobs, sales and customer services, for example, men have a higher tendency toward underemployment than women. Such a result may be attributed to the gendered division of labour at home as well as at work (Webber and Williams, 2008). Households with a cohabiting couple and dependent children, for instance, curtail the likelihood of underemployment among women, whereas they have an opposite effect on men.

Despite gender differences, both men's and women's underemployment is influenced by common dynamics from within their working lives. In particular, one's underemployment is impacted upon by his or her position at work. Our logistic analyses revealed a strong relationship between underemployment and some commonly used variables to understand labour standards such as industrial variations, establishment size and flexible work. Low-pay jobs in, for example, hotels and restaurants boost the likelihood of underemployment (Kjeldstad and Nymoen, 2012; Yotopoulos, 1965). Likewise, smaller establishments predict higher levels of underemployment (Dex and Scheibl, 2001; Edwards and Ram, 2006). In addition, although men in part-time jobs have a higher propensity toward underemployment than women, flexible work in general raises underemployment. By and large, this corresponds with the international research findings over part-time (Kjeldstad and Nymoen, 2012; Lind and Rasmussen, 2008) and temporary (Rogers, 2001) contracts.

More evidence over the link between one's position at work and underemployment comes from the work-status indicators. High level

occupations reduce involuntariness among both male and female workers, compared to lower ranking ones. Such an inverse relationship between occupations and underemployment turns out to be a structural, rather than a cyclical, effect. In 2007, for example, underemployment was below 5% among managerial, professional and senior officials, whereas the proportion was twice as much as that for process, plant and machine operatives as well as elementary jobs (LFS, 2007).

The negative association of underemployment with higher occupations implies that it actually is informed by a work-status inconsistency. The reason for this is because although higher occupations help alleviate underemployment, higher educational attainments show no impact on men but an opposite effect on women. Thus, our finding defies the repressive impact of higher education on underemployment among the EU and other developed countries at the aggregated level (Stier and Lewin-Epstein, 2003). The divergence in Britain is partly related to the issue of credentials underemployment (Batenburg and De Witte, 2001): There has been a growing incontinency between occupational and educational levels over the past decades due to a long-term inflation in over qualification and managerial layers (Brown, 2004; Brynin, 2002; Felstead *et al.,* 2007). In the specific case of women, however, the situation is further accentuated arguably by a glass ceiling against their access to high-ranking occupations (Buchel and Battu, 2003; Maume, 1999). Disproportionate location of women in part-time jobs is an important catalyst for this (Durbin and Tomlinson, 2010) as holding a degree, for example, doubles such women's underemployment, compared to having no qualification, 20% (LFS, 2011).

Recent government initiatives to restrict the state support available for childcare through the tax credit system may lead to a further rise in flexible work, and hence, underemployment, especially among women (Forry and Hofferth, 2011). This should be taken with an increasing share of men in the service sector amid the accelerated erosion of traditionally female-dominated occupations because of the recession (Hogarth *et al.,* 2009). To combat the current economic downturn successfully, the government should try to contain

the spread of underemployment as it undermines job satisfaction (Johnson and Johnson, 1995; Wooden *et al.,* 2009), work commitment (Abrahamsen, 2010) and labour productivity (Sullivan, 1978). For this purpose, policy makers should consider a fuller adoption of the EU directives to empower employees in negotiating work arrangements with management (Forde and Slater, 2005). It would also be useful to address managerial reservations on becoming involved in dialogues with trade unions (Butler, 2009). Unions needs to become more effective in terms of delivering dividends to workers from their interventions in working times (Gregory and Milner, 2009; Rigby and Smith, 2010).

The negative relation of job levels to underemployment renders it an explorable area for the students of precarious employment both empirically and conceptually (Kalleberg, 2009; Pape, 2008). There is also a need for specific analyses to examine the relationship between underemployment and some potentially important issues which are not covered in this study such as working hours and earnings. Further, it would be useful to conduct qualitative research in order to develop an in-depth insight into, for example, the ways in which variations in household types, demographic profiles and educational attainments culturally inform underemployment.

References

Abrahamsen, B. (2010) 'Employment Status and Commitment to Work in Professions', *Economic and Industrial Democracy,* 31(1): 93–115

Barber, B. (2012) Male under-employment has doubled over the last four years, http://www.tuc.org.uk/economy/tuc-21009-f0.cfm, Last visited on 2 August 2012

Batenburg, R. and De Witte, M. (2001) 'Underemployment in the Netherlands: How the Dutch "Poldermodel" Failed to Close the Education-Jobs Gap', *Work Employment Society,* 15(1): 73–94

Bednarzik, R. W. (1976) 'Involuntary Part-Time Work and Educational Attainment', *The Journal of General Education*, 28(2): 135–43

Blanden, J. and Machin, S. (2003) 'Cross-Generation Correlations of Union Status for Young People in Britain', *British Journal of Industrial Relations*, 41(3): 391–415

Böheim, R. and Taylor, M. P. (2004) 'Actual and preferred working hours', *British Journal of Industrial Relations*, 42: 149–66

Bonney, N. (2005) 'Overworked Britons? Part-time work and Work–life balance', *Work, Employment and Society*, 19 (2): 391–401

Booth A. L. and Ours J. C. Van (2009) 'Hours of Work and Gender Identity: Does Part-time Work Make the Family Happier?' *Economica*, 76:176–96

Brook, K. (2001) 'Trade union membership: an analysis of data from the autumn 2001 LFS', *Labour Market Trends* - July 2002: National Statistics Feature

Brown, P., Hesketh, A. and Williams, S. (2004) *Mismanagement of Talent: Employability and Jobs in the Knowledge Economy*, Oxford University Press: Oxford

Brynin, M. (2002) 'Overqualification in employment', *Work, Employment and Society*, 16(4): 637–54

Buchel, F. and Battu, H. (2003) 'The theory of differential overqualification: does it work?' *Scottish Journal of Political Economy*, 50(1): 1–16

Butler, P. (2009) 'Non-union employee representation: exploring the riddle of managerial strategy' *Journal of Industrial Relations*, 40(3): 198–214

Cam, S. (2011) *Unincluded Trade Union members: Evidence from the Labour Force Survey*, Cardiff University, Working Papers, ISBN 978-1-908469-03-8

Cam, S. (2012) 'Involuntary Part-time Work in Britain: Evidence from the Labour Forcer Survey, *Industrial Relations Journal*, 43(3): 242–60

Caputo, R. K. and Cianni M. (2001) 'Correlates of Voluntary vs. Involuntary Part-time Employment among US Women', *Gender, Work and Organization*, 8(3): 311–25

Chatzitheochari, S. and Arber, S. (2009) 'Lack of sleep, work and the long hours culture: evidence from the UK Time Use Survey', *Work, Employment and Society,* Volume 23(1): 30–48

Clarkberg, M. and Moen, P. (2001) "Understanding the time-squeeze: Married couples' preferred and actual work-hour strategies", *American Behavioral Scientist*, 44: 1115–36

Dex, S. and Scheibl, F. (2001) 'Flexible and Family-Friendly Working Arrangements in UK-Based SMEs: Business Cases', *British Journal of Industrial Relations*, 39(3): 411–31

Durbin, S. and Tomlinson, J (2010) 'Female part-time managers', *Work, Employment and Society*, 24 (4): 621–41

Edwards, P. and Ram, P. (2006) 'Surviving on the Margins of the Economy: Working relationships in Small, Low-Wage Firms', *Journal of Management Studies,* 43 (4): 895–916

Felstead, A., Gallie, D., Green, F. and Zhou, Y. (2007) *Skills at Work: 1986-2006*, ESRC Centre for Skills, Knowledge and Organisational Performance: Cardiff, ISBN-978-0-9555799-0-5

Forde, C. and Slater, G. (2005*) '*Agency Working in Britain: Character, Consequences and Regulation' *British Journal of Industrial Relations,* Volume 43(2): 249–71

Forry, N. D. and Hofferth, S. L. (2011) Maintaining Work: The Influence of *Child Care* Subsidies on *Child Care*-related Work Disruptions, *Work, Employment and Society,* Volume 32(3): 346–68

Forth, J., Bryson, A. and Bewley, H. (2006) *Small and medium-sized enterprises: Findings from the 2004 workplace employment relations survey*, Department of Trade and Industry: London.

Glyde, G. P. (1977) 'Under-employment: definition and causes', *Journal of Economic Issues*, 11(2): 245–61

Golden, L. and Gebreselassie, T. (2007) 'Overemployment mismatches: The preference for fewer work hours', *Monthly Labor Review*, 130(4), 18–37

Gregory, A. and Milner, S. (2009) 'Trade Unions and work-life Balance: Changing Times in France and the UK?' *British Journal of Industrial Relations*, 41(7):122–46

Hakim, C. (1997) 'A sociological perspective on part-time work' in H-P Blossfeld and C. Hakim (eds) *Between Equalization and Marginalization: Women Working Part-Time in Europe and the United States of America*. Oxford: Oxford University Press, pp. 22–70

Ham, J. C. (1982) 'Estimation of a labour supply model with censoring due to unemployment and underemployment', *Review of Economic Studies*, 49: 335–54

HMSO, Her Majesty's Stationary Office (2012) *The Working Time Regulations 1998*, http://www.legislation.gov.uk/uksi/1998/1833/contents/made, Last visited on 31 July, 2012

Hogarth, T., Owen, D., Gambin, L., Hasluck, C., Lyonette, C. and Casey, B. (2009) *The equality impacts of the current recession* (Equality and Human Rights Commission Research report, 47)

Hussmans, R. (2007) *Measurement of employment, unemployment and underemployment –current international standards and issues in their application*, ILO Bureau of Statistics: www.ilo.org/wcmsp5/groups/public/, Last Visited on 31/8/2012

Jacobs, J. A. and Gerson, K. (2004) *The time divide: Work, family, and gender inequality*, Cambridge, MA: Harvard University Press.

Jenkins, J. and Laux, R. (1999) 'Using the Labour Force Survey to estimate time-related underemployment', *Labour Market Trends*, 417–23

Jensen, L. and Slack, T. (2003) 'Under-employment in America: measurement and evidence', *American Journal of Community Psychology*, 32(2): 21–31

Johnson, G. and Johnson, W. R. (1995) 'Subjective under-employment and job satisfaction', *International Review of Modern Sociology*, 25: 73–84

Kalleberg, A. (2009) 'Precarious Work, Insecure Workers: Employment Relations in Transition', *American Sociological Review*, 74(1): 1–22

Kjeldstad, R. and Nymoen, H. (2012) 'Underemployment in a gender-segregated labour market', *Economic and Industrial Democracy*, 33(2): 207–24

Lallement, M. (2011) 'Europe and the economic crisis: forms of labour market adjustment and varieties of capitalism' *Work, Employment and Society*, 25(4): 627–41

Lee, Y. and Mowry, B. (2009) 'Involuntary Part-Time Workers and the Deficiencies of the Unemployment Rate', *Economic Trends*: http://www.clevelandfed.org/research/trends/2009/0509/03ecoact.cfm, Last Visited on 31/8/2012

LFS (2000, 2007, 2010, 2011 & 2012) *UK Data Archive Labour Force Survey*, Autumn Quarters: http://www.esds.ac.uk/findingData/snDescription.asp?sn=6413, Last Visited on 31/8/2012

Lind, J. and Rasmussen, E. (2008) 'Paradoxical patterns of part-time employment in Denmark?' *Economic and Industrial Democracy,* 29(4): 521–540

MacInnes, J. (2005) 'Work–Life Balance and the Demand for Reduction in Working Hours: Evidence from the British Social Attitudes Survey 2002', *British Journal of Industrial Relations,* 43 (2): 273–295

Massey, D. (1994) 'Masculinity, Dualism and High Technology', *Transactions of the Institute of British Geographers*, 20(87): 487–99

Maume, D. J. J. (1999) 'Glass ceilings and glass escalators: occupational segregation and race and sex differences in managerial promotions', *Work and Occupations*, 26(4): 483–509.

Millar, J., Ridge, T. and Bennett, F. (2006) *Part-time Work and Social Security: Increasing Options*, Department for Work and Pensions: Norwich

Nosal, E. (1998) 'Financial Distress and Underemployment', *Review of Economic Studies*, 65: 817–45

OECD (2010) *Employment Outlook: Moving Beyond the Jobs Crisis*, OECD: Geneva

ONS (2011) *Labour Force Survey Technical Report*, Last visited on 03 April 2012: http://www.esds.ac.uk/findingData/snDescription.asp?sn=6715

Pape, K. (2008) *Precarious Employment and Flexicurity - the perspective of a (trade union orientated) user of statistics*: http://www.wiego.org/reports/statistics/nov-2008/Pape.pdf, Last visited on 31/8/2012

Reynolds, J. and Aletraris, L. (2010) 'Mostly Mismatched with a Chance of Settling: Tracking Work Hour Mismatches in the United States', *Work and Occupations* 37(4): 476–511

Rigby, M. and O'Brien-Smith, F. (2010) 'Trade union interventions in work-life balance' *Work, Employment and Society,* Volume 24(2): 203–20

Rogers, J. K. (2001) "There's No Substitute: The Politics of Time Transfer in the Teaching Profession", *Work and Occupations,* 28: 64–90

Ruiz-Quintanilla, S.A. and Claes, R. (1996) 'Determinants of underemployment of young adults: a multi-country study', *Industrial and Labor Relations Review*, 45(5): 424–38

Schellenberg, G. (1995) 'Involuntary Part-time Workers', *Perception*, 28: 3–4

Siltanen, J. (1994) *Locating Gender, Occupational Segregation, Wages and Domestic Responsibilities*, London: UCL Press

Simic, M. (2002) 'Underemployment and Overemployment in the UK', *Labour Market Trends*, 110 (8): 399–414

Stewart, M. B. and Swaffield, J. (1997) 'Constraints on the desired hours of work of British men', *Economic Journal*, 107: 520–35

Stier, H. and Lewin-Epstein, N. (2003) 'Time to work: a comparative analysis of preferences for working hours', *Work and Occupations*, 30: 302–26

Sullivan, T. A. (1978) *'Marginal Workers, Marginal Jobs –The Under-utilization of American Workers*, University of Texas Press: London

Walling, A. and Clancy, G. (2010) 'Underemployment in the UK labour market', *Economic & Labour Market Review*, 4(2): 16–24

Walsh, J. (1999) ‘Myths and Counter-Myths: An Analysis of Part-Time Female Employees and Their Orientations to Work and Working Hours’, *Work, Employment and Society,* Volume 13(2): 179–203

Watson, I. (2002) ‘Wage inequality and under-employment: Australia in the 1990s’, *The Journal of Industrial Relations*, 44(1): 88–107

Wilkins, R. (2007) ‘The consequences of under-employment for the under-employed’, *Journal of Industrial Relations*, 49(2): 247–75

Webber, G. and Williams, C. (2008) ‘Part-Time Work and the Gender Division of Labor’ *Qualitative Sociology*, 31: 15–36

Wooden, M., Warren, D. and Drago, R. (2009) ’Working Time Mismatch and Subjective Well-being’, *British Journal of Industrial Relations*, 47(1): 147–79

Yotopoulos, P. A (1965) ‘The “Wage-Productivity” Theory of Underemployment: A Refinement’, *Review of Economic Studies* 32(1): 59–66