

Going 'Absent', Then Just 'Going'? A Case Study Examination of Absence and Quitting

Donna Cassidy and John Sutherland¹

ABSTRACT

This paper makes use of personnel data to examine absence, variously defined, and quitting in a call centre. It seeks to examine the hypothesis that absence and quitting are related, both being indicative of a lack of commitment on the part of the worker but offering different adjustment strategies to this problem. In the case study, absence is seen to be positively correlated with tenure, occupation and type of employment contract and negatively correlated with gender and age. The impact of the individual's operations manager is not without significance. For example the inclusion of this set of variables reduces absence, however defined, for certain occupational groups and grades. Quitting is seen to be negatively correlated with age, tenure and type of employment contract. There is a positive correlation between quitting and an individual's absence record prior to making the decision to leave, although the results are not statistically significant and the quantitative effects of the relationships are negligible.

1. INTRODUCTION

ABSENCE IS COSTLY TO ORGANISATIONS. These costs may be direct, in terms of sick pay, the costs of hiring temporary replacement workers, where this is possible, and lost output. Additionally, costs may be indirect, in terms of the psychological impact of the low morale it may create among staff who may be faced with consequential increased workloads, and the administrative costs of managing the problem (Barmby, 2002). From the perspective of the organisation, estimates of the average annual cost of absence per employee range from £476 (CBI, 2004) to £588 (CIPD, 2004). From the perspective of the economy as a whole, the CBI estimates the total cost of absence in the United Kingdom in 2005 at £13 billion (CBI, 2006).

Although there is anecdotal evidence which suggests that contemporary rates of absence may be increasing, nonetheless research indicates that absence rates in the United Kingdom (UK) have seldom varied over time (Barmby *et al*, 2004). Furthermore, the phenomenon of 'absence' is not unique to the UK (Barmby *et al*, 2002; Gimeno *et al*, 2004). Research also indicates that absence rates vary both by sector and employee, for example, they are

higher in the public sector than in the private sector, higher for female employees than male employees and higher for younger employees than older (Barham and Begum, 2005).

According to economic theory, absence is a problem of labour supply. Absence results when the contract hours demanded by the employer exceed the individual worker's optimal labour supply. Absence, therefore, is analogous to rational shirking on the part of the employee, because he/she is involuntarily over-employed. Although absence may be a short run response to the perceived problem of over-employment, an equally rational long run response may be to quit the employing organisation. However, viewing absence in the same context as quitting opens up another perspective of this behaviour pattern (Clark *et al*, 2005) in that both may be symptoms of withdrawal on the part of the worker, manifestations of a lack of commitment on the part of the employee to the employing organisation.

This paper examines absence and quitting in a call centre, anonymised as UtilCall, over the 12 month period 31.01.2004 to 31.01.2005. Call centres are frequently cited as a sector especially prone to the problem of absence (Holman, 2002; 2003a; 2003b). UtilCall is one of several call centres serving a utility company. The poorest performing of all the company's call centres, it reported over 19 days absence per full time equivalent during 2003. Making use of personnel data, two questions motivate the investigation: what are the determinants of absence at UtilCall? And to what extent is absence at UtilCall correlated with quitting the organisation voluntarily?

The paper proceeds as follows. In section 2, some literature of relevance is reviewed to provide an academic context to the study. The data set is described in section 3, which also provides relevant information about the case study organisation. How absence and quitting are measured, modelled and estimated is outlined in section 4. The results are reported and discussed in section 5. Section 6 concludes.

2. SOME LITERATURE OF RELEVANCE

Following the seminal work of Ehrenberg (1970), in the early literature absence is perceived to be an exclusively labour supply problem. Absenteeism results when the contract hours demanded by the employer exceeds the individual worker's optimal labour supply (e.g. Allen, 1981; 2001; Barmby and Treble, 1991; Brown and Sessions, 1996; Dunn and Youngblood, 1986; Leslie, 1982; Winkelmann, 1996). Absence, therefore, is analogous to rational shirking on the part of the employee, seeking to minimise the difference between hours required by the employer and his/her desired hours. Alternatively, the individual is described as involuntarily over-employed.²

In accordance with this conventional labour-leisure choice model, there are two vectors of variables seen to constitute the determinants of worker absence: one reflecting the properties of the reward system and the other

reflecting the characteristics of the individual's indifference map between work and non-work time. In the context of the former, the variables of consequence are the wage rate, the bonuses paid, where applicable, and the manner in which absence impacts upon either or both. Whether or not sick pay is given to absent workers — and, if so, at what rate/s — is integral to this, this despite the fact that '(b)y offering sick pay, firms are in effect increasing the workers' incentives to absent themselves even more.' (Chatterji and Tilley, 2002).³ Individual choice between work and non-work time are proxied by variables denoting personal characteristics of the employee and the circumstances of his/her physical work environment.⁴

This early literature ignored the role of demand side variables manifest, for example, in the conditions of the employment contract — most especially the specification of work hours which the employee has accepted and to which he/she is nominally obliged to conform (Brown and Sessions, 1996) and any policy, strategic or reactive, which management may have implemented, designed to address the issue of potential absence (Barmby *et al*, 1991; Chatterji and Tilley, 2002). To illustrate this in the specific context of the employment contract, a worker on a flexi-time scheme has more control over the times at which he/she may supply labour. 'If an employee is free to make his own hours, the issue of absence does not arise' (Brown *et al*, 1999, p. 235). Similarly, individuals working part time have a reduced probability of encountering an hours mis-match between contractual hours and desired hours than those working full time. Absence, therefore, is better explained by the interaction of both supply and demand factors (if thereby creating an econometric problem of identification in so doing).⁵

Whereas absence may be a rational short run response to the perceived problem of over-employment, a rational response to the same problem in the long run may be to quit the organisation voluntarily (Altonji and Paxson, 1988; 1991; Freeman, 1980). Hence, the relevance of Barmby *et al*'s (1991, p. 222) observation that: '... the study of absence would be enhanced with a concurrent study of turnover'. Viewing absence in the same context as quitting, however, opens up another perspective of this behaviour pattern. Clark *et al*. (2005, p. 285) view these two variables as part of a continuum. 'As the degree of withdrawal increases, workers progress along the continuum exhibiting increasingly serious forms of malfeasance until a separation ... occurs'. According to this perspective, absence is comparable to lateness. It is a manifestation of a lack of commitment on the part of the worker, which may culminate in a voluntary quit.

Call centres have been one of the fastest growing parts within the expanding service sector of the UK economy, with an industrial presence now well beyond their initial base within the financial services sector and a geographical presence across most of the UK's regions (Bristow *et al*, 2000). Their economic rationale is the manner of their operation, in which they make use of information technology to meet customer demands for convenience, often by

means of making extensive use of a contingent labour force.⁶ The majority of the workforce employed is female, most of whom face what has been described as a career-less future, despite the presence of many women in team leadership roles (Belt, 2002; Belt *et al*, 2002).

With their Fordist/Taylorist management philosophies, call centres have been described as recreating work environments traditionally associated with the 'dark Satanic mills' of the industrial revolution (Arkin, 1997; Bain *et al*, 2002; Batt, 1999; Fernie and Metcalf, 1998; IDS, 1997; Taylor and Bain, 1999). That said, as Taylor *et al* (2002, p. 134) emphasise, 'work organisation in call centres is far from uniform'. Furthermore, there is a similar variety to be found in the human resource management strategies employed within call centres (Houlihan, 2002; Wood *et al*, 2006). Central to the operation of these centres is the customer service representative (CSR), although this role is variously entitled.⁷ Kinnie *et al*. (2000, p. 968) describe the work of the CSR as being 'often tightly scripted, repetitive, mentally and physically demanding and stressful'.

Relatively high levels of absence and quitting are characteristics of call centre operations, with CSRs being especially prone to both (Deery *et al*, 2002; Holman, 2002; Knights and McCabe, 1998; Taylor *et al*, 2003).

3. THE CASE STUDY CONTEXT AND THE DATA SET

UtilCall takes customer service calls for billing enquiries and other services of the company. Customer Service Advisors (CSAs) handle these calls and are expected to cross-sell all the services offered. The call centre operates from 8.00 am until 8.00 pm Mondays to Fridays and from 8.00 am until 6.00 pm on Saturdays. Full time employees (i.e. those contracted to work a 35 - 40 hour week) are complemented by part time employees working varying hours per week. A shift system of sorts also operates, reflected in varying start times throughout the day and evening.⁸ The majority of staff work a 37 hour week, working every other Saturday or until 8.00 pm in the evening. There is a pre-determined one hour lunch break. Contracted hours are adhered to, strictly.

The internal labour market of UtilCall is structured by job and grade. CSAs, the frontline call taking agents, constitute the single largest occupational grouping within the centre. They are graded as Grade 2s. They take calls throughout the working day, with a (discretionary) 20 minute break (which is strictly monitored). Grade 1 personnel do not take calls but undertake general administrative work. Grade 3s (Senior Customer Service Advisors) provide support to the call centre, which may include coaching Grade 2s, providing training on new procedures and systems, dealing with complex accounts, as well as taking calls when this is required. Team managers are graded Grade 4 and manage teams of 12, principally personnel in Grade 2. They are required to 'coach, motivate and lead'. This entails coaching team members on sales, knowledge and customer service skills; conducting quality assessments and

undertaking performance reviews; dealing with complaints; and managing team members on a day-to-day basis. There are also 'senior managers' (identified in the empirical sections as Grade 5), some of whom are the operations managers to which team managers and, through them the members of their teams, ultimately report.

Salary is dependent upon grade, and grade and tenure determine holiday entitlement. Employees are entitled to full sick pay for six months and then half pay for the next six months.⁹ Employees may take up to six days absence in any 12 month period without entering into the stages of UtilCall's absence management procedures. (This equates to approximate 2.5 percent of contractual time). A family leave policy also operates for those with carer/parental responsibilities. Those granted family leave are entitled to five days paid leave. Thereafter, any leave taken under this auspices is not paid. Much in accordance with call centre practice elsewhere, some employees at UtilCall are agency personnel. Individuals employed by agencies have different salaries, holiday entitlements and sickness absence provision from UtilCall employees.

The data file was constructed by integrating several discrete personnel files, to produce a composite data set with information on personal characteristics, such as age and gender, workplace characteristics, such as employment contract, occupation, grade and tenure, and absence details. The original data set consisted of 1644 individuals employed by UtilCall during the 12 month period 31.01.2004 to 31.01.2005. At the outset, two groups were excluded. First, those on secondment to other locations were excluded, because the aim was to examine absence exclusively at the location in question. This removed 48 observations. Secondly, those recruited and employed by agencies under the agencies' terms and conditions and subsequently subcontracted to UtilCall were excluded. As noted above, UtilCall makes regular use of agency workers to meet contingencies. 259 agency employees were included in the original data set. However, only 12 agency employees were *in situ* at the beginning of the absence accounting period and no agency worker remained throughout the accounting period.¹⁰

Of the resulting 1337 observations, 1092 were employed on 31.01.04, the beginning of the absence accounting period. However, 155 of these (14.19 percent) were to quit voluntarily during the 12 months which followed.¹¹ On the other hand, 245 were to become UtilCall employees during 2004. Those recruited after the beginning of the accounting period are not subject to analysis.

4. THE MODELS AND THE ESTIMATION STRATEGIES

There are several ways in which the phenomenon of absence may be measured, each offering a different perspective of the diverse dimensions of the problem from a management perspective. For example, absence may be exam-

ined as an event, and its incidence across individuals and its frequency by individuals may be analysed accordingly. Alternatively, the duration of each event may be investigated, to distinguish between ‘short’ periods of absence, which necessitate one type of managerial response to address its particular consequences, from ‘long’ periods of absence, which create an altogether different set of implications for management. In this paper, absence is measured by the actual hours ‘lost’ per worker, expressed as a percentage of his/her annual contract hours, a statistical variant of what Brown *et al* (1999, p. 241) identify as the ‘ideal measure of absence rates’.

Changing the method by which absence is measured may impact upon the results of the estimation reported, however. For example, in the context of this case study, the number of hours ‘lost’ could be measured using the organisation’s absence data. Alternatively, given the existence of a family leave policy — effectively managerial permission to be absent for reasons associated with an individual’s responsibilities to home and family — it could be measured by summing absence data and family leave data.¹² In the empirical analysis which follows both measures are used.

One way in which absence may be modelled is to view it as a binary outcome and estimate its determinants by means of a probit model. Central to this option is the notion of a latent variable y^* , that there is an underlying propensity to go absent that generates the observed state. Although y^* may not be observed directly, at some point a change in y^* results in a change in what is observed, namely whether or not an individual goes absent (Long, 1997; Maddala, 2001; Green, 2003).

The latent dependent variable y^* is assumed to be related to the observed independent variables through the structural model

$$y_i^* = x_i\beta + \varepsilon_i \quad (1)$$

where x_i is a vector of values for the i^{th} observation, β is a vector of parameters to be estimated and ε is the error term. The latent variable y^* is linked to the observed binary variable y_i by two measurement equations viz

$$y_i = 1 \text{ if } y_i^* > \tau \quad (2)$$

$$y_i = 0 \text{ if } y_i^* \leq \tau \quad (3)$$

where τ is some threshold level such that, when y^* crosses this, then ($y_i = 0$) becomes ($y_i = 1$) i.e. the individual goes absent.

The probit model would identify the determinants of the probability of an individual going absent some time during the accounting period. However, it would not identify the determinants of the extent of an individual’s absence over the period, the absence rate, however this is measured i.e. exclusive or inclusive of family leave. Because a number of individuals within the data set

Table 1: The Probability of Going Absent: Probit Results

Variable	Coefficient	Standard Marginal		Coefficient	Standard Marginal	
		Error	Effects		Error	Effects
Male	-.3009	.1041	-.09 ***	-.2305	.1105	-.07 **
Log Age	-.5114	.2221	-.16 **	-.7194	.2396	-.21 ***
Log Tenure	.1395	.0631	.04 **	.1664	.0678	.05 **
CSA	.8902	.3456	.30 **	.6402	.3654	.20 *
On Full Time Contract	.9771	.1085	.33 ***	.8413	.1263	.27 ***
Grade 1	-.2264	.4061	-.07	-.4432	.4305	-.15
Grade 3	.5500	.3733	.14 *	.2639	.4955	.07
Grade 4	-.1741	.3760	-.05	-.8268	.6669	-.29
Grade 5	-.9676	.4391	-.36 **	-1.6559	.7022	-.59 ***
Constant	1.0776	.7822		2.4016	.8949	
Operation manager dummies included?		No			Yes	
Number of observations			911			911
LR chi-squared			(9) 171.39			(27) 230.68
Prob > chi-squared			0.0000			0.0000
Pseudo R-squared			.1604			.2159
Likelihood-ratio test					(18) 59.29	
Prob > chi-squared					0.0000	

record no absence and take no family leave, it would be inappropriate to apply the traditional ordinary least squares model to examine this issue. Inconsistent estimates would be produced were observations associated with no absence to be either included or excluded. In the case of their inclusion, the intercept is underestimated and the slope is overestimated. In the case of their exclusion, the intercept is overestimated and the slope is underestimated. Conventionally, the solution to the problem of incomplete information about the dependent variable, given full information about the independent variables, is to estimate a censored regression/tobit model (Long, 1997; Maddala, 2001; Green, 2003).

In the tobit model, the structural model remains that as identified and described above, viz.:

$$y_i^* = x_i\beta + \varepsilon_i \quad (4)$$

Table 2: The Probability of Going Absent and/or Taking Family Leave: Probit Results

Variable	Standard			Marginal		
	Coefficient	Error	Effects	Coefficient	Error	Effects
Male	-.2495	.1082	-.07 **	-.1491	.1158	-.03
Log Age	-.4391	.2300	-.12 *	-.7259	.2523	-.18 ***
Log Tenure	.2021	.0648	.05 ***	.2193	.0708	.05 ***
CSA	.8130	.3432	.25 **	.4689	.3630	.13
On Full Time Contract	.9765	.1110	.25 **	.7512	.1305	.21 ***
Grade 1	-.0557	.4100	-.01	-.4154	.4437	-.12
Grade 3	.5519	.3742	.12	.3006	.5050	.06
Grade 4	-.0124	.3755	-.01	-.2034	.6819	-.05
Grade 5	-1.236	.4383	-.44 ***	-1.8144	.7212	-.63 ***
Constant	.9284	.8032		2.6771	.9345	
Operation manager dummies included?		No			Yes	
Number of observations			911			911
LR chi-squared			(9) 153.88			(27) 227.31
Prob > chi-squared			0.0000			0.0000
Pseudo R-squared			.1580			.2334
Likelihood-ratio test					(18) 73.43	
Prob > chi-squared					0.0000	

Footnotes to Tables 1 and 2

1. ***, ** and * statistically significant at (p < .01), (p < .05) and (p < .1), respectively.
2. Grade 2 is the omitted/reference grade category. Marginal effects are calculated at the means for scalar variables and for a discrete change from 0 to 1 for the dichotomous dummy variables.

Now, however, y_i^* is not observed if $y_i^* \leq 0$. y_i^* is only observed were $y_i^* > 0$. Consequently, the observed y_i is defined as follows:

$$y_i = y_i^* = x_i\beta + \varepsilon_i \quad \text{if } y_i^* > 0 \quad (5)$$

$$y_i = 0 \quad \text{if } y_i^* \leq 0 \quad (6)$$

The independent variables associated with both the probit and tobit estimations of absence are identified in Table 1. They include variables denoting both

personal and workplace characteristics and conform, generally, to the sets of variables which appear in previous studies of absence. Age (measured in years) and tenure (measured in months) are scalar variables. Gender (viz. male), occupation (viz. CSA) and the nature of the employment contract (viz. on full time contract) are dichotomous dummy variables. The variables denoting grade and operation manager (i.e. the manager to which individuals are ultimately responsible) constitute a series of dichotomous dummy variables.

The probability that an individual quits voluntarily may be seen as a further application of the binary probit model of the type outlined above (Weiss, 1984; Galizzie and Lang, 1998; Sutherland, 2002). The independent variables used in this estimation are identified in Table 5.¹³ In the empirical estimations, absence — initially exclusive of and latterly inclusive of family leave — is included as an independent variable in two ways. It appears as a

Table 3: The Absence Rate (abs_rate): Tobit Results

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>Coefficient</i>	<i>Standard Error</i>
Male	-2.3005 ***	.8144	-2.0944 **	.8250
Log Age	2.9223 *	1.7500	2.1324	1.770
Log Tenure	.2964	.5111	.4626	.5151
CSA	7.9390 **	3.3904	6.4738 *	3.4196
On Full Time Contract	4.6049 ***	.9166	4.0779 ***	1.004
Grade 1	-1.7003	3.7395	-5.1147	3.8067
Grade 3	6.0667 *	3.5826	2.8451	4.4538
Grade 4	1.1198	3.6596	-2.8645	6.5647
Grade 5	-7.2471 *	4.3879	-10.4013	6.8944
Constant	-16.1311		-10.7172	6.8730
Operation manager dummiesincluded?	No		Yes	
Number of Observations		911		911
LR chi-squared		(9) 89.19		(27) 129.16
Prob > chi-squared		0.0000		0.0000
Pseudo R-squared		.0163		.0235
/sigma			10.7281	.3044
Observations summary	249 left censored observations at abs_rate <= 0 662 uncensored observations 0 right censored observations			
Likelihood-ratio test			LR chi-squared (18)	39.97
Prob > chi-squared				0.0021

dichotomous dummy variable taking the value '1' if the individual records an absence at any time during his/her employment with UtilCall during the accounting period (and '0' otherwise); and it appears as a scalar variable recording the individual's absence rate, *pro rata* with his/her time with the company during the accounting period.¹⁴

5. THE RESULTS

From previous empirical work (e.g. Allen, 1981; Barmby, 2002; Barmby and Treble, 1991; Brown and Sessions, 1996; Taylor *et al*, 2002), it is hypothesised that both the probability of absence and the rate of absence — for both measures — will be related to gender (with males being less likely to go absent than females); type of contract (with those on full time contracts being more likely to go absent than those on part time contracts); occupation (with those working as CSAs being more likely to go absent than those working in other occupations); and grade, to the extent that this set of dichotomous dummy variables proxies the wage rate (with those on higher wage rates/grades being less likely to go absent than those on relatively lower wage rates/grades). Further, it is hypothesised that the role played by the operations managers is not without significance. For example, Holman (2002) argues that management is one of several factors which have an effect on the well being of customer service representatives employed in call centres, taking as they do an important lead role in coaching, monitoring and assessing their team members.

The results of the probit estimation of the probability of going absent are reported in Table 1, and these results are very much in accordance with the expectations thus outlined. Examining first the estimation without the set of operation managers dummies: males are 9 percent less likely to go absent than females; those on full time contracts are 33 percent more likely to go absent than those working the various part time contracts available; and those employed as CSAs are 30 percent more likely to go absent than those employed in other occupations. Furthermore, all these results are statistically significant. The results with respect to grade are more ambiguous. Relative to Grade 2, the omitted category, those classified as Grade 3 are more likely to go absent whereas those classified as Grades 1, 4 and 5 are less likely to go absent. Notably, those classified as Grade 5 — the highest paying grade in terms of the wage rate — are 36 percent less likely to go absent than those in the reference category. The probability of going absent is negatively correlated with age but positively correlated with tenure, the latter an uncommon result in the context of previous studies of absence.

Including dummy variables to examine the impact of the role of operations managers, generally and inevitably, modifies these results at the margin, in terms of both the marginal effects and the levels of statistical significance of the coefficients. Of more consequence, the result of the likelihood ratio test confirms Holman's (2002) argument as to the importance of the role of 'management' in the context of absence. Moreover, manifest in the more

substantive changes in the values of the marginal effects between the two estimations in question, the statistical impact of including the set of dummies associated with operations managers is to decrease the likelihood of CSAs (rel-

Table 4: The Absence Rate Plus the Family Leave Rate (absplus_rate): Tobit Results

Variable	Coefficient	Standard Error	Coefficient	Standard Error
Male	-2.1219 ***	.7939	-1.8279 **	.8013
Log Age	3.1604 *	1.7123	2.1570	1.7272
Log Tenure	.5372	.4991	.6300	.5019
CSA	7.6633 **	3.2732	5.7117 *	3.2923
On Full Time Contract	3.9778 ***	.8905	3.1042 ***	.9700
Grade 1	-.8986	3.6052	-4.8029	3.6644
Grade 3	6.2022 *	3.4622	2.9155	4.2932
Grade 4	2.2502	3.5262	.4942	6.1100
Grade 5	-8.3271 *	4.2722	-10.8658 *	6.5514
Constant	-15.7688	6.3449	-8.8434	6.6857
Operation manager dummies included?	No		Yes	
Number of Observations		911		911
LR chi-squared		(9) 82.18		(27) 132.33
Prob > chi squared		0.0000		0.0000
Pseudo R squared		.0143		.0230
/sigma	10.7961	.2957	10.5482	.2883
Observations summary	206 left censored observations at absplus_rate <= 0 705 uncensored observations 0 uncensored observations			
Likelihood-ratio test			LR chi-squared (18)	50.15
Prob > chi-squared				0.0001

ative to other occupations) going absent (by six percentage points) and to increase further the likelihood of individuals classified as Grade 5 (relative to those classified as Grade 2) from not going absent (by as much as 13 percentage points).¹⁵

When taking family leave is added to going absent to compute an alternative measurement of the dependent variable, there is little change in the pattern of results (cf. Table 2). The signs on the coefficients remain the same; there are marginal changes to the values of the marginal effects; and the

impact of the role of the operations managers remains statistically significant.

Whereas these probit estimations examine the determinants of the probability of an individual going absent (both exclusive of and inclusive of taking family leave), the tobit estimations examine the determinants of the absence rate (again both exclusive of and inclusive of taking family leave).

The results of the tobit estimation of the absence rate exclusive of taking family leave, when 249 reported no absences, are reported in Table 3. In terms of the signs of the coefficients, their relative magnitudes and statistical significance, these tobit results are consistent with their probit equivalents, in that the absence rate is seen to be statistically significantly correlated with gender, occupation and contract type. For example, in the context of the dichotomous variables in the full estimation (i.e. inclusive of the set of operations managers dummy variables) being male (relative to being female) decreases the expected value of the absence rate by 2.3; being occupied as a CSA (relative to other occupations) increases the expected value of the absence rate by 7.9; and being on a full time contract (relative to being on a part time contract) increases the value of the absence rate by 4.6. The impact of grade is again ambiguous. Once more, however, the important role of the operations managers is made manifest in the result of the likelihood ratio test. The only instance in which there is some seeming incompatibility between the probit and tobit results is with respect to the age variable. Whereas it is negatively related to the probability of going absent in the former, it is positively related to the absence rate in the latter.¹⁶

The results of the tobit estimation of the absence rate inclusive of taking family leave, when 206 reported no such absences, are reported in Table 4. Perhaps attributable to the limited number of days made available for purposes of family leave, again there is a compatibility between these results and the previous ones, with only slight differences in the values of the coefficients observable. In the context of UtilCall, therefore, the absence rate is to be explained by the same central variables, irrespective of how this is measured.

The results of the probit estimation seeking to identify the determinants of the probability of quitting are presented in Table 5. The potential significance of absence in this context is estimated in four ways: by two dichotomous dummy variables identifying whether or not an individual was absent, exclusive then inclusive of taking family leave; and by two scalar variables, measuring the absence rate, again exclusive of taking family leave then inclusive of the same.

From Weiss onwards, empirical studies of labour turnover have emphasised the salience of variables such as age and tenure, with the probability of quitting decreasing as age and tenure increase. Notwithstanding the likelihood of these variables being important determinants of the probability of quitting at UtilCall, to the extent that going absent is a precursor to quitting, it is hypothesised that variables denoting absence will also be of consequence, and positively signed.

Table 5. The Probability of Quitting: Probit Results

Variable	Coeff- icient	S.E.	Marginal effects	Coeff- icient	S.E.	Marginal effects	Coeff- icient	S.E.	Marginal effects	Coeff- icient	S.E.	Marginal effects
Male	.0202	.1024	.00	.0453	.1038	.00	.0188	.1024	.00	.0422	.1037	.00
Log Age	-.5115	.2388	-.10 **	-.6748	.2475	-.13 ***	-.5136	.2388	-.10 **	-.6696	.2473	-.13 ***
Log Tenure	-.2543	.0639	-.05 ***	-.2553	.0650	-.05 ***	-.2554	.0641	-.05 ***	-.2575	.0650	-.05 ***
Full Time	-.2722	.1180	-.05 **	-.2679	.1120	-.05 **	-.2654	.1185	-.05 **	-.2608	.1118	-.05 **
CSA	.0317	.3542	.00	-.0233	.3537	-.00	.0392	.3549	.00	-.0280	.3541	-.00
Grade 1	.3042	.4264	.07	.3350	.4327	.07	.2930	.4274	.07	.3332	.4332	.07
Grade 3	.0102	.3895	.00	.0225	.3904	.00	.0150	.3900	.00	.0160	.3906	.00
Grade 4	-.1333	.4089	-.02	-.1363	.4125	-.02	-.1397	.4095	-.02	-.1428	.4126	-.02
Grade 5	.2905	.4817	.06	.3619	.4829	.08	.2910	.4829	.06	.3594	.4830	.08
Abs_dv	.0014	.0013	.00									
Abs_rate				.0224	.0041	.00						
Absplus_dv							.1194	.1347	.02			
Absplus_rate										.0212	.0040	.00 ***
Constant	.9700	.8460		1.4908	.8706		.9786	.8461		1.4749	.8704	
Number of obs.			1088			1088			1088			1088
LR Squared			59.42			87.72			59.05			85.83
Prob > χ^2			0.0000			0.0000			0.0000			0.0000
Pseudo R ²			.0667			.0985			.0663			.0963

Notes:

1. ***, ** and * statistically significant at (p < .01), (p < .05) and (p < .1), respectively
2. Grade 2 is the omitted/reference grade category. Marginal effects are calculated at the means for scalar variables and for a discrete change from 0 to 1 for the dichotomous dummy variables.

Much in accordance with these empirical studies, the probability of quitting UtilCall is seen to decrease with both age and tenure. Further, those employed on full time contracts are less likely to quit than those on part time contracts, also indicative of a literature which associates those working part time to be part of a contingent workforce prone to job swap. By way of contrast, the results which relate to grade are not what might be expected from a hierarchically structured internal labour market, although none of these results are statistically significant. Of the three grades 'higher' than Grade 2, the reference grade, only Grade 4 has the expected negative sign. That those employed at Grade 5 are more likely to quit than those in the reference category may be attributable to the generic managerial skills these individuals have acquired, skills which may be capable of being transferred elsewhere in the local labour market (Stevens, 1994). However, there is no evidence for the hypothesis that absence may be a precursor to quitting, irrespective of which of the four variables are used to denote absence. Although each is positively signed, the marginal effects of all are quantitatively very insignificant.

6. CONCLUDING COMMENTS

This paper has made use of personnel data to examine absence and quitting in a call centre. In particular, it has sought to investigate the extent to which these two variables may be related, as part of a continuum signifying lack of commitment on the part of the employee to the employing organisation.

Data restrictions determined that the paper conformed to the earlier type of empirical study of absence, in that the sole focus was upon supply-side variables. Hence the oft-cited identification problem is not addressed, with potential implications for the results reported above. Furthermore, neither the absence models nor the quitting models estimated attempted to address the problem of unobserved heterogeneity i.e. the models estimated may be misspecified because individuals may differ in systematic but unobserved ways. One possible example of this — potentially very pertinent — is the manner in which dependent family may have consequences for both absence and quitting decisions, especially on the part of women.

Notwithstanding the above, absence was found to be correlated with personal characteristics, for example gender, and workplace characteristics, such as occupation and employment contract. Of particular policy relevance, the investigation established the (statistically significant) role played by the individual's operations manager in the context not only of the decision to go (or not to go) absent, but also the rate of absence recorded. Quitting was found to be negatively correlated with age, tenure and employment contract. However, there was no evidence which related the probability of an individual quitting to his/her absence record in the months prior to the decision to leave the firm. Absence and quitting in the context of UtilCall would appear to be distinct rather than related decisions.

Accepted for publication: 25 July 2008

ENDNOTES

1. Donna Cassidy: Business Services Authority, National Health Service; John Sutherland (corresponding author): Centre for Public Policy for Regions, University of Glasgow, Ivy Lodge, 63 Gibson Street, Glasgow, G12 8LR. Email: j.sutherland@lbss.gla.ac.uk
2. See Simic (2002) for a wider discussion on the extent of the phenomenon of over-employment and its counterpart under-employment in the UK.
3. That said, there is a counter argument. By making absence financially punitive, firms may create another problem, that of 'presenteeism' viz. encouraging 'sick' employees to report for work, with its attendant consequences for both worker productivity and the health and safety of their colleagues (Brown and Sessions, 2004: Chatterji and Tilley, 2002).
4. In the context of individual personal characteristics, however, one marked feature of the economics literature has been the tendency to ignore the state of a person's health, perhaps because of the dearth of such information in the data sets collected and analysed.
5. The hypothesis that the level of absence within firms (or establishments) will vary with size (Barmby and Stephan, 2000: Coles and Treble, 1996: Winkelmann, 1996) is not without consequence, although is not relevant in the present paper, given the case study nature of this investigation.
6. Holman (2003b, p. 48) offers the following description: "A call centre can be defined as a work environment in which the main business is mediated by computer and telephone-based technologies that enable the efficient distribution of incoming calls (or allocation of outgoing calls) to available staff, and permit customer-employee interaction to occur simultaneously with the use of display screen equipment and the instant access to, and inputting of, information. This includes parts of companies dedicated to this activity, as well as the whole company."
7. In UtilCall, for example, they are described as Customer Service Advisors.
8. Unfortunately, the shift start times data were incomplete. Consequently, the significance of start times on absence could not be investigated meaningfully.
9. This was to change for employees recruited post 01.01.04. Only after 18 months employment with UtilCall were these employees eligible for full sick pay. Until then, if sick, they had to claim statutory sick pay.
10. To the extent that type of contract held may be a determinant of absence (Barmby and Treble, 1989; 1991), that no agency personnel were to remain throughout the accounting period meant that this line of enquiry could not be pursued.
11. Missing information on several of the variables was to reduce further these numbers. Comprehensive information was available for 911 individuals who were present throughout the accounting period. These observations constitute the basis for the examination of absence. Comprehensive information was available for 1088 individuals present at the beginning of the accounting period. These observations constitute the basis for the examination of quitting.

12. The authors are grateful to a referee for making this point. In an earlier version of the paper, absence was analysed using absence data only.

13. Unfortunately, there were no data available which related to the quitters' operations manager at UtilCall. Inter alia, this precluded an examination of the operations managers impact on the individual's quit decision.

14. No data are available on the number of instances an individual goes absent which, perhaps, would have been the preferred variable in this instance.

15. The probability of some multicollinearity between Grade 5 and the series of dummy variables associated with the operations managers is acknowledged.

16. This may be attributable to age related differences in the number of absence spells and duration, something which cannot be investigated because of the nature of the absence data available.

REFERENCES

Allen S G (1981) 'Compensation, safety and absenteeism: evidence from the paper industry', *Industrial and Labor Relations Review*, 34, 207-218.

Allen S G (2001) 'An Empirical model of work attendance', *Review of Economics and Statistics*, 71, 1-17.

Altonji J G and Paxson C H (1988) 'Labor supply preferences, hours constraints and hours-wage trade-offs', *Journal of Labor Economics*, 6, 254-276.

Altonji J G and Paxson C H (1991) 'Labor supply, hours constraints and job mobility', *the Journal of Human Resources*, XXVII, 256-278.

Arkin A (1997) 'Hold the production line', *People Management*, 3, 22-27.

Bain P, Watson A, Mulvey G, Taylor P. and Gall G. (2002) 'Taylorism, targets and the pursuit of quantity and quality by call centre management', *New Technology, Work and Employment*, 17, 170-185.

Barham C and Begum N (2005) 'Sickness absence from work in the UK', *Labour Market Trends*, 113, 149-158.

Barmby T (2002) 'Worker absenteeism: a discrete hazard model with bivariate heterogeneity', *Labour Economics*, 9, 469-476.

Barmby T A, Ercolani M G and Treble J G (2002) 'Sickness absence: an international comparison', *Economic Journal*, 112, F315-F331.

Barmby T A, Ercolani M G and Treble J G (2004) 'Sickness absence in the UK, 1984-2002', *Swedish Economic Policy Review*, 11, 65-88.

Barmby T A, Orme C D and Treble J A (1991) 'Worker absenteeism: an analysis using microdata', *Economic Journal*, 101, 214-229.

- Barmby T and Stephan G (2000) 'Worker absenteeism: why firm size may matter', *The Manchester School*, 68, 568-577.
- Barmby T and Treble J (1989) 'A Note on absenteeism', *British Journal of Industrial Relations*, 27, 155-158.
- Barmby T A and Treble J T (1991) 'Absenteeism in a medium-sized manufacturing plant', *Applied Economics*, 23, 161-166.
- Batt R (1999) 'Work organisation, technology and performance in customer service and sales', *Industrial and Labor Relations Review*, 52, 539-564.
- Belt V (2002) 'A Female ghetto? Women's careers in call centres', *Human Resource Management Journal*, 12, 51-66.
- Belt V, Richardson R and Webster J (2002) 'Women, social skill and interactive service work in telephone call centres', *New Technology, Work and Employment*, 17, 20-34.
- Bristow G, Munday M and Gripaios P (2000) 'Call centre growth and location: corporate strategy and the spatial division of labour', *Environment and Planning A*, 32, 519-538.
- Brown S, Fakhfakh F and Sessions J (1999) 'Absenteeism and employee sharing: an empirical analysis based upon French panel data, 1981 -1991', *Industrial and Labor Relations Review*, 52, 234-251.
- Brown S and Sessions J (1996) 'The economics of absence: theory and evidence', *Journal of Economic Surveys*, 10, 23-31.
- Brown S and Sessions J (2004) 'Absenteeism, 'presenteeism' and shirking', *Economic Issues*, 9, 15-21.
- Chatterji M and Tilley C J (2002) 'Sickness, absenteeism, presenteeism and sick pay', *Oxford Economic Papers*, 54, 669-687.
- Clark K, Peters S A and Tomlinson M (2005) 'The Determinants of lateness: evidence from British workers', *Scottish Journal of Political Economy*, 52, 282-304.
- Coles M G and Treble J (1996) 'Calculating the price of worker reliability', *Labour Economics*, 3, 169-188.
- CBI (Confederation of British Industry) (2004) *Room for Improvement: Absence and Labour Turnover*, London: CBI.
- CBI (Confederation of British Industry) (2006) *Absence Minded: Absence and Labour Turnover 2006*, London: CBI.
- CIPD (Chartered Institute of Personnel and Development) (2004) *Employee Absence, 2004: A Survey of Management Policy and Practice*, London: CIPD.
- Deery S, Iverson R and Walsh J (2002) 'Work relationships in telephone call centres: understanding emotional exhaustion and employee withdrawal', *Journal of Management Studies*, 39, 471-496.
- Dunn L F and Youngblood S A (1986) 'Absenteeism as a mechanism for approaching an optimal labour market equilibrium: an empirical study', *Review of Economics and Statistics*, 68, 668-674.

- Ehrenberg R G (1970) 'Absenteeism and the overtime decision', *American Economic Review*, 60, 352-357.
- Fernie S and Metcalf D (1998) (Not) Hanging on the telephone: payment systems in the new sweatshops, Discussion Paper number 390, Centre for Economic Performance, London: London School of Economics.
- Freeman R (1980) 'The exit-voice trade-off in the labor market: unionism, job tenure and quits', *The Quarterly Journal of Economics*, 94, 643-673.
- Galizzi M and Lang K (1998) 'Relative wages, wages growth and quit behaviour', *Journal of Labor Economics*, 16, 367-482.
- Gimeno D, Benavides F G, Benach J and Amick B C (2004) 'Distribution of sickness absence in the European Union countries', *Occupational and Environmental Medicine*, 61, 867-869.
- Green W H (2003) *Econometric Analysis*, 5e, New Jersey, USA: Prentice Hall.
- Holman D (2002) 'Employee wellbeing in call centres', *Human Resource Management Journal*, 12, 35-50.
- Holman D (2003a) 'Phoning in sick? An Overview of employee stress in call centres', *Leadership & Organisation Development Journal*, 24, 123 -130.
- Holman D (2003b) 'Call centres', in Holman D, Wall T D, Clegg C W, Sparrow P and Howard A (eds) *The New Workplace: A Guide to the Human Impact of Modern Working Practices*, Chichester: Wiley.
- Houlihan M (2002) 'Tensions and variations in call centre management strategies', *Human Resource Management Journal*, 12, 67-85.
- Income Data Services (IDS) (1997) *Pay and Conditions in Call Centres*, London: IDS.
- Kinnie N, Hutchinson S and Purcell J (2000) 'Fun and surveillance: the paradox of high commitment in call centres', *International Journal of Human Resource Management*, 11, 967-985.
- Knights D and McCabe D (1998) 'What happens when the phones go wild? Staff, stress and spaces for escape in a BPR telephone banking work regime', *Journal of Management Studies*, 35, 163-194.
- Leslie D (1982) 'Absenteeism in the UK labour market', in Artis M (ed) *Demand Management, Supply Constraints and Inflation*, Manchester: Manchester UP.
- Long J S (1997) *Regression Models for Categorical and Limited Dependent Variables*, London: Sage Publications.
- Maddala G S (2001) *Introduction to Econometrics*, 3e, Chichester: Wiley.
- Sargent A (1989) *The Missing Workforce – Managing Absenteeism*, London: Institute of Personnel Management.
- Simic M (2002) 'Underemployment and overemployment in the UK', *Labour Market Trends*, 110, 399-414.

Stevens M (1994) 'A Theoretical model of on-the-job training with imperfect competition', *Oxford Economic Papers*, 46, 537-562.

Sutherland J (2002) 'Wages in and voluntary quits from an establishment internal labour market', *Applied Economics*, 34, 395-400.

Taylor P and Bain P (1999) 'An 'assembly line in the head': work and employee relations in the call centre', *Industrial Relations Journal*, 30, 101-117.

Taylor P, Baldry C, Bain P and Ellis V (2003) "A Unique working environment": health, sickness and absence management in UK call centres', *Work, Employment and Society*, 17, 435-458.

Taylor P, Mulvey G, Hyman J and Bain P (2002) 'Work organisation, control and the experience of work in call centres', *Work, Employment and Society*, 16, 133-150.

Weiss A (1984) 'Determinants of quit behaviour', *Journal of Labor Economics*, 2, 371-387.

Winkelmann R (1996) 'Wages, firm size and absenteeism', *Applied Economics*, 6, 337-341.

Wood S, Holman D and Stride C (2006) 'Human resource management and call centres', *British Journal of Industrial Relations*, 44, 99-124.