Kahneman meets the Quitters:
Peak-End Behaviour in the Labour Market

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Abstract

Danny Kahneman's experimental work is justifiably famous. Individuals report their experienced utility at various points in time throughout a number of different events. Their choices of which experiences to repeat do not always maximise total enjoyment or minimise total pain. Decisions are better described by the average of the peak experience and the final experience. Decision utility is thus a transformation of experienced (momentary) utility, rather than its sum, as might have been supposed.

This phenomenon, known as peak-end theory, has been verified in a number of different experimental settings. It has not been applied in large-scale, long-run settings. We apply peak-end theory to the decision to quit a job. We use job spell data from the BHPS and the GSOEP, in which there are a number of different observations on the same job spell. Our results show that the peak-end transformation of job satisfaction is the best predictor of quits. Job satisfaction at time *t* is therefore best thought of as experienced rather than decision utility.

JEL Classification Codes: D10, J28, J63.

Keywords: Job Satisfaction, Quits, Peak-End, Decision Utility, Experienced Utility

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1. Introduction

Danny Kahneman's experimental work distinguishing between experienced utility and decision utility has become justifiably famous. In various experiments, individuals report their experienced utility at various points in time throughout a number of different events. They are then asked which of the events they would prefer to repeat. Individuals do not always choose to maximise total enjoyment or to minimise total pain. Instead, with respect to pain, the average of the most intense pain recorded and the pain recorded at the end of the experience is a powerful predictor of their desire (decision utility) to repeat the event. Decision utility is hence some specific transformation of the distribution of experienced utility, rather than just being its sum, as might have been supposed.

This phenomenon, known as peak-end theory, has been verified in a number of different experimental settings. To our knowledge, it has not been applied in a labour market context, nor using large-scale survey data. We apply peak-end theory to the decision to quit a job, where panel data provide a number of different observations over the same job spell. The formal test of peak-end theory is to see whether the **minimum** or **maximum** levels of job satisfaction ever recorded in the job affect the quit probability, while controlling for **current** job satisfaction and the standard set of demographic variables.

We use job spell data from the British BHPS and the German GSOEP. Our results show that current job satisfaction is an inadequate measure for predicting future quits; in both countries a type of peak-end measure does a far better job. This finding is robust to a number of different specification checks. Job satisfaction at time *t* therefore does not measure the total job experience up to that point; rather it is an evaluation of how the individual feels **at that moment** about his or her job. Decision utility is hence not captured by contemporaneous reported job satisfaction. A transformation of the different reported job satisfaction scores seems necessary to convert experienced utility into decision utility: our results suggest that the peak-end transformation is a strong candidate.

The paper is organised as follows. Section 2 briefly recalls the distinction between experienced utility and decision utility, and Section 3 discusses economic research relating job

satisfaction to quits and presents our three key hypotheses. Section 4 presents the data, and Section 5 contains our main empirical results. Section 6 concludes.

2. Experienced Utility and Decision Utility

Kahneman *et al*. (1997), clearly distinguish between types of utility. Two of the main concepts are experienced utility, which is the instantaneous level of pleasure and pain described by Bentham, and decision utility, which determines our choice between alternatives. As Kahneman *et al*. emphasise, all but a tiny part of economic research has been carried out under the axiom that the two types of utility make the same behavioural predictions: we choose the options with the highest experienced utility.

A number of justifiably famous experiments have somewhat shaken our confidence in this identity. Kahneman and others have shown that individuals do not in general maximise pleasure or minimise pain, for example often rating the experience of medical interventions with greater reported total pain as less disagreeable than interventions with less total pain (Riedelmeyer and Kahneman, 1996)[1]. Individuals' evaluations of such interventions are found to be strongly correlated with both the highest level of pain, and with the pain experienced at the end of the procedure. This has become known as the peak-end hypothesis: "the remembered utility of pleasant or unpleasant episodes is accurately predicted by averaging the Peak (most intense value) of instant utility (or disutility) recorded during an episode and the instant utility recorded near the end of the experience" (Kahneman *et al*., 1997, p.381). Decisions taken according to the peak-end rule can explain why dominated options (in terms of the simple sum of experienced utility) are chosen. These dominated options will either have low peak pain relative to the other choices, or (as in Riedelmeyer and Kahneman's colonoscopy and lithiotripsy experiments) a better end[2].

Peak-end choice demonstrates that experienced utility and decision utility are distinct animals. This not only presents doctors with an ethical conundrum (should they gratuitously add pain to the end of an intervention in order to make it remembered as less unpleasant?), it also has wide-ranging implications for economic behaviour, much of which is spread out over time.

Some may balk at changing the way in which we think about choice as a result of such experiments. Three drawbacks are highlighted. First, the samples are typically small (from the tens to the low hundreds). Second, the durations of the events over which peak-end behaviour is observed are usually under an hour. There is obviously a gulf between the latter and the decisions about consumption of durables, housing, job and marriage which interest economists.

Last, peak-end evidence is often found in laboratory settings, and its direct translation to real-world phenomena is questioned. In this paper we address all three of these drawbacks, using large-scale panel survey data to model real-world behaviour over a period of a number of years.

Distinguishing between experienced and decision utility with thousands of individuals and over a longer time period seems at first like a daunting task: the subjects in psychological experiments use some hand-held device to report their level of pain or discomfort every minute or so, and then, after the experience is over, report their overall evaluation of it. We believe that some progress can be made with standard panel data. In this paper we substitute the levels of satisfaction that individuals report at each wave for the reports of instantaneous utility, and we replace the overall evaluation with an observable decision to stop the experience or not.

It is therefore important that the behaviours that we model last for a significant number of years, to allow a number of satisfaction statements to be recorded. Possible candidates include marriage, living in a certain house, or staying in a certain job. In this paper we have chosen the latter, so that the decision utility measure will be the decision not to carry on with the job, *i.e.* to quit. Our instantaneous utility measure will be job satisfaction. This in itself is a testable hypothesis, as it may be imagined that reported job satisfaction at time t refers to the *whole job experience up to time t*. If this is the case, then current job satisfaction will reflect decision utility and will be the best predictor of quitting. We test this hypothesis explicitly below.

3. Job Satisfaction and Quits

Despite recent increased interest in job satisfaction amongst economists, many still wonder about the reliability of such subjective data. A small literature has contributed to the validation of job satisfaction scores by relating job satisfaction at time t to the quit probability between time t and time $t+1$. Such analyses have either been carried out using probit methods, or via duration analysis. Early examples, using American data, are Freeman (1978) and Akerlof, Rose and Yellen (1988). More recently, Clark, Georgellis and Sanfey (1998) and Clark (2001) modelled the same relationship using German GSOEP data and British BHPS data respectively. Related work has considered quits as a function of stated quit intentions, see GHS (1973) and Shields and Wheatley-Price (2002)[3]. Other validation work in the labour market has uncovered relationships between job satisfaction and absenteeism (negative: Clegg, 1983) and productivity and profitability (positive: Patterson *et al*., 1997)[4].

Our paper continues in this tradition by relating future observable behaviours to current subjective evaluations. However, in this paper, we break new ground by bringing experimental

psychology results into the realm of panel data analysis. We apply Kahneman's peak-end idea to quit probabilities using long-run panel data. Our research hypotheses can be broken down into three key parts.

1) ***Does job satisfaction predict future quit behaviour?*** This is the standard validation test used in the literature. Our prior is that, *ceteris paribus*, those reporting lower levels of satisfaction at time *t* will be more likely to quit their job between *t* and *t+1*.

2) ***Does job satisfaction at time t represent experienced or decision utility?*** If satisfaction at time *t* represents decision utility then other previously-reported satisfaction levels in the same job will bring no additional explanatory power. Our prior is that job satisfaction is at least partly a measure of experienced utility[5]. We test this hypothesis by including lagged values of job satisfaction in the quit equation to see whether this improves the equation's predictive power.

3) ***If job satisfaction is experienced utility, how do we transform past experienced utilities to obtain decision utility?*** One obvious approach is to calculate average job satisfaction over the whole job. Alternatively, as Kahneman's experiments have suggested, the average of peak and end could be the best transformation of experienced utility into decision utility. We test these two candidates by introducing them separately into the quit equation, and comparing the resulting log-likelihoods. We have no prior concerning which should work best.

Parts 2) and 3) represent a joint hypothesis, in the sense that they will be tested together. We believe that bringing together observable behaviours in large-scale datasets and an explicitly intertemporal element in subjective evaluations represents a promising new direction for research in the social sciences.

4. Data

We use two large-scale panel datasets to model quits. The first is the West German sub-sample of the GSOEP, spanning the period 1984-2000; we therefore have data from seventeen waves. We combine spell data information with information from the individual waves to create a complete job history for each individual. Specifically, the spell data information in the GSOEP allows us to identify full-time employment spells (start and end dates, and whether the spell is censored left or right). Information from the individual wave data allows us to identify whether

and when a job change occurred.

We not only need to identify job changes, but the reason for which they occurred. In the GSOEP data, the reason for leaving the last job is reported for all job changes. These reasons include: quit, layoff, contract expired, training completed, employee requested transfer, employer requested transfer, and other. As is usual, these are self-reported. The individual wave data also provide information on job tenure (length of time with current employer), employment status (Full Time, Part Time, etc) and other personal and job characteristics. These latter include the level of job satisfaction, which will be a key variable in our analysis. This is measured on a scale of zero to ten.

We impose various natural restrictions on our sample. We consider only full-time salaried employees of working age, and we exclude job spells for which key information is missing (e.g wages or the reason the job spell terminated). These restrictions yield a final sample of 54149 observations on 11736 job spells. Of these job spells 1820 ended in a quit.

The second data source is the BHPS, a general survey with similar structure to the GSOEP covering a random sample of approximately 10 000 individuals in 5 500 British households per year. This data set includes a wide range of information about individual and household demographics, health, labour force status, employment and values. There is both entry into and exit from the panel, leading to unbalanced data. The BHPS is a household panel: all adults in the same household are interviewed separately. The wave 1 data were collected in late 1991 - early 1992, the wave 2 data were collected in late 1992 - early 1993, and so on. Job satisfaction is measured on a scale of one to seven in the BHPS. The estimation sample includes 26255 observations on 10946 job spells. Of these job spells 1771 ended in a quit.

In this paper, we are interested in quit behaviour not only as a function of the most recently-reported level of job satisfaction (which is that reported in the job one year ago), but also as a function of previously-reported satisfaction. Specifically, we test the explanatory power of current satisfaction against various combinations of current and past satisfaction. This distinction will arguably be sharper in longer job spells. Luckily, both the GSOEP and the BHPS have been running long enough to produce an adequate number of such spells.

5. Results

The tables below show the results from various Cox proportional hazard duration models estimated in Stata using GSOEP and BHPS data. All regressions are corrected for possible clustering of errors at the individual level. There are three key tables, corresponding to the

research questions outlined above.

Main Results

In order to simplify the presentation of the regression results, we treat job satisfaction as a cardinal variable, so that averages can be simply calculated. An alternative (although messier) approach is to treat job satisfaction as an ordinal variable and enter it in the quit regressions as a set of dummies. This produces the same results.

First, Table 1 shows the results from quit equations including "current" job satisfaction. To be clear, this is the most recent job satisfaction score reported by the individual: we are modelling the probability that the individual quits during the period $(t+\Delta t)$ as a function of her reported job satisfaction at time *t*. Current job satisfaction attracts a significant negative coefficient in the quit equations, with t-statistics of around 15 in both BHPS and GSOEP data. Other results show that quits are more likely for younger and higher-educated workers; they also rise with hours worked but fall with pay.

In this paper we aim to go beyond simply showing that job satisfaction predicts quits. The interpretation of job satisfaction as experienced utility, rather than decision utility, requires that the series of job satisfaction scores in the same job be somehow aggregated into decision utility. There are any number of such transformations. We consider five:

1) The running average satisfaction score.
2) The running maximum or minimum satisfaction score.
3) Running Peak-end measures using maximum satisfaction or minimum satisfaction.

Although at first blush it may seem odd to consider a peak-end score with minimum satisfaction, it is worth recalling that Kahneman's peak-end experiments were carried out using measures of pain, and his discussion of these results only appeals to intensity of experience, without specifying that this be pleasant or unpleasant.

The text table below illustrates our six measures using hypothetical data over five periods.

Various Measures of series of job satisfaction scores

	t=1	*t*=2	*t*=3	*t*=4	*t*=5
Job Satisfaction	5	4	6	3	5
Running Average	5	4.5	5	4.5	4.6
Running Maximum	5	5	6	6	6
Running Minimum	5	4	4	3	3
Peak-end (Maximum)	5	4.5	6	4.5	5.5
Peak-end (Minimum)	5	4	5	3	4

Appendix A shows the pairwise correlations between these satisfaction measures in the BHPS and the GSOEP. They are correlated between themselves, which is to be expected. In particular, the peak-end measures are strongly correlated with their component parts. This mechanical correlation implies that the measures will tend to give the same results in the statistical analysis of quits. As the results show, this is far from being the case.

The different satisfaction measures are then compared in terms of their predictive power in a quit regression. The results are presented in Table 2. Note that, apart from the satisfaction measure, the same right-hand side variables are used in each of these regressions, and that the number of observations is identical. As such, we can simply compare the regression log-likelihoods to see which measure "best" explains quits, in terms of having the greatest predictive power. It is worth emphasising that all of the job satisfaction scores are (potentially) time-varying – the maximum job satisfaction score, peak-end and so on are **running** scores, and are evaluated for each observation within the spell.

The job satisfaction measures in Table 2 are presented in decreasing order of statistical importance, so that the measure which explains quits the best (which produces the lowest absolute value of the log-likelihood) appears first.

In neither Great Britain nor Germany does current job satisfaction reflect decision utility: Peak-end measures dominate in both countries (with the peak being with respect to the maximum of satisfaction in Great Britain, and with respect to the minimum of satisfaction in Germany)[6]. The British remember the best that they felt, while the Germans remember the worst. The qualitative results on the other right-hand side variables are unchanged.

This is, to our knowledge, the first large-scale long-duration evidence that peak-end theory

is important. A corollary is that when individuals are asked to evaluate their job, they report how they are feeling at that point in time, rather than their evaluation of the job's entire duration (even though that is what is explicitly requested).

Table 3 shows the same results by sex and by age, as quit behaviour may well differ across demographic groups (see Viscusi, 1980). In the BHPS, Peak-end with maximum satisfaction works best except for those aged over 35, where it is the simple running maximum which dominates (although the difference in log-likelihoods between first and second place are sometimes small). In Germany, Peak-end with minimum satisfaction works best for women and the young, while men and older workers quit as a function of the running minimum (the lowest score recorded to date).

Sunk Costs and Predicting the Future

A textbook microeconomist might be somewhat bemused by the above results. Why should my decision to stop doing something depend on what has already happened? Sunk costs are sunk, and only what will happen in the future concerns me. This idea has already been applied to quitting decisions by Lévy-Garboua, Montmarquette and Simonnet (2001). In terms of Table 2, it might be argued that Peak-end is just a good predictor of future satisfaction (and a better predictor than current satisfaction). There is no psychological interpretation, just a statistical one.

We are able to evaluate this hypothesis using our spell data. Specifically, we estimate job satisfaction at time t+1 as a function of our six different satisfaction measures at time *t*. We restrict the sample to be identical in all six "prediction" regressions. We then compare the prediction rank from this exercise to the quit rank from Table 2, using a Spearman rank correlation.

The results provide no strong support for the "prediction" hypothesis. In the BHPS, the estimated ρ is only –0.14 (79%); in the GSOEP there is more agreement but the correlation is still insignificant $\rho = 0.60$ (21%). This is not to say that we dismiss the future as unimportant in quitting decisions, but rather that the finding of peak-end behaviour in the labour market does not reflect a superior predictive strategy for future satisfaction with the job.

Job Satisfaction Changes

Table 4 extends the statistical results by considering a possible independent role for changes in job satisfaction. Various commentators have suggested that individuals are sensitive not only

to levels but also to changes in stimuli (see Kahneman and Tversky, 1979, and Kahneman, 1994, for example). Ariely and Carmon (2003) consider the rate of change or trend of a variable as a dynamic "gestalt" characteristic, which may play an independent role as a predictor of future outcomes. In line with the sunk costs section above, the slope in job satisfaction between *t-1* and *t* might be thought to contain information about its likely future value.

In terms of the current paper's subject matter, Clark (1999) showed that job satisfaction in the British Household Panel Survey was more strongly correlated with wage changes between *t-1* and *t* than with the level of wages at time *t*. In a related vein, Clark, Georgellis and Sanfey (1998) found that in ten waves of GSOEP data quits were not only a function of wage levels, but also of changes in wages. Campbell (1994) develops a theoretical model, relying on worker quality and outside options, in which wage changes are correlated with quits. Last, Galizzi and Lang (1998) show that, controlling for current wages, wage growth is negatively correlated with quits. They conclude that quit behaviour is determined by the long-run value of a job, rather than just its instantaneous representation.

Table 4 thus adds job satisfaction change variables slope variables to the "winning" specifications in Table 2. The first column adds the change on its own, the second column inquires whether a fall in job satisfaction is more important than a rise in job satisfaction in predicting quits.

The BHPS results show that, in addition to the peak-end measure, the change in job satisfaction predicts quits. In addition, the interaction results in column two show that only falls in job satisfaction matter. The GSOEP slope results are mostly "correctly" signed, but are all in significant.

Most importantly, the peak-end variables remain very significant in these specifications, even when the change in job satisfaction is controlled for. Individuals' quit decisions in panel data seem to exhibit the same characteristics as subjects in context-free psychology experiments, and medical interventions.

Peak-end or PEAK-end?

The last topic in this section considers whether peak-end evaluations consist of equal parts of peak and end. The large scale data that we are using allow us to evaluate these proportions: we run quit regressions including both current job satisfaction and running maximum (minimum) job satisfaction in the British (German) data. The estimated coefficients on these two variables are shown in Table 5.

The estimated coefficients are not equal. In particular, that on maximum or minimum satisfaction is far larger than that on current job satisfaction. It is striking that, despite the differences between the British and German datasets, the regressions agree that Peak-end should actually be more peak than end. Specifically, the ratio of Peak to End in determining behaviour is around Two to One. This can be confirmed by re-estimating the quit equations in Table 2 using a weighted peak-end measure (with weights of 2/3 on peak and 1/3 on end). In the BHPS, this variable attracts an estimated coefficient of –0.327 (0.020), with an associated log-likelihood of –11 137.3; in the GSOEP the respective figures are –0.181 (0.011) and –14 911.6. In both cases, the weighted peak-end likelihoods are smaller (in absolute terms) than those from the unweighted peak-end regressions.

6. Conclusion

This paper has used large-scale, long-run British and German panel data to model quit decisions. By considering the whole series of job satisfaction scores reported by a worker in the same job, we have been able to test Kahneman's famous peak-end prediction. There are four main findings.

First, we find that, conditional on wages, hours and many other demographic characteristics, reported job satisfaction plays a very important role in predicting subsequent quit behaviour. As such we believe that such subjective measures have an important role to play in the economic analysis of behaviour.

Second, we find that the most recent reported job satisfaction score is not the best predictor of quitting; past reported job satisfaction is also important. The "best" satisfaction measure, of the six that we examined, was a peak-end transformation of the job satisfaction series. For British workers, this operated with respect to maximum job satisfaction, while for German workers the peak-end transformation applied to maximum dissatisfaction.

The regression results suggest unambiguously that reported job satisfaction is experienced utility rather than decision utility, reflecting how the individual feels at that particular point in time rather than their evaluation of the whole experience. This latter, which corresponds to decision utility, seems to be well-described by the average of the peak and the end, as in a number of well-known psychological experiments.

Third, we find an independent role (in the British data) for job satisfaction changes in predicting quits. This might be argued to show that individuals use slopes to forecast their future satisfaction in their current job. The peak-end of job satisfaction remains a very significant

predictor of quitting, even when slope variables are included.

Last, we find that weighted measures, whereby the peak is twice as important as the end, do better than simple peak-end in explaining quits. As such, outstanding experiences, even if they are of short duration, seem to matter excessively in determining behaviour.

Our results have extended the existing literature in a number of ways. First, by using survey rather than experimental data, we are able to analyse the behaviour of many thousands of different individuals, and to control for many possibly confounding variables in a regression framework. Second, existing peak-end experiments have referred to episodes of short duration, typically no more than an hour. Here we find that the same transformations of experienced utility into decision utility occur over periods of many years. Last, the behaviour that we analyse is an important one, in terms of the gravity of the decision to quit for the individual, ensuring that the decision is taken seriously.

Most generally, the finding of peak-end quitting behaviour is in an indication of the potentially very rich rewards to be gained from the application of psychological concepts to what are typically considered to be economic phenomena.

Footnotes

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[1] A number of other experiments are reported in Section II of Kahneman *et al*. (1997). See also Langer *et al*., (2000).

[2] Berridge (1999) describes a number of brain experiments which show that "liking" and "wanting" (which he identifies with experienced and decision utility respectively) are not synonyms. He concludes that "Our biopsychological studies indicate that simple positive emotion has separable core processes of 'liking' and 'wanting.' These psychological components appear to be mediated by different brain systems." (p.544).

[3] This subject has also interested psychologists. Carsten and Spector (1987) report results from a meta-analysis of 39 studies; Warr (1998) is a more recent summary of work in this field.

[4] Other work has looked at outcomes outside the realm of the labour market. Measures of life satisfaction or general subjective well-being have been shown to be correlated with both Coronary heart disease (Sales and House, 1971) and the length of life itself (Palmore, 1969).

[5] This position is thus contrary to that taken by Lévy-Garboua and Montmarquette (2001), who posit that reported job satisfaction at time *t* covers not only the whole experience of the current job, but also the worker's entire career.

[6] It can be argued that the average of two points should contain more information than just one point, so it is unsurprising that peak-end does best. However, the running average is also an average of a number of points, but this does worse than current job satisfaction in both countries in Table 2.

Appendix A

BHPS

	Current	*Run Max*	*Run Min*	*Run Av.*	*PE (Max)*	*PE (Min)*
Current	1.0000					
Run Max	0.7883	1.0000				
Run Min	0.8630	0.6801	1.0000			
Run Av.	0.9018	0.9001	0.9002	1.0000		
PE (Max)	0.9525	0.9382	0.8220	0.9544	1.0000	
PE (Min)	0.9618	0.7581	0.9683	0.9356	0.9161	1.0000

GSOEP

	Current	*Run Max*	*Run Min*	*Run Av.*	*PE (Max)*	*PE (Min)*
Current	1.0000					
Run Max	0.6073	1.0000				
Run Min	0.7136	0.4040	1.0000			
Run Av.	0.8095	0.7990	0.8288	1.0000		
PE (***Max***)	0.9176	0.8730	0.6402	0.8966	1.0000	
PE (Min)	0.9148	0.5386	0.9358	0.8853	0.8309	1.0000

Table 1. Job Satisfaction and Quits in Great Britain and Germany

	Great Britain	**Germany**
Job Satisfaction	-0.248	-0.167
	(.017)	(.011)
Male	-0.017	0.078
	(.069)	(.067)
Age	-0.065	-0.082
	(.021)	(.023)
Age-squared	0.064	-0.163
	(.28)	(.312)
Log wage	-0.361	-0.035
	(.067)	(.079)
Log hours	0.262	0.457
	(.096)	(.157)
Temporary worker	0.855	
	(.099)	
Trade union member	-0.169	
	(.079)	
Trade union recognition	-0.391	
	(.072)	
Married	0.209	-0.041
	(.082)	(.224)
Separated	0.272	0.210
	(.186)	(.289)
Divorced	0.390	-0.187
	(.135)	(.226)
Widowed	-0.283	0.297
	(.438)	(.243)
Years of education		0.067
		(.015)
Education: High	0.276	
	(.088)	
Education: A/O/Nursing	0.057	
	(.082)	
Health: Excellent	0.091	-0.010
	(.074)	(.067)
Health: Good	-0.031	-0.079
	(.068)	(.151)
Number of Children	0.040	-0.088
	(.045)	(.030)
Renter	0.154	
	(.067)	
Firm size small (1-24)	0.098	
	(.076)	
Firm size medium (25-199)	0.105	
	(.069)	
Firm size 20-199		0.037
		(.067)
Firm size 200-1999		-0.589
		(.075)
Firm size 2000+		-1.040
		(.087)
Region Dummies	Yes	Yes
Industry Dummies	Yes	Yes
Occupation Dummies	Yes	No
Social Class Dummies	No	Yes
N	23245	54149
Log Likelihood	-11182.5	-14935.3
Log Likelihood without job satisfaction	-11263.7	-15060.4
Log Likelihood at zero	-11800.2	-16061.7

Table 2. Ranking of Job Satisfaction Measures as Predictors of Quits

	Great Britain (BHPS)			Germany (GSOEP)	
Job Satisfaction Measure					
Peak-end (with maximum)	-0.321 (.020)	-11140.2	Peak-end (with minimum)	-0.183 (.011)	-14913.7
Running Maximum	-0.314 (.019)	-11143.3	Running Minimum	-0.167 (.010)	-14916.6
Current	-0.248 (.017)	-11168.4	Current	-0.167 (.011)	-14935.3
Running Average	-0.275 (.021)	-11175.4	Running Average	-0.153 (.012)	-14976.3
Peak-end (with minimum)	-0.211 (.019)	-11198.2	Peak-end (with maximum)	-0.140 (.012)	-14989.4
Running Minimum	-0.141 (.018)	-11229.7	Running Maximum	-0.076 (.012)	-15040.0
N		23245			54149
Log Likelihood at zero		-11781.54			-16061.67

Table 3. Ranking of Job Satisfaction Measures as Predictors of Quits: Results by Sex and by Age

BHPS				GSOEP			
Women				*Women*			
Peak-end (with maximum)	-0.353	(.027)	-10795.8	Peak-end (with minimum)	-0.195	(.018)	-4981.9
Running Maximum	-0.35	(.026)	-10796.2	Running Minimum	-0.173	(.016)	-4987.3
Running Average	-0.316	(.029)	-10812.1	Current	-0.185	(.018)	-4987.4
Current	-0.263	(.024)	-10814.9	Running Average	-0.167	(.019)	-5008.7
Peak-end (with minimum)	-0.231	(.026)	-10829.2	Peak-end (with maximum)	-0.161	(.019)	-5010.8
Running Minimum	-0.162	(.025)	-10846.2	Running Maximum	-0.094	(.02)	-5035.3
	11809				16203		
Men				*Men*			
Peak-end (with maximum)	-0.302	(.029)	-10057.4	Running Minimum	-0.166	(.012)	-8659.0
Running Maximum	-0.29	(.028)	-10060.2	Peak-end (with minimum)	-0.177	(.013)	-8661.0
Current	-0.241	(.025)	-10067.7	Current	-0.159	(.014)	-8676.6
Running Average	-0.248	(.03)	-10075.3	Running Average	-0.147	(.014)	-8696.6
Peak-end (with minimum)	-0.198	(.027)	-10082.8	Peak-end (with maximum)	-0.129	(.015)	-8707.1
Running Minimum	-0.128	(.025)	-10097.4	Running Maximum	-0.067	(.015)	-8734.2
	11436				37946		
Under 35				*Under 35*			
Peak-end (with maximum)	-0.28	(.024)	-12854.0	Peak-end (with minimum)	-0.176	(.013)	-10050.4
Running Maximum	-0.263	(.023)	-12859.9	Running Minimum	-0.158	(.012)	-10057.0
Current	-0.23	(.021)	-12863.1	Current	-0.166	(.013)	-10059.8
Running Average	-0.246	(.025)	-12868.6	Running Average	-0.160	(.014)	-10080.3
Peak-end (with minimum)	-0.201	(.023)	-12876.5	Peak-end (with maximum)	-0.150	(.014)	-10087.6
Running Minimum	-0.146	(.022)	-12891.7	Running Maximum	-0.100	(.014)	-10120.7
	9591				21408		
35 or Over				*35 or Over*			
Running Maximum	-0.413	(.032)	-7896.2	Running Minimum	-0.185	(.018)	-3824.4
Peak-end (with maximum)	-0.406	(.034)	-7899.8	Peak-end (with minimum)	-0.194	(.02)	-3827.7
Current	-0.289	(.029)	-7920.6	Current	-0.168	(.021)	-3838.8
Running Average	-0.339	(.037)	-7922.3	Running Average	-0.130	(.022)	-3857.6
Peak-end (with minimum)	-0.241	(.032)	-7937.0	Peak-end (with maximum)	-0.110	(.022)	-3862.2
Running Minimum	-0.145	(.03)	-7953.8	Running Maximum	-0.010	(.025)	-3874.1
	13654				32741		

Table 4. Adding slopes and kinks

BHPS

Peak-end (Maximum)	-0.338	-0.316
	(0.035)	(0.036)
Δ Job satisfaction (*t-1* to *t*)	-0.095	0.095
	(0.029)	(0.053)
Δ Job satisfaction (*t-1* to *t*)	---	-0.279
if Δ < 0.		(0.070)

GSOEP

Peak-end (Minimum)	-0.157	-0.146
	(0.016)	(0.018)
Δ Job satisfaction (*t-1* to *t*)	-0.013	0.018
	(0.014)	(0.026)
Δ Job satisfaction (*t-1* to *t*)	---	-0.056
if Δ < 0.		(0.040)

Table 5. Decomposing Peak-End

	BHPS	**GSOEP**
Current Job Satisfaction	-0.099	-0.055
	(0.028)	(0.017)
Maximum Job Satisfaction	-0.228	---
	(0.030)	
Maximum Job Satisfaction	---	-0.125
		(0.016)

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