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The Anatomy of Job Satisfaction and the Role of Contingent Employment Contracts

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The anatomy of job satisfaction and the role of contingent employment contracts

Marloes de Graaf-Zijl

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Abstract:

In this paper I analyse job satisfaction using fixed effect analysis and a multiple equation model. Overall job satisfaction is analysed as an aggregate of satisfaction with several job aspects. I find that overall job satisfaction is mainly determined by satisfaction with job content. All aspect satisfactions are subsequently explained from observed characteristics, with special focus on contingent employment contracts. Satisfaction with job security is the aspect satisfaction with the strongest relation to type of contract. Since this is also the aspect that receives least weight in overall job satisfaction this has little impact on workers' total happiness. More influential is the low satisfaction with job content due to agency work. Overall, temporary agency work leads to the lowest job satisfaction. On-call work and fixed-term work arrangements do not differ from regular work in overall job satisfaction they provide, even though they do lead to higher or lower satisfaction with some aspects of the job.

JEL codes: J28, J40, C23

Keywords: temporary employment, job satisfaction

1. Introduction

In many countries, the labour market has displayed an increase in contingent work arrangements. Contingent employment refers to jobs in which an individual does not have an explicit or implicit contract for long-term employment or to one in which the minimum hours worked can vary in a non-systematic manner (Polivka and Nardone, 1989). The increased use of this type of contracts in most western societies has spurred a new branch of research focusing on the economic, social and psychological impact of these contracts. Many authors find evidence of lower wages, less fringe benefits, higher accident rates and less training opportunities for workers in contingent work arrangements (for an overview see De Graaf-Zijl, 2005a). Also the issue of job

satisfaction in contingent employment has received some attention in recent years (see e.g. Kaiser, 2002; Booth et al., 2002; Bardasi and Francesconi, 2003; D'Addio et al., 2003). It is generally found that individuals working in temporary jobs experience less job satisfaction than individuals in regular jobs. Several factors are potentially causing this phenomenon. An obvious possibility is that contingent contracts are indeed less satisfactory than regular jobs. De Witte and Näsval (2003) give some explanations why this might be the case.¹ But it is also possible that those workers employed in contingent jobs are less satisfied with their work irrespective of their type of contract. Or perhaps their happiness is caused by different factors, resulting in a different overall satisfaction. It is also conceivable that contingent contracts are used in different types of jobs, e.g. where heavy or dirty work is common. Or possibly contingent employment is more common in a certain phase when people are not feeling too well anyhow, such as periods of recession. To determine whether contingent employment indeed causes lower job satisfaction, we need an empirical strategy that allows disentanglement of confounding factors.

The increased attention for well-being analysis has brought more attention for the methodological issue of analysing satisfaction data. Ferrer-i-Carbonell and Frijters (2004) provide an overview of research methodologies. Distinguishing two key areas of distinction between research methodologies, they find that assuming ordinality or cardinality of happiness scores makes little difference, whereas allowing for fixed effects does change results substantially compared to cross-section (or random effects) analysis. Another extension was made by Van Praag et al. (2003), who view life satisfaction as an amalgam of various domain satisfactions. This results in a system of equations, which they estimate using Seemingly Unrelated Regression. Van Praag and Ferrer-i-Carbonell (2004) have developed a methodology with which panel data methods and multiple equation analyses are made feasible, while at the same time not fully depending on a cardinal concept of utility. In this paper I will use a combination of fixed effect analysis and Seemingly Unrelated Regression to analyse job satisfaction in the Netherlands,

¹ According to De Witte and Näsval (2003) lower job satisfaction in temporary work arrangement might be the result of higher job stress caused by more aggravating work characteristics, asymmetrical psychological contracts or deprivation due to a lack of a corporate family.

focussing on the role of contingent employment contracts. I use the Dutch Socio-Economic Panel for the years 1995-2001.

The outline of the paper is as follows. In the next section I present the model and the estimation method. Section 3 describes the data and gives descriptives. Section 4 presents estimation results showing the anatomy of overall job satisfaction as an amalgam of satisfaction with several job aspects, and the way it is related to contingent work arrangements. In section 5 I discuss policy relevance of the outcomes. Section 6 concludes.

2. Model and estimation

The model used in this paper is inspired by Van Praag et al. (2003). They apply a model that is a little more sophisticated than the standard model in which satisfaction is explained using objective variables such as age, income, gender and education. Their model assumes that life satisfaction is an aggregate of various domain satisfactions, such as health satisfaction, financial satisfaction, job satisfaction, housing satisfaction, leisure satisfaction etcetera. Likewise I argue that a job cannot be described as a one-dimensional characteristic. It consists of several job aspects, such as job security, financial rewards, working hours and job content. Therefore I use a model similar to the one used by Van Praag et al. (2003), i.e. Seemingly Unrelated Regression, to explain overall job satisfaction (JS) as a construct of job aspect satisfactions (JAS), which are in turn related to objective characteristics of individuals (i) and their jobs:

$$JS_{it} = JS(JAS_{lit}, \dots, JAS_{jit}; \alpha_i) \quad (1)$$

$$JAS_{jit} = JAS_j(X_{jit}, \alpha_{ji}) \quad \text{with } j = 1, 2, \dots, J \quad (2)$$

In this system of equations X_j stands for the sub-selection of observed objective job and personal characteristics that influence aspect-satisfaction j and α reflects a latent component of unobserved personality traits that influence both general job satisfaction and job aspect satisfactions. These α -characteristics are assumed to be time-invariant. This implies that they are automatically taken care of by fixed effect estimation. The use of fixed-effect estimation has been found by Ferrer-i-Carbonell and Frijters (2004) to

change results considerably compared to cross-section analysis. Fortunately my data allow me to use this method. In this way the common unobservable factor α in the JAS and JS is taken into account and we may view the equations (1) and (2) as a recursive system, estimated by Seemingly Unrelated Regression.

In my dataset, satisfaction questions are asked using a 6-point Likert scale. The usual approach in the economic literature is to treat satisfaction in an ordinal way. That is, we assume that the numerical evaluations 1,2,3,...,6 indicate six satisfaction levels, where a score of 6 is better than a score of 3. A cardinal approach, which is usual in psychological literature on well-being, assumes that a person scoring 6 is twice as satisfied as the same person scoring 3 and that the difference between a satisfaction answer of 5 and 6 is the same as the difference between 3 and 4. The cardinal treatment of satisfaction is unpopular in economics, even though Ferrer-i-Carbonell and Frijters (2004) show that results between ordinal and cardinal research methodologies hardly differ. Instead economists use ordered probit or logit analysis in order to treat satisfaction answers as ordinal. However, as Van Praag and Ferrer-i-Carbonell (2004) show, the usual ordered probit methodology does imply an implicit cardinalisation to some extent. They use this implicit cardinalisation to recast the problem in such a way that it can be tackled by OLS. In doing so they avoid a number of technical and computational difficulties of ordered probit when dealing with panel data sets and multiple equation models. Their approach implies transformation of the response category i to $\ln(z_i)$, where

$$\ln(z_i) = \frac{n(\mu_{i-1}) - n(\mu_i)}{N(\mu_i) - N(\mu_{i-1})}$$

N is the normal distribution function, n is the normal density function and μ_i are the values for which holds that $N(\mu_i) - N(\mu_{i-1})$ is the fraction of respondents belonging to response category i . Using this transformation, first advocated by Terza (1987), ensures that the explanatory variables in (1) vary over the whole real axis and are no longer bound to integer values between 1 and 6, so we do not need to use dummy variables any more. Also dependent variables in (1) and (2) now vary over the whole real axis, which implies OLS can be used. Van Praag and Ferrer-i-Carbonell call this approach “probit adapted OLS” (POLS). It enables not only the estimation of equation (1) without using a

large amount of explanatory dummy variables, but also makes fixed effect estimation and multiple equation models computationally feasible. They show that results from POLS are almost the same as ordered probit results, except for a multiplication factor. The resulting trade-off ratios are virtually identical, as are t-ratios.

3. Data and descriptive statistics

In this paper I use the Dutch Socio-Economic Panel (SEP). Netherlands Statistics started this panel survey in 1984 with 4000 households. In 1986 they reached a number of 5000 households by natural creation of new households (children leaving the household or divorce) and recruitment of new households. They have kept the number of households on this level ever since, by balancing natural creation and recruitment of new household with attrition. Non-response (48%) at the start of the survey and later panel attrition caused a certain degree of selectivity. To correct for this selectivity, Netherlands Statistics have calculated weights based on demographic statistics (size of municipality, age, sex and marital status).

All household members older than 16 years of age are interviewed once a year in April about their socio-economic situation with questions on education, labour force participation, income, wealth and satisfaction. Per household one individual answers questions on the living situation and wealth. Finally, demographic features of all household members – including those aged under 16 – such as sex, date of birth, marital status, nationality and position in the household are registered. The face-to-face surveys are carried out using portable computers and computer-controlled questionnaires (CAPI). National Statistics ensures the longitudinal character of the dataset by checks on date of birth and sex. I have made additional checks on age and sex. Furthermore I have corrected all monetary variables in the dataset for inflation to ensure proper comparison over the years. The health variable (“How healthy are you in general?”) has been transformed such that 1 is very bad and 5 is very good. I have added year dummies and vacancy to unemployment ratios that vary by education level and (the first quarter of the) year, from publicly available data sources of Netherlands Statistics.

Key variables in the dataset for the purpose of this paper are questions on job satisfaction and questions on the type of contract. The latter have been introduced in

1995. Therefore I use seven waves of the panel from 1995 till 2001. Table 1 gives an overview of the job satisfaction responses per contract type. Satisfaction questions are asked on a scale from 1 to 6, where 1 means very dissatisfied and 6 very satisfied. Clearly, some differences between contract types are discernable, most of which – with the exception of satisfaction with working hours and working conditions – are in favour of regular contracts. Satisfaction with job security is the issue that varies most, on which the contingent contracts show by far the lowest satisfaction. Only agency work is associated with statistically significant lower overall job satisfaction.

Table 1 Descriptive outcomes job (aspect) satisfaction by employment contract

	agency work	on-call work	fixed-term contract	regular contract
overall JS	4.544 (0.985) ***	4.675 (0.905)	4.747 (0.946)	4.759 (0.865) ***
wage satisfaction	4.020 (1.230) ***	4.085 (1.234) ***	4.245 (1.208) ***	4.411 (1.010) ***
job security satisfaction	3.161 (1.610) ***	3.570 (1.643) ***	3.766 (1.549) ***	4.848 (1.144) ***
working hours satisfaction	4.749 (1.081) ***	4.479 (1.275) *	4.708 (1.145) **	4.600 (1.098) ***
working times satisfaction	4.887 (1.075)	4.790 (1.074)	4.874 (1.080)	4.831 (1.053)
job content satisfaction	4.333 (1.222) ***	4.777 (1.140)	4.812 (1.114)	4.849 (0.963) ***
working conditions satisfaction	4.441 (1.225) **	4.469 (1.100) **	4.526 (1.181) ***	4.327 (1.142) ***
commuting distance satisfaction	4.732 (1.210)	4.826 (1.214)	4.716 (1.326) ***	4.815 (1.223) ***
Number of observations	594	305	1529	23455

*** = difference statistically significant at 99% confidence level

** = difference statistically significant at 95% confidence level

* = difference statistically significant at 90% confidence level

Standard errors in parentheses

Bold = positive difference with other contract(s)

4. Results

In this section I present the estimation results of the seven job aspect satisfaction equations and the overall job satisfaction equation, estimated by fixed effect probit adapted OLS (see section 2). I start with the results of the general job satisfaction and proceed with the job aspect satisfactions in order of importance according to the JS results. The explanatory variables in each job aspect satisfaction equation are chosen with a view on the literature, intuitive plausibility and the availability in the data set. For most non-dummy variables I use the standard logarithmic specification (see Van Praag and Ferrer-i-Carbonell, 2004). All JAS equations include non-reported dummy variables for missing values. Furthermore every JAS equation includes time effects, decomposed in two elements. On the one hand I have included the vacancy/unemployment (V/U) ratio. This ratio captures the business cycle effect and the outside opportunities of the workers.

If there are many vacancies per unemployed individual, workers have many outside options. An individual has few outside options if unemployment is high and vacancies are scarce. The V/U ratio varies per year and by education level. Apart from this V/U-ratio I have included time fixed effects to capture additional year effects. Robustness checks have shown that results are not sensitive to selection of the sample, such as limiting the sample to job switchers or private sector employees.

Overall job satisfaction

Estimation results for equation (1) are shown in table 2 and graphically illustrated in figure 1. The first column gives results for all workers; the other columns give results for the types of jobs separately. Clearly, most of the individuals have multiple observations: the 6952 individuals in the sample result in 25883 job observations. Some of these individuals hold different types of jobs during the observation period, as a result of which the total number of workers of the four contract types is larger than the number of individuals. The fact that individuals shift between types of contract enables me to identify effects of contract type using fixed effect analysis.

General job satisfaction is mainly determined by happiness with job content, which holds true for all types of workers. Clearly job content is much more influential than conditions or terms under which the job is performed. The weight of all other job aspect satisfactions differs between employment contracts. On average a Dutch worker weighs the remaining aspect satisfactions in the following order of importance: working conditions, working hours, wage, working times, commuting distance and job security. Workers in fixed-term jobs derive satisfaction from about the same aspect satisfactions as regular workers, but – apart from the fact that job content is the main determinant – agency workers and on-call workers are completely different. Commuting distance for example is much more important if someone works as temp agency or on-call worker. Wage satisfaction has practically no weight at all in these jobs. And interestingly for on-call workers the satisfaction with job security has a much larger weight than in other jobs.

Table 2 Estimation results overall job satisfaction, fixed effect POLS analysis

	everyone	agency workers	on-call workers	fixed-term workers	regular workers
satisfaction with wage	0.061 (0.006) ***	0.008 (0.032)	-0.031 (0.050)	0.067 (0.020) ***	0.062 (0.007) ***
satisfaction with job security	0.032 (0.005) ***	0.031 (0.024)	0.093 (0.035) ***	0.049 (0.015) ***	0.034 (0.006) ***
satisfaction with working hours	0.072 (0.006) ***	0.034 (0.036)	0.093 (0.045) **	0.058 (0.023) **	0.074 (0.007) ***
satisfaction with working times	0.056 (0.007) ***	0.064 (0.042)	0.044 (0.053)	0.054 (0.025) **	0.055 (0.007) ***
satisfaction with job content	0.223 (0.007) ***	0.283 (0.037) ***	0.261 (0.056) ***	0.240 (0.023) ***	0.219 (0.007) ***
satisfaction with working conditions	0.098 (0.006) ***	0.081 (0.034) **	0.055 (0.054)	0.077 (0.021) ***	0.098 (0.006) ***
satisfaction with commuting distance	0.036 (0.006) ***	0.076 (0.029) **	0.089 (0.044) **	0.048 (0.016) ***	0.034 (0.006) ***
Number of individuals	6952	459	232	1133	6429
Number of observations	25883	594	305	1529	23455
Pseudo R ²	0.305	0.304			

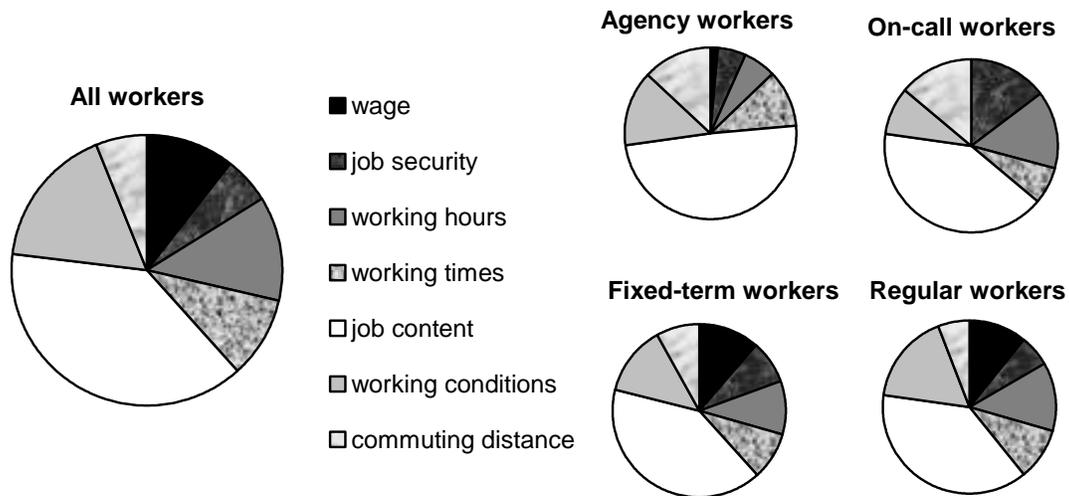
*** = statistically significant at 99% confidence level

Standard errors in parentheses

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Figure 1 Relative importance of job aspect satisfactions in overall job satisfaction



Job content satisfaction

Satisfaction with job content is clearly most important for overall job satisfaction.

Table 3 shows how this content satisfaction relates to observed job characteristics.

Interestingly, this satisfaction relates more to function level than to function type. Workers are least satisfied on the lowest function levels and most satisfied on the intermediate levels. The highest function levels take in an intermediate position.² Working in an executive function results in a higher satisfaction with the job content irrespective of the number of subordinate employees and irrespective of the function level. A worker is least satisfied with his job content if employed on an temporary agency contract. Agency workers are typically sent by their agency on short placements at client firms, which they have not chosen for themselves, to work on tasks they also have not always chosen themselves. Even though agency workers can refuse placements, their influence on their type of job and the organisation they work for is generally less than for workers who work for a firm directly. This might be the reason why agency work is associated with lower content satisfaction.

Working hours determine the satisfaction with job content as well, with people working more than 17 hours per week being more and more satisfied with the content of their job as they work more hours. Apparently small jobs are on average less interesting than more substantial ones. Also tenure influences the pleasure workers derive from their job content. People who are new in their job generally find their work content more interesting than people who have performed the same job for years, which is intuitively plausible. Two other factors related to satisfaction with job content are not really job related. When an individual was unemployed before he started working in the current job he is less satisfied with it. This might reflect his inferior bargaining position at the start of the job, which causes the job content to be not really what he prefers. The other non-job related variable that is associated with job content satisfaction is health. People who become less healthy experience decreases in satisfaction with their job content. This probably has little to do with their job itself. As next sections will show a decline in health causes decreasing satisfaction with all aspects of the job.

² Adding or deleting 'executive position' as explanatory variable does not change this result.

Table 3 Estimation results job content satisfaction, fixed effect POLS analysis

Variable	Coefficient		
ln(tenure)	-0.142 (0.030)	***	
ln(tenure)^2	0.003 (0.010)		
previously unemployed	-0.084 (0.029)	***	
health status	0.085 (0.011)	***	
executive position	0.090 (0.041)	**	
number of subordinates	0.007 (0.039)		
ln(weekly working hours)	-0.815 (0.491)	*	
ln(weekly working hours)^2	0.143 (0.071)	**	
function level (reference: lower medium)			
lowest	-0.247 (0.050)	***	
lower	-0.052 (0.019)	***	
higher medium	0.053 (0.022)	**	
higher	-0.001 (0.034)		
highest	0.043 (0.077)		
job type (reference: administrative)			
technical	-0.018 (0.028)		
agricultural	-0.032 (0.072)		
education	0.098 (0.062)		
medical	0.016 (0.035)		
transport	-0.013 (0.052)		
legal	0.032 (0.049)		
social/cultural	0.030 (0.038)		
employment contract (ref: regular)			
agency work	-0.201 (0.047)	***	
on-call	-0.055 (0.069)		
fixed-term	0.025 (0.029)		
V/U-ratio	-0.192 (0.149)		
year dummies (ref: 1997)			
1995	0.030 (0.021)		
1996	0.046 (0.018)	**	
1998	-0.002 (0.027)		
1999	0.020 (0.042)		
2000	0.072 (0.075)		Number of individuals 6982
2001	0.103 (0.081)		Number of observations 25883
intercept	1.029 (0.858)		Pseudo R ² 0.022

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Standard errors in parentheses

Working conditions satisfaction

Table 4 gives results of the working conditions satisfaction analysis. Clearly, the availability of training is the main facility determining satisfaction on this point, for both men and women. For women, training and education opportunities are even more

important than for men. Availability of childcare facilities increases satisfaction with working conditions too, curiously only for men and not for women. On average in my sample a quarter of all men with small children and half of the women with small children have access to these facilities. Since half of all women with small children do not have these facilities, selection of women into jobs with childcare provision is not the reason for this curious finding. For men, employer provided sports facilities increase this aspect of job satisfaction as well. Having a company car or lease car does not significantly influence this aspect satisfaction, neither for men, nor for women.

Tenure has the largest effect on satisfaction with working conditions. As people have been working in the same job for a longer time, they become less satisfied with the conditions. This continues up until 28 years of tenure, which is not often reached. Working hours are influential as well. As the workweek lengthens, workers become less satisfied with the conditions under which they have to perform their job. Minimum satisfaction is reached at a workweek of 44 hours, and contracts of more hours are uncommon in the Netherlands. So part-time workers either work under better circumstances or they are bothered less by the same circumstances. This last explanation is not illogical. A person who sits at a desk for 20 hours might experience less negative consequences than he would if he sat at the same desk for 40 hours. Health is also an important factor. Someone who experiences a decline in health becomes less satisfied with his working conditions.

Regarding employment contracts, some effects are found. Fixed-term workers and agency workers appear to be more satisfied with their working conditions than regular workers and on-call workers. Both fixed-term workers and agency workers work in an organization for a short period of time. However, if this were the explanation, it would have been picked up by the tenure effect.

Table 4 Estimation results working conditions satisfaction, fixed effect POLS analysis

Variable	Coefficient	
ln(tenure)	-0.340 (0.031)	***
ln(tenure)^2	0.051 (0.010)	***
previously unemployed	-0.019 (0.030)	
health status	0.087 (0.011)	***
executive position	0.010 (0.019)	
ln(weekly working hours)	-1.482 (0.514)	***
ln(weekly working hours)^2	0.196 (0.074)	***
facilities - women		
childcare if child <= 4 years	0.054 (0.063)	
childcare if no child <= 4 years	-0.004 (0.031)	
training	0.121 (0.026)	***
sport facilities	0.038 (0.035)	
car	0.015 (0.090)	
facilities - men		
childcare if child <= 4 years	0.116 (0.042)	***
childcare if no child <= 4 years	0.049 (0.026)	*
training	0.075 (0.019)	***
sport facilities	0.049 (0.024)	**
car	0.046 (0.037)	
employment contract (ref: regular)		
agency work	0.087 (0.049)	*
on-call	-0.025 (0.072)	
fixed-term	0.075 (0.031)	**
V/U-ratio	0.006 (0.156)	
year dummies (ref: 1997)		
1995	0.012 (0.022)	
1996	0.027 (0.019)	
1998	-0.036 (0.028)	
1999	-0.043 (0.044)	
2000	-0.058 (0.078)	
2001	-0.025 (0.085)	
intercept	2.777 (0.898)	***
		Standard errors in parentheses
	Number of individuals	6982
	Number of observations	25883
	Pseudo R ²	0.028

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Working hours satisfaction

Not surprisingly satisfaction with working hours is mainly determined by working hours itself, as table 5 shows. What might be surprising is the shape of the relation. Both men and women are most satisfied with their working hours if they work around 15 hours a week. Working more (or less) hours decreases satisfaction. In the Netherlands women

usually work part-time and men work full-time. Apparently this is not because they are most satisfied with this number of working hours. From table 5 we might conclude that men who reduce their working hours get happier as well. Still Sousa-Poza and Henneberger (2002) indicate that 70 percent of the Dutch workforce would rather not change his or her number of working hours, whereas 19 percent would like to work more and earn correspondingly more and only 11 percent prefers to work less hours and earn correspondingly less money. The relation I find depends on the presence of a partner in the household. When living together with a partner, workers are generally more satisfied with their working hours, but are less satisfied if they work longer hours. Intuitively children in the household could influence the number of hours people prefer to work if they like to spend time with their children. I do not find this effect. Individuals in executive positions usually work longer hours in practice, but this too is not found to be related to their preferences.

Regarding type of employment contract, on-call work is typically different from the other types. If employed on an on-call basis both the number of hours and the timing of hours differ per day or week, which means that workers have little certainty about when and how much they will work. As a result it is not surprising to find that working on-call decreases satisfaction with working hours. Agency workers also might work different hours per placement. Since these placements are generally longer than a week, variance is smaller than for on-call workers. As a result agency work does not result in low working hours satisfaction. The same holds for fixed-term employment.

Again tenure is of major influence. On the issue of working times, individuals are least satisfied if they have been employed on the same job for 15 years. All in all people seem to be better off in terms of job satisfaction if they change jobs every so often. Also the health effect is present again. Here, some year effects are found as well. In 1995 and 1996 workers were more satisfied with their number of working hours, which is hard to explain. If any effect was to be expected, it would have been after July 2000. At that moment a new act became operative, which states that any employee can request a change in his number of working hours and the employer should grant this wish unless he has demonstrable ponderous arguments why he cannot. In my dataset I have only one observation after this date, namely April 2001. I do not find a significant increase in

working hours satisfaction after 2000, but this might be caused by the short period since the introduction of the new act. It generally takes some time to adapt to new regulation. Employees need to learn about it, decide if and how to use it and employers need to learn how to implement its consequences. Even in 2003 an evaluation showed that only 50 percent of workers knew about their right to request longer or shorter working hours (Mu consult, 2003).

Table 5 Estimation results working hours satisfaction, fixed effect POLS analysis

Variable	Coefficient			
women				
ln(weekly working hours)	7.085	(0.669)	***	
ln(weekly working hours) ²	-1.119	(0.100)	***	
men				
ln(weekly working hours)	6.885	(0.613)	***	
ln(weekly working hours) ²	-1.051	(0.085)	***	
partner				
partner in household	1.28	(0.366)	***	
partner * hours	-0.341	(0.101)	***	
children				
children in household	-0.192	(0.253)		
children * hours	0.051	(0.070)		
executive position				
executive position	0.261	(0.271)		
executive * hours	-0.089	(0.075)		
ln(tenure)	-0.164	(0.030)	***	
ln(tenure) ²	0.031	(0.010)	***	
previously unemployed	-0.033	(0.029)		
health status	0.069	(0.011)	***	
employment contract (ref: regular)				
agency work	0.011	(0.047)		
on-call	-0.326	(0.069)	***	
fixed-term	0.034	(0.029)		
V/U-ratio	-0.107	(0.149)		
year dummies (ref: 1997)				
1995	0.057	(0.021)	***	
1996	0.051	(0.018)	***	
1998	0.014	(0.027)		
1999	-0.003	(0.042)		
2000	0.037	(0.074)		Number of individuals 6982
2001	0.048	(0.081)		Number of observations 25883
intercept	-11.174	(1.097)	***	Pseudo R ² 0.041

*** = statistically significant at 99% confidence level

Standard errors in parentheses

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Wage satisfaction

The use of explanatory variables in the wage satisfaction analysis in table 6 has been inspired by findings from the literature on life satisfaction, financial satisfaction and overall job satisfaction. This literature shows that it is not only, not even mainly, a person's own income that determines satisfaction but rather the income of a comparison

group (see e.g. Clark and Oswald, 1996 and Ferrer-i-Carbonell, 2005). Ferrer-i-Carbonell (2005) argues that the relation between satisfaction and comparison income is not always symmetric. In some cases happiness of individuals is negatively affected by an income below that of their reference group, whereas individuals with an income above that of their reference group do not experience a positive impact on well-being. In order to test these hypotheses I have included in the wage satisfaction analysis several wage related variables.

First I included both hourly and monthly wage and the results show that satisfaction is more related to the (log) monthly wage rate than the (log) hourly wage rate. Excluding one of the two variables, or working hours, from the regression does not change this finding. In my view this is rather surprising. From an economic point of view it is the wage per time unit worked that is the relevant unit to compare jobs. Taking on more than one job can always compensate a low monthly wage due to few hours.

Next, I added two comparison wage variables: one for the (log) positive difference between own wage and comparison wage and one for (log) negative differences. Reference groups have been defined as individuals with the same education level in the same age group. I find that the difference between own wage and reference wage is as important for wage satisfaction as the wage itself. This effect is symmetric: the effect of a positive difference is as large as the effect of a negative difference. It holds both when defined in terms of monthly wage or in terms of hourly wage.

Another financial element included in this analysis is the share of the individual's wage in monthly household income. So here I test whether, corrected for the wage level itself, the income compared to that of the other household members influences wage satisfaction. The results indicate that, given the height of the hourly wage, an individual is more satisfied with his or her wage if its share in household income becomes more substantial. Other household characteristics have no further influence on wage satisfaction. Neither the partner, nor the child dummies have significant effects.

To continue, some financial fringe benefits have been included in the analysis. Participation in an employer provided pension scheme, in a salary saving scheme, provision of corporate bonds or options, profit sharing and lease cars/company cars were

available in the dataset. It is the company or lease car and the salary saving scheme that have positive effects on wage satisfaction.

Wage satisfaction, in contrast to the other job aspect satisfactions presented so far, appears to be labour market related. This effect is shown in the V/U-ratio. The higher the number of vacancies per unemployed on their education level, i.e. the more outside options a worker has, the less satisfied workers are with their wages. They might have the feeling that others are better off than they are, and feel they have a choice for a higher wage elsewhere. This makes them less satisfied with their current wage. In recessions they see many unemployed workers receiving no wage at all and feel they have few outside options themselves, which makes them more satisfied with the wage they receive. Plus they know employers are not doing well and are not always able to pay higher wages. The year dummies show a completely opposite relation. The better years, 1998 until 2001, result in a higher wage satisfaction. Apparently wage satisfaction is negatively related to the education level specific labour market situation, but positively to the national business cycle.

Furthermore we see the by now familiar patterns regarding tenure, health and previous unemployment. Individuals are least satisfied at 18 years of tenure, are more satisfied if they are healthier and are less satisfied if they were unemployed directly before they found the current job. With respect to the type of employment contract the interesting conclusion is that workers are somewhat more satisfied with their wage if they work on a fixed-term contract. From the literature we know that fixed-term workers earn less than regular workers, even if we control for their characteristics (see e.g. Segal and Sullivan, 1998; Booth, Francesconi and Frank, 2002; Hagen, 2003, McGinnity and Mertens, 2004; Addison and Surfield, 2005, De Graaf-Zijl, 2005). De Graaf-Zijl (2005) shows that employers' uncertainty about a worker's ability is a main reason for this relation. The effect found in table 6 might lead us to conclude that workers understand this reason behind their lower payment. If a worker enters a firm on a fixed-term contract and understands that his employer is uncertain about his ability to perform the job, he is satisfied with the wage he gets. When he subsequently receives a regular contract, he knows that the employer has observed his ability during the last period and he is therefore less satisfied if he still receives the same wage.

Table 6 Estimation results wage satisfaction, fixed effect POLS analysis

Variable	Coefficient		
wage			
ln(net monthly wage)	0.011(0.004)	***	
ln(gross hourly wage)	0.023(0.023)		
ln(reference hourly wage) positive	0.024(0.008)	***	
ln(reference hourly wage) negative	-0.027(0.008)	***	
share in household income	0.145(0.030)	***	
additional financial benefits (yes/no)			
pension	0.029(0.018)		
salary saving	0.038(0.017)	**	
shares/option	0.025(0.037)		
profit sharing	0.039(0.026)		
car	0.068(0.032)	**	
household characteristics			
partner	0.011(0.031)		
children	-0.034(0.046)		
ln(tenure)	-0.239(0.030)	***	
ln(tenure)^2	0.041(0.010)	***	
previously unemployed	-0.153(0.028)	***	
health status	0.022(0.010)	**	
ln(weekly working hours)	-0.050(0.478)		
ln(weekly working hours)^2	0.031(0.069)		
employment contract (ref: regular)			
agency work	-0.049(0.046)		
on-call	-0.046(0.067)		
fixed-term	0.050(0.028)	*	
V/U-ratio	-0.378(0.144)	***	
year dummies (ref: 1997)			
1995	-0.034(0.020)	*	
1996	-0.024(0.017)		
1998	0.065(0.026)	**	
1999	0.106(0.041)	***	
2000	0.197(0.072)	***	Number of individuals 6982
2001	0.393(0.080)	***	Number of observations 25883
intercept	-0.282(0.838)		Pseudo R ² 0.034

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Standard errors in parentheses

Working time satisfaction

Satisfaction with working times is explained very poorly using the SEP dataset. Reason is that the data contain no information on occurrence of irregular working hours, working weekends or night shifts, overtime or the start and end moments of a regular working day. Therefore the only variables included in the working times satisfaction

analysis are the general ones also used in the other JAS regressions. Individuals are less satisfied with their working times as they work in the same job for a longer time. They are most satisfied if they work about 20 hours per week. The more healthy they are, the more satisfied. Some business cycle effects appear to be present. The years 1995 and 1996, which are the worst years during my observation period, show the highest satisfaction levels. This might be related to overtime: generally workers need to work more hours in the best parts of the business cycle. An alternative explanation is that workers are happy to have any work, regardless working times, if the economic situation is bad. Finally, we observe that agency workers are more satisfied with their working times than all other workers.

Table 7 Estimation results working time satisfaction, fixed effect POLS analysis

Variable	Coefficient		
ln(tenure)	-0.092(0.030)***		
ln(tenure)^2	0.007(0.010)		
previously unemployed	-0.006(0.029)		
health status	0.057(0.011)***		
executive position	-0.002(0.018)		
ln(weekly working hours)	2.519(0.487)***		
ln(weekly working hours)^2	-0.431(0.070)***		
employment contract (ref: regular)			
agency work	0.138(0.047)***		
on-call	-0.006(0.068)		
fixed-term	0.030(0.029)		
V/U-ratio	-0.006(0.148)		
year dummies (ref: 1997)			
1995	0.073(0.021)***		
1996	0.044(0.018)**		
1998	0.003(0.026)		
1999	-0.004(0.042)		
2000	0.015(0.074)	Number of individuals	6982
2001	0.049(0.081)	Number of observations	25883
intercept	-3.571(0.851)***	Pseudo R ²	0.019

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Standard errors in parentheses

Commuting distance satisfaction

Satisfaction with commuting distance is the job aspect satisfaction that is best explained from observed variables, as can be seen from the relatively high R² value (0.384). Not surprisingly, it mainly depends on commuting distance itself. As distance

increases, satisfaction drops substantially. Also situations in which individuals have no fixed working place are experienced as satisfaction-reducing job characteristics. This is in accordance with findings by Van Ommeren et al (2000), who have shown that individuals in the Netherlands experience negative utility from commuting. They estimated the marginal willingness to pay in case of a working day of eight hours to about -0.20 Euro per kilometre. As I show in table 8, an employer-provided car diminishes this effect. If an employer provides the car, an individual values the distance less negative than he would without the car. The same holds for individuals with children. They also value commuting distance less negative than they would if they had had no children. This might be explained from the fact that many people with children choose to live in greener, quieter environments outside the cities, where they usually work. So the commuting distance is a deliberate choice for the sake of their children and as such is experienced as less dissatisfactory. Furthermore, individuals find larger commuting distance less problematic if they work more hours per week. Working longer hours per day decrease the relative amount of commuting time and as such make it less unattractive.

Table 8 Estimation results commuting distance satisfaction, fixed effect POLS analysis

Variable	Coefficient		
ln(commuting distance in km)	-0.736(0.077)***		
no fixed working place	-1.591(0.035)***		
employer provided car			
car	-0.169(0.041)***		
car * ln(distance)	0.063(0.012)***		
executive position			
executive position	0.031(0.029)		
executive * ln(distance)	0.000(0.010)		
partner			
partner in household	0.043(0.045)		
partner * ln(distance)	-0.012(0.015)		
children			
children in household	-0.065(0.031)**		
children * ln(distance)	0.030(0.011)***		
working hours			
ln(weekly working hours)	-0.408(0.395)		
ln(weekly working hours)^2	0.035(0.057)		
working hours * ln(distance)	0.065(0.021)***		
ln(tenure)	0.038(0.024)		
ln(tenure)^2	-0.011(0.008)		
previously unemployed	-0.005(0.023)		
health status	0.015(0.009)*		
employment contract (ref: regular)			
agency work	-0.011(0.038)		
on-call	-0.084(0.055)		
fixed-term	0.003(0.023)		
V/U-ratio	0.042(0.120)		
year dummies (ref: 1997)			
1995	0.045(0.017)***		
1996	0.018(0.014)		
1998	0.001(0.021)		
1999	-0.020(0.034)		
2000	-0.039(0.060)	Number of individuals	6982
2001	-0.048(0.065)	Number of observations	25883
Intercept	2.173(0.701)***	Pseudo R ²	0.384

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Standard errors in parentheses

Job security satisfaction

By their nature agency workers, on-call workers and workers on fixed-term contracts experience less job security than regular workers. The contracts they work on are often designed for reasons of avoiding employment protection legislation. However, perceived job insecurity has no one-to-one relation with flexible employment. In the

literature, type of contract is one of the objective measures of job insecurity, which appears to be imperfectly correlated with subjective job insecurity perceived by workers. Although we might expect the two to be related, literature shows that the association is far from perfect (Robinson, 2000; Letourneux, 1998; Kaiser, 2000; Parker et al, 2002; Sverke et al, 2000). De Witte and Näsval (2003) for example find negative associations between temporary employment and subjective job insecurity in Sweden, the Netherlands, to a lesser extent in Belgium and in Italy only marginally. As such, there is no automatic relation between type of contract and satisfaction with job security. Furthermore, contingent employment is by no means involuntary for all workers. Based on the Eurostat labour force survey Berkhout and Van Leeuwen (2004) show that in Spain 76% of all temporary workers work in a temporary job just because they could not find a permanent one. But the share of people who are voluntarily working as temporary worker ('did not want a permanent job') is more than a third in Portugal and the Netherlands. If working on a contingent contract because they voluntarily choose to do so, employees might value the lack of job security – or more positively formulated the high variety – as positive instead of negative.

Table 9 shows that in my dataset on-call work, fixed term contract work and agency work all lead to lower satisfaction with job security. This holds on average, but some circumstances aggravate it, and others diminish it. Working more hours per week for instance diminishes the effect of on-call and fixed-term work. So workers especially dislike the job security of on-call work if they are on average called for only a small number of hours. And they dislike fixed-term work most if it is part-time. Also, the security offered by on-call work is valued more negatively if household income depends on it to a larger extent. If there are enough other income sources in the household the lack of security offered by on-call work is not deemed to be as problematic. Curiously the same effect is found for children. Once a child is present, the lack of security offered by fixed-term work seems to matter less. Easier to explain is the relation with the labour market situation. In a situation where an individual has many outside options (high V/U-ratio), negative effects of agency work and fixed-term contracts partly disappear. Since it is easier to find another job the lack of security is not so bad. In a sense, security regarded

as the chance to be in work next month, is higher in these situations. Year dummies show an additional effect in the same direction, on top of the V/U effect.

Table 9 Estimation results job security satisfaction, fixed effect POLS analysis

Variable	Coefficient
employment contract (ref: regular)	
agency work	-1.411(0.632) **
on-call	-2.143(0.651) ***
fixed-term	-2.051(0.370) ***
partner	
partner in household	0.034(0.032)
partner * agency work	-0.039(0.115)
partner * on-call	-0.113(0.186)
partner * fixed-term	-0.093(0.068)
children	
children in household	0.004(0.022)
children * agency work	-0.064(0.088)
children * on-call	-0.060(0.135)
children * fixed-term	0.178(0.055) ***
executive position	
executive position	0.025(0.018)
executive * agency work	0.189(0.133)
executive * on-call	0.191(0.189)
executive * fixed-term	0.086(0.068)
working hours	
ln(weekly working hours)	-0.268(0.490)
ln(weekly working hours)^2	0.041(0.070)
working hours * agency work	0.052(0.169)
working hours * on-call	0.485(0.181) ***
working hours * fixed-term	0.374(0.100) ***
hourly wage	
gross hourly wage	0.029(0.020)
hourly wage * agency work	-0.009(0.040)
hourly wage * on-call	-0.045(0.061)
hourly wage * fixed-term	-0.032(0.029)
household income	
share personal wage in household income	0.017(0.035)
share * agency work	0.038(0.101)
share * on-call	-0.515(0.175) ***
share * fixed-term	0.027(0.073)
ln(tenure)	0.026(0.030)
ln(tenure)^2	-0.028(0.010) ***
previously unemployed	-0.008(0.028)
health status	0.069(0.011) ***
vacancy/unemployment ratio	
V/U-ratio	-0.067(0.145)
V/U-ratio * agency work	1.026(0.207) ***
V/U-ratio * on-call	0.339(0.274)
V/U-ratio * fixed-term	0.350(0.110) ***
year dummies (ref: 1997)	
1995	-0.042(0.020) **
1996	-0.072(0.017) ***
1998	0.113(0.026) ***

1999	0.126(0.041)	***		
2000	0.212(0.072)	***	Number of individuals	6982
2001	0.213(0.079)	***	Number of observations	25883
Intercept	0.106(0.859)		Pseudo R ²	0.081

*** = statistically significant at 99% confidence level

** = statistically significant at 95% confidence level

* = statistically significant at 90% confidence level

Standard errors in parentheses

5. Policy considerations

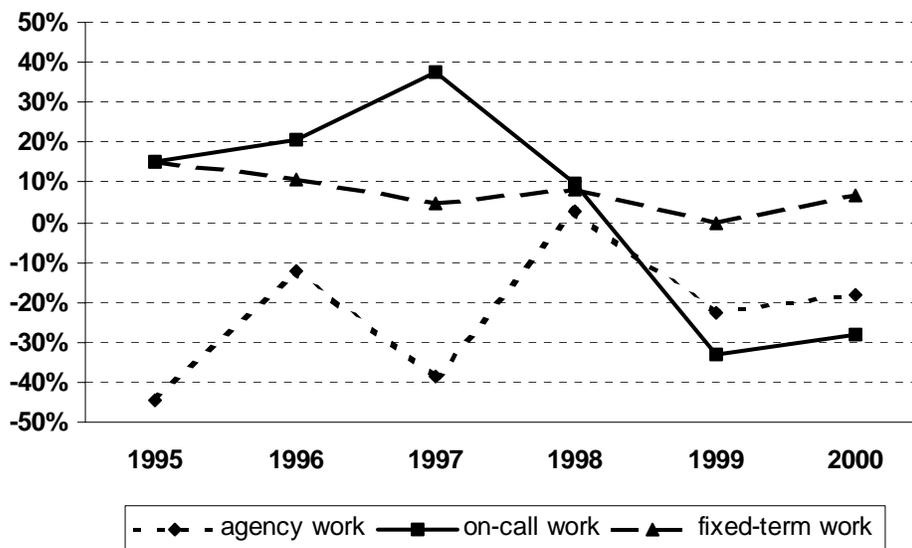
The Dutch government is planning to relax employment protection regulation. The current Dutch system is quite complicated and regarded by OECD (1999) as one of the most cumbersome of all OECD countries. The National Action Plan of the Dutch Ministry of Social Affairs and Employment (2004) announced plans to take a number of steps aimed at removing obstacles in dismissal procedures. The Cabinet is considering reviewing the application of the *lifo* principle (last in first out) in connection with the procedure for business economic dismissal. In addition, it announced that the imputability test in the unemployment benefit system ought to be reviewed in order to counter the *pro forma* dismissal procedures currently in practice. The reason behind this test is that workers that are dismissed by their own fault are not eligible for unemployment insurance. Furthermore, discussion is going on about simplification of the so-called dual system of dismissal regulation, where firms can choose between going through a lengthy procedure at the Centre for Work and Income (CWI) or go to court with higher chances of success but also higher severance payments. In the process of adjusting the employment protection regulation, the Dutch government encounters the opposition of the trade unions (see Klaassen, 2005). The unions are willing to discuss the simplification of the employment protection regulation, but not the reduction of employment protection by shutting down the CWI procedure or letting go of the *Lifo* principle that protect workers with long tenure. My analysis has shown that workers' job satisfaction depends only to a minor extent on the satisfaction with job security. Therefore I conclude that there is little reason for trade unions to be too concerned about the level of employment protection. Aiming their resources at the improvement of working conditions – after job content the most important job aspect according to my analysis – might be more cost effective.

In 1999 a major policy change regarding employment protection was implemented with the introduction of the Flexibility and Security Act. This act aimed at increasing opportunities for employers to use flexible and temporary labour, and at the same time increasing employment rights of the flexible workforce. Now, the Netherlands is one of the countries with the least stringent regulation on temporary forms of employment (OECD, 2004). The results in this paper show that workers in fixed-term and on-call work arrangements, although less satisfied with their job security, are overall as satisfied with their jobs as when they work in regular work arrangements. Only agency workers are less satisfied. This cannot be fully attributed to their lack of job security, but is mainly due to the fact that they are less satisfied with the content of their work.

To get an impression of the development of job satisfaction of workers in contingent work arrangements since the introduction of the Flexibility and Security Act I calculated the difference in overall job satisfaction between regular workers and workers in the other arrangements for each year in the data set. Even though we need to be careful with causal interpretation, results in figure 2 indicate that overall job security of contingent workers has not increased after 1999. What strikes when comparing the development since 1999 is that on-call work has had negative job satisfaction results since, which it did not have beforehand. Regarding on-call work the Flexibility and Security Act enhanced the legal position of workers in this work arrangement in a number of ways. It restricted the period during which the employer can fully shift the underutilisation risk to the employee. Before 1999 zero hour contracts could last indefinitely. The employer did not need to pay the worker when there was insufficient work. Since 1999 zero hour contracts are restricted to the first six months of the contract. From that moment on employers need to pay a worker even if there is insufficient work. The amount of payment depends on the average number of hours the worker was called on during the three preceding months. Another feature introduced by the Flexibility and Security Act is the minimum payment of three hours. Even if the actual duration of the call does not exceed two hours, a worker should be paid three hours wage. Finally the Flexibility and Security Act removed the legally doubtful existence of an employment contract in some cases of on-call work. It states that a worker who worked at least 20 hours per month during three months presumptively has an employment contract. De

Graaf-Zijl (2005b) already showed that these adjustments reduced attractiveness of on-call work for employers and led to a significant reduction in the use of on-call work between 1997 and 2002 and to reduction of the wages of on-call workers. Figure 2 shows that it did not increase job satisfaction of workers in these arrangements. Again this indicates that improvement of job security does not automatically lead to higher job satisfaction.

Figure 2 Development of relative job satisfaction compared to regular workers by type of work arrangement



6. Summary and conclusion

Job satisfaction is a weighted average of satisfaction with several aspects of a job, such as job content, wage and job security. In this paper I have analysed it as such and determined the weights of the job aspects. I found that satisfaction with job content is the main determinant of job satisfaction. All other aspects have comparatively little importance in overall job satisfaction. On average a worker weighs the remaining aspect satisfactions in the following order of importance: working conditions, working hours, wage, working times, commuting distance and job security.

All job aspect satisfactions can be explained from observed job and personal characteristics. Some relations hold for every aspect in more or less the same way. A decline in health for instance is associated with a decline in satisfaction with practically every job aspect. Also the tenure profile is quite universal. When starting fresh in a new job all aspects are valued higher than they are in the same job after a few years. This decline either continues till retirement or has its minimum after at least 15 years. So all in all we can conclude that job satisfaction decreases as people work in the same job for more years. Another rather general finding concerns the previous labour market situation. When an individual was unemployed before he started working in the current job he is less satisfied with most of its aspects. This might reflect his inferior bargaining position at the start of the job, which causes the job to be not really what he prefers. Also outside options determine more than one job aspect satisfaction. The more outside options a worker has, the less satisfied with his wage, but the more satisfied with job security he is.

Other aspects influencing job aspect satisfactions are typical for the job aspect under consideration. Satisfaction with job content relates more to function level than to function type. Workers are least satisfied on the lowest function levels and most satisfied on the intermediate levels. The highest function levels take in an intermediate position. Satisfaction with working conditions is mostly determined by the availability of training. Also availability of childcare facilities is appreciated, as are employer provided sports facilities. Having a company car or lease car does not significantly influence this aspect-satisfaction. Not surprisingly satisfaction with working hours is mainly determined by working hours itself. Both men and women are most satisfied with their working hours if they work around 15 hours a week. So the division of women into part-time jobs and men in full-time jobs does not seem to be satisfaction related. Wage satisfaction is mostly determined by the (monthly) wage, the difference in wage level with the reference group and the share of the wage in household income. Satisfaction with working times is explained very poorly, because the data contain no information on occurrence of irregular working hours, working weekends or night shifts, overtime or the start and end moments of a regular working week. The worst years from a business cycle point of view are the ones resulting in the highest satisfaction levels. There might be several explanations for this finding. Maybe in insecure times people are happy with just having a job. People

have less outside opportunities, which makes them happier with what they have. Also, work overload might be smaller if business is worse. Satisfaction with commuting distance is the job aspect satisfaction that is best explained from observed variables. Not surprisingly, it mainly depends on commuting distance itself. As distance increases, satisfaction drops substantially. Also situations in which individuals have no fixed working place are experienced as satisfaction reducing job characteristics. An employer-provided car, having children and working more hours per week make larger commuting distances less burdensome. Finally, satisfaction with job security is mainly determined by the type of employment contract. On-call work, fixed term contract work and agency work all lead to lower satisfaction with job security. This holds on average, but some circumstances – high share in household income – aggravate it, whereas others – working more hours per week, having children, more shortages on the labour market – diminish it.

In this paper I focussed specifically on the relation between job (aspect) satisfaction and employment contract types. Results show that individuals weigh job aspects differently when working on on-call or agency contracts than when regularly employed. Commuting distance is much more important if someone is working as temp agency or on-call worker. Wage satisfaction has practically no weight at all in these jobs. And for on-call workers the satisfaction with job security has a much larger weight than in other jobs. Apart from different weights attached to job aspects, employment contracts influence satisfaction with job aspects as well. Most importantly, since job content is the main determinant of overall job satisfaction, agency work results in less satisfaction with job content. Agency work also differs from the other arrangement in that it is associated with higher satisfaction with working conditions, higher satisfaction with working times and lower satisfaction with job security. In sum, agency work results in a lower overall job satisfaction than the other work arrangements. Agency work is the only arrangement for which this holds. The overall job satisfaction of fixed-term and on-call work arrangements does not differ significantly from regular employment. Nevertheless they do differ on some aspects. When employed in a fixed-term work arrangement, an individual is satisfied with working conditions, wage and less satisfied with job security than regular workers. When working fixed-term a worker is more satisfied with his wage

than he would be if he were to receive the same wage in a regular job. On-call work is mainly different with respect to working hours. It decreases satisfaction with working hours, which are typically fluctuating and uncertain under this type of contract. This also results in a lower satisfaction with job security.

The fact that both fixed-term and on-call work arrangements do not lead to lower overall job satisfaction, even though they lead to considerable lower satisfaction with job security indicates that job security is not a main concern to employees. Also, the low satisfaction of agency workers is mainly due to their dissatisfaction with the content of their work and their lack of job security plays only a minor role. This leads me to conclude that trade unions need not be too concerned about the level of employment protection. Aiming their resources at the improvement of working conditions – after job content the most important job aspect according to my analysis – might be more cost effective. Also, the fact that since 1999 job satisfaction of on-call workers has decreased relative to regular workers, while their job security was increased significantly by a policy change, indicates that job security is of secondary importance for employees.

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