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Well-being at work: a cross-national analysis of the levels and determinants of job satisfaction

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Abstract

The aim of this paper is to analyze the levels and determinants of job satisfaction in a cross-national setting. This aim is accomplished using the latest Work Orientations data set from the International Social Survey Program (ISSP). The survey was conducted in 1997 and, in this paper, data for 21 countries are used. The main results are: (i) workers in all countries are quite satisfied; this result also applies to the five Eastern European countries analyzed here. (ii) Denmark is the country with the highest job-satisfaction level. The United States is ranked seventh, Great Britain fifteenth, Japan nineteenth, and Russia twentieth. (iii) A comparison with the 1989 ISSP data set reveals that job satisfaction has declined in Germany and the United States in the 1990s. (iv) Using a bottom-up psychological model, in which we compare work-role inputs (e.g., effort) with work-role outputs (e.g., pay), we try to explain cross-national differences. Countries with high work-role outputs, in general, have a high job-satisfaction ranking, and vice versa. (v) Having an interesting job and having good relations with management are the two most important work-role outputs, and having an exhausting job is the most important work-role input. (vi) Workers in Eastern European countries tend to value high income.

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1. Introduction

Subjective well-being (SWB) has been extensively researched in psychology and in management. This, however, is not the case in economics. At least for noneconomists, this lack of research comes as a surprise since well-being is, one could argue, the central economic variable driving individuals' decisions. Oswald puts it very nicely:

> "Economic performance is not intrinsically interesting. No-one is concerned in a genuine sense about the level of gross national product last year or about next year's exchange rate. People have no innate interest in the money supply, inflation, growth, inequality, unemployment, and the rest. [. . .] The relevance of economic performance is that it may be a means to an end. That end is not the consumption of beefburgers, nor the accumulation of television sets, nor the vanquishing of some high level of interest rates, but rather the enrichment of mankind's feeling of well-being" (Oswald, 1997, p. 1815).

Recently, there has been an increased interest among economists in aspects relating to SWB. There are two main research areas that have developed in recent years. (i) The analysis of general (life) well-being or happiness (see, for example, Clark and Oswald, 1994; Frey and Stutzer, 1999; Kenny, 1999; Oswald, 1997) and (ii) the analysis of well-being at work, better known as "job satisfaction" (see, for example, Blanchflower and Oswald, 1999; Brown and McIntosh, 1998; Clark, 1996, 1997; Clark and Oswald, 1996; Clark et al. 1995, 1997).[1]

The aim of this paper is to further international evidence on job satisfaction. We analyze the latest available data set on Work Orientations from the 1997 International Social Survey Program (ISSP).[2] This is an interesting data set since it covers numerous countries from four continents.[3] It also contains data for five Eastern European countries (Hungary, Russia, Slovenia, Bulgaria, Czech Republic) and Japan, that is, countries that have received comparably little attention in this field of research. In fact, and as pointed out by Diener et al. (1995), cross-national research on SWB has, in the past, been primarily based on a very small number of nations (for example, Easterlin, 1974; Veenhoven, 1991) and heavily weighted toward Europe and the United States (for example, Blanchflower and Oswald, 1999). This is especially the case in the job-satisfaction literature (see Spector, 1997). A further aim of this study is to try and explain cross-national differences in job satisfaction with the aid of a bottom-up psychological model. As far as the authors of this study can ascertain, this is generally not done among economists, who usually specify a model in an ad hoc manner. Furthermore, no one has yet been able to explain why countries have different job-satisfaction levels. By explicitly using a psychological model of the determinants of job satisfaction, we try to shed some light onto this topic.

The structure of this paper is as follows: in section 2, some conceptual issues on the determinants of job satisfaction are discussed. Furthermore, this section also introduces the conceptual framework implemented in this study. In section 3, we take a closer look at the quality of such data. This is necessary since it may explain economists' reluctance to analyze such data, thereby hindering research in this field. This section also provides a few reasons why job satisfaction is an interesting research topic (for economists as well). In section 4, we present the results. Section 5 concludes.

2. Conceptual issues

There are a number of psychological theories that attempt to explain the determinants of SWB. One possible categorization distinguishes between two types of frameworks: bottom-up theories and top-down theories. *Bottom-up theories* analyze the effects that external events, situations, and demographics have on SWB. In essence, this model assumes that there are basic and universal human needs, and that if an individual's needs are fulfilled in the current situation, then he or she will be happy (see, Diener et al., 1999, p. 278). This framework therefore postulates that happiness is simply the sum of many small pleasures, and that a person will judge his or her life as happy if the pleasures outweigh the pains. In other words, it proceeds from the premises of a "naturalistic" approach, which assumes that SWB is something like the sum of positive and negative affects, which the more or less "livable" circumstances of living in an environment induce among its inhabitants (see, Walter-Busch, 2000 and Veenhoven, 1996). *Top-down theories*, on the other hand, assume that there is "a global propensity to experience things in a positive way, and this propensity influences the momentary interactions an individual has with the world" (Diener, 1984, p. 565). In this latter approach, an individual's personality plays a central role.[4]

As in a number of studies that analyze the determinants of job satisfaction, we adapt a bottom-up approach. The type of data plays an important role in our choice of model. The ISSP data set does not, for example, contain data on personality characteristics, making the implementation of a top-down approach impossible. There is, however, a second reason for implementing a bottom-up approach. Our aim is to analyze the determinants of job satisfaction in several countries. Knowing how situational factors such as working time, education, or job security influence job satisfaction in different countries is, from an economist's or manager's point of view, interesting, since these are often endogenous variables that can be (wholly or partially) driven by public or corporate policies. For example, that long working hours are a significant "pain" (i.e., reduce job satisfaction), could be an argument for reducing working time. Although in most job satisfaction studies conducted by economists there is no explicit reference to a theoretical framework (i.e., the empirical specification is done in an ad hoc manner), such studies do, de facto, implement a bottom-up approach.

The bottom-up approach used in this study is described in Hulin et al. (1985) and implemented by, among others, Judge and Watanabe (1993). In essence, this framework postulates that job satisfaction depends on the balance between work-role inputs (such as education, working time, effort) and work-role outputs (such as wages, fringe benefits, status, working conditions, intrinsic aspects). Thus, if work-role outputs ("pleasures") increase relative to work-role inputs ("pains"), then job satisfaction will increase.[5,6]

We distinguish five variables that capture the *work-role inputs*: years of schooling, usual working time per week, working in an exhausting job, working in a physically demanding job, working in a dangerous job. An increase in one of these inputs should, *ceteris paribus*, decrease job satisfaction.[7] Nine variables characterize the *work-role outputs*: work compensation, job security, advancement opportunities, interesting job, independent work, helping people, usefulness to society, good relationship with management, good relationship with colleagues. An increase in one of these outputs should, *ceteris paribus*, increase job satisfaction. The work-role outputs and inputs are depicted in Table 1.

Table 1
Work-role inputs and outputs

work-role inputs	work-role outputs
education	high income[a]
working time	job security[a]
exhausting job[a]	advancement opportunities[a]
physically demanding[a]	interesting job[a]
dangerous job[a]	work independently[a]
	help people[a]
	useful to society[a]
	relationship with management[a]
	relationship with colleagues[a]

[a] self-perceived values

An important point to take note of is that most of these variables are *self-perceived*. The only exceptions are the working time and education variables. Thus, the high-income variable, for example, measures whether or not the respondent considers his or her job to be well paid. Such data are interesting since it is primarily self-perceptions that determine satisfaction. In fact, such self-perceived variables on income, job security, effort, and so forth are more appropriate than more objective measures (such as actual income) when trying to establish the determinants of job satisfaction. To a certain extent, these self-perceived measures are also compatible with the relativistic models encountered in psychology. Easterlin (1974), for example, states that differences in absolute income between nations do not necessarily lead to differences in SWB between nations. Instead, he argues that individuals compare their incomes to those around them and that their happiness is based on this comparison (see also Diener et al., 1995; Clark and Oswald, 1996). An individual's judgment whether his income is high or not is, most probably, based on such a comparison. The same reasoning applies to the other self-perceived variables used in this study. Thus, the existence of such self-perceived variables is another reason why the ISSP data set is interesting to analyze.

We use this framework in order to identify the reasons for differing levels of job satisfaction among countries. One would expect that countries with a relatively high level of job satisfaction should also have lower levels of work-role inputs and/or higher levels of work-role outputs.

3. Some comments on the data

Perhaps the main reason that job satisfaction has received little attention in economics is that economists tend to avoid data on subjective feelings and generally question their usefulness. Clark (1997) and Oswald (1997), however, state a few good reasons why this should not be the case. The two most important reasons are that, first, SWB measures correlate with observable phenomena such as quit rates (see Clark et al., 1997) or suicides (i.e., reported job-satisfaction values are not just "noise"), and, second, psychologists have

been using such data for many years.[8] There are also other reasons why job satisfaction (and thus data on SWB) should be analyzed.

In management, it is argued that satisfied workers should have higher performance. Although a direct link with organizational performance, and thus economic performance, has yet to be established,[9] an indirect link can be ascertained. It has been shown that low satisfaction leads to higher absenteeism (Vroom, 1964) and labor turnover rates (further examples of how SWB measures correlate with observable phenomena). These are two factors that represent considerable expenses to organizations and, consequently, to society. Lawler and Porter (1967), by reversing the causality, did find that high organizational performance is related to high satisfaction. They argue that it is high performance and the results of high performance such as prestige, bonuses, and good evaluations that cause high satisfaction levels.

Another good reason for studying employee satisfaction lies in the change occurring in the structure of industry. In most developed countries, there has been a strong shift from manufacturing to service industries, and there is a related increase in professional and knowledge workers. It has been found that in service industries a direct and positive relationship between employee satisfaction and customer satisfaction exists (see, Rogers et al., 1994; Fosam et al., 1998).[10]

Furthermore, performance of professional and knowledge workers is often difficult to measure and therefore indirect measures, such as employee satisfaction, take on a new and greater importance. A clear understanding of employee satisfaction is therefore a prime requisite in industry and society.

Finally, it should also be noted that job satisfaction is one of the three most important predictors of overall well-being (see Argyle, 1989; Judge and Watanabe, 1993).

Thus, there are a number of good reasons for wanting to analyze job satisfaction and data related to job satisfaction. At this stage, however, it must be mentioned that data on self-perceived job satisfaction do have some problematic characteristics. SWB scores depend on the type of scale used, the ordering of the items, the time-frame of the questions, the current mood at the time of measurement, and other situational factors (see Diener et al., 1999; Diener, 1984; Schwarz and Strack, 1991; Walter-Busch, 1977). A further problem with the ISSP data set is that it only has a single item on job satisfaction, and, therefore, the variance due to the specific wording of the item cannot be averaged out. A single item also hinders the evaluation of internal consistency. Furthermore, our analysis is based on a cross-sectional analysis and it is therefore not possible to test the causality of certain variables. Do satisfied workers, for example, consider their jobs interesting or do interesting jobs increase job satisfaction? The job-satisfaction literature is plagued with such causality problems (see, Diener et al., 1999), and our paper is no exception. Perhaps contrary to other job satisfaction studies conducted by economists, we do attempt to use a conceptual framework that explicitly postulates the direction of causality.

One central aim of this paper is to see whether different levels of job satisfaction among countries can be explained. Although such cross-national studies are valuable and interesting,[11] they do introduce a number of additional problems (see Sousa-Poza, 1999). Perhaps the most serious problem in this context is culturally-motivated biased perceptions (see, for example, Hogan and Tartaglini, 1994). If the questionnaire or the topic being studied is "ethnically biased," then errors in perception will occur. Similar sounding terms in different

languages such as "individualism" and *"individualismo"*, are based on different perceptions (Smith et al., 1995). For example, in collectivist countries such as Spain, individualism is a prized part of the self-concept. The Anglo-Saxon definition of the word however, does not apply. Pike (1967) calls the use of terms adapted from linguistics, that are "conceptualized and validated in one culture and then applied elsewhere without consideration of its local validity," an imposed etic.[12] In other words, an interpretation of a word that does not apply to all cultural regions is imposed on regions where the word has a different meaning (or does not exist).

Thus, there are a number of data and methodological problems in a cross-national analysis on a subjective topic such as job satisfaction. Yet the aim of the above paragraphs was, by no means, to disqualify our subsequent empirical analysis. In fact, most job-satisfaction studies are based on such data. However, and as will be seen below, our bottom-up approach cannot explain everything, and one must therefore be aware that certain methodological and data problems inevitably exist.

We analyze the data set on Work Orientations from the 1997 International Social Survey Program (ISSP). The ISSP is a continuing annual program of cross-national collaboration which started with the first survey in 1985. The data for the ISSP are collected by independent institutions in several countries. The topics change from year to year by agreement with a view to replication approximately every five years. The ISSP's official data archive is the Zentralarchiv at the University of Cologne, Germany. The topic of the 1989 and the 1997 surveys is "Work Orientations," and covers issues on general attitudes toward work and leisure, work organization, work content, collective interests, and aspects on second jobs. Furthermore, the ISSP data set contains several socio-demographic variables. We analyze a sample of 15,324 full and part-time workers.

4. Results

4.1. A general overview

In Table 2, the levels of job satisfaction in the twenty-one countries considered in this study are shown. The wording of the job satisfaction question is: *"How satisfied are you in your main job?"*. Respondents were then allowed to classify their satisfaction level on a seven-point scale (ranging from "completely satisfied" to "completely dissatisfied"). Fig. 1 depicts a ranking of the levels of reported job satisfaction in these countries (based on the mean of the original seven-point scale).[14] Some interesting results are: (i) Workers in Denmark reported the highest level of job satisfaction and workers in Hungary the lowest level. (ii) The United States ranks seventh, Germany thirteenth, and Great Britain fifteenth. (iii) All of the five Eastern European countries considered here (Hungary, Russia, Slovenia, Bulgaria, Czech Republic) are among the lowest eight. (iv) An interesting result is that the Japanese reported the third lowest level of job satisfaction. One would expect that in a country with an economic model that propagates life-time employment, high skills development, good public services, "stakeholder" management principles, long-term strategies, and so forth that job satisfaction should, in an international comparison, be quite high.[15] (v) Countries with the same language, or belonging to the same family of languages (for

Table 2
Levels of job satisfaction

	Completely satisfied	Very satisfied	Fairly satisfied	Neither nor	Fairly dissatisfied	Very dissatisfied	Completely dissatisfied	No. obs.
Anglo-Saxon countries								
United States (USA)	15.9%	32.5%	35.0%	7.3%	6.4%	1.8%	1.1%	834
Great Britain (GB)	13.0%	22.6%	43.3%	10.3%	8.1%	1.8%	1.1%	571
New Zealand (NZ)	11.8%	29.4%	42.6%	9.1%	5.2%	0.9%	0.9%	745
Western European Countries								
Denmark (DK)	24.7%	36.9%	26.3%	7.7%	3.6%	0.9%	0.0%	700
France (F)	11.4%	22.3%	42.2%	14.1%	7.7%	2.0%	0.4%	704
Germany (D)	7.9%	28.6%	43.3%	14.5%	4.3%	1.0%	0.5%	1017
Italy (I)	15.5%	19.9%	43.4%	13.1%	5.0%	2.5%	0.8%	482
Netherlands (NL)	10.5%	37.6%	41.8%	6.1%	2.8%	0.8%	0.4%	1175
Norway (N)	10.1%	26.6%	45.4%	12.3%	4.6%	0.8%	0.2%	1639
Portugal (P)	17.7%	21.2%	32.5%	21.8%	3.7%	1.7%	1.4%	888
Spain (E)	13.8%	36.0%	33.7%	11.3%	3.7%	1.0%	0.5%	406
Sweden (S)	9.9%	30.4%	42.1%	11.7%	4.2%	1.3%	0.2%	826
Switzerland (CH)	11.7%	40.3%	37.1%	7.2%	2.4%	0.6%	0.6%	1780
Eastern European Countries								
Hungary (H)	9.1%	14.1%	39.0%	29.6%	5.0%	1.8%	1.4%	625
Czech Republic (CZ)	15.4%	13.0%	50.5%	14.3%	4.7%	1.1%	0.9%	552
Slovenia (SL)	11.6%	15.4%	39.7%	26.2%	5.2%	0.9%	0.9%	534
Bulgaria (BU)	10.7%	18.4%	49.3%	13.0%	4.8%	2.5%	1.3%	477
Russia (R)	13.2%	26.7%	19.2%	25.5%	8.0%	3.4%	4.1%	859
Others								
Japan (J)	5.5%	24.7%	41.6%	13.4%	9.7%	4.1%	0.9%	776
Israel (IS)	27.6%	20.8%	32.8%	10.9%	4.9%	1.9%	1.1%	912
Cyprus (CY)	21.6%	38.2%	27.4%	10.3%	2.0%	0.5%	0.0%	602
Total[a]	13.6%	26.5%	38.6%	13.8%	5.1%	1.6%	0.9%	15324

[a] Unweighted.

example, Switzerland and Germany; United States and Great Britain; Spain, Italy, Portugal and France) have quite different rankings, implying that language effects are not the only possible reasons for differing values.

Perhaps the most interesting observation in Table 2 and Fig. 1 is not that differences exist among countries but that, in all countries, the level of satisfaction is remarkably high. Only a small fraction of workers are explicitly dissatisfied (in Switzerland about 4%, in the United States about 10%, and in Russia about 16%). The fact that Hungarian or Russian workers are nearly as satisfied as workers in several advanced Western European countries is an interesting result, and it underscores the relativity of SWB.

In Table 3, the changes in the level of satisfaction for a selection of countries that were included in both the 1989 and in the 1997 ISSP Work Orientations surveys are shown. As in Blanchflower and Oswald (1999), a slight decrease in the level of satisfaction in the United States can be observed.[16] An interesting, and to our knowledge new, result is the fact that job satisfaction appears to have decreased in West Germany in the 1990s. A similar result applies to Norway. The trend in Great Britain is not as clear. On the one hand, there is a slight

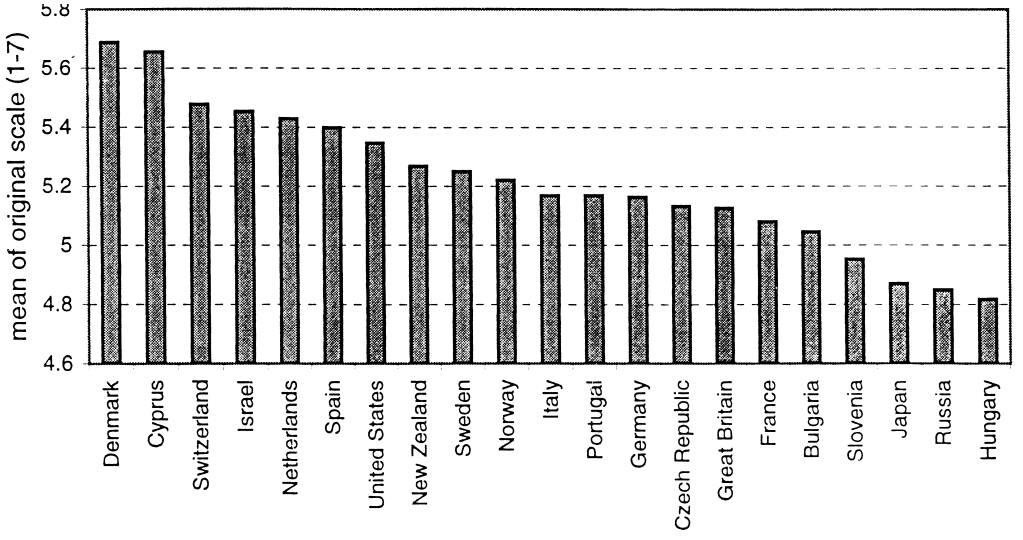

Fig. 1. Levels of job satisfaction

increase in the number of completely satisfied workers. On the other hand, the portion of dissatisfied workers appears to have increased. The only country in which there seems to be a (more or less) consistent increase in the number of satisfied workers is Holland. It is difficult, however, to judge whether these changes are significant and to what extent they are the product of changing attitudes or survey-related aspects. Furthermore, one can only speculate on the causes of changes in job satisfaction.[17]

In order to attempt an explanation for the differing levels of job satisfaction in the twenty countries considered here,[18] we have depicted in Table 4 each country's "endowment" with work-role inputs and work-role outputs. There are some interesting differences in the self-perceived values among countries. For example: (i) the portion of workers in Russia that consider their jobs well paid is higher than in several Western European countries (including Great Britain and Switzerland). This result underscores the assumption we made above that

Table 3
Changes in the levels of job satisfaction: 1989 vs. 1997

	Completely satisfied	Very satisfied	Fairly satisfied	Neither nor	Fairly dissatisfied	Very dissatisfied	Completely dissatisfied
United States	0.98	0.96	0.95	1.22	1.23	1.38	1.83
Great Britain	1.09	0.82	0.99	1.26	1.35	1.06	1.57
Germany (West)	0.81	0.92	1.04	1.21	1.18	1.33	2.00
Italy	0.94	1.14	0.93	1.36	0.81	1.67	0.42
Netherlands	1.03	1.26	0.93	0.58	0.80	0.89	1.33
Norway	0.73	0.93	1.08	1.03	2.09	1.14	0.29
Hungary	1.44	1.96	0.62	1.66	1.25	2.57	2.00
Israel	1.67	1.20	0.70	1.14	0.79	1.27	0.58

Note: values correspond to the quotient of the corresponding percentages for 1997 and 1989. A value of less than one thus implies that the corresponding item has declined.

Table 4
Work-role inputs and work-role outputs by country

	Work-role inputs					Work-role outputs								
	Schooling in years	Work time (hours per week)	Exhaust-ing job (%)	Physically demand-ing (%)	Dangerous Job (%)	Income is high (%)	Job is secure (%)	Offers good advance-ment opportun-ities (%)	Interesting job (%)	Can work independ-ently (%)	Can help other people (%)	Job is useful to society (%)	Good relations with manage-ment (%)	Good relations with colleagues (%)
DK	12	36	33	22	11	43	78	23	87	95	80	80	70	86
CY	12	39	61	22	17	43	56	30	69	55	65	70	77	84
CH	12	40	37	17	6	21	61	22	89	86	65	69	77	86
IS	13	40	50	27	18	31	68	32	66	68	75	74	76	86
NL	14	31	16	15	6	24	65	24	75	85	64	61	66	83
E	12	39	36	24	15	17	59	16	64	59	62	73	66	80
USA	14	41	41	21	12	24	68	30	73	79	79	70	68	79
S	12	38	38	25	9	17	55	21	76	83	64	65	63	86
N	13[a]	37	41	23	12	18	70	14	74	85	70	70	63	86
I	12	41	48	24	13	24	61	23	73	58	58	58	56	75
P	8	42	48	25	21	15	62	27	81	72	85	88	67	75
D	11	40	46	20	11	23	58	16	82	85	50	62	77	87
CZ	13	45	33	21	21	11	56	10	65	72	69	80	58	77
GB	12	39	42	21	11	17	53	19	70	78	68	55	66	87
F	14	39	47	19	7	14	46	13	74	46	65	65	53	76
BU	12	40	65	27	26	9	40	17	61	52	64	87	61	69
SL	12	42	47	18	20	32	67	27	75	77	78	77	47	74
J	13	43	29	17	11	23	66	10	57	39	48	59	61	74
R	12	39	40	24	17	21	53	12	49	50	53	72	46	74
H	12	49	52	31	25	9	48	14	65	74	74	79	58	76

[a] Approximated.

Table 5
Cross-national ranking of work-role inputs and work-role outputs

	Work-role inputs		Work-role outputs	
	Score	Predicted rank	Score	Predicted rank
DK	3.23	4	8.44	1
CY	3.96	17	7.54	3
CH	3.02	2	7.40	5
IS	4.08	18	7.75	2
NL	2.59	1	7.14	8
E	3.56	10	6.33	14
USA	3.61	11	7.54	4
S	3.37	5	6.78	11
N	3.52	9	6.91	9
I	3.71	13	6.42	13
P	3.78	14	7.39	6
D	3.38	6	6.89	10
CZ	3.84	16	6.13	16
GB	3.40	7	6.56	12
F	3.40	8	5.70	18
BU	4.54	19	5.81	17
SL	3.79	15	7.35	7
J	3.22	3	5.62	19
R	3.70	12	5.51	20
H	4.62	20	6.17	15

self-perceived values are based on comparisons within one's own environment, not between countries. (ii) Russians have the worst relationship with their bosses. (iii) Self-perceived job security is highest among Danish workers and lowest among Bulgarian workers. (iv) Self-perceived advancement opportunities are the lowest in Japan. (v) More than 50% of the Russian labor force does not consider its job interesting.

In Table 5, a ranking of the inputs and outputs is shown. The ranking was done in a simple manner. A score was calculated for each country as follows:

$$\sum_{i} \frac{X_i}{\mathrm{Max}(X_i^j)}$$

where X_i is the country's ith endowment, and (X_i^j) is the maximum endowment value taken over all countries. In Table 6, we classify the twenty countries into one of eight segments, depending on (i) the output score ranking, (ii) the input score ranking, and (iii) the job satisfaction ranking. "High" and "low" values were attributed to each country depending on whether the country was ranked in the top or bottom ten, respectively.

It can be assumed that, if our conceptual model is valid, then countries with a relatively high level of satisfaction should also possess a high rank with regard to the job-role inputs (i.e., a low score) and/or a high rank with regard to the job-role outputs (i.e., a high score). This is the case for Denmark, Switzerland, the Netherlands, and Norway. Explaining the low levels of job satisfaction in the Czech Republic, Bulgaria, Russia, and Hungary can also be done with this ranking; all these countries have relatively high endowments of inputs and low endowments of outputs. This result is not surprising.

Table 6
Classification of countries by inputs and outputs

			Output	
			Low	High
Input	Low	High satisfaction	E, S	DK, CH, NL, N
		Low satisfaction	GB, F, J	D
	High	High satisfaction	I	CY, IS, USA
		Low satisfaction	CZ, BU, R, H	P, SL

Note: ''high satisfaction'' implies that the country ranks in the top ten with regard to job satisfaction. The shaded areas are not compatible with the bottom-up approach taken in this study.

For some countries, it is difficult to apply this approach because it would require an exact comparison of the inputs with the outputs, which is not possible. In Cyprus, Israel, and the United States, both inputs and outputs are relatively high. It could be argued that in these countries a "give a lot, get a lot (and be satisfied)" mentality is being observed. In the United States workers generally consider their jobs to be secure, have good advancement opportunities, and provide high income.[19] Portugal and Slovenia also have a high output/high input combination, yet they are countries with a relatively low satisfaction level. Spain and Sweden, on the other hand, have low levels of inputs and also relatively low levels of outputs, yet rank high in the satisfaction scale.[20] Great Britain, France and Japan have the same endowment structure as Spain and Sweden, yet they are classified in the lower half of the satisfaction scale.[21] An interesting result is the relatively low ranking of Japan's work-role outputs: Japanese workers have comparably low levels of (self-perceived) advancement opportunities, interesting jobs, independent work, and jobs contributing to a society's well-fare. Then there are two countries that do not fit into this conceptual framework very well. According to this framework, German workers should have every reason to be more satisfied than workers in other countries. They have relative low inputs and above average outputs. Yet, they appear in the bottom half of the satisfaction ranking.[22] Italy has a high input and a low output and yet they have a job-satisfaction rank in the top ten. Finally, we also note that countries with relatively high work-role outputs (irrespective of work-role inputs) have a high satisfaction ranking. In fact, this applies to seven of the top-ten ranked countries. Thus, one could argue that it is primarily work-role outputs that influence job satisfaction.[23]

In general, the results in Table 6 are quite encouraging: in eight cases, the results are completely compatible with the conceptual bottom-up framework used here, in ten cases, the results do not conflict with the model, and in only two cases are the results conflicting. If one furthermore notes that both Italy and Germany are borderline cases in the job satisfaction classification (Italy is ranked tenth and Germany twelfth), then even this conflict does not appear to be very severe.

4.2. A regression analysis

In Table 7, the results of an ordered probit model are presented. The dependent variable has been reclassified so that it only has three possible values that measure job satisfaction.

Table 7
Determinants of job satisfaction—ordered probit

	All		Males		Females	
	Coef.	ME[b]	Coef.	ME[b]	Coef.	ME[b]
Male	−0.028	−0.006				
Work-role inputs						
Schooling in years	−0.017**	−0.004	−0.015**	−0.003	−0.017**	−0.004
Work time	−0.001	−0.000	0.003	0.000	−0.005**	−0.001
Exhausting job[a]	−0.258**	−0.059	−0.254**	−0.058	−0.262**	−0.059
Physically demanding[a]	−0.066**	−0.015	−0.081*	−0.018	−0.032	−0.007
Dangerous job[a]	−0.819*	−0.019	−0.068	−0.016	−0.117	−0.026
Work-role outputs						
Income is high[a]	0.294**	0.067	0.325**	0.074	0.237**	0.053
Job is secure[a]	0.173**	0.039	0.216**	0.049	0.123**	0.028
Good advancement opportunities[a]	0.203**	0.046	0.203**	0.046	0.214**	0.048
Interesting job[a]	0.830**	0.189	0.828**	0.188	0.843**	0.189
Can work independently[a]	0.274**	0.062	0.243**	0.055	0.296**	0.066
Can help other people[a]	0.082**	0.019	0.091*	0.021	0.069	0.015
Job is useful to society[a]	0.098**	0.022	0.118**	0.027	0.068	0.015
Good relations with management[a]	0.623**	0.141	0.564**	0.128	0.685**	0.154
Good relations with colleagues[a]	0.204**	0.046	0.153**	0.035	0.273**	0.061
Number of observations	15112		8127		6985	
Log likelihood	−7642		−4108		−3504	
Pseudo R^2	0.202[c]		0.204[c]		0.208[c]	

Note: the dependent variable can have three possible values: 0—dissatisfied, 1—neither nor, 2—satisfied. The regressions included 19 country dummy variables. For the sake of clarity, these coefficients have not been reported here.

[a] Dummy variables.

[b] ME = marginal effect calculated at score equal to 2.

[c] The pseudo R^2 measure is that of McFadden (1973).

*/** Significant at the 5%/1% level, respectively.

There are two reasons for doing this: first, there is little variation and, in most cases, there are only few observations in the low satisfaction scales. A second reason is that we assume that there is quite a bit of "noise" in such a detailed scale.[24] The goodness-of-fit is not poor (pseudo R^2 equal to 0.20), yet a substantial degree of variation remains unexplained. This is a standard result for bottom-up approaches and indicates that job satisfaction does depend on other (possibly top-down) factors (see also Diener et al., 1999). Furthermore, the largest portion of the variation is explained by the variables "interesting job" and "good relations with management." The signs of the work-role input and work-role output coefficients are as expected.[25] The working-time variable is, however, only significantly negative for the female sample. In general, the estimated coefficients for the male and female samples are quite similar. Only the work-role input "physically demanding," and the two work-role outputs "can help other people" and "job is useful to society" differ.

In general, one can say that the determinants of job satisfaction do not differ substantially between genders. In Table 8, we rank the determinants of job satisfaction according to their marginal effects.[26]

Having an interesting job and having good relations with one's boss have the largest effect

Table 8
Ranking of determinants

	All		Males		Females	
	ME	Rank	ME	Rank	ME	Rank
Interesting job	0.189	1	0.188	1	0.189	1
Good relations with management	0.141	2	0.128	2	0.154	2
Income is high	0.067	3	0.074	3	0.053	5
Can work independently	0.062	4	0.055	4	0.066	3
Good advancement opportunities	0.046	5	0.046	6	0.048	6
Good relations with colleagues	0.046	6	0.035	7	0.061	4
Job is secure	0.039	7	0.049	5	0.028	7
Job is useful to society	0.022	8	0.027	8	0.015*	8
Can help other people	0.019	9	0.021	9	0.015*	9
Work time	−0.000*	10	0.000*	10	−0.001	10
Schooling in years	−0.004	11	−0.003	11	−0.004	11
Physically demanding	−0.015	12	−0.018	13	−0.007*	12
Dangerous job	−0.019	13	−0.016*	12	−0.026*	13
Exhausting job	−0.059	14	−0.058	14	−0.059	14

Note: ME = marginal effects.
* Not significant.

on job satisfaction. These two determinants have the same ranking in both the male and female samples. Women, however, do appear to value good relations with management more than men. Third in the male's ranking is perceived income, that is, whether the respondent considers his income to be high or not. High income ranks fifth in the female sample. This is not an uncommon result in the psychology and management literature, which postulates that women value "soft" aspects of a job (such as good relationships), whereas men value "hard" aspects (such as pay and job security). An interesting observation is that being able to work independently has quite a high ranking in both the male and the female samples. A further interesting (and to our knowledge previously unobserved) result is that good relations with management has a substantially larger effect than good relations with colleagues. Altruistic characteristics of a job (i.e., helping other people and being useful to society) have a much lower effect on job satisfaction than more individualistic interests such as income and job security.

Having an exhausting job has the largest negative effect on job satisfaction. This result shows that effort is an important work-role input. The other work-role inputs only have minimal effects on job satisfaction. The robustness of these estimates is discussed in the appendix.

In Table 9, the marginal effects for each country are shown. These marginal effects are based on standard probit regressions for each country. The fact that, in several countries, a number of coefficients are insignificant is a disquieting result. This could imply that our bottom-up model does not perform very well at the country level. More likely, however, this is a result of the relatively small sample size in a number of countries. Despite this shortcoming, there are a few interesting results[27]:

- The two work-role outputs "interesting job" and "good relations with management" are statistically significant (at the 10% level) across all countries.[28] Furthermore, the marginal effects for these two variables are quite high in all the countries considered here.

Table 9
Marginal effects by country

	USA	GB	DK	F	D	I	NL	N
Male	−0.05	−0.07	0.00	0.00	0.00	0.00	0.00	0.00
Work-role inputs								
Schooling in years	−0.01	0.00	0.00	0.00	0.00	0.00	−0.01	0.00
Work time	0.00	0.00	0.00	0.00	−0.01	0.00	0.00	0.00
Exhausting job[a]	−0.05	0.00	−0.07	−0.08	0.00	0.00	−0.05	−0.09
Physically demanding[a]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dangerous job[a]	0.00	−0.13	0.00	0.00	0.00	0.00	0.00	−0.05
Work-role outputs								
Income is high[a]	0.00	0.00	0.00	0.11	0.10	0.00	0.00	0.00
Job is secure[a]	0.07	0.00	0.05	0.08	0.00	0.07	0.00	0.04
Good advancement opportunities[a]	0.00	0.00	0.00	0.00	0.09	0.12	0.00	0.00
Interesting job[a]	0.12	0.21	0.13	0.22	0.24	0.27	0.08	0.18
Can work independently[a]	0.07	0.15	0.00	0.07	0.11	0.07	0.05	0.05
Can help other people[a]	0.00	0.00	0.04	0.00	0.06	0.00	0.04	0.03
Job is useful to society[a]	0.00	0.00	0.04	0.00	0.06	0.00	0.04	0.03
Good relations with management[a]	0.11	0.20	0.08	0.16	0.18	0.11	0.07	0.16
Good relations with colleagues[a]	0.00	0.00	0.06	0.13	0.00	0.07	0.06	0.09
Number of observations	798	531	628	659	977	469	1152	1554
Pseudo R^2	0.203	0.286	0.309	0.280	0.266	0.242	0.342	0.292

Note: a value equal to zero implies that the coefficient is not significant at the 10% level.

- A number of studies for Great Britain and the United States show that women are more satisfied than men (see, for example, Blanchflower and Oswald, 1999; Brown and McIntosh, 1998; Clark, 1997, 1996). Since labor-market conditions are, in general, less favorable for women than for men, this is a paradoxical result. The results in Table 11 reveal that this paradox cannot be generalized.[29]
- Surprisingly, work-role inputs differ substantially from country to country. Furthermore, in most countries, a number of the work-role inputs are insignificant. In fact, some countries (such as Bulgaria) do not have any work-role inputs. This, once again, is most probably due to the small sample sizes.
- The effect of having a (self-perceived) well-paying job on job satisfaction is insignificant in, among others, the United States and Great Britain.[30] A result that does catch our attention is that in four of the five Eastern European countries considered here, the importance of a high income as a determinant of job satisfaction is quite high. In Russia, for example, high income is as important as having an interesting job.

5. Summary and conclusions

The aim of this paper was to analyze the levels and determinants of job satisfaction in a cross-national setting. We analyzed the latest available data set on Work Orientations from the 1997 International Social Survey Program (ISSP). This data set has a number of interesting properties: (i) it covers twenty-one countries, (ii) besides containing data for several Western European countries and the United States, this data set also has data for a

few other countries that have received comparably little attention in the analysis of job satisfaction (especially, Eastern European countries and Japan), (iii) the data set contains several variables on self-perceived work conditions.

With regard to the level of satisfaction, we showed that, in all the countries considered here, the level of job satisfaction is remarkably high. This result also applies to countries such as Russia and Hungary. We ranked the countries according to their satisfaction levels. Denmark is the country with the highest job-satisfaction level. Switzerland is ranked third, the United States seventh, Great Britain fifteenth, Japan nineteenth, and Russia twentieth. A comparison with 1997 data from eight countries with data from the same countries from the 1989 ISSP data set showed that in the United States, Germany, and Norway, job-satisfaction levels have declined in the 1990s. Only in the Netherlands does job satisfaction appear to have increased slightly.

With the aid of a bottom-up psychological model that compares five work-role inputs (for example, schooling, work time, and effort) with nine work-role outputs (for example, income, and job security), we tried to explain why job-satisfaction levels differ in the countries considered here. We showed that the relatively low satisfaction ranking encoun-

especially the case for Japan, which ranks second last with regard to their work-role outputs. Furthermore, countries with high work-role outputs (irrespective of work-role inputs) also generally have a high job-satisfaction ranking.

Our multivariate regression analysis confirmed that our work-role inputs and outputs have, in general, a significant influence on job satisfaction. A ranking of the marginal effects of the work-role inputs and outputs revealed that having an interesting job and good relations with management are the most important determinants of job satisfaction (based on the variables considered here). High income and being able to work independently are also important determinants. Having an exhausting job is the most important work-role input. In general, the determinants of job satisfaction do not differ much between genders. We also estimated standard probit models for each individual country in order to investigate possible differences in importance that specific countries attribute to certain work-role inputs and outputs. One interesting result is that, for workers in the Eastern European countries, having a well-paying job is an important determinant of job satisfaction.

Our main contribution in this paper was to show that job-satisfaction levels differ across countries and that these differences can be partially attributed to differences in work-role inputs and outputs. Furthermore, we showed that there are some determinants of job satisfaction that apply to all countries (namely, having an interesting job and good relations with management) and others that are country specific (such as pay and job security). These results are not only interesting from an economic and from a sociological perspective, they also supplement the management literature in this field. With the increased importance of multinational companies, knowing how employees' job satisfaction can be influenced in different cultures is a central research objective in the international management literature.

Notes

1. Older studies which need to be mentioned are Easterlin (1974), Hamermesh (1977) and Freeman (1978).
2. The first ISSP Work Orientations survey was conducted in 1989. In a recent paper, Blanchflower and Oswald (1999) also analyze job satisfaction with this data set.
3. At the time of writing only 21 of the 25 countries included in 1997 ISSP survey were available.
4. There are also other theoretical frameworks such as discrepancy theories, goals, adoption, and coping. See Diener et al. (1999).
5. This framework is similar to Herzberg's Two-Factor Theory (Herzberg et al., 1959). He postulates that there are two sets of variables that influence employee satisfaction. Pain avoidance factors (hygienic: pay, safety, technical administration, etc.) that can cause dissatisfaction but do not contribute to satisfaction and psychological needs factors (esthetic: value of work, perceived importance of work, social aspects of work, etc.) that increase satisfaction but do not cause dissatisfaction if they are not present.
6. Hulin et al. (1985) also argue that the utility of direct and opportunity costs (for example, available alternatives) and also the frames of reference for evaluating job outcomes (for example, past experience) influence job satisfaction. For the sake of simplicity, we have excluded variables that capture these aspects.

7. The effect that the level of education has on job satisfaction has not always enjoyed a straight-forward interpretation among economists. Clark and Oswald (1996) view the negative effect of the level of education as a kind of curse of high aspirations; schooling raises the expectations of what someone thinks they should receive. A similar argument was proposed by Tsang et al. (1991). Treating education as a contribution (i.e., input) can be interpreted in a similar way.
8. Quoting Blanchflower and Oswald: "[. . .] it seems difficult to believe that economists have a more acute understanding of the limitations of well-being statistics than do the thousands of psychologists who use such data in their own research" (Blanchflower and Oswald, 1999, p. 1).
9. And which has been questioned by many researchers (see, for example, Bayfield and Crockett, 1955; French, 1984; Robbins et al., 1986).
10. Quoting Fosam et al.: "The measurement of employee satisfaction as well as customer satisfaction is now central to most quality oriented companies' strategies. This is particularly relevant where employees have direct contact with customers, as 'organizations with satisfied employees have satisfied customers'" (Fosam et al., 1998, p. 236).
11. Quoting Kohn: "[. . .] cross-national research is valuable, even indispensable, for establishing the generality of findings and the validity of interpretations derived from single-nation studies. In no other way can we be certain that what we believe to be social structural regularities are not mere particularities, the product of some limited set of historical or cultural or political circumstances. I also argue that cross-national research is equally valuable, perhaps even more valuable, for forcing us to revise our interpretations to take account of cross-national differences and inconsistencies that could never be uncovered in single-nation research" (Kohn, 1989, p. 77).
12. An etic effect is defined as an effect that transcends cultures, in contrast to an emic effect, that is particular to a specific culture (Segall et al., 1990).
13. Official documentation on the 1997 ISSP is not yet available. The survey is, however, in essence (and with the main exception being the number of countries analyzed), identical to the 1989 ISSP survey (see, Beckmann, 1991). The 1997 survey questionnaire is available from the Zentralarchiv at the University of Cologne, Germany.
14. The ranking does change slightly if, instead of a seven-point scale, a two or three-point scale is used (i.e., when a few scales are aggregated together).
15. Although this view of Japan may be outdated. Only about a quarter of full-time male employees still enjoy the life-time employment benefit, and about twenty percentage of the workforce has a part-time employment (see, Babcock, 1996, p. 371).
16. Blanchflower and Oswald (1999) use longitudinal data from the US General Social Survey. They show that job satisfaction is slowly trending down over time among those over 30. They also show that this decline is not caused by the slowly declining job security in the United States. In Blanchflower and Oswald (1997), it is shown that life satisfaction is actually increasing among young men and women.
17. The dynamics of job satisfaction are, needless to say, quite complex. The effect that a certain event (for example, German reunification, or transition of the Eastern European countries) or measure (for example, increase in wages, or reduction of working time) has on job satisfaction is difficult to determine. Even if panel data were

available, isolating the effect of an event or a measure could be quite problematic. Furthermore, the time between when an initial change took place and the posteffect stable level of satisfaction will vary greatly between individuals and across measures.

18. Because of missing variables, we have excluded New Zealand in the subsequent analysis.
19. Thus, despite the fact that job security appears to be declining in the United States (see, Blanchflower and Oswald, 1999), most American workers still (and in comparison to workers in other countries) perceive their job to be quite secure.
20. They thus reflect hedonistic traits.
21. The oxymoron "unsatisfied hedonists" would characterize such a situation.
22. Perhaps there is a grain of truth in the popular notion that Germans consider work more a duty than a pleasure (". . . they live to work, and not work to live").
23. One could also argue that we have not been able to capture the most important work-role inputs.

Appendix

Diagnostics of the standard probit

In order to test the robustness of the estimated coefficients we recoded the dependent variable so that it only has two possible values: '0′ for dissatisfied and "neither-nor" workers, and '1′ for satisfied workers. There are, once again, two reasons for this. First, there is the "noise" argument mentioned above. A second reason is that the coefficients estimated with an ordered probit model are inconsistent if the underlying normality and homoskedasticity assumptions are violated. By estimating a standard probit model, these assumptions can be tested. The results for the standard probit model are presented in Table A1. Using score tests described in Pagan and Vella (1989), it can be seen that the homoskedasticity assumption clearly does not hold (see Table A2). Heteroskedasticity appears through the variables "Switzerland", "Norway", "Slovenia", "Russia", "working time", "exhausting job," and

TABLE A1
Determinants of job satisfaction—standard probit

	Standard		With mult. hetero.[d]	
	Coef.	ME[b]	Coef.	ME[b]
Male	−0.044	−0.010	−0.055	−0.010
Work-role inputs				
Schooling in years	−0.012**	−0.003	−0.015**	−0.003
Work time	−0.001	−0.000	0.000	−0.001
Exhausting job[a]	−0.252**	−0.057	−0.302**	−0.056
Physically demanding[a]	−0.072*	−0.016	−0.060	−0.021
Dangerous job[a]	−0.070	−0.016	−0.090	−0.017
Work-role outputs				
Income is high[a]	0.308**	0.069	0.376**	0.069
Job is secure[a]	0.187**	0.042	0.221**	0.041
Good advancement opportunities[a]	0.195**	0.044	0.251**	0.046
Interesting job[a]	0.882**	0.197	1.135**	0.183
Can work independently[a]	0.303**	0.068	0.356**	0.066
Can help other people[a]	0.086**	0.019	0.096*	0.018
Job is useful to society[a]	0.121**	0.027	0.146**	0.027
Good relations and management[a]	0.642**	0.144	0.767**	0.141
Good relations with colleagues[a]	0.221**	0.049	0.263**	0.048
Number of observations	15112		8127	
Log likelihood	−5642		−4108	
Pseudo R^2	0.258[c]		0.204[c]	

Note: the dependent variable have two possible values: 0—dissatisfied and neither nor, 1—satisfied. The regressions included 19 country dummy variables. For the sake of clarity, these coefficients have not been reported here.

[a] Dummy variables.

[b] ME = marginal effect.

[c] The pseudo R^2 measure is that of McFadden (1973).

[d] It is assumed that in the model $U_i \sim N(0, (e^{\gamma' G_i}))$ and the variables in G are ''Switzerland'', ''Norway'', ''Slovenia'', ''Russia'', ''working time'', ''exhausting job'', and ''income is high''.

*/** Significant at the 5%/1% level, respectively.

Table A2
Profit diagnostics[a]

variable	t-statistic
Homoscedasticity	
Switzerland	2.314
Germany	1.851
Great Britain	0.749
Hungary	−1.741
Italy	−0.200
Netherlands	1.989
Norway	3.077
Sweden	1.439
Czech Republic	0.539
Slovenia	2.405
Bulgaria	−1.943
Russia	−2.965
Israel	−1.504
Japan	−1.706
Spain	-0.788
France	1.241
Portugal	−1.379
Cyprus	−0.929
Denmark	1.934
Male	−1.233
Schooling in years	0.006
Work time	−2.055
Exhausting job	−2.598
Physically demanding	−1.319
Dangerous job	−1.898
Income is high	−2.354
Job is secure	1.348
Good advancement opportunities	−1.086
Interesting job	−0.656
Can work independently	1.056
Can help other people	0.036
Job is useful society	−0.803
Good relations with management	−0.839
Good relations with colleagues	−0.950
Normality	
Skewness	0.169
Kurtosis	0.041

[a] Conditional moment tests described in Pagan and Vella (1989).

"income is high." The normality assumption, on the other hand, does not pose a problem. In Table A1, we estimate a probit model with multiplicative heteroskedasticity, as described in Greene (1995), pp. 422–425 and Greene (1997), pp. 889–891. This model uses the general formulation analyzed by Harvey (1976) and assumes that

$$U_i \sim N\left(0,(e^{\gamma' G_i})^2\right)$$

where, in our case, the variables included in G are the seven variables mentioned above. As can be seen, the results do not diverge substantially from those of the normal probit model.

Furthermore, the fact that the marginal effects are quite similar to those of the ordered probit model in Table 7 does underscore the robustness of those results.

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