
Is work satisfaction dependent on wage levels? Insights from a cross-country study

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Abstract: Inspired by the debates within happiness research, this paper approaches the question whether the average job satisfaction in a country depends on the financial situation. In a survey among agricultural researchers in Romania, Austria, Germany and Switzerland, we used a simple job satisfaction item, similar to that used in happiness research, and the more complex job description index. The single item did not indicate significant differences between countries. The job descriptive index, however, revealed a lower job satisfaction in Romania if compared with the three western countries. In addition, these differences were explained fully by differences in the perceived financial situation.

Keywords: happiness; work satisfaction; comparative research; Romania; Switzerland; Germany; Austria; job descriptive index; JDI.

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1 Introduction

Over the last decades, social science has intensely been occupied with the relation between wealth and happiness. It is necessary to distinguish between three different levels of this issue: does happiness increase when I am richer than my neighbour, does happiness depend on average wealth of my nation, and does it depend on economic growth?

To start with the latter: While economic welfare rose constantly (or at least incrementally) over the decades, the average level of happiness did not (Marar, 2003; Binswanger, 2006; Drakopoulos, 2008; Easterlin et al., 2010). This 'Easterlin paradox' was particularly disturbing for the theoretical foundations of economics, because a rise in income is usually associated with a rise in utility in a straightforward, almost linear way. On the other hand, my relative financial wellbeing within society has a significant impact on happiness (Easterlin, 1995; Headey and Wooden, 2004).

The role of a nation's financial standard in influencing happiness stands in between. Refined statistical analysis has allowed constructing some empirical relation between a nation's material standard of living and average subjective well-being (Sacks et al., 2012; Veenhoven and Vergunst, 2014). Nevertheless, after some decades of happiness research, the modest contribution of income to happiness is obvious: my nation's living standard has a far weaker effect on my happiness than my relative financial standing if compared with my immediate environment (Easterlin, 1995), and this financial standing, in turn, matters much less than factors related to family life and friends (Kiiski et al., 2013).

If wealth differences between nations somewhat affect well-being, it is fair to ask whether this also applies to work satisfaction. Does work satisfaction in a given country depend on the wage level in this country? To approach this subject, we begin this paper with a review of the link between wages and work satisfaction. We then present an international survey as an appropriate method to test the effect of a nation's wage level on work satisfaction. Finally, we present and discuss the results and draw conclusions.

2 The monetary impact on work satisfaction

Latham and Budworth (2007) see the origin of research on job satisfaction in the 1930s when first surveys on that matter were done. Since that time, an extensive body of evidence has indicated that monetary and non-monetary factors influence work satisfaction. According to this paper's focus, we are going to present some findings about monetary aspects.

Researchers were able to contribute significantly to explaining work satisfaction by using direct financial variables, such as hourly wages (Tellez, 2012) or paid leave time (Kovner et al., 2006) of nurses. Although a few of these variables were shown to have a significant influence on work satisfaction, much evidence shows that a comparative perspective in the close environment has more explanatory power than absolute wage levels. Wage changes, for example, are a better predictor of job quits than wage levels (Clark et al., 1998). The effects are not symmetric. Carol et al. (2010), for example, found that a pay below the average wage of similar positions leads to dissatisfaction, whereas a payment level above average does not bring added satisfaction. On the other hand, high wages in my environment can, under some conditions, also serve as a signal for my future financial prospects (Clark et al., 2009). In any case, it is extremely important for work satisfaction that the wage setting is fair (Olafsen et al., 2015).

This longing for fairness resembles findings in behavioural economics about basic human needs. However, the relevance of relative wage setting confirms the findings from happiness research 'those individuals in fact are happier when they live among the poor' [Firebaugh and Schroeder, (2009), p.805]. We have the desire to stand above our peers, also in terms of wage levels, and suffer considerably if we feel that they stand above us.

Thus, the debate from happiness economics may be transferrable to the topic of wages: within a given country, work satisfaction depends on the distribution of wage levels, but whether wage levels are generally high or low may not affect work satisfaction. This claim certainly deserves an empirical test, taking into account that international differences in job satisfaction are not mainly due to a different portfolio of professions or institutional factors. The few publications on international comparisons of work satisfactions (e.g., Sousa-Poza and Sousa-Poza, 2000; DeWitte and Näswall, 2003; Vila et al., 2007; Millan et al., 2013) have not been concerned with the impact of wage

differentials between countries, so that this paper's approach may be considered as innovative.

3 Method

This study used a survey among agricultural researchers in Romania, Germany, Austria and Switzerland. Based on an internet search and personal contacts among project participants, the link to an online survey was sent to 2,500 employees active in agricultural research (in public sector organisations including classical universities, applied universities and research stations) in these four countries (Romanian, German and French versions were available). Prizes were offered for participation, and so 633 questionnaires were completed, resulting in a response rate of 25.3%.

The sample can be considered as a random sample for two reasons. Firstly, no criteria were applied that would be relevant for the variables tested. Secondly, the 2,500 addresses can almost be considered as the whole population, as agricultural research, particularly in western countries, is just a relatively small sector of the economy. As the farming sector itself, agricultural research has been shrinking over the last decades and facilities have been shut.

Although many work satisfaction case studies query nurses because they represent a relatively homogeneous professional group, agricultural researchers in Europe can also be considered as such. Oshagbemi (2013; 20) summarised additional reasons for using academics as a study group: "further studies on the job satisfaction of university teachers are not only justified, but long overdue", an argument that probably can be transferred to other academic groups as well, given that a lot of agricultural research also takes place outside universities. Balmann et al. (2017) have approached agricultural economists for a survey covering, among other issues, work satisfaction, leaving aside financial aspects.

Despite their relative proximity, the income situation differs between the countries, as confirmed by the results of the survey. According to the indicated income categories of the survey, the median monthly income of the Romanian respondents was between €750 and €1,000, whereas the German and Austrian median income was between €3,000 and €4,000 per month, and the Swiss one between €4,500 and €9,000. Table 1 depicts the more detailed distribution to illustrate wage distributions. Translated into the theoretical framework presented in the preceding section, these differences might translate into different average levels of work satisfaction between the countries.

Two methods were applied to measure the degree of work satisfaction. Similar to the standard measurement in happiness research (Veenhoven, 2015) the question "taken all together, how happy are you with your job in agricultural research?" was to be evaluated on a 10-point scale. To add a tool that has been validated (Kinicki, 2002) and widely applied in psychological job satisfaction research (Ilardi et al., 1993; Suma and Lesha, 2013; Bormann and Abrahamson, 2014; Schahmoradi et al., 2016), the job descriptive index (JDI) was also applied at the questionnaire's beginning. The JDI arguably has been the most commonly used indicator for the measurement of job satisfaction within a nation after its development by Smith et al. (1969). This tool asks respondents to rate various descriptive features of their job as true or false and addresses the job in general, co-workers, the work, the pay, promotion and supervision. For each category, a 'yes' scores 3, a 'no' zero and a question mark 1. These figures are aggregated per

sub-category and in total, and there is usually no weighing involved. As the questionnaire's long version was used, this adds up to a maximum score of 54 for the categories work on present job, supervision, people on your present job and job in general and to 27 for pay and for opportunities for promotion. T-tests were carried out to compare sub-categories between countries, and subsequent references on differences rely on probabilities of error below 5%.

Table 1 Respondents' net wage distributions in national currencies

| | <2,000/m | 2,000–3,000/m | 3,000–4,000/m |
|-------------|---------------|----------------|---------------|
| Romania | 9% | 30% | 20% |
| Germany | 23% | 20% | 17% |
| Austria | 26% | 23% | 27% |
| Switzerland | 6% | 2% | 14% |
| | 4,000–5,000/m | 5,000–10,000/m | >10,000/m |
| Romania | 13% | 26% | 2% |
| Germany | 24% | 16% | 0% |
| Austria | 11% | 11% | 2% |
| Switzerland | 9% | 53% | 15% |

Notes: At the time of the survey, one Euro translated into 1.1 Swiss Franc and 4.5 Romanian Lei.

Previous international comparisons of work satisfaction (e.g., Eurofund, 2010) might be criticised for using neither a differentiated scale for their measurement, as used in happiness research, nor a validated instrument like the JDI. Psychological research has often emphasised the advantages of more nuanced measurement scales: respondents are less frustrated that they have to be rough in their judgements (Ecker and Bar-Anan, 2015) and leads to more precise results (Moore and Moors, 2011). It should be expected that the JDI will reveal finer differences between the countries than the one-scale measurement.

The variables used to explain job satisfaction by an ordinary least squares regression model are shown in Table 2. Although possible, using the wage group as an explanatory variable over the international sample would have caused many methodological problems including covariance, currency fluctuations (the Euro, the Swiss Franc and the Romanian Lei being involved), purchasing power issues and missing values. In addition, the perceived quality of a salary is extremely dependent on contextual factors such as seniority, having children or working full-time. At the same time, wages usually are by far the most important income source for researchers in agriculture. Therefore, a better proxy for wage levels was to use the respondents' judgement of their financial situation. To test whether the financial situation would play a stronger role if economic restrictions apply, an interdependency term for Romanian respondents was created.

To prevent distorting background variables, three additional control variables were used. As shown in a meta-analysis by Faragher et al. (2005), health and work satisfaction usually correlate by a degree of around 0.3, and so health was considered as a factor influencing work satisfaction. A likewise strongly influencing factor is culture (Sledge et al., 2008), and the attitude toward gender differences can be considered as a fair proxy for culturally based differences in attitudes (Sczesny et al., 2004). Finally, age also was shown to significantly influence job satisfaction (Bedeian et al., 1997) and thus was

considered as a variable. Other factors like gender were tested; as they did not show any significance, they were not included in the presentation of results.

Table 2 Independent variables

| <i>Variable</i> | <i>Meaning</i> | <i>Measurement</i> | <i>Mean</i> |
|-----------------|--|--|-------------|
| Health | Satisfaction with health situation | 1 = not at all satisfactory to 10 = very satisfactory | 7.54 |
| Culture | Agreement to 'clear differences exist between genders' | 1 = total disagreement to 5 = total agreement | 2.87 |
| Age | Age group | 0 = below 20 to 5 = above 60 | 2.74 |
| Rom | Romanian workplace | 0 = no; 1 = yes | 0.14 |
| Fin | Satisfaction with financial situation | 1 = not at all satisfactory to 10 = very satisfactory | 6.47 |
| Romfin | Interaction term | Fin * Rom | 2.28 |

Source: Survey

4 Results

Table 3 shows the results of the two measurements of job satisfaction for the four countries. The single-variable measurement showed hardly any difference in job satisfaction between countries. Although wages in Romania are unambiguously lower than in the western countries, this circumstance does not result in a lower job satisfaction.

Table 3 Descriptive results of the two measurements of job satisfaction

| <i>Measurement</i> | <i>Romania</i> <i>(n=89)</i> | <i>Germany</i> <i>(n=218)</i> | <i>Austria</i> <i>(n=107)</i> | <i>Switzerland</i> <i>(n=216)</i> |
|--|---------------------------------|----------------------------------|----------------------------------|--------------------------------------|
| <i>Single variable</i> <i>(work satisfaction)</i> | 7.29 | 6.95 | 7.43 | 7.13 |
| JDI job in general | 42 | 42 | 43 | 42 |
| JDI co-workers | 36 | 42 | 39 | 41 |
| JDI work | 39 | 41 | 41 | 41 |
| JDI pay | 24 | 32 | 32 | 34 |
| JDI promotion | 23 | 16 | 19 | 17 |
| JDI supervision | 25 | 35 | 31 | 35 |

Note: JDI = job description index.

Source: Survey

The part of the JDI that considered satisfaction with the job in general apparently confirmed the results of the single-variable measurement in that no differences between countries were detected. However, differences were detected when the other parts of the JDI were also taken into account. Regarding financial aspects, the comparison between the countries confirmed the income pattern presented in the previous section showing that

Swiss respondents had a higher average salary than German and Austrian ones and that Romanians clearly scored last. Romanians were less satisfied than their western colleagues not only with payment but also with collaboration. They were not as content as Germans, Austrians and the Swiss with their co-workers or regarding the supervision they receive.

Table 4 Explaining the Job Description Index by ordinary least squares models

| <i>Variable</i> ¹ | <i>Equation (1)</i> | <i>Equation (2)</i> | <i>Equation (3)</i> |
|------------------------------|---------------------|---------------------|---------------------|
| n | 626 | 625 | 625 |
| Constant | 188*** (21.4) | 150*** (18.5) | 146*** (17.6) |
| Health | 4.68*** (5.52) | 2.58*** (3.41) | 2.72*** (3.59) |
| Culture | -4.11*** (-3.06) | -2.25* (-1.91) | -2.28* (-1.94) |
| Age | 2.79** (2.03) | -1.97 (-1.58) | -2.05* (-1.66) |
| Rom | -27.8*** (-5.77) | -23.4*** (-5.55) | -0.25 (-0.02) |
| Fin | | 9.23*** (14.0) | 9.73*** (13.9) |
| Romfin | | | -3.76** (-2.09) |
| R2 | 0.12 | 0.33 | 0.34 |

Notes: ***p < 0.01, **p < 0.05, *p < 0.10, t-values in parentheses.

¹Rom = Romanian workplace, Fin = satisfaction with financial situation, Romfin = interaction term.

Source: Survey

The variability between countries was much larger in the JDI than in the single-variable measurement of job satisfaction. To explain the variances, we conducted a regression analysis to explain differences in the total JDI (as an unweighted sum of the single subcategories), the results of which are shown in Table 4. This entails the explanation of an index containing aspects of financial satisfaction with the real salary, but it should be kept in mind that the JDI only touches financial issues to a rather small part. The first regression [equation (1) in Table 4] showed that the selected control variables do their job. Health and advancing age, as expected, contributed to enhancing job satisfaction, whereas an inclination toward clear gender differences decreased job satisfaction. Romanians, in this first equation, had a clear negative bias in the JDI. They scored on average 28 points lower than their western colleagues when the variables health, age and culture were controlled for.

To check whether the financial situation negatively influenced job satisfaction, we conducted a second regression [equation (2) in Table 4]. Financial satisfaction, as easily can be seen in this column, greatly affects job satisfaction, also due to the methodological difficulty described above. It also eliminated some of the significances of some of the

control variables (indicating, for example, an expectable correlation between age and financial satisfaction). Romanians, however, still lagged 23 points behind in this regression.

The third regression (Equation 3 in Table 4) finally took into account that the interplay between financial factors and job satisfaction may depend on the level of the living standard. Thereby, the strong positive significance of the Rom variable (Romanian workplace) was eliminated, indicating that, if Fin (satisfaction with financial situation, see Table 1) and the interaction term Romfin are taken into account, no systematic difference exists between Romanian and western academics.

The negative sign of the significant Romfin variable certainly deserves attention. If we consider the decreasing marginal utility of money as indicated by happiness research, we could expect that wages bring more work satisfaction in Romania than in the wealthier countries. However, the opposite was the case. Particularly among respondents with a comfortable financial situation, this benefit 'bought' more work satisfaction in western countries than in Romania. For Romanian respondents, money mattered less and could not serve as consolation for an otherwise unsatisfactory work life.

5 Discussions

The presented results warrant both a methodological discussion and one with respect to work satisfaction. Starting with the latter, our attention should rather focus on the analysis of the JDI, not only because it has been validated in psychological research but also because this index revealed significantly different patterns between the four countries. Agricultural researchers in Romania were significantly less happy than their western colleagues in relational and financial aspects.

However, the differences between respondents in Romania on the one hand and respondents in Austria, Germany and Switzerland on the other can well be explained by the differences in their financial situation. Respondents in Austria, Germany and Switzerland with a comfortable financial situation were much more content with their job than those with a low income. This relationship applied to a far lower degree to Romanian academics. Apparently, a 'good' salary in Romania is not sufficiently good to overcome the difficulties of the job, whereas a 'good' Swiss, German or Austrian salary is.

This finding can only be understood if intersectoral differences in the countries are taken into account. Researchers in Romania receive low salaries if compared with people working in businesses or in public administration. This is not the case in Switzerland and occurs to a lower degree in Austria and Germany. It appears that particularly senior positions at Romanian research organisations are not rewarded by a salary that could compensate for the trouble at work.

These differentiated results allow the conclusion that in the countries under investigation, a low payment level led to a low average level of work satisfaction if measured by the JDI. Furthermore, financial factors were fully satisfactory to explain the differences between countries, making a search for institutional factors of dissatisfaction obsolete.

The results differed when, instead of using the complex JDI, we assessed work satisfaction with the single-variable measurement similar to the usual subjective well-

being index of happiness research. This measurement did not reveal any systematic disadvantage in terms of work satisfaction when comparing Romanians with the better paid Germans, Austrians and Swiss. In fact, a comparison of the average answers to the general work satisfaction item of the JDI confirmed that work satisfaction was similarly high in countries with very different payment levels. This strong contradiction of results still deserves some more discussion in the concluding section.

6 Conclusions

Happiness research has shown that the average subjective well-being is somewhat dependent on the level of wealth in a country. Could we likewise show – by our survey among agricultural researchers in Romania, Austria, Germany and Switzerland – that average work satisfaction is somewhat dependent on the average wealth in a nation?

Not really, if the same simple and one-dimensional scale is applied for the measurement of work satisfaction as usually is applied for the measurement of subjective well-being. If employees are asked in a simple and straightforward way how satisfied they are with their job, their answer in Romania does not, as an average, differ from the answers in the three western countries, despite the largely different levels of payment.

However, the answer is yes if a more nuanced assessment such as the psychologically validated JDI is applied. We could show that this JDI reveals several systematic differences in certain aspects of work satisfaction between the countries, and that the differences between Romanian and western respondents could entirely be explained by financial factors.

There are good reasons suggesting that some respondent perhaps had not sufficiently thought about the most appropriate answer to the one-dimensional question about work satisfaction. Measurement on several items or dimensions will bring out more differences than measuring on a single and therefore more abstract scale or item.

The results of the study, therefore, also might be considered as a challenge to the scale usually considered in happiness research. Asking for a single statement about a central question (such as subjective well-being or job satisfaction) may simply be asking too much.

Some limitations to the study should also be mentioned. One is the group of agricultural researchers which has not been explored sufficiently to state its representativeness for the entire population. Another is the Romanian sample size. While 89 Romanian respondents cause statistical significance in many instances, they are still a relatively small sample.

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