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Braun, Michael; Baumgärtner, Miriam K.

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THE EFFECTS OF WORK VALUES AND JOB CHARACTERISTICS ON JOB SATISFACTION

MICHAEL BRAUN & MIRIAM BAUMGÄRTNER

Abstract: Several approaches relate job satisfaction to work values and job characteristics. Quinn & Mangione (1973) used work values to weight domain-specific satisfaction ratings to find out that importance weighting rather reduces the explanatory power of domain-specific satisfaction ratings with regard to some outcome variables, such as overall job satisfaction. Kalleberg (1977) analyzed the effect of both types of variables in their own right. Using US data he concluded that while job characteristics had strong positive relationships with overall job satisfaction, the effect of work values was negative. Borg (1991) found that work values and the evaluation of job characteristics were not independent from each other. Coping strategies can account for linear or v-shaped relationships for different aspects. The present paper replicates selected analyses of previous studies using the International Social Survey Program 1997 study on 'Work Orientations', which includes similar indicators. The study is based on representative samples of full-time employed respondents in a broad variety of national contexts.

Work values, job characteristics and satisfaction

There are several approaches which relate job satisfaction to work values (i.e., what is regarded as important in a job) and job characteristics or 'rewards' (i.e., what people perceive they actually get from their jobs) and the interaction of both. The main difference between these approaches is how the relationship between the three variable sets is conceived theoretically. One line of reasoning holds that the effect of a specific job characteristic on satisfaction should depend on its importance for the individual. Thus, if someone does not value, say, income, the fact that a job provides a high income should not have a high impact on satisfaction. A second line of reasoning would rather come to the opposite conclusion: the higher the importance given to a job characteristic the lower the satisfaction which should tend to result (at least for a given level of rewards). Moreover, the relationship between work values and job characteristics is far from clear, e.g. whether

work values are an entirely independent factor or whether they are, at least to some degree, a function of job characteristics. A minor distinction regards the selection of measurement devices, in particular for job characteristics, and how these are labeled. Some researchers measure them by asking respondents explicitly how satisfied they are with a given aspect (e.g. income), while others use – in the semantical sense – purely ‘descriptive’ qualifiers (e.g. ‘my income is high’) or rather evaluative qualifiers without referring to satisfaction (e.g. ‘my income is good’). In the following, we will refer to job characteristics and domain-specific satisfaction ratings. We will briefly sketch the work of several scholars which exemplify the different approaches.

Quinn & Mangione (1973) used importance ratings (‘work values’) to weight domain-specific satisfaction ratings (such as ‘the pay is good’). They found that importance weighting rather reduces the explanatory power of domain-specific satisfaction ratings with regard to some outcome variables, such as overall job satisfaction. The authors compared the correlations of these outcome variables with a variety of predictors based partly on job characteristics alone and partly on using work values as weights. Even the simple mean of job characteristics showed higher correlations with the outcome variables than the more sophisticated measures employing weighting by the importance ratings. They concluded that, while weighting by work values is theoretically sound because the importance workers attach to job characteristics should modulate their effect, this does not show empirically, because “the average worker apparently is one step ahead of the model builders. He is often unobliging enough to engage in his own weighting procedures *before* he provides what the researcher presumes to be ‘pure’ satisfaction ratings” (Quinn & Mangione 1973: 20). According to these authors, job characteristics without importance weighting are better predictors of overall job satisfaction.

Kalleberg (1977) developed a different approach for dealing with similar indicators: he analyzed the effect of both types of variables, job characteristics and work values, in their own right. Using US data, he found that while the former had strong positive relationships with overall job satisfaction, the effect of work values was negative, i.e., given what workers have attained in their jobs (the ‘job characteristics’), the more importance was attributed to job aspects (the ‘work values’) the lower was overall job satisfaction. Kalleberg explained the negative coefficients of work values as follows: “For a given level of rewards (i.e., holding rewards constant), the more one values those rewards the more likely it is that these values are not fulfilled” (Kalleberg 1977: 133). Moreover, he tested interaction models, with the main effect of job characteristics included together with an interaction effect between job characteristics and work values. The interaction terms were found to be negative which is not compatible with the assumption of Quinn & Mangione that the effects of job characteristics increase with the value attached to them. As a remark of caution he added: “The possibility remains very plausible that values (...) interact with the

'objective' job characteristics to produce evaluative judgments about those characteristics. For example, individuals are likely to develop judgments about or even to merely *notice* characteristics of their jobs to the extent to which the individuals value these characteristics. ... Under these conditions, the job-reward measures *already* represent the interactions between the true job characteristic scores and values" (Kalleberg 1977: 134f).

The potential lack of independence between work values and the perception/evaluation of job characteristics was analyzed by Borg (1991). Unlike Kalleberg, who assumed that the perception of job rewards changed as a function of work values, he rather found the opposite relationship: work values differing as a function of the perception of job characteristics. In the literature, Borg encountered contradicting assumptions on the relationship between work values and domain-specific job satisfaction: on the one hand, that both are positively correlated because people whose work is not satisfactory for a given aspect downgrade this aspect. On the other hand, that there is a v-curved relationship with highest importance ratings both for those who are satisfied with a given job characteristic to a particularly high and a particularly low degree. Previous studies partly supported the former and partly the latter hypotheses, probably due to the fact that sample sizes were usually small and the groups studied were highly selective. Borg provided evidence that both theories hold depending mainly on the perceived controllability of a given job aspect. When someone is dissatisfied with a certain job aspect but feels at the same time that he/she is not capable of actually changing it 'in the real world', he/she would, as a consequence, rather solve it in the 'mental world'. In other words, one would, e.g., devalue this aspect or adjust one's personal standard in order to cope with dissatisfaction. The more these intrapsychic reactions are triggered, the more predominates a linear rather than a v-shaped trend. As found by Borg, the importance ratings of the organization itself show a more linear trend than, e.g., pay and promotion.

The work done by Borg raises the question in which way non-linear relationships between work values and job characteristics might affect overall job satisfaction. Partly independent of this aspect, the previous studies did not address the question for which kinds of workers, defined by the work values they hold, the obtained results apply. As is known, there are only very few workers who do not think work values are important, at least to some degree. Yet, both the Quinn & Mangione and the Kalleberg analyses are based on sample sizes of little more than 1,500 cases. The American part of the survey we are going to analyze here includes, with half the sample size of those studies, only 2 and 6 respondents who think an interesting job is 'not important at all' and 'not important', respectively. This suggests that the results of the analyses of the previous studies are practically restricted to respondents who value job rewards. While Borg tested his hypotheses on a much larger database (7,369), it consisted mainly of organizational surveys in the electronics industry in Europe.

In order to include workers with low work values, a sufficiently large sample size is needed. However, irrespective of the sample size, there will be still much more workers who value a job characteristic to a high degree. As regression results are sensitive to the number of cases, we will use this method only at a preliminary stage of analysis, and switch to a visual representation of the data thereafter. This is also useful as regards the possible non-linear relationships.

Data and methods

The present paper replicates selected analyses of the previous studies using the International Social Survey Program (ISSP; Braun 1994; Davis & Jowell 1990) 1997 study on 'Work Orientations' (Zentralarchiv 2001). The ISSP is based on representative samples of 34,835 respondents in a broad variety of national contexts (25 countries, with separate data for East and West Germans as well as Israeli Jews and Arabs). In this paper, only full-time employed respondents are considered. In all countries taken together their number is 15,673. The questionnaire was drafted in a form that allowed for self-completion. The actual form of administration, however, differed from country to country: it was administered as a mail questionnaire, as a personal interview or as a drop-off following a personal interview.

Work values were measured by the following question: "From the following list, please tick one box for each item to show how important *you personally* think it is in a job. How important is ... job security?, high income?, good opportunities for advancement?, an interesting job?, a job that allows someone to work independently?, a job that allows someone to help other people?, a job that is useful to society?, a job that allows someone to decide their times or days of work?". Answer categories were 'very important', 'important', 'neither important nor unimportant', 'not important' and 'not important at all'. In addition, a 'can't choose' category was offered. The last item of the work-value battery was not asked in a parallel fashion for job characteristics but in a related question outside the respective battery. Therefore, it is not included in the following analyses.

Job characteristics were measured by the following question: "For each of these statements about your main job, please tick one box to show how much you agree or disagree that it applies to *your job*. ... My job is secure, My income is high, My opportunities for advancement are high, My job is interesting, I can work independently, In my job I can help other people, My job is useful to society." Answer categories for these statements were 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree' and 'strongly disagree'. In addition, a 'can't choose' category was offered.

Domain-specific satisfaction measures were not included in the ISSP study, while other studies do include such measures in addition to job characteristics (e.g. Habich 1996) or exclusively (e.g. Borg 1991). To some degree, it might be possible to interpret job characteristics as measures for domain-specific satisfaction. As Kalleberg (1977: 131) puts it, “they are evaluative judgements on the part of the respondents concerning features of their jobs (...); in this sense, they may be regarded as representing measures of satisfaction with the various dimensions of jobs.” Probably, such an interpretation might be quite adequate for some aspects but not for others. E.g. respondents might say that their income is low but they might nevertheless be fully satisfied with it – given their work input and/or aspirations. In any case, in the present context, job characteristics in a narrower sense are more important than domain-specific satisfaction ratings.

Overall job satisfaction was measured by the question: “How satisfied are you in your (main) job?” Answer categories were ‘completely satisfied’, ‘very satisfied’, ‘fairly satisfied’, ‘neither satisfied nor dissatisfied’, ‘fairly dissatisfied’, ‘very dissatisfied’ and ‘completely dissatisfied’. Additionally, a ‘can’t choose’ category was offered.

The main advantage of the ISSP data is that it offers a sufficient number of cases for those who are not satisfied with their jobs and who do not rate the different work values as important. As is generally known, importance ratings in the area of work values are extremely skewed. In order to visualize the effect of the interaction between work values and job characteristics on overall job satisfaction, we, thus, need a big data set. Even in this comparatively large sample, those respondents who regard the different work values as ‘not important at all’ are few in number and, therefore, the respective curves for this subgroup have to be regarded with caution. Table 1 shows the number of cases in the most critical category ‘not important at all’ and, for comparative purposes, in the ‘not important’ category.

Table 1 Number of respondents in ‘not important at all’ and ‘not important’ categories of work values

	not important at all	not important
Job security	69	258
High income	103	705
Interesting work	50	276
Independent work	169	894
Help others	155	800
Useful to society	177	812

Data: ISSP 1997; full-time employed respondents.

Results

Country differences in overall job satisfaction, work values, and job characteristics

The mean of overall job satisfaction across all countries is 5.24 with a standard deviation of 1.16. Table 2 shows the means and standard deviations of work values and job characteristics.

Table 2 Means (and standard deviations) for work values and job characteristics

	Work values	Job characteristics
Job security	4.51 (0.70)	3.64 (1.17)
High income	4.05 (0.83)	2.69 (1.08)
Interesting work	4.39 (0.71)	3.88 (0.98)
Independent work	4.04 (0.90)	3.82 (1.12)
Help others	3.90 (0.86)	3.75 (1.07)
Useful to society	3.92 (0.88)	3.92 (0.99)

Data: ISSP 1997; full-time employed respondents.

The cognitive representation of the work-value and job-characteristic items

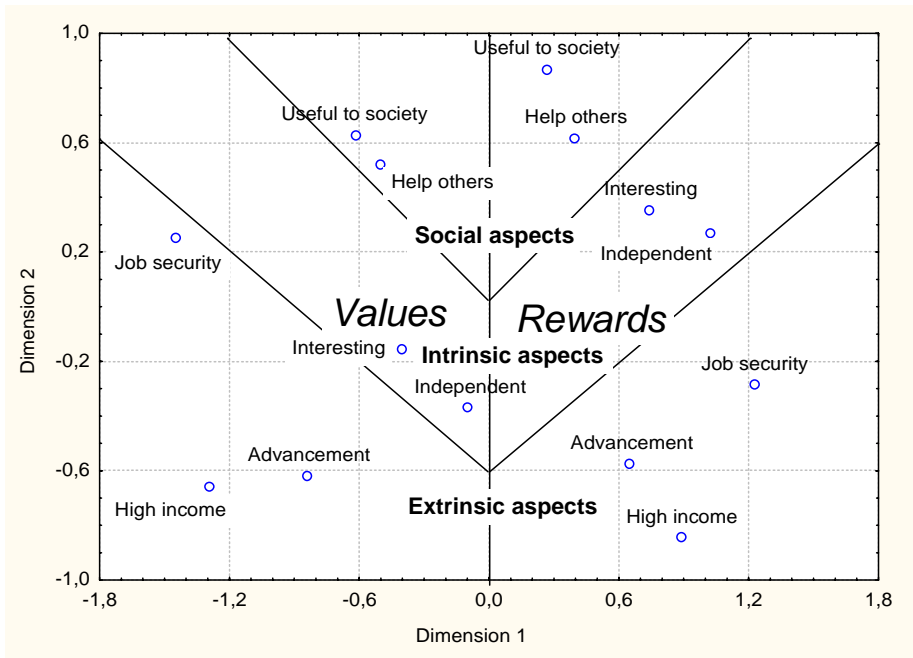
In order to visualize the mental representations of the items, we use Multidimensional Scaling (MDS; see Borg & Groenen 1997; Borg & Shye 1995). MDS represents the inter-correlations of the items in a graphical way. Correlations correspond to the distances between the items. The interpretation of the MDS representation focuses on the correspondence between geometrical characteristics of the configuration and the substantive characteristics of the items.

The items included to measure work values in the ISSP 1997 survey can be grouped, on theoretical grounds, into three regions: 'extrinsic aspects' (secure job, high income), 'intrinsic aspects' (independent, interesting), and 'social aspects' (help others, useful to society). 'Advancement' does not conceptually belong to only one of the three regions, and, in addition, it was found to be located at their intersection by Borg & Braun (1996) for a larger set of items.

Figure 1 shows the joint MDS representation for work values and job characteristics. A partitioning of the space along two criteria is possible: along values vs. rewards as well as along extrinsic, intrinsic, and social aspects. ‘Advancement’ is stronger connected to the extrinsic aspect, though it is still possible to draw dividing lines in such a way that it forms part of the ‘intrinsic’ region. Therefore, we will not consider this item in the following. ‘Job security’ and ‘high income’, in spite of belonging to the same region, might entail fine but potentially important distinctions. We will come back to this when we present the regression results. The same applies to ‘interesting’ and ‘independent’ work. Therefore, no indices are constructed in the following.

When overall job satisfaction were included in the MDS, it would be located in the region of intrinsic rewards close to the point denoting the ‘interesting work’ reward, a finding in line with the regression results presented below.

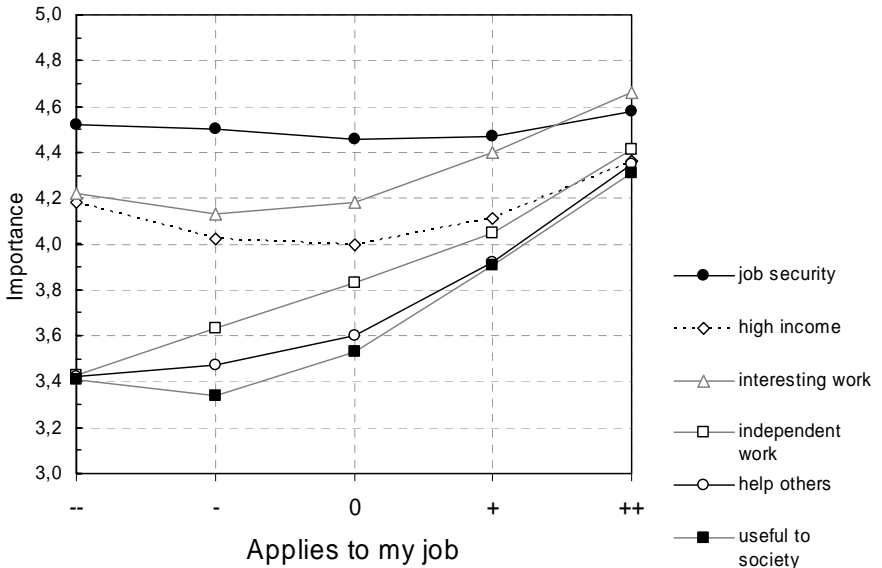
Figure 1 MDS-representation of work values and job characteristics



The relationship between work values and job characteristics

Figure 2 shows the relationships between work values and job characteristics. For job security and high income (and to some degree also: interesting work), there are v-curves with both those who think that the respective job characteristic is given or not given showing higher importance ratings for the extrinsic work values. However, the v-curves are not very pronounced, such that for smaller samples one might come to the conclusion that importance ratings are independent of the job characteristics. For the other aspects, more or less linear relationships hold, whereby work values gain importance the more the respective characteristic applies to one's job.

Figure 2 Mean work values for different levels of the respective job characteristics



Regression of job satisfaction on work values and job characteristics

We will use multilevel regression analysis (Rabe-Hesketh & Skrondal 2005; Raudenbush & Bryk 2002) as our sample comes from a variety of countries. First, we will estimate a variance component model ('empty model') with no predictors. This model shows that only 4.3% of the variance of job satisfaction is located on the country level, while 95.7% is due to differences between workers within countries. Introducing the work values and job characteristics as predictors, 38% of the group-level variance can be explained, i.e., a considerable part of the variance in satisfaction between countries is due to the composition of their respective populations with regard to work values and job characteristics. As for the individual level, the introduction of the explanatory variables leads to an explanation of 27% of the variance. In this model with predictors, only 3.7% of the variance is located on the country level and 96.3% on the individual level. Table 3 shows the fixed effects of the multilevel random-intercept regression of overall job satisfaction on work values and job characteristics.¹

Table 3 Fixed effects of multilevel random-intercept regression model of overall job satisfaction on work values and job characteristics

	Coefficient	Std.error
Constant	2.35*	0.10
Job security (imp.)	0.06*	0.01
High income (imp.)	-0.05*	0.01
Interesting work (imp.)	-0.05*	0.01
Independent work (imp.)	-0.03*	0.01
Help others (imp.)	0.02	0.01
Useful to society (imp.)	0.01	0.01
Job security	0.09*	0.01
High income	0.16*	0.01
Interesting work	0.47*	0.01
Independent work	0.08*	0.01
Help others	0.02	0.01
Useful to society	0.01	0.01

Data: ISSP 1997; full-time employed respondents; N = 13681; * = significant on .05 level.

1 An additionally estimated random-coefficient model shows some borderline variance components for the random slopes but overall country differences with regard to the regression patterns are small.

Neither the social work values nor the corresponding job characteristics have any effect on satisfaction.² The effects of the other work values are relatively small. Whereas the negative coefficients for the extrinsic value of high income as well as for both intrinsic work values correspond with Kalleberg's results (i.e., the more these are valued by a worker, the less satisfied he or she will be). Job security as a work value does not fit into this pattern. Those who value job security more, are likely to be more satisfied. This points at a characteristic difference between the two extrinsic work values considered here: a high income is to some degree a luxury reward, and one is easily disappointed by attaching too much importance to it. In contrast, the security of one's own job represents rather a basic issue, in particular for those who like their present jobs. Thus, it is not surprising that we find a positive correlation between job satisfaction and the importance attached to job security. For the job characteristics, all significant effects are positive, as predicted by Kalleberg. The strongest effect is found for the intrinsic job characteristic of having an interesting job.

Graphical presentation of the joint effects of work values and job characteristics

In the following, visual means of presentation are used rather than numerical. This is advantageous, as regression results are dominated by frequent patterns, thus potentially blurring the effect that extremely low work values have on job satisfaction. We will select one extrinsic (importance of high income) and one intrinsic work value (importance of independent work) because the tendencies are most pronounced for these. Each figure represents graphically the impact of one work value and the corresponding job characteristic on overall job satisfaction.

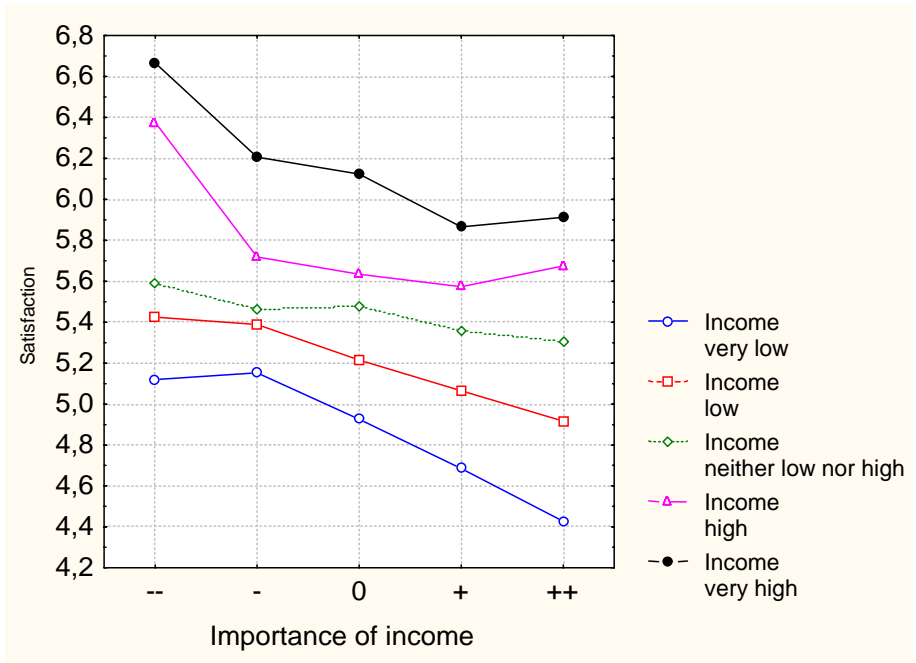
High income

With regard to high income as an extrinsic aspect of work, respondents with low importance ratings show generally higher satisfaction levels, independent of the perceived presence of the respective job characteristic (Figure 3). Also, the more a high income is perceived to be given in one's job, the higher the satisfaction, again for all levels of the importance rating. Satisfaction is especially low for the 'high importance' group when its members perceive their income to be very low. On the contrary, satisfaction is highest when income is not important to a worker while at the same time it is perceived to be very high.

2 This might be partly due to the selection of the particular items included in the survey: both refer to the possibility of some kind of pro-social behavior, which does not fully cover the rewarding potential of social contacts in general.

The practical consequence of this can be stated as follows: it is not wise to attach importance to a high income, as this is likely to decrease the satisfaction level, independent of the actual income a job offers. On the other hand, it is not a bad idea to accept an especially well-paid job (but the worker should not attach to much importance to the pay level).

Figure 3 Effect of importance of high income on satisfaction dependent on how high workers perceive their income to be

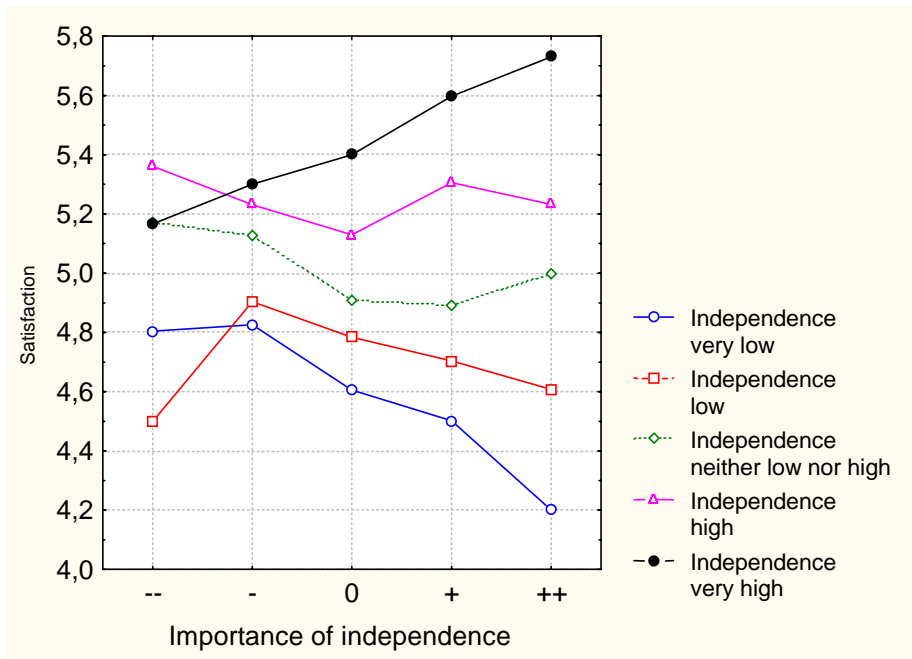


Independent work

Figure 4 shows the corresponding relationships for the intrinsic aspect of independent work. For the independent work, the effect of the work value depends on the concrete value the respective job characteristic assumes, and vice versa. If the possibility to work independently is given to a particularly low degree, high importance ratings reduce satisfaction; while with the job characteristic being perceived to be present to a particularly high degree, a very high importance rating can even increase satisfaction.

The practical consequence can be stated as follows: only those who have jobs that provide them with a high chance to work independently profit from attaching a high importance to independence; all others are well advised to regard independence as less important, otherwise their satisfaction might decrease.

Figure 4 Effect of importance of independent work on satisfaction dependent on how high workers perceive their independence to be



Discussion

The present paper cannot solve all the theoretical and methodological problems encountered in analyzing the nexus of work values, job characteristics, and overall job satisfaction. However, for replicating previous research, the data base used has considerable merits: first, it is large enough to analyze groups of respondents for whom the different work values are less important. Second, the data were collected in a variety of national contexts and, thus, permit to gauge the intercultural generality of the findings. Third, the data came from random samples of the working population and, not being confined to a small number of organizations, permit to gauge the generality of the findings based on organizational surveys. Finally, the partial differences in the behavior of some of the measures usually interpreted as belonging to the same dimension also provide some important insights.

The findings support in part, but not generally, those of Kalleberg (1977): neither have all job rewards a positive effect on job satisfaction nor is the effect of work values always negative. With regard to the social characteristics of work, this result might be due to the specific selection of items which do not fully tap the core of the dimension. The effect of social work values is rather nil than negative. While for high income high work values are always negative, in the case of working independently the effect of high work values becomes negative for those workers, only, who do not perceive the possibility to work independently in their present jobs. For those, who encounter the respective job characteristic to a high degree, however, high importance ratings might rather increase overall job satisfaction. Moreover, this lends support to the explanation proffered by Borg concerning the reduction of the importance of a given value by those who do not encounter the corresponding job reward as a coping mechanism.

The following general – substantive as well as practical – conclusions seem to be warranted: workers' satisfaction is more influenced by the things they perceive in their jobs than by the work values they might or might not have. High importance ratings do not increase satisfaction at all with regard to extrinsic aspects of work, and for intrinsic aspects only if the corresponding job characteristics are perceived to be present to a high degree. To gauge the relative impact of the extrinsic, intrinsic, and social components is more difficult, as the items included in the ISSP survey might be of rather different quality for each of the three.

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