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Human resource managers' attitudes towards utility analysis: An extended and refined update in Switzerland

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Abstract

Although utility analysis (UA) could be an important tool to show the utility of human resource (HR) activities, little is known about its usage. Only Macan and Highhouse (1994) showed that it is used by nearly half of the surveyed US industrial/organizational psychologists and HR professionals. As an extended and refined update of this study, we surveyed Swiss HR managers about their UA usage. Furthermore, we tried to replicate the predictors of the attitude towards UA indicated by Macan and Highhouse's exploratory results, and used previous theorizing to add predictors. The results revealed that only 8% HR managers used UA. The demand for utility information, the plausibility of UA, and the non-use of other utility approaches were significant predictors.

Keywords: utility analysis; personnel selection; training and development; scientist-practitioner gap

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Utility analysis (UA) was developed to help convey the financial value of human resource (HR) activities (Sturman, 2000). It allows correlation coefficients and effect sizes to be translated into monetary units such as dollars or Euros. The first formula was proposed by Brogden in 1949, and several refinements have been suggested in the years since (e.g., Cronbach & Gleser, 1965; Sturman, 2000)

Given its long history, UA might be expected to be a well-established tool for HR managers. However, this does not seem to be the case (e.g., Latham & Whyte, 1994). In particular, Macan and Highhouse (1994) surveyed US industrial/organizational (I/O) psychologists and HR professionals in 1991 and found that although they were fairly skeptical regarding its usefulness, they did use it to a considerable extent.

For four reasons, we believe that an extended and refined replication of the Macan and Highhouse (1994) findings in a European country is warranted. First, the business world has changed dramatically since 1991, and HR departments are under increasing pressure to demonstrate their financial value (Cascio & Boudreau, 2008), which could lead to a higher usage. Second, Macan and Highhouse recruited survey respondents from the Society for Industrial and Organizational Psychology (SIOP), who might have been trained in UA, which could have resulted in a relatively high percentage of usage that does not generalize to HR managers in general. Third, Macan and Highhouse collected arguments against the use of utility analyses in an exploratory manner only. Fourth, recent theorizing (e.g., Klehe, 2004) suggests additional predictors. Ultimately, it is hoped that this research will help to revive interest in this topic – interest which has been sparse in recent years (Cascio & Aguinis, 2008).

Background

An introduction to UA

According to Brogden's 1949 formula, four variables are needed to establish the utility in monetary units: the average z-standardized score of the predictor of hired employees (z_x), the correlation between predictor and job performance (r_{xy}), a monetary value of a standard deviation in job performance (SD_y), and the costs per applicant (C). In the extended form suggested by Cronbach and Gleser (1965), the formula is as follows:

$$\Delta U = N_{\text{hired}} * T * z_x * r_{xy} * SD_y - C, \quad (1)$$

where N_{hired} is the number of hired people and T the time employees stay in an organization. Although this formula covers personnel selection, it can easily be changed to be relevant for other HR interventions (e.g., training): The correlation r_{xy} is replaced by an effect size (e.g., Cohen's d) and N_{hired} by N_{trained} (number of trainees).

UA usage

Macan and Highhouse (1994, p. 433) were not concerned with technical details of UA, but rather aimed to explore why HR practitioners had or had not used UA. They therefore surveyed members of local associations of applied psychologists (as listed in *The Industrial-Organizational Psychologist*, the SIOP journal); thus, respondents were mainly I/O psychologists, but also other HR professionals.

Macan and Highhouse asked respondents whether they had used UA, and if not, why not. The results revealed that UA had been used by 46% of those respondents who had presented an HR activity to higher management. Although the 46% figure is the only precise percentage to be found in the UA literature, and is thus still our best guess, one motivation for this study was to ascertain whether this percentage can be replicated.

There are reasons to expect both a higher and a lower percentage. On the one hand, Macan and Highhouse's (1994) sampling strategy might have resulted in respondents who were particularly favorable towards UA because UA was developed and refined by applied psychologists such as Brogden; however, I/O psychologists are just a small minority in HR departments. Therefore, a replication might find a lower percentage if HR managers are surveyed. On the other hand, HR managers have been described as being under increased pressure to provide hard evidence that HR departments are not just something 'nice to have' but indeed contribute to the financial performance of organizations (e.g., Cascio & Boudreau, 2008), and this pressure seems to have resulted in an increasing market for indicators of HR performance (e.g., Echols, 2005). Thus, a replication nowadays might find a higher percentage of UA usage.

The attitude towards UA

Macan and Highhouse (1994) sorted respondents' reasons why they had not used UA into five categories. The first was the lack of demand of utility information: Such information was "not needed, requested, or supported" (p. 432). The second was the complexity of UA, which is a recurrent theme in the literature (e.g., Carson, Becker, & Henderson, 1998). The third category was the lack of knowledge in UA. The fourth category was the implausibility of UA results: UA often produces very high dollar values (cf. Mattson, 2003). The final category was the argument that other approaches are used to communicate the value of HR activities (e.g., anecdotes, face validity, legal compliance, and retention data). Building on this exploratory categorization, this study aimed to test whether these five reasons predict the attitude towards using UA in a statistical manner.

Additional predictors

Recent theorizing regarding the scientist-practitioner gap (e.g., Colbert, Rynes, & Brown, 2005; Klehe, 2004) suggests additional predictors beyond the reasons of Macan and Highhouse (1994). Klehe built on institutional theory, where it is argued that organizations try to achieve legitimacy by mimicking other organizations (e.g., Meyer & Rowan, 1977) and generalized this to the (non-)use of personnel selection tools (see also König, Klehe, Berchtold, & Kleinmann, 2010, and Johns, 1993). This should also apply for UA usage: The more UA is perceived as being widespread in the field, the more positive the attitude towards using UA should be.

Furthermore, Klehe (2004) also argued that organizations are highly susceptible to short-term costs. These might also arise when UA is used because practitioners have to familiarize themselves with UA and then collect the data for all ingredients of the formula. Thus, the higher the perceived costs of conducting a UA, the more negative the attitude towards using UA should be.

In addition, several authors (e.g., Colbert et al., 2005; Terpstra & Rozell, 1997b) argued that practitioners often have little contact with the research world, either personally or through reading academic outlets. It is reassuring for academics that reading academic outlets has been found to be linked with organizational profitability (Terpstra & Rozell, 1997b). Given that UA is also an academic issue, it is reasonable to expect that the closer HR managers are to science, the more positive their attitude towards using UA will be.

Method

Sample

Participants were HR managers from the German-speaking part of Switzerland. We used the websites www.swissfirms.ch and www.directories.ch to find addresses of companies with at

least 50 employees and contacted 576 companies predominantly by telephone to find a person responsible for personnel selection or personnel training. We explained the general goal of the research and offered individual feedback. Several companies declined (mostly because they were too busy), but 259 people visited our online survey starting page. Of these, 104 completed the survey. Table 1 reports descriptive information about our informants and their organizations.

Survey

Introducing UA. Participants were informed that there are several approaches to establish the utility of HR interventions and that this study focuses on an approach for which mathematical formulas are used. Participants were then introduced to UA with two examples including detailed explanations: a personnel selection example (from Latham & Whyte, 1994) and a training example (from Sturman, 2000).

UA knowledge. Participants were asked whether they know such UA and if so, how they know about it.

UA use. Participants were asked whether they had already used such UA.

Use of other utility approaches. We asked participants whether their organizations used other approaches to establish the utility of HR interventions (and if so, which).

Demand for utility information. This construct was measured using three items (cf. Macan & Highhouse, 1994): "In our organization, there is a demand for conducting such utility analyses for establishing the value of HR activities", "In our organization, such utility analyses are requested for establishing the value of HR activities", and "In our organization, there is support for conducting such utility analyses for establishing the value of HR activities."

UA complexity. This was measured with two items (cf. Macan & Highhouse, 1994): "It is difficult to conduct such utility analyses" and "It is difficult to explain such utility analyses." Reliability problems led to the exclusion of a third item.

UA plausibility. This variable was measured with three items: "The results of such utility analyses are accurate" (cf. Macan & Highhouse, 1994), "I consider such utility analysis as plausible", and "The value of HR interventions can be well expressed with such utility analyses."

UA diffusion. Three items were used: "I know HR colleagues who use such utility analyses", "Organizations in the same sector use these utility analyses", and "Organizations in our physical proximity use this kind of utility analysis."

UA costs. This was measured with the following two items: "Conducting such utility analyses requires much effort" and "Conducting such utility analyses requires much time." Due to reliability problems, a third item was excluded.

Proximity to science. This construct was measured with two items: "I read scientific journals that cover HR topics (e.g., Journal of Applied Psychology)" (cf. Terpstra & Rozell, 1997a) and "I keep myself informed about recent research results in the HR field." Another item was excluded due to reliability problems.

Attitude towards UA. The dependent variable was measured with the following three items: "I have a positive attitude towards such utility analyses", "I like this kind of utility analysis", and "I consider this kind of utility analysis as a good method to establish the value of HR activities".

Results

Only 9% of the participants had already used such UA (n = 9). Twenty-two participants (21%) stated that they knew such UA (77 did not) and of these, 78% (n = 21) had heard about it

during their training. Table 2 shows means, standard deviations and correlations, and Table 3 reports the results of the regression analysis: Demand for utility information, plausibility of UA, and the use of other utility approaches were significant predictors (and costs of conducting UA reached only marginal significance).

Discussion

The most striking result is that not even 10% of the HR managers had used UA. This figure is much lower than the 46% reported by Macan and Highhouse (1994). At least among Swiss HR managers, UA does not seem to be a well-established tool (and is also not widely known). A potential explanation might be found in the different data collection strategies. Whereas Macan and Highhouse surveyed members of local associations of applied psychologists (who are likely better trained in utility analysis than HR managers), we used online directories of large companies to contact HR managers. Alternatively, the finding might be explained by differences between Switzerland and the US (but note that Swiss HR management has been described as similar to other Western countries, Ignjatović & Svetlik, 2003).

Macan and Highhouse's (1994) exploratory results suggested five predictors of the attitude towards UA, which could only partly be replicated. As suggested, the plausibility of UA and the demand for utility information were positively related to the attitude towards UA. Using other approaches to show the utility of HR activities was a negative predictor of UA – as in Macan and Highhouse, practitioners might have already found other approaches that they consider more effective. However, neither UA complexity nor UA knowledge were significant predictors, contrary to suggestions of participants in the Macan and Highhouse study.

Building on theoretical arguments in the literature (e.g., Klehe, 2004), we argued that the diffusion of UA practice in the field, the costs of conducting a UA and the proximity to science

would be additional predictors. Only one variable (UA costs) seemed to be related to the attitude towards UA, and this only marginally.

The low level of UA usage might be considered bad news for all who believe that HR management needs to sell their activities better to top management or that HR should move more into the role of a strategic advisor. However, there are alternative ways to show the utility of HR activities (for an example, see Winkler, König, & Kleinmann, 2010), and results of this study indicate that these alternatives deserve more attention from researchers (and, if they work, by practitioners).

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Table 1

Sample description

Variable	% (*n*)
Gender	
Female	46.2% (48)
Male	53.8% (56)
Highest education	
An apprenticeship degree ("Lehre" in German)	12.5% (13)
A Swiss HR degree ("eidgenössischer Personalleiter/in" or "eidgenössische/r Personalfachfrau/-mann", a post-apprenticeship degree)	16.3% (17)
A degree from a university of applied sciences ("Fachhochschule" in German, worth a little more than a Bachelor's degree in the American or British educational system)	17.3% (18)
University degree (more or less equivalent to a Master's degree in the American or British educational system)[a]	38.5% (40)
A post-graduate degree from a university	3.8% (4)
Other degree	5.7% (6)
Missing information	5.7% (6)
Job title	
Head of HR or equivalent	44.2% (46)
Head of recruitment or Head of learning & development or equivalent	42.3% (44)
Other title	10.6% (11)
Missing information	2.9% (3)
Sector	
Manufacturing industry	24.0% (25)
Financial industry	23.1% (24)
Other service industry	14.4% (15)
Insurance	12.5% (13)
Sales and repairs	7.7% (8)
Traffic and communication	3.8% (4)
Hotel and restaurant industry	2.9% (3)
Health and social services	2.9% (3)
Building industry	2.9% (3)
Energy and water	2.9% (3)
Education	1.0% (1)

Note. N = 104, average age = 42 years (SD = 7.7), average job tenure = 9.4 years (SD = 6.5). HR = human resource.

[a] = predominantly with a business/management degree

Table 1

Means, Standard Deviations, and Correlations of Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Attitude towards UA [a]	2.79	0.84	*.91*								
2. Demand for utility information [a]	1.89	0.74	.51**	*.80*							
3. UA complexity [a]	3.76	0.87	-.14	-.17	*.62*						
4. UA knowledge [b]	1.26	0.44	-.01	.05	-.11	-					
5. UA plausibility [a]	2.85	0.76	.76**	.35**	-.08	-.13	*.77*				
6. Use of other utility approaches [c, d]	1.47	0.47	-.06	.12	-.06	.22*	-.02	-			
7. UA diffusion [a]	2.05	0.69	.38**	.47**	-.20*	.26**	.31**	.07	*.73*		
8. UA costs [a]	3.62	0.84	-.19*	-.27*	.34**	-.08	-.05	-.16	-.13	*.73*	
9. Proximity to science [a]	3.22	1.04	-.01	.15	-.01	.25*	-.17	.17	-.01	.04	*.76*

Notes. *N* = 104. Cronbach's alphas in the diagonal where applicable. UA = utility analysis.

[a] Likert-scaled (ranging from 1 = *strongly disagree* to 5 = *strongly agree*)

[b] 1 = *no*, 2 = *yes*

[c] 1 = *no*, 1.5 = *don't know*, 2 = *yes*

[d] examples ranging from human capital matrices and balanced scorecards to employee surveys and interviews

* $p < .05$; ** $p < .01$.

Table 4

Multiple Regression Predicting the Attitude towards Utility Analysis (UA)

Variable	*B*	*SE B*	β
Demand for utility information	0.23	0.08	.20**
UA complexity	0.00	0.06	.00
UA knowledge	0.10	0.13	.05
UA plausibility	0.76	0.07	.69**
Use of other utility approaches	-0.22	0.11	-.12*
UA diffusion	0.06	0.09	.05
UA costs	-0.12	0.07	-.12#
Proximity to science	0.08	0.05	.09

Notes. $N = 104$. $R^2 = .68$; corrected $R^2 = .65$.

# $p < .10$; * $p < .05$; ** $p < .01$.