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EDITORIAL

The Economic Value of Industrial-Organizational Psychology

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A long time ago, Rauschenberger and Schmidt (1987) emphasized that although industrial-organizational psychologists had developed valid tools to evaluate the effectiveness of human resource programs, they often reported results in psychological terms (such as test validities or group differences), which were not sufficiently persuasive for managers, who tend to rely more on economic criteria and cost–benefit analyses when making decisions. However, more recent meta-analytic evidence indicates that high-performance work practices (representing human resource management policies designed to enhance employees' skills, motivation, and commitment) are positively associated with organizational performance (Saridakis, Lai, & Cooper, 2017), referring to both operational outcomes (e.g., productivity, innovation, turnover) and financial outcomes (e.g., profitability, return on assets). In order to emphasize the economic value of industrial-organizational psychology to decision-makers in public institutions and private companies, researchers introduced utility analysis, a tool for quantifying the financial value of HR practices.

Indeed, research shows that managers are more likely to recognize the value of psychological interventions when these are expressed in clear economic terms (Hazer & Highhouse, 1997). Macan and Foster (2004) investigated the role of utility analysis in managers' decision-making about selection tests. Their findings indicate that utility analysis information has small but consistent positive effects on managers' acceptance and likelihood of implementing such tests. Notably, a majority of managers who received utility analysis perceived it as one of the most influential pieces of information. Similarly, Mattson (2003) applied utility analysis to a training program and found that managers perceived financial evaluations as substantially more useful than anecdotal accounts. These results underscore that framing HR practice outcomes in economic terms through utility analysis can significantly strengthen managerial support for program adoption. Utility analysis can be used for a number of HR practices: personnel selection, training, performance management, and even occupational health psychology interventions.

Personnel Selection

Decades ago, Schmidt and colleagues (1986) assessed the economic impact of valid selection methods in the U.S. federal workforce. Employees hired through cognitive ability tests demonstrated a .487 SD performance advantage, corresponding to a 9.7% increase in output relative to those chosen through education and experience

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evaluations. For one annual hiring cohort, this translates into $600 million in additional yearly productivity, and nearly $8 billion over the average 13-year tenure of new employees. If total output is held constant, efficiency gains permit a reduction of up to 20,044 hires annually (9%), producing $272 million in yearly payroll savings. At the same time, the share of low-performing employees would decline from 10% to about 4%, a 61% decrease. These results highlight the substantial financial and performance benefits of adopting valid cognitive selection procedures in large-scale organizations. In another study, Schmidt and colleagues (1979) examined the economic impact of the Programmer Aptitude Test (a measure of numerical reasoning, figure analogies, and arithmetic problem solving) when used to select computer programmers. The test was shown to generate productivity gains of up to $97 million annually in the U.S. federal government and over $1.6 billion annually in the national economy, depending on selection ratios and prior procedures.

Thornton and Potemra (2010) evaluated the economic utility of an assessment center used for promoting police officers to sergeant in the Dallas Police Department. Despite a total cost of $158,970 (about $764 per candidate), the assessment center produced substantial net gains, with utility estimates ranging from $415,000 to $871,000 depending on the number of promotions realized. Benefits per candidate ranged from $1,995 to $4,187, and per promoted sergeant from $12,442 to $18,861, with higher estimates when broader performance variability was assumed. Even inexpensive physical ability measures can generate substantial productivity and economic benefits in selection contexts. For example, Arnold and colleagues (1982) validated the use of a simple static strength test (the arm dynamometer) for selecting entry-level steelworkers. Utility analyses indicated average gains of about $4,900 per hire, translating into annual savings of up to $9.1 million for the company.

Fine (2012) examined the economic impact of personnel selection tools designed to prevent counterproductive work behaviors (CWB). Case studies demonstrated substantial returns on investment, with annual savings averaging more than $380,000 per company in Israel and a 165% return on investment in retail settings for theft prevention alone. Despite methodological limitations, the findings highlight the significant financial value of integrity testing and similar assessments in reducing workplace deviance. Even more so, human resource management creates substantially greater financial value when organizations attract and retain star performers, whose output is disproportionately higher than that of peers. Using utility analysis across 206 samples and more than 820,000 workers, Joo and colleagues (2022) showed that accounting for stars yields financial valuations up to nine times larger than traditional models assuming normal performance distributions. Findings indicate that human resource management's financial value follows a nonlinear pattern, with significant but diminishing returns as more top performers are obtained.

Training

One study found that the average return on investment for managerial training was 84%, with sales and technical training yielding a much higher mean return on investment of 156%, significantly outperforming management training in terms of economic value (Morrow et al., 1997). Another study indicates that leadership development programs, when assessed through Return on Development Investment (RODI), can generate substantial financial benefits for organizations. Using meta-analytic data and utility analysis methods, Avolio, Avey, and Quisenberry (2010) estimated that such interventions yield highly variable outcomes, ranging from significant losses to returns exceeding 200%. Average estimates suggest positive returns of 44–87%, with the greatest gains observed when high-performing leaders are selected and when organizational contexts support the transfer of learning. Chochard and Davoine (2011) applied utility analysis to evaluate the return on investment of ten Swiss management training programs involving 158

managers. Return on investment varied dramatically, ranging from –55% (losses) to 1996% (very high gains). The most profitable were short, performance appraisal programs (return on investment between 600% and 1996%), while broader leadership and management programs produced much lower returns, sometimes negative. Training for entry-level managers yielded an average return on investment of 571%, compared to 158% for middle managers.

Performance Management

Sturman and colleagues (2003) evaluated the financial utility of performance-based pay within the context of retaining high performers. Using the utility framework, they showed that traditional cost-based or accounting analyses underestimate the economic value of incentive pay systems. While such systems may increase salary and service costs, they significantly reduce dysfunctional turnover among top performers, thereby enhancing overall workforce value. The study shows that performance-based pay emerges as a financially advantageous investment that supports organizational competitiveness in the "war for talent". One study (Florin-Thuma & Boudreau, 1987) examined the effects of a performance feedback intervention in a small retail food organization. Providing employees with feedback on serving sizes significantly reduced overserving, leading to a substantial decrease in product costs and a profitability increase of nearly 200%. Utility analysis demonstrated that the financial benefits of the intervention far exceeded implementation costs. These findings highlight that performance feedback can yield tangible organizational improvements, particularly by reducing waste and enhancing operational efficiency. Finally, goal setting yields an average productivity gain of 9.2% per employee, which corresponds to approximately $9,200 in added annual output per worker (assuming a $50,000 salary baseline) (Schmidt, 2013). For instance, a five-year program applied to 35 employees is expected to increase revenues by over $1.6 million, after accounting for implementation costs. Organizations can leverage these gains either by expanding output or by reducing labor costs: a 9.2% productivity increase allows for an 8.4% workforce reduction without loss of output, which may translate into savings of nearly $480,000 annually in a 100-employee unit.

Occupational Health Psychology Interventions

One study (Erfurt et al., 1992) examined the cost-effectiveness of four worksite wellness program models implemented in automobile manufacturing plants, targeting hypertension, obesity, smoking, and lack of physical exercise. Employees were randomly assigned to one of four interventions: (a) health education only (Site A), (b) a fitness facility (Site B), (c) health education combined with systematic follow-up counseling (Site C), and (d) health education, follow-up counseling, and plant-wide organizational strategies (e.g. walking trails) (Site D). Annual per-employee program costs ranged from $17.68 (Site A) to $39.28 (Site B). After three years, Sites C and D, both of which incorporated active outreach and counseling, achieved significantly greater reductions in cardiovascular risk factors (44–51%) compared with Sites A and B (32–39%). In contrast, the fitness facility alone (Site B) was the costliest and least effective model. Cost-effectiveness analyses showed that Sites C and D required less than $2 per employee annually for each additional 1% reduction in risk, while Site B yielded no incremental benefit. Findings demonstrate that passive approaches, such as fitness centers or health education alone, are insufficient. The most effective and cost-efficient wellness programs combine systematic screening, personalized counseling, and supportive organizational strategies to reduce risks and sustain long-term health improvements. A utility analysis based on meta-analytic data estimated that job crafting interventions in healthcare can generate an economic benefit of approximately $2,310 per employee over a three-month period; the analysis also suggests a 14.1% increase in productivity and a

corresponding 12.36% reduction in labor costs over the same period (Oprea et al., 2019). Job crafting interventions in the Romanian healthcare sector are estimated to generate economic benefits, yielding an estimated return on investment ranging from approximately $4,030 (e.g., for beginner nurses or dental technicians) to $19,420 (e.g., for primary care physicians or dentists) per group of 10 employees, depending on specialization (Cotel et al., 2023).

Conclusion

Utility analysis proves to be a versatile tool, applicable across diverse HR practices, including personnel selection, training, performance management, and even occupational health psychology interventions. However, a Swiss survey (König et al., 2013) revealed that fewer than 10% of HR managers use utility analysis, far below earlier U.S. figures. These findings underline the limited practical diffusion of utility analysis and the ongoing gap between research and HR practice. A greater emphasis on utility analysis would allow practitioners to more effectively convey to decision-makers the economic impact and practical relevance of industrial–organizational psychology. Future research should also integrate utility analysis with the HR strategy literature to better capture how workforce investments generate value. Huselid (2023) recommends shifting focus from individual HR practices to entire HR systems, and from generic jobs to strategic jobs (those with both high impact and high performance variability), and to nonlinear returns to talent, recognizing that some roles yield increasing returns while others offer little upside.

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