Cognitive predictors of individual occupational careers in the 21st century – Do complex problem solving skills matter beyond general mental ability**?**

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Abstract

Purpose

Complex problem solving (CPS) describes the interaction with dynamic and nonroutine tasks, and has been included in PISA 2012 as a factor for employability. This study examines whether CPS can also contribute to the prediction of career advancement in jobs beyond general mental ability (GMA) as one of the best predictors.

Design/Methodology

Using latent structural equation modeling (SEM), we analyzed a sample of technicians, service/trade workers, and assemblers (n=245) at a German automotive company. A computer-based assessment measured participants' CPS and GMA levels. The dependent variables were the participants' job level (ISCO-08) and professional training days.

Results

CPS and GMA both correlated significantly with career advancement (from .18 to .26, all $p <$ .01). The models showed good fit and indicated that CPS explained incremental variance in one of two indicators *(*β = .14 for trainings, $p < .05$; $\Delta R^2 = .02$) in comparison with GMA alone (β = .24, $p < 0.01$; $R^2 = .06$).

Limitations

Analyses did not include processes information from CPS assessment as potential advantage. The company-based sample and cross-sectional data restrict inferences.

Research Implications

Our findings suggest positive relations between CPS and career advancement even when controlling for GMA. Hence, CPS could be a valuable addition for the study of careers and personnel selection test batteries.

Originality/Value

The first evaluation of CPS in career research gave a general indication of an as-yet-to-be-defined role of CPS, especially when considering the task characteristics compared to complex and demanding jobs, and process data available through CPS.