

ROI STUDY

On the Manufacturing Compatibility Questionnaire

For an Organization in the
Production and Manufacturing



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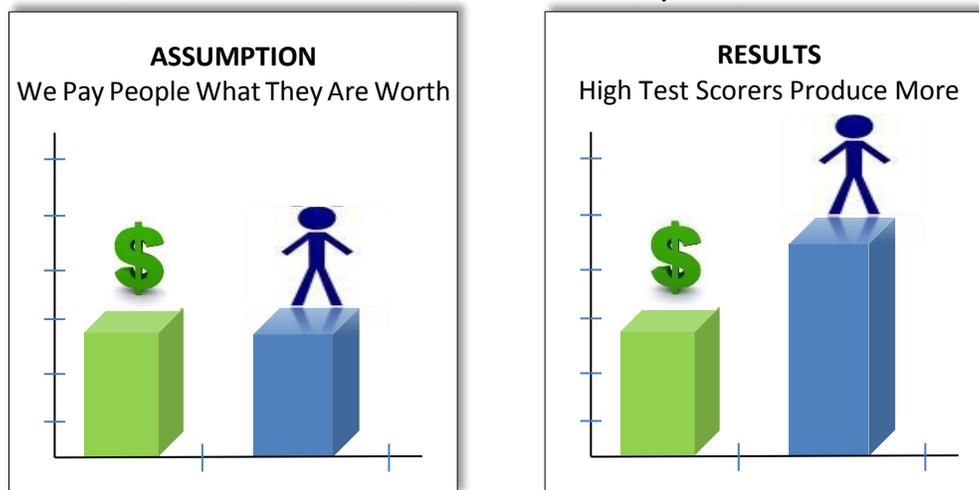
Exceptional Value in Pre-Employment Testing with the MCQ™ -- April 2013

The new *Manufacturing Compatibility Questionnaire* (MCQ™), measures core competencies that are important in most manufacturing or production jobs, such as *Dependability*, *Team Orientation*, *Learning and Problem Solving*, and *Safety Focus*. Additionally, each MCQ™ report includes a structured behaviorally-based interview guide *tailored* to the applicant's responses on the 48-item test. A large scale criterion validation study was conducted in a multi-plant manufacturing company.

The average correlation between the MCQ™ and job performance was .24, falling in the range of most professionally developed pre-employment tests. This number suggests that this instrument can identify those applicants who are more likely to be successful on the job. Next, we followed the validation study with a utility analysis.



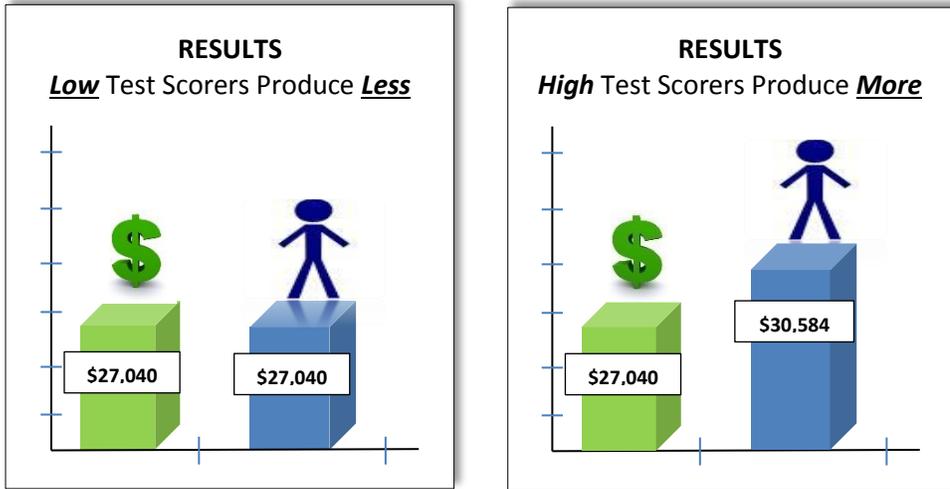
Utility analysis measures the return on investment (ROI) for a selection test. This analysis yields a dollar value that indicates how much money will be gained if a particular test is used for selection. In order to accurately assess the ROI, we considered the typical salary for manufacturing positions (\$13 per hour), how much it costs to administer the selection test (\$26), and the relationship between the test and job performance ($r_{xy} = .24$).



The effectiveness of the test was assessed with a sample of current employees from a multi-plant manufacturing organization. The test was significantly related to job performance. Based on the information obtained from this organization and using a conservative estimate of an hourly (U.S.) wage of \$13.00, a utility analysis was conducted for the MCQ™.

The analysis revealed that if the manufacturing company only hired the *top scoring applicants*, they would realize an **increase in productivity on the average of \$3544 per hire** in the first year of employment. This indicates that *top scoring applicants* are 13% more productive than

lower scoring applicants. This estimate was obtained using a conservative test cost of \$26 per applicant.



$$UA = [N_s * r_{xy} * SD_y * (\lambda / SR)] - C$$

- N_s = number of applicants selected
- r_{xy} = relationship between test and performance
- SD_y = standard deviation of performance – expressed in wages
- λ = standardized value of the minimum acceptable score on the test
- SR = selection ratio
- C = cost of testing per person

- Assume applicants selected: **1**
- Relationship between **MCQ™** & performance: $r = 0.24$
- Conservative estimated salary: **\$27,040**
- Standard deviation of performance – expressed in wages: $(\$13 \times 2080)$ **\$10,400**
- Standardized value of the minimum acceptable score on the test: **.2661**
- The selection ratio: **.18** (or one hire out of 5.56 applicants)
- Test administration costs: **\$145**



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