

Case need domain: “Employment”

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This article presents the findings of a narrative review and meta-analysis of the employment domain. Sixty-seven studies generated 200 effect sizes with recidivism and produced a mean correlation with recidivism of $r = .13$. In this result, employment was subsumed within a social achievement domain ($r = .15$). An examination of the mean r values associated with the seven categories of the employment domain indicated that education/employment ($r = .26$), employment needs at discharge ($r = .15$) and employment history ($r = .14$) were among the most powerful predictor categories. Further, a literature search uncovered several measures that assessed the employment construct. Specific recommendations were made as to how to improve the Case Needs Identification Analysis (CNIA) instrument used by the Correctional Service of Canada.

Of all of the predictors of offender recidivism, the employment domain² is probably the most prosaic. Indeed, it has generated little debate compared with other predictors, such as social class of origin, personal distress and personality.³ In general, it has been assumed that the employment domain is a moderately good predictor of recidivism. This conclusion has been confirmed by meta-analyses of the literature about juvenile and adult offenders.⁴ Surveys have also revealed that employment, vocational training and financial needs are the strongest deficits among adult offenders.⁵

Almost all adult offender risk instruments include an employment domain item. To our knowledge, however, only two risk measures, the Level of Service Inventory — Revised (LSI-R)⁶ and the CNIA protocol have explored this area in depth. Ten LSI-R items and 35 CNIA items deal with the employment domain. Since the CNIA is currently undergoing significant revisions, a reassessment of the predictive validity of the employment domain is timely. This study updates the 1996 meta-analysis⁷ of education and employment as part of the social achievement domain. It also reviews the literature that deals with psychological testing for recent psychometric instruments used to measure the employment construct.

Sample of studies

We conducted a literature search for relevant studies published between January 1994 and December 1997. These studies were added to the database reported in the 1996 meta-analysis of the predictors of recidivism among adult offenders. As well, studies from two recent meta-analyses of the predictors of recidivism for mentally disordered and sex offenders were also added.⁸

Studies were chosen using the following criteria:

- Data on the offender was collected before the recording of the criterion measure.
- The follow-up period was a minimum of six months. If a study reported more than one follow-up period, data from the longest interval was used.
- Recidivism had to be recorded when the offender was 18 years or older.
- The criterion measures were arrest, conviction, incarceration, or a probation or parole violation.
- Each study had to report statistical information that could be converted into a common metric or effect size (i.e., Pearson r).

Predictor domain

The employment predictor domain was divided into seven categories:

1. employment history — frequently unemployed, ever fired, unstable work history;
2. employment needs at discharge — no employment plans after release, poor job motivation, employment need;
3. employment status at intake — unemployed at intake, not employed before incarceration;
4. financial — poor financial management, major financial problems, low income;

5. education/employment — LSI rating of education/ employment, academic/ vocational;
6. school achievement — few years of education, less than grade 12, poor school achievement; and
7. school maladjustment — suspension/ expulsion, school discipline problems.

Pearson product-moment correlation (*r*) coefficients were produced for all predictors in each study that reported a numerical relationship with recidivism. When statistics other than Pearson *r* were presented, their conversion to *r* was undertaken using the appropriate statistical formula. Next, standard statistical procedures were used to weight each *r* according to sample size.

Study characteristics

We identified 67 studies as suitable for the meta-analysis that generated 200 effect sizes. For those variables where at least 50% of the studies reported information on sample and study characteristics, the results were as follows:

- 91% of effect sizes came from studies with a one-year or greater follow-up period;
- 82% of effect sizes came from studies that assessed only males or had mixed gender samples;
- 82% of effect sizes were associated with non-violent recidivism;
- 76% of effect sizes were associated with adult or mixed adult and juvenile samples;
- 75% of outcomes included conviction, incarceration or a combination of both;
- 69% of studies came from the 1980s or 1990s;
- 62% of effect sizes were associated with subjects of mixed risk levels; and

- 16% of effect sizes were associated with offenders with a violent or sexual offence history.

Predictive validities

The results in Table 1 can be interpreted in the following manner. Reading from the left of row 1, the employment history category produced 34 effect sizes involving 23,415 offenders. The mean correlation (*r*) was .14 and the confidence interval (CI) about mean *r* ranged from .11 to .17. The weighted *r* (*z'*) for the same category was .18 and its CI ranged from .17 to .19.

When examining mean *r*, the CIs for the education/employment predictor category (5) did not overlap with those of predictor categories 1, 3, 4 or 6, and overlapped only minimally with those of categories 2 and 7. In the case of weighted *r* (*z'*), the employment needs at discharge and employment history predictor categories did not overlap with any of the other groupings. The drop in value from a mean *r* of .26 to a mean *z'* of .10 for the education/employment category reflects the fact that three effect sizes within that group had large sample sizes and produced weak correlations with the criterion (*r* < .12).

The common language effect size indicator (CL)⁹ was used to compare the relative practical application of the various predictors. This procedure demonstrated the education and employment predictor categories produced higher correlations with recidivism than did the other predictors, ranging from 70% of the time compared with employment

Table 1

Mean Effect Sizes for Employment and Education Predictor Categories

Predictor (<i>k</i>)	N	<i>Mr</i> (SD)	CI	<i>Mz'</i>	CI
1. Employment history (34)	23,415	.14 (.10)	.11-.17	.18*	.17-.19
2. Employment needs at discharge (16)	4,961	.15 (.12)	.09-.21	.19*	.16-.22
3. Employment status at intake (28)	12,990	.11 (.13)	.06-.16	.10*	.08-.12
4. Financial (27)	14,457	.13 (.10)	.09-.17	.10*	.08-.12
5. Education/employment (20)	9,142	.26 (.18)	.18-.34	.10*	.08-.12
6. School achievement (60)	37,245	.10 (.10)	.07-.12	.10*	.09-.11
7. School maladjustment (15)	11,822	.14 (.08)	.10-.19	.11*	.09-.13
Total (200)	114,032	.13 (.12)	.12-.15	.12*	.11-.13

Note: *k* = effect sizes per predictor domain; *N* = subjects per predictor domain; *Mr* = mean Pearson *r* (SD); *Mz'* = $[(z_r) \times (n - 3)] / (n - 3)^{1/2}$ where *n* = number of subjects per effect size; CI = confidence interval about the mean Pearson *r* and mean *z'*; **p* < .05.

needs at discharge to 81% of the time compared with school achievement. Employment needs at discharge produced higher correlations with recidivism than did five other predictor categories 52% to 63% of the time. Of the two school-based predictors, school maladjustment was greater than school achievement 62% of the time.

The predictors listed in Table 1 were then collapsed into three categories: education, employment and education/employment combined. The results are described in Table 2. For mean *r*, the CIs for the education/employment category do not overlap with the other two groups. Using weighted mean *r* values (*z'*), however, the employment category CIs do not overlap with the education or combined education/employment categories. The CL index indicated that the education/employment predictor category produced higher correlations with recidivism than employment and education 74% and 79% of the time, respectively.

Opportunity, the Employment Checklist, the Intrinsic Job Motivation scale, the Maladaptive Behaviour Record, the Occupational Self-Efficacy scale, the Value of Employment, the Work Beliefs scale, and the Work Involvement scale.¹⁰

Discussion

This meta-analysis confirmed the usefulness of the employment predictor domain. Given that it generated a database of 200 effect sizes and 114,032 offenders, the employment predictor domain is established as a moderately strong predictor of recidivism.

Further research may establish that these results have underestimated the predictive potential of the employment domain. Questions regarding offender risk measures have been limited to basic grade achieved/employment history items. More attention should be focused on assessing the offenders' values, beliefs, and satisfactions with employment and acquiring related skills. We recommend that this domain be considered in

a more dynamic fashion, similarly to what has been argued for the conceptualization of IQ with offenders.¹¹ In support of this view, our database revealed that items that assessed factors such as

“non-rewarding work” and “poor job motivation” sometimes produced *r* values greater than .20. In one large-scale follow-up of offenders, a measure of work beliefs, when compared with a wide range of predictor domains, generated the strongest correlations with recidivism.¹²

This database contains very few studies with female and Aboriginal samples. Those studies included often produced inconsistent findings for females and reported higher correlations between employment and recidivism for non-Aboriginal versus Aboriginal offenders. A great deal more research on gender and ethnicity is needed.

Table 2

Mean Effect Sizes for Collapsed Employment and Education Predictor Categories

Predictor (<i>k</i>)	N	<i>Mr</i> (SD)	CI	<i>Mz'</i>	CI
1. Education (75)	49,067	.11 (.10)	.08-.13	.11*	.10-.11
2. Employment (105)	55,823	.13 (.11)	.11-.15	.14*	.14-.16
3. Education/Employment (20)	9,142	.26 (.18)	.18-.34	.10*	.08-.12
Total (200)	114,032	.13 (.12)	.12-.15	.12*	.12-.13

Note: *k* = effect sizes per predictor domain; *N* = subjects per predictor domain; *Mr* = mean Pearson *r* (SD); *Mz'* = $[(z_p) \times (n - 3)] / (n - 3)^{1/2}$ where *n* = number of subjects per effect size; CI = confidence interval about the mean Pearson *r* and mean *z'*; **p* < .05.

Further analyses revealed that mean effect sizes did not vary by study decade, published versus unpublished sources, gender, age, race, risk level or by most methodological variables. Effect sizes associated with an adequate description of subjects, however, were significantly lower than those generated by studies where demographic data was not provided.

Assessment protocols

In addition to the LSI-R and the CNIA, we identified nine potential “employment” assessment protocols. They are the Australia Work Ethic scale, the Awareness of Limited

Recommendations

The employment domain of the CNIA consists of 6 principal components and 10 subcomponents. The database in this meta-analysis substantiates the continued use of the first three indicators in the education/skills subcomponent, five of the indicators in the history subcomponent, as well as all of the indicators in the dismissed/departure, economic gain and (from the interventions principal component) history subcomponents. Unfortunately, this meta-analysis did not contain effect sizes that addressed the content of the other CNIA employment indicators.

Our recommendations for revising the employment domain of the CNIA are:

- Continue to use the above-noted indicators, although some judicious culling (e.g., choose one of “less than grade 8” or “less than grade 10”) would be helpful. In addition, review the need to include 35 indicators in the employment domain. By comparison, the LSI-R employment/education section contains 10 items, although we are not suggesting a draconian reduction in items to the CNIA employment domain.

- Add an item on school maladjustment factors.
- Serious consideration should be given to adapting several items from the following scales: Australia Work Ethic, Intrinsic Job Motivation, Occupational Self-Efficacy, Work Beliefs and Work Involvement.
- Consider adopting measures such as the General Aptitude Test Battery (or an approximate Canadian equivalent like the Canadian Adult Achievement test). We realize this recommendation is controversial, but based on the following argument. The employment domain is a useful predictor of recidivism. Good employment skills are necessary for a successful, prosocial reintegration into society. Research has shown that the best predictor of job success, by far, is this type of measure. Although they are time consuming, we believe that these measures would provide information that would help the case management process considerably for offenders’ rehabilitation. ■

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² The employment domain in this study is defined by the CNIA protocol. [See L. L. Motiuk and S. L. Brown, *The Validity of Offender Needs Identification and Analysis in Community Corrections*, Report R-34 (Ottawa, ON: Correctional Service of Canada, 1993).] Besides standard employment items, the CNIA also includes some educational achievement items.

³ P. Gendreau, T. Little and C. Goggin, “A meta-analysis of the predictors of adult offender recidivism: What works!” *Criminology*, 34 (1996): 575–607. See also P. Gendreau, C. Goggin and M. Paparozzi, “Principles of effective assessment for community corrections,” *Federal Probation*, 60 (1996): 64–70.

⁴ M. S. Lipsey and J. H. Derzon, *Predictors of Violent or Serious Delinquency in Adolescence and Early Adulthood: A Synthesis of Longitudinal Research*, paper prepared for the OJJDP Study Group on Serious and Violent Juvenile Offenders (March 1997). See also R. Loeber and M. Stouthamer-Loeber, “Prediction,” *Handbook of Juvenile Delinquency*, H. C. Quay, Ed. (New York, NY: Wiley, 1987): 325–382. And see L. Simourd and D. A. Andrews, “Correlates of delinquency: A look at gender differences,” *Forum on Corrections Research*, 6, 1 (1994): 26–31. And see Gendreau, Little and Goggin, “A meta-analysis of the predictors of adult offender recidivism.”

⁵ L. L. Motiuk and M. Nafekh, *Using Case Needs Indicators to Develop Correctional Plans* (Ottawa, ON: Correctional Service of Canada, to be released).

⁶ D. A. Andrews and J. Bonta, *LSI-R: The Level of Service Inventory—Revised* (Toronto, ON: Multi-Health Systems, Inc., 1995).

⁷ Gendreau, Little and Goggin, “A meta-analysis of the predictors of adult offender recidivism.”

⁸ J. Bonta, M. Law and K. Hanson, “The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis,” *Psychological Bulletin*, 123 (1998): 123–142; and R. K. Hanson and M. T. Bussière, “Predicting relapse: A meta-analysis of sexual offender recidivism studies,” *Journal of Consulting and Clinical Psychology*, 66 (1998): 348–362.

⁹ K. O. McGraw and S. P. Wong, “A common language effect size,” *Psychological Bulletin*, 111 (1992): 361–365.

¹⁰ C. A. Gillis, “The prediction of employment stability in a sample of federal offenders on conditional release,” Dissertation prospectus (Ottawa, ON: Psychology Department, Carleton University, 1998).

¹¹ F. T. Cullen, P. Gendreau, G. Roger Jarjoura and J. P. Wright, “Crime and the bell curve: Lessons from intelligent criminology,” *Crime and Delinquency*, 43 (1997): 387–411.

¹² P. Gendreau, B. A. Grant, M. Leipziger and S. Collins, “Norms and recidivism rates for the MMPI and selected experimental scales on Canadian delinquent sample,” *Canadian Journal of Behavioural Science*, 11 (1979): 21–31.