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SERN Reliability: Indicators Contributing to Risk and Needs Ratings

The SERN demonstrated internal consistency reliability with static and dynamic risk indicators.

Why we are doing this study

In 2019, the Romanian Probation Service (RPS) nationally implemented a 'Scale for the Evaluation of Risk and Needs' (or SERN) that was modeled earlier on the static and dynamic factors components of Correctional Service of Canada's (CSC) Offender Intake Assessment process.<sup>1</sup> This project continues the technical assistance being provided under the auspices of a 2022 joint statement of cooperation between the Probation Directorate of Romania and CSC. The present study explores the reliability of the SERN or the extent to which its items are consistent with an overall 5-level risk and needs rating.

What we did

A snapshot sample was gathered of 792 probationers (737 men and 55 women) ranging in age 18 to 80 (M= 39.2 years; SD=12.9 years) who were SERN-assessed while under the supervision of RPS, across 42 sites over the course of a one-month period. SERN level is coded as Low=1, Low-Medium=2, Medium=3, Medium-High=4 or High=5 rating made by probation officers. SAS / ETS software was used for analyzing the internal consistency of the SERN data.

What we found

Table 1 presents the measures of association statistics for the 9 static risk indicators in relation to the overall risk and needs SERN level rating. Cronbach's  $\alpha$  (.80) showed good internal reliability consistency for the static risk indicators with SERN level.

Most of the Chi-square and Cramer's V statistics between the static risk indicators and the SERN rating were statistically significant and indicated good to moderate associations with several indicators showing some very strong relationships (>.60); previous adult convictions (0.741), earlier probation (0.664) and prison terms (0.606).

It is also observed that for probationers there were no occurrences of a previous history of escape/attempt/unlawfully at large which implies possible elimination from the SERN. As well, there were very few observations and/or statistical significance of the static risk indicator pre-release failure-technical which suggests perhaps collapsing this indicator with pre-release failure new crime.

Table 1. Static Indicators with SERN Level<sup>a</sup>

Indicators (12)	M	SD	X <sup>2</sup>	p	V
Under age	0.029	0.168	177.85	<.0001	0.474
Previous adult convictions	0.179	0.384	435.69	<.0001	0.741
Violent criminal offences	0.117	0.322	130.58	<.0001	0.406
Earlier probationer	0.138	0.345	348.97	<0.001	0.664
Pre-release failure-technical	0.003	0.050	8.66	<0.070	0.105
Pre-release failure-new crime	0.008	0.087	43.39	<.0001	0.126
Earlier prison term	0.076	0.264	291.16	<.0001	0.606
Escape/attempt/unlawfully at large	n/a	n/a	n/a	n/a	n/a
Confinement for disciplinary reasons	0.003	0.050	77.40	<.0001	0.313
Less than six months since last incarceration	0.002	0.050	25.63	<.0001	0.180
No crime-free period of one year or more	0.040	0.197	33.04	<.0001	0.204
Co-convicted	0.160	0.367	57.02	<.0001	0.368

Notes: M = Mean, SD = Standard Deviation, X<sup>2</sup> = Chi-square, p = p-value, V = Cramer's V. n/a=not applicable. <sup>a</sup>Cronbach's  $\alpha$  = .80

Table 2 presents the measures of association statistics for the 18 dynamic risk indicators in relation to the overall risk and needs SERN level rating.

Cronbach's  $\alpha$  (.89) showed good internal reliability consistency for the dynamic risk indicators with SERN level.

All of the Chi-square and Cramer's V statistics between the dynamic risk indicators and the SERN rating were statistically significant and indicated good to moderate associations with the most robust being difficulty with self-control (0.425), disrespect for persons or property (0.411), and low levels of education (0.407).

Table 2. Dynamic Factors with SERN Level<sup>b</sup>

Domains (9) Items (18)	M	SD	X <sup>2</sup>	V
<b>Education</b>				
Less than grade 10	0.346	0.476	131.23	0.407
Less than grade 12	0.622	0.485	82.35	0.323
<b>Employment</b>				
Unemployed	0.143	0.349	91.79	0.340
Lacks work skills	0.043	0.203	89.86	0.337
<b>Family Background</b>				
Family attachment limited	0.045	0.208	63.11	0.282
Members criminally active	0.085	0.278	71.83	0.277
<b>Social Contacts</b>				
Affiliated with crime groups	0.480	0.214	60.80	0.341
Has criminal friends	0.135	0.342	87.82	0.333
<b>Substance Abuse</b>				
Abuses alcohol	0.121	0.327	81.51	0.279
Abuses drugs	0.029	0.168	14.74	0.136
<b>Community Living</b>				
No fixed accommodation or changes addresses	0.027	0.161	41.40	0.229
Difficulties with financial mgt.	0.090	0.286	91.77	0.340
<b>Thinking/Behavior</b>				
Has difficulty with self-control	0.254	0.435	143.34	0.425
Linking actions to consequences is limited	0.551	0.498	121.57	0.391
<b>Criminal Attitude</b>				
Negative attitude legal system	0.064	0.250	89.52	0.336
Denies crime/ minimize	0.144	0.351	100.51	0.356
<b>Values Orientation</b>				
Disrespect for persons/prop.	0.064	0.246	133.74	0.411
Support use of violence	0.035	0.185	87.10	0.331

Notes: M = Mean, SD = Standard Deviation, X<sup>2</sup> = Chi-square, all p-values <.0001, V = Cramer's V. <sup>b</sup>Cronbach's  $\alpha$  = .89

What it means

Statistical analyses on a new sample have reaffirmed the value of systematically assessing Romanian probationers with a structured set of static and dynamic risk indicators. Overall, Cronbach's  $\alpha$  (.83) showed good internal reliability consistency for the SERN level. Moreover, it appears that a number of static risk (e.g., previous convictions, probation periods and prison terms) and dynamic risk (e.g., thinking/behaviour, value orientation, education) indicators strongly contribute to the final SERN rating. These findings support the overall risk and needs SERN ratings being made by probation officers. While the internal consistency of SERN instrument is evident in this study, some data-informed revisions and streamlining may be considered with further validation work.

For more information

For questions and/or more information, please email [Research Branch](#). You can also visit the [Research Publications](#) section for a full list of reports and one-page summaries.

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<sup>1</sup> Motiuk, L.L. (2018). *The Development and Delivery of a Scale for the Evaluation of Risk-Needs (SERN) in Romanian Probation Services*. Research Report 402. Ottawa: Correctional Service Canada.

