EXECUTIVE SUMMARY

Is Corrections "Collar" Blind: Examining the Predictive Validity of a Risk/Needs Assessment Tool on White-Collar Offenders

Prepared for the Administrative Office of the United States Courts, Probation and Pretrial Services Office

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Abstract

Risk/needs assessment tools are essential to implementing supervision and interventions that reduce recidivism in correctional populations. A substantial amount of research exists supporting the use of risk, need, and responsivity principles to reduce recidivism. However, research thus far has not examined whether or how these principles generalize to white-collar offenders. The primary goal of this dissertation was to validate a risk/needs assessment instrument, the Administrative Office of the United States Courts, Probation and Pretrial Service Office's Post Conviction Risk Assessment (PCRA), on a sample of white-collar offenders. To accomplish this goal, a sample of 31,306 white-collar offenders who started supervision under the AOUSC, PPSO between October 2006 and October 2014 was used to examine the validity of the PCRA in predicting revocation. Results from binary logistic regression confirmed that PCRA risk levels create statistically significant groups that are associated with a white-collar offender's likelihood of being revoked while on supervision. Results from analyzing the predictive validity of the overall PCRA risk score with revocation supported the use of the PCRA as a strong predictor, showing that white-collar offenders are more likely to be revoked as their scores on the PCRA increase. Additionally, binary logistic regression identified both similarities and differences in significant items from the PCRA for white-collar offenders compared to other types of offenders, suggesting that there may be some unique aspects of risk for white-collar offenders. However, when white-collar offender specific scoring was generated for the PCRA, there were no significant improvements in prediction of revocation within the sample. The results demonstrate that white-collar offenders share similar criminogenic needs to "street" offenders, but sometimes they manifest differently. The overall contributions of this research to the fields of corrections and white-collar crime and suggestions for future areas of research are discussed.

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Overview and Background

In 1990, Andrews, Bonta, and Hoge published their seminal work outlining the principles of risk, need, and responsivity for effective correctional intervention[1]. Since then, many studies have examined and reviewed these principles providing a substantial amount of support for the principles of risk, need, and responsivity[2]. Within this field of research, studies have examined the application of these principles to different types of offenders such as women[3], juveniles[4], mentally disordered[5], sex offenders[6], and violent offenders[7]. Yet, there are no studies that examine the ability of a risk/needs assessment tool to predict recidivism for white-collar offenders nor do any studies investigate the applicability of the principles of risk, need, and responsivity to white-collar offenders[8]. This study was designed to address the gap in the literature on "what works" for reducing recidivism by validating a risk/needs assessment instrument on a sample comprised only of white-collar offenders.

It is likely that correctional researchers have not explored the application of risk/needs assessment to white-collar offenders because most state or county level agencies do not supervise many such offenders. Furthermore, few researchers who specialize in correctional rehabilitation are familiar with white-collar crime. The author of this study proposed a dissertation topic that would combine both areas and in order to do that, approached the Administrative Office of the United States Courts, Probation and Pretrial Services Office (PPSO) since many white-collar offenders are convicted in federal courts and receive terms of supervised release or probation. In addition, since the PPSO had developed the PCRA recently, there was a unique opportunity to explore a dataset that

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[1] Andrews, D. A., Bonta, J. and Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, *17*, 19-52.

[2] Smith, P., Gendreau, P., and Swartz, K. (2009). Validating the principles of effective intervention: A systematic review of the contributions of meta-analysis in the field of corrections. *Victims & Offenders, 4*, 148-169.

[3] Andrews, D. A., Guzzo, L., Raynor, P., Rowe, R. C., Rettinger, L. J., Brews, A., & Wormith, J. S. (2012). Are the major risk/need factors predictive of both female and male reoffending?: A test with the eight domains of the Level of Service/Case Management Inventory. *International Journal of Offender Therapy and Comparative Criminology*, *56*, 113-133. Brusman-Lovins, L., Lowenkamp, C. T., Latessa, E. J., & Smith, P. (2007). Application of the risk principle to female offenders. *Journal of Contemporary Criminal Justice*, *23*, 383-398. Dowden, C. and Andrews, D. A. (1999). What works for female offenders: A meta-analytic review. *Crime & Delinquency*, *45*, 438-452.

[4] Cottle, C. C., Lee, R. J., and Heilbrun, K. (2001). The prediction of criminal recidivism in juveniles: A meta-analysis. *Criminal Justice and Behavior*, *28*, 367-394.

[5] Bonta, J., Law, M. and Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally-disordered offenders: A meta-analysis. *Psychological Bulletin*, *123*, 123-142.

[6] Hanson, R. K. and Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment*, *1*, 1-21.

[7] Dowden, C. and Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. *Canadian Journal of Criminology*, *42*, 449-467.

[8] Gendreau, P. Little, T., and Goggin, C. (1996). A meta-analysis of the predictors of adult recidivism: What works! *Criminology*, *34*, 575-607.

would permit a review of risk and needs with a white-collar offender population[9]. It is not unusual for researchers and policymakers alike to assume white-collar offenders are less likely to recidivate or that a criminal justice sentence alone is enough to deter future criminal behavior. Yet, research on white-collar criminal careers and offending patterns suggests this is a flawed assumption. For example, in the Yale sentencing study on white-collar crime, 31.1% of white-collar offenders were re-arrested in a ten year follow-up period[10]. The PPSO itself had recognized that white-collar offenders are an important population to examine and that it is essential to have research supporting the use of the PCRA with white-collar offenders. As a result, they agreed to share their data for a dissertation that would explore risk factors for white-collar offenders.

Methodology

A sample of 31,306 white-collar offenders who started supervision with the PPSO between 2006 – 2014 were identified for the study. In order to identify white-collar offenders, the project used Shapiro's (1981) definition which states white-collar crimes are "economic offenses committed through the use of some combination of fraud, deception or collusion"[11]. This definition is well-respected in white-collar crime research and has been used in prominent white-collar crime studies such as the Yale sentencing study of white-collar crime[12]. Starting from this definition, the title and section number for the offense the individual was convicted of were used to narrow down specific white-collar offenses. Since the Yale sentencing study occurred in the early 1980's, the United States code was reviewed to update the list of offenses used in previous research. The Yale study used antitrust, bribery, embezzlement, false claims and statements, lending and credit institution fraud, mail and wire fraud, securities, and tax offenses[13]. In addition to updating the offenses since the early 1980's, this study expanded the types of white-collar crimes to include food and drug, environmental, real estate and mortgage fraud, and workplace safety offenses as well. To identify the title and section number for white-collar crimes, the resource manuals of the U.S. District Attorney's website[14] and information from regulatory agencies such as the Food and Drug Administration, Environmental Protection Agency, and the Securities and Exchange Commission, were referenced. After a list of white-collar offenses was created, a second approach was conducted to identify white-collar offenders by paring down the cases in the dataset. First, offenses that did not clearly meet the definition of white-collar crime were removed (i.e. sex offenses, manslaughter, robbery,

[9] Johnson, J. L., Lowenkamp, C. T., VanBenschoten, S. W., and Robinson, C. R. (2011). The construction and validation of the Federal Post Conviction Risk Assessment, *Federal Probation*, *75*, 16-29.
[10] Weisburd, D. Waring, E. J. and Chayet, E. F. (2001). *White-Collar Crime and Criminal Careers*. New York: Cambridge University Press.
[11] Shapiro, S. P. (1981). *Thinking About White-Collar Crime: Matters of Conceptualization and Research*. Washington, D.C.: National Institute of Justice.
[12] Wheeler, S., Weisburd, D., and Bode, N. (1982). Sentencing the white collar offender: Rhetoric and reality. *American Sociological Review*, 47, 641-659.
[13] Wheeler, S., Weisburd, D., and Bode, N. (1982). Sentencing the white collar offender: Rhetoric and reality. *American Sociological Review*, 47, 641-659.
[14] https://www.justice.gov/usam/united-states-attorneys-manual

burglary, immigration, drug possession, drug trafficking, DUI). Next, remaining cases that were not already identified in the list of white-collar crimes were reviewed to determine if they met the definition. A complete list of white-collar offenses by title and section number are listed in Appendix B in the dissertation.

Once the white-collar offender dataset was created, cases were reviewed to determine if they had complete or mostly complete PCRA information. Because the PCRA was rolled out gradually, some cases were missing the PCRA. In the end, this study identified 31,306 white-collar offenders. Table 1 below demonstrates the percentage of individuals in each white-collar crime category. As the table demonstrates, most white-collar offenders were convicted of false claims and statements, mail and wire fraud, and tax related offenses as their most serious offense.

Table 1: Percentage in the Study Sample by Most Serious White-Collar Offense (Conviction)

Category of White-Collar Crime	**Frequency**	**Percent**
Antitrust	28	0.1%
Bribery	514	1.6%
Embezzlement	1,591	5.1%
Environmental	212	0.7%
False claims and statements	7,760	24.8%
Food and drug	216	0.7%
Lending and credit institution fraud	649	2.1%
Mail and wire fraud	9,169	29.3%
Real estate or mortgage fraud	8	0.0%
Securities	2,072	6.6%
Tax	9,080	29.0%
Workplace safety	7	0.0%

The dissertation focused on three specific research questions: 1) do the PCRA risk levels classify and place white-collar offenders into distinct groups according to their likelihood of being revoked? 2) does the overall risk score predict revocation among white-collar offenders? 3) are there specific individual risk factors that predict revocation among white-collar offenders? The request for data submitted to the PPSO proposed creating a white-collar offender trailer for the PCRA. However, before examining white-collar offender specific risk factors for a trailer, it was important first to examine the predictive validity of the PCRA with this population. The third research question in the study was designed to review whether specific items from the PCRA predicted uniquely for white-collar offenders. After the third research question was investigated, supplemental analyses were conducted to examine if a revised scoring protocol for white-collar offenders on the PCRA would improve the prediction of the tool.

Control variables in the study included age, gender, race, and length of supervision. The independent variables in this study were the PCRA risk levels (question #1), overall PCRA risk score (question #2), and individual PCRA items (question #3). Unfortunately, databases designed to collect court data for PSI's or case processing, sentencing, and

supervision typically do not contain information on the social and psychological characteristics of white-collar offenders. As a result, the ability to explore data related to potential risk factors of revocation for white-collar offenders was limited. Yet, a few additional independent variables were identified in the data and reviewed in the study:

- Part-time employment ("0" = yes; "1" = no)
- Full-time employment ("0" = yes; "1" = no)
- Educational attainment ("0" = some vocational classes, college, or higher; "1" = less than high school, GED, or high school diploma)
- PICTS t score ('0" = no criminal thinking; "1" = yes criminal thinking on PICTS)
- Gambling ("0" = no gambling problem; "1" = yes gambling problem)
- Dual diagnosis ("0" = no; "1" = yes)

The dependent variable in this study was revocation. Requests made to the FBI for re-arrest data were not successful. There are some drawbacks to using revocation as an outcome measure, such as including individuals who received revocations for technical violations. However, it is assumed that individuals on supervision were not revoked for minor technical violations but rather for more serious violations or patterns of serious noncompliance. Additionally, white-collar offenders who did commit a new offense are likely to have their supervision revoked. Furthermore, this outcome measure is useful in that another goal of supervising officers is make sure that individuals are compliant with their terms of supervision in addition to helping reduce the likelihood of new offenses. While other outcome measures would have been appropriate to examine also, revocation is important in its own right.

To enhance comparability, this study followed approaches similar to those used in other PCRA validation studies. First the PCRA risk levels, the overall PCRA risk score, and the individual items on the PCRA were examined in terms of their ability to predict revocation with white-collar offenders. Multiple analytical steps were used but the primary analyses involved binary logistic regression to examine the tool's ability to predict the outcome of revocation with control variables and the use of the Area Under the Curve value to examine the strength of the tool's ability to predict. In order to determine the strength of the AUC value, the following cut offs were used based on recommendations provided by Rice and Harris[15]: .556 as "weak", .639 as "moderate", and .714 as "strong".

Analyses and Findings

A comparison of the characteristics of the sample in this study was made to the sample of the most recent validation study published on the PCRA[16]. Since the dissertation study is based on the premise that there are some unique characteristics about white-collar offender criminal pathways and social, demographic, and psychological characteristics that make white-collar offender risk and needs different, the sample was compared on a few

[15] Rice, M. E., and Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC , Cohen's d and r. *Law and Human Behavior, 29*, 615-620.

[16] Lowenkamp, C. T., Holsinger, A. M., & Cohen, T. H. (2015). PCRA Revisited: Testing the Validity of the Federal Post Conviction Risk Assessment (PCRA). *Psychological Services*, *12*, 149-157.

key characteristics. The PCRA study from 2015 likely includes some white-collar offenders, but it is assumed that the random nature of the sampling process results in a sample comprised of mostly "street" offenders. The comparison in Table 2 below shows that this study's sample of white-collar offenders had a mean age of 44 years, which was only four years older than the mean age of the 2015 validation study sample. White-collar offenders had just 6% more whites in their sample, but had more females represented with 13% more in the total sample of white-collar offenders. Overall, white-collar offenders had a mean score of 4.44 on the PCRA, which was approximately 2 points lower than the sample of mostly "street" offenders. A key difference in this study was that a higher percentage of white-collar offenders scored as low risk on the PCRA, while the 2015 validation study found a smaller percentage scored low risk and more as low/moderate risk instead.

Table 2: Comparison of White-Collar Offender Sample to Most Recent Validation Sample

	Current Study's WCO Sample	**"Street Offenders" Sample[a] Recent Validation (2015)**
Characteristic of Sample		
Mean Age	44	40
% White	64%	58%
% Male	68%	81%
Mean PCRA score	4.44	6.33
% low risk on PCRA	67%	42%

[a]This sample includes mostly "street" offenders in the most recent validation study of the PCRA: Lowenkamp et al. (2015).

The first step to examining the predictive validity of the PCRA with white-collar offenders was to conduct analyses designed to answer the first research question: *do the PCRA risk levels classify and place white-collar offenders into distinct groups according to their likelihood of being revoked?* The results from the binary logistic regression model are presented in this summary for this research question, as they include control variables when looking at the relationship of risk level and revocation. The results of the binary logistic regression analysis provide evidence for the PCRA risk levels as predictors of revocation for white-collar offenders. The odds ratios (Exp(B)) and their confidence intervals are provided below for each risk level (low risk is the reference group). As a white-collar offender increases in risk level, so does their odds of being revoked increase. Thus, the PCRA's risk levels classify and place white-collar offenders into distinct groups according to their likelihood of being revoked.

Table 3: Results from Binary Logistic Regression of PCRA Risk Level and Revocation for WCO's

	Exp(B)	**95% Confidence Interval**
Revocation		
Low/moderate risk	8.36***	7.27 – 9.51
Moderate risk	19.73***	16.90 – 23.02
High risk	32.94***	26.29 – 41.25

*** $p < .000$

[1]Control variables include: age, race, gender, and supervision length.

[2] Reference group is low risk.

The next step in reviewing the PCRA's predictive validity with white-collar offenders was exploring the overall PCRA risk score, which ranges from 0-18, to answer the following research question: *does the overall risk score predict revocation among white-collar offenders?* Reported in this summary are the results of the *t*-test for independent samples and the AUC value. The *t*-test for independent samples was used to compare the mean overall PCRA scores between those revoked and those who had not been revoked from supervision. The results of the *t*-test for independent samples found that the mean overall risk score for white-collar offenders revoked was 8.99, which was significantly different ($p < .000$) than the mean overall risk score for white-collar offenders who were not revoked (4.06). The AUC value for the overall PCRA risk score in predicting revocation for white-collar offenders was 0.855 (confidence interval: 0.847 - 0.862), which was significant at the .000 level. Results from the analyses on the second research question support the use of the overall PCRA risk score in predicting revocation and indicate that it is a strong measure for predicting revocation for this population.

The final step was to conduct analyses to determine whether there are *specific individual risk factors that predict revocation among white-collar offenders.* The main analysis conducted was a binary logistic regression model that included each individual item from the PCRA and control variables with revocation. The results are presented in Table 4. The results are similar in some regards to previous validation studies of the PCRA but some of the findings diverge. Seven of the fifteen items from the PCRA that are scored out and were found to be predictive in prior studies were also found as predictive for white-collar offenders: *number of prior misdemeanor and felony arrests*, *revocation or arrest while on supervision*, *institutional adjustment*, *current alcohol problems* (however, in the opposite direction), *current drug problems*, *marital status*, and *attitude towards supervision and change*. Four new risk factors unique to this white-collar offender sample were found significant at the .001. or .000 level: *employed less than 50% of the last 24 months*, *continued use despite social and interpersonal problems*, *no or unstable home*, and *financial stressors*. Some of the items on the PCRA did not reach the threshold of a .01 significance level, which was used in this study for identifying significant predictors. The PCRA items *companions*, *lives with spouse/children*, and *lacks positive pro-social support* approached significance at the .05 level. Items from the PCRA that are scored out and were not found as significant in this study were: *violent offense*, *varied offense pattern*, *age at intake to supervision*, *highest education level achieved*, *unemployed*, *work history over the past 12 months*, *unstable family situation*, and *lacks positive and pro-social support*.

Table 4: Binary Logistic Regression for Individual PCRA Items and Revocation

PCRA Risk Factor	Exp(B)	95% Confidence Interval
Criminal history		
1. Arrested under age 18	0.98	0.86 – 1.12
2. **Number of prior misdemeanor and felony arrests**	1.73***	1.60 – 1.87
3. **Violent offense**	0.94	0.83 – 1.07
4. **Varied offense pattern**	1.11	0.93 – 1.31
5. **Revocation or arrest while on supervision**	1.64***	1.44 – 1.87

6. **Institutional adjustment**	1.37***	1.19 – 1.58
7. **Age at intake to supervision**	1.03	0.89 – 1.19
Education and employment		
8. **Highest education level achieved**	1.10	0.97 – 1.24
9. **Unemployed**	0.98	0.86 – 1.12
10. Number of jobs in past 12 months	1.01	0.89 – 1.15
11. Employed less than 50% of the last 24 months	1.40***	1.22 – 1.60
12. **Work history over the past 12 months**	1.07	0.94 – 1.22
Drugs and Alcohol		
13. Alcohol/drugs cause disruption at work, school, home	1.18	0.98 – 1.43
14. Use alcohol/drugs when physically hazardous	0.91	0.77 – 1.07
15. Legal problems related to use	0.95	0.80 – 1.12
16. Continued use despite social/interpersonal problems	1.38**	1.14 – 1.68
17. **Current alcohol problems**	0.71**	0.58 - 0.88
18. **Current drug problems**	1.98***	1.70 – 2.30
Social networks		
19. **Marital status**	1.52***	1.31 – 1.77
20. Lives with spouse and/or children	0.85*	0.75 – 0.97
21. Lack of family support	1.07	0.90 – 1.27
22. **Unstable family situation**	1.07	0.93 – 1.23
23. Companions	1.08*	1.00 – 1.15
24. **Lacks positive pro-social support**	1.19*	1.00 – 1.39
Cognitions		
25. Antisocial attitude/values	1.02	0.87 – 1.19
26. **Attitude toward supervision and change**	1.51***	1.28 – 1.77
Other factors		
27. No or unstable home	1.22**	1.08 – 1.36
28. Risk influence in home	1.08	0.92 – 1.27
29. Financial stressors	1.32***	1.15 – 1.51
30. Pro-social recreation	1.01	0.976– 1.25

***p < .000, **p < .001, *p < .05

[1]Control variables include age, sex, race, and days on supervision.

[2]Bolded items are risk factors that are scored out on the PCRA, while others are those items that are only marked and do not count towards the total score.

The analysis conducted with the individual PCRA items offers evidence that white-collar offenders share characteristics similar to "street" offenders and that PCRA items do measure risk for this population. However, since there was some variation in the findings regarding the individual items on the PCRA (4 new factors predicted revocation and eight items dropped in significance for this group), the findings suggested that further analyses should be conducted to explore the possibility of white-collar offender specific scoring. If scoring is improved with items found to be statistically significant with white-collar offenders, then there could be utility in developing a white-collar offender trailer for the PCRA.

Two new scores were created in order to compare two possible white-collar offender specific scoring approaches for the PCRA. First, a score was calculated using only those items in the PCRA that were predictive for white-collar offenders. These items were: *number of prior misdemeanor and felony arrests*, *revocation or arrest while on supervision*, *institutional adjustment*, *current alcohol problems*, *current drug problems*, *marital status*, *attitude towards supervision and change*, *employed less than 50% of the last 24 months*, *continued use despite social and interpersonal problems*, *no or unstable home*, and *financial stressors*. This generated a new PCRA score for cases in the sample, referred to here as "WCO PCRA#1", which ranged from 0 – 13 (it included 11 PCRA items, but *number of prior misdemeanor and felony arrests* can be scored up to 2 points). A second scoring specific for white-collar offenders was created, referred to as "WCO PCRA#2". This scoring included the prior 11 PCRA items significant for white-collar offenders and added two new items. A new regression model with the 11 PCRA items explored other factors that were correlated with revocation in this study[17]. One was a new measure for *educational attainment* that had different cut-offs from the PCRA measure for *educational attainment*: a "0" was for some vocation or vocational training, college, or higher and a "1" was for less than high school, GED, or high school diploma. The other new item added to the model was for *dual diagnosis* measured as a "0" for no dual diagnosis or "1" for receiving a dual diagnosis. Two other items were correlated in the sample but when they were added to a regression model, they were no longer significant: *employment* (part-time) and the t-score for the PICTS. Additionally, when the exploratory items were added to the significant PCRA items, the item for *institutional adjustment* lost significance. In the end, the WCO PCRA#2 had ten items from the PCRA that were significant and the new items *educational attainment* and *dual diagnosis*. The WCO PCRA#2 had 12 items that ranged in score from 0 - 14.

The AUC values for the new white-collar offender specific scoring were obtained to observe if they fell within the confidence interval of the AUC value identified for the PCRA in the analyses conducted for the third research question. The AUC values for the WCO PCRA#1 and the WCO PCRA#2 both had a value of 0.856[18] (significant at .00), which fell within the confidence interval of 0.847 - 0.862 for the AUC value of 0.855 for the overall PCRA score with white-collar offenders. Since the AUC values for these two white-collar offender specific scoring protocols fell within the confidence interval for the AUC value of the overall PCRA score, it was determined that white-collar offender specific scoring does not provide any meaningful improvement in the prediction of risk of revocation for white-collar offenders.

[17] *Full-time employment* and *gambling problem* were examined as well, but they were not significantly correlated with revocation and therefore were not added to the regression model.

[18] A .001 difference was found between the AUC values for the PCRA and white-collar offender specific scoring, which may be a result of a scoring algorithm that adjusts for missing cases for the overall PCRA score. The scores for WCO PCRA#1 and WCO PCRA#2 did not use any adjustment for missing cases.

Discussion

The dissertation "Is Corrections "collar" blind: Examining the predictive validity of a risk/needs assessment tool on white-collar offenders" is the first study to explore the generalizability of risk/needs assessment to white-collar offenders. The findings of the study support the use of the PCRA with white-collar offenders, but also suggest that criminogenic needs manifest differently with this population. Some recommendations for using the PCRA with white-collar offenders are provided below as well as some suggestions for future research.

Limitations

A few limitations must be acknowledged regarding this study. First, the outcome for this study was revocation. Other outcomes such as re-arrest and reconviction may have produced different results. Another limitation is the definition adopted for "white-collar crime" in this study. Offense-based approaches include offenders who are not in powerful positions or of high social status, two characteristics that are part of the stereotype of the white-collar offender[19]. However the definition used here certainly did not exclude offenders who have higher social status or are elite, as other studies following this approach have found this as well[20]. Finally, another limitation was the relative lack of data unique to white-collar offenders and their criminal patterns and typologies, as well as their distinctive psychological and social characteristics. It is possible that if a study were able to explore a wider range of other factors that are associated with white-collar offenders, there could be an improvement in the predictive validity of the PCRA that might warrant a white-collar offender trailer or specific scoring.

Applying risk and needs principles to white-collar offenders

The results from this study provide evidence supporting the use of the PCRA with white-collar offenders. Analyses showed that the risk levels from the PCRA classify and place white-collar offenders into distinct groups according to their likelihood of being revoked. The results on the overall PCRA risk score demonstrated that the score predicts revocation among white-collar offenders. Indeed, it is a strong predictor with an AUC value of 0.855. The PCRA provides risk levels and overall scores that can be applied to white-collar offenders to their risk of being revoked from supervision.

The criminogenic needs and domains of the PCRA apply to white-collar offenders and while some individual items predicted revocation for white-collar offenders that have been significant in previous validation studies, other results diverge. Specifically, seven

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[19] Pontell, Henry N. (2016). Theoretical, Empirical, and Policy Implications of Alternative Definitions of "White-Collar Crime": "Trivializing the Lunatic Crime Rate." Pp. 39-58 in Shanna Van Slyke, Michael L. Benson, and Francis T. Cullen (eds.), *The Oxford Handbook of White-Collar Crime.* New York: Oxford University Press. Geis, G. (1996). Definition in White-Collar Crime Scholarship: Sometimes It Can Matter. In James Helkamp, Richard Ball and Kitty Townsend (eds.) *Definitional Dilemma: Can and Should There Be a Universal Definition for White-Collar Crime: Proceedings from an Academic Conference.* Morgantown, WV: National White-Collar Crime Center. Braithwaite, J. (1985). White-collar crime. *Annual Review of Sociology, 11*, 1-25.

[20] Weisburd, D., Wheeler, S., Waring, E., & Bode, N. (1991). *Crimes of the middle-classes: White-collar offenders in the federal courts*. New Haven, CT7 Yale University Press.

items scored in the PCRA were statistically significant predictors for white-collar offenders and were significant in previous validation studies where samples are comprised mostly of "street" offenders: *number of prior misdemeanor and felony arrests*, *revocation or arrest while on supervision*, *institutional adjustment*, *current alcohol problems* (however, in the opposite direction), *current drug problems*, *marital status*, and *attitude towards supervision and change.* However, risk did manifest differently in some areas. The four items that were significant for white-collar offenders that are not scored out in the PCRA were: *employed less than 50% of the last 24 months*, *continued use despite social and interpersonal problems*, *no or unstable home*, and *financial stressors*. Additionally, eight of the original predictive items, which are scored out in the PCRA were not predictive of revocation for white-collar offenders.

The unique typologies, patterns of criminal behavior, and individual characteristics for white-collar offenders likely contributes to different findings regarding the significance (or insignificance) of risk factors. For example, the PCRA scores out six items in the criminal history domain because prior studies found those six items to be significant when examined on typical samples, which are mostly comprised of "street" offenders. While this study found the items *number of prior misdemeanor and felony arrests*, *revocation or arrest while on supervision*, and *institutional adjustment* as significant, the items for *violent offense*, *varied offense pattern*, and *age at intake to supervision* were not significant. It should be expected that although some white-collar offenders have criminal histories[21], their different patterns of criminal behavior mean that certain risk factors may not apply in the standard way, given that they are less likely as a group to have violent offenses or that maybe only a certain portion of chronic white-collar offenders have a varied offense pattern[22]. White-collar crime research has also uncovered a later age of onset for white-collar offenders[23]. Thus, it is not surprising that *age at intake to supervision* as it is currently measured does not predict for white-collar offenders. White-collar offenders have criminal histories, but they differ enough to make them unique in some ways.

Another domain that had different predictors for white-collar offenders was the education and employment domain. The item *employed less than 50% of the last 24 months* was significant in this study but three items found significant in prior validation studies, *highest education level achieved*, *unemployed*, and *work history over the past 12 months*, were not significant for white-collar offenders. A sample with mostly "street" offenders would find issues with unemployment and lower levels of educational attainment, which the PCRA captures. However, with white-collar offenders different employment patterns and higher levels of educational attainment are typical. It is not that employment and education as criminogenic needs for white-collar offenders can be ignored, but rather that their risk manifests differently. The results demonstrate the importance of understanding

[21] Wheeler et al., (1982).

[22] Benson, M. L. and Moore, E. (1992). Are white-collar and common offenders the same?: An empirical and theoretical critique of a recently proposed general theory of crime. *Journal of Research in Crime and Delinquency, 29*, 251-272.

[23] Piquero, N. L and Benson, M. L. (2004). White-collar crime and criminal careers: Specifying a trajectory of punctuated situational dependent offending. *Journal of Contemporary Criminal Justice, 20*, 148-165. Wheeler et al., (1982).

employment as a criminogenic need that is more than an issue with finding a job, but the attitudes and values around pro-social employment. After all, a substantial portion of white-collar offenders used their job to commit their offense. The significant item in the employment and education domain may be tapping into employment instability related to other underlying issues with white-collar offenders.

Two domains where white-collar offenders had similar significant factors were in the substance abuse and cognitions domain. The same item *attitude towards supervision and change* was predictive for white-collar offenders just as it was predictive in prior validation studies. Prior research suggests that white-collar offenders are not very different in their criminal thinking and use of justifications as other offenders[24]. Yet, white-collar offenders may be a harder group in terms of challenging their criminal thinking when their justifications can be drawn from the norms of society such as pursuing wealth and obtaining success[25]. For example, a probation officer may find it easier to challenge the antisocial cognitions of a street offender who uses a weapon to steal from a neighborhood store than challenging the justifications of a white-collar offender, who during the course of their occupation embezzled with the belief that they worked hard and weren't paid enough by their employer. Both offenders may claim "they earned what they stole", but the different context may make it harder for a supervising officer to challenge those antisocial cognitions.

The items for *current alcohol problems* and *current drug problems* were significant in this study as well as prior studies. However, *current alcohol problems* was predictive in the opposite direction and the item *continued use despite social and interpersonal problems* was significant in this study, although it is not scored out in the PCRA. This domain emphasizes what some of the other research on white-collar offenders has portrayed regarding alcohol and drug use; there are some similarities to the general offender population but some differences as well[26]. More research is needed in this area to understand the substance abuse needs among white-collar offenders and how it might impact their success on supervision and contribute to their chances of recidivating.

The social networks domain offers an intriguing portrait of the risk factors associated with revocation for white-collar offenders. The only significant item was

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[24] Ragatz, L. L., Fremouw, W., and Baker, E. (2012). The psychological profile of white-collar offenders: Demographics, criminal thinking, psychopathic traits, and psychopathology. *Criminal Justice and Behavior, 39*, 978-997. Walters, G. D., and Geyer, M. D. (2004). Criminal thinking and identity in male white-collar offenders. *Criminal Justice and Behavior, 31,* 263-281.

[25] Benson, M. L and Simpson, S. S. (2015). *White-Collar Crime: An Opportunity Perspective*. New York: Routledge. Coleman, James W. 1987. Toward an Integrated Theory of White-Collar Crime. *American Journal of Sociology, 93*, 406-39.

[26] Benson, M. L. and Moore, E. (1992). Are white-collar and common offenders the same?: An empirical and theoretical critique of a recently proposed general theory of crime. *Journal of Research in Crime and Delinquency, 29*, 251-272. Poortinga, E., Lemmen, C., and Jibson, M. D. (2006). A case control study: White-collar defendants compared with defendants charged with other nonviolent theft. *The Journal of the American Academy of Psychiatry and the Law, 34*, 82-29. Weisburd, D. Waring, E. J. and Chayet, E. F. (2001). *White-Collar Crime and Criminal Careers*. New York: Cambridge University Press.

marital status, which was significant in prior validation studies. The items *lives with spouse and/or children*, *companions*, and *lacks positive pro-social support* approached significance but did not reach .01 in this study. This is a domain that should receive more attention in the future. There is an assumption that white-collar offenders have more positive social connections, but conviction may sever those relationships making this an important criminogenic need on supervision. Or, it may be possible those relationships became risky before involvement in the criminal justice system. Another consideration in this domain concerns the conceptualization of *companions* as a risk factor. Traditionally, correctional agencies consider peers or associates as antisocial or negative if they are affiliated with gangs or involved in criminal behavior associated with "street' crimes. With white-collar offenders, companions should be explored differently such as looking at the work associates that may be transferring values and attitudes at the workplace conducive to white-collar crime, just as Sutherland[27] suggested. Again, this domain applies for white-collar offenders but understanding how risk factors manifests for white-collar offenders may differ compared to "street" offenders.

The "other" domain found that *no or unstable home* and *financial stressors* were predictive for white-collar offenders. These items are not scored out by the PCRA and are being explored in future studies. For white-collar offenders, these areas may become risk factors as part of the consequences of receiving a conviction. Also, issues with finances or home could be issues that existed prior to conviction and are wrapped up in the justifications white-collar offenders use for committing their offense. These items demonstrate another area where white-collar offenders have similar life problems as "street" offenders but needs are different.

Recommendations

Results from this study suggest that the PCRA can be used with white-collar offenders for the purposes of predicting risk. The analyses demonstrated statistically significant findings supporting the use of the PCRA risk levels and overall PCRA risk score when predicting revocation among white-collar offenders. Even though the study found both similarities and differences among the individual PCRA items, modifying scoring specifically for white-collar offenders did not demonstrate any meaningful improvement in the prediction of risk of revocation. As this is the only study to date that examines the PCRA or risk/needs assessment with a sample comprised of white-collar offenders only, the research indicates that the PCRA should continue to be used with white-collar offenders as the scoring guide directs.

Criminogenic needs areas apply to white-collar offenders, but their risk can manifest differently because of the unique patterns of criminal activity and the distinctive psychological and social characteristics of this population. The PPSO should consider developing training for supervising officers who work with a significant number of white-collar offenders. This training could address misconceptions that white-collar offenders

[27] Sutherland, E. H. (1998). Differential association. In F. P. Williams, III and M. D. McShane, *Criminology Theory: Selected Classic Readings* (pp.77-82). Cincinnati, OH: Anderson Publishing Co.

are more likely to be compliant and not re-offend[28], and could also focus on the risk factors that are significant for this population, so that supervising officers can target those needs effectively. While the PCRA predicts risk, it is important that the unique needs of white-collar offenders are addressed in order to reduce their likelihood of committing a new offense. In this study, 2.2% white-collar offenders were high risk, 7.7% were moderate risk, and 23.4% were low/moderate risk. Thus, a portion of white-collar offenders do need correctional intervention to reduce their likelihood of being revoked. In some districts that supervise a significant portion of white-collar offenders, it would be worthwhile to help supervising officers understand how they can target the unique aspects of risk for this population. In larger, urban offices where there is greater representation of this type of offender, consideration may even be given to creating a specialized caseload where a supervisor officer who understands the unique risk factors of white-collar offenders can learn how to address their needs in a more dedicated way.

Areas for Future Research

Most important though, the PPSO should consider partnering with researchers in the academic community familiar with the unique aspects of white-collar crime and white-collar offenders to examine other potential areas of risk for this population. There are two reasons more research is needed for white-collar offenders under community supervision. First, there are some relationships regarding the criminogenic needs of this population that need to be explained more clearly through additional research. Second, this study only used revocation as an outcome and prior research suggests that a substantial portion of white-collar offenders do commit new offenses over time[29]. This is important given that when these offenders recidivate, committing a new white-collar offense can mean more victims and more costs given the nature of this type of offending.

More validation studies: The PPSO should validate the PCRA on white-collar offenders with different outcomes other than revocation such as re-arrest and reconviction to pursue additional replication of this study.

White-collar crime specific data: A lack of data specific to white-collar offenders and their patterns of criminal behaviors was a limitation in this study when exploring the potential of a white-collar offender specific trailer as a means to improve the predictive capabilities of the PCRA. There is research on white-collar offenders and their criminal careers that provides some insight into what data to collect for this population. Some of this data could help identify other risk factors unique to this group that would allow the agency to identify risk among white-collar offenders better, but also understand their criminogenic needs better so their risk can be reduced. For example, examining personality characteristics related to psychopathy [30]and collecting information about the

[28] Benson, M. L. (1985). White-collar offenders under community supervision. *Justice Quarterly, 2*, 429-438.
[29] Weisburd, D. Waring, E. J. and Chayet, E. F. (2001). *White-Collar Crime and Criminal Careers*. New York: Cambridge University Press.
[30] Ragatz, L. L., Fremouw, W., and Baker, E. (2012). The psychological profile of white-collar offenders: Demographics, criminal thinking, psychopathic traits, and psychopathology. *Criminal Justice and Behavior, 39*, 978-997.

motivations to commit white-collar offenses[31], are two areas where other research could guide efforts to collect more data on offenders who commit these offenses.

Additional research on white-collar offenders: This study found some areas where more research is needed to understand the criminogenic needs of white-collar offenders. While substance abuse issues exist among this population, it is unclear how the needs around drugs and alcohol may be similar to other offenders correctional agencies deal with. Dual diagnosis was a significant predictor in this study and alcohol abuse was significant, but in the opposite direction of prior studies. Prior research using the PICTS with white-collar offenders found some similarities between them and other offenders, but subscales could be explored to understand where some of the differences exist among white-collar offenders[32]. Since this is the first study to apply the principles of risk and need to white-collar offenders, additional research on criminogenic needs is necessary to create a more comprehensive portrait of reducing risk for white-collar offenders.

Conclusion

The results presented in this summary represent the findings from the first study to explore the principles of risk and need with white-collar offenders and to validate a risk/needs assessment tool on a sample comprised solely of this population. While the study found that a large portion of white-collar offenders were scored as low risk (66.7%), a third of the sample was classified in higher risk levels that are likely to warrant correctional intervention due to the presence of criminogenic needs. The results of the study demonstrate that the PCRA is a valid tool for predicting revocation among white-collar offenders. The study also shows that based on available data, there is no meaningful improvement in prediction from the PCRA when a white-collar offender specific scoring protocol is created. Because there are some limitations, particularly the outcome variable and the need to clarify the findings concerning specific needs for white-collar offenders, it is recommended that more research on this population be explored to ensure that supervising officers have the knowledge and skills to target the risk factors associated with white-collar offenders.

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[31] Benson, M. L. and Moore, E. (1992). Are white-collar and common offenders the same?: An empirical and theoretical critique of a recently proposed general theory of crime. *Journal of Research in Crime and Delinquency, 29*, 251-272. Piquero, N. L. (2012). The only thing we have to fear is fear itself: Investigating the relationship between fear of falling white-collar crime. *Crime & Delinquency, 58*, 362-379.

[32] Ragatz, L. L., Fremouw, W., and Baker, E. (2012). The psychological profile of white-collar offenders: Demographics, criminal thinking, psychopathic traits, and psychopathology. *Criminal Justice and Behavior, 39*, 978-997. Walters, G. D., and Geyer, M. D. (2004). Criminal thinking and identity in male white-collar offenders. *Criminal Justice and Behavior, 31,* 263-281.