

Youth Level of Service/Case Management Inventory Validation Study

Kansas Juvenile Justice Oversight Committee

June 29, 2020



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Agenda

- YLS/CMI in Kansas
- Purpose of a Validation
- Study Limitations
- Kansas YLS/CMI Validation
- Recommendations

YLS/CMI in Kansas



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YLS/CMI

- The Youth Level of Service/Case Management Inventory (YLS/CMI) is a risk and needs assessment designed by Multi-Health Systems.
 - The tool has eight domains with a total of 42 items
 - Many validations across the USA and Canada have demonstrated the validity of the tool and have made it one of the most commonly used tools in the USA
 - Risk level is used for supervision length and type; domains are used for case planning

YLS/CMI in Kansas

- Both the Kansas Department of Corrections (KDOC) and the Office of Judicial Administration (OJA) use the YLS/CMI
 - KDOC began using the YLS/CMI in 2006
 - Staff are trained by KDOC trainers, who were trained by MHS, and recently the University of Cincinnati
 - Assessments are recorded in the CASIMS database
 - OJA began using the YLS/CMI in 2016
 - Staff are trained by University of Cincinnati trainers
 - Assessments are recorded on paper and stored locally.
 - Both agencies will be switching to the YLS/CMI 2.0
 - Very similar to the current version

Purpose of a Validation



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Purpose of a Validation

- A validation
 - Determines if the risk assessment predicts recidivism outcomes for the target population
 - Informs next steps with the risk assessment
- It should be completed every 2-3 years for risk and needs assessments

Purpose of a Validation

- Three research questions are answered
 - Is the YLS/CMI a Valid Instrument for Predicting Youth Recidivism in Kansas?
 - Does the Kansas YLS-CMI Reliably Classify Risk Levels Based on Increasing Rates of Recidivism?
 - Does the Kansas YLS-CMI consistently predict the risk of recidivism for various subgroups?

Purpose of a Validation

- Statistical analyses are used to complete the validation
 - Univariate analyses – to describe the data
 - Bivariate analyses – to determine the strength and relationships between variables and outcomes
 - Multivariate analyses – to determine performance using controls

Study Limitations



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Limitations

- Cohort Sampling
- Matching
- Data Quality

Cohort Sampling

- Throughout 2018 and 2019, CJI conducted a series of interrater reliability (IRR) exercises
 - Coaching memos and later webinars followed each exercise
 - IRR scores never reached the threshold of 80% reliable
- For this reason, using a sample from all staff for the validation study was not possible
- CJI determined a cohort of staff that did meet the 80% threshold
 - This cohort included 103 staff members, out of 313 who participated in the IRR process

Cohort Sampling

- The cohort approach allowed the validation to accurately measure the validity of the YLS/CMI
 - This approach means, however, that the validation does NOT assess the way the tool is used by all staff across the state
- It is therefore possible that the cohort YLS/CMI scores do not accurately reflect the YLS/CMI scores of all youth who have been assessed

Matching

- There is no unified individual identifier across the youth and adult systems
 - This is good for privacy and ethical reasons
 - Introduces potential errors when trying to track someone across both systems
- Matching between youth and adult systems was done using name and (when available) date of birth
- Name matching systematically undercounts recidivism, but because these match errors are random it should not effect our assessment of the validity of the tool

Data Quality

- Scanned paper records were manually digitized
 - This introduces opportunities for data entry errors
- When writing out names by hand, assessors are more likely to use shortened first names, initials, and nicknames, making matching difficult
- Data elements like date of birth are were not consistently recorded on handwritten documents, making matching more error prone

Kansas YLS/CMI Validation



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Sample Description

- Number of risk assessments in the data: 18,493
- Case inclusion criteria
 - Received a YLS/CMI between 2008 and 2017 conducted by a staff member who participated in the interrater reliability process during 2018/2019 and demonstrated high levels of
 - Supervised by Court Services, Community Corrections, or the Department of Corrections
 - Discharged two or more years from the end of court data
- Number of complete risk assessments that met the eligibility criteria: 2,723

Sample Description

Race	Non-cohort	Cohort
White	72.1%	71.9%
Black	22.3%	23.8%
Other	5.1%	4.3%

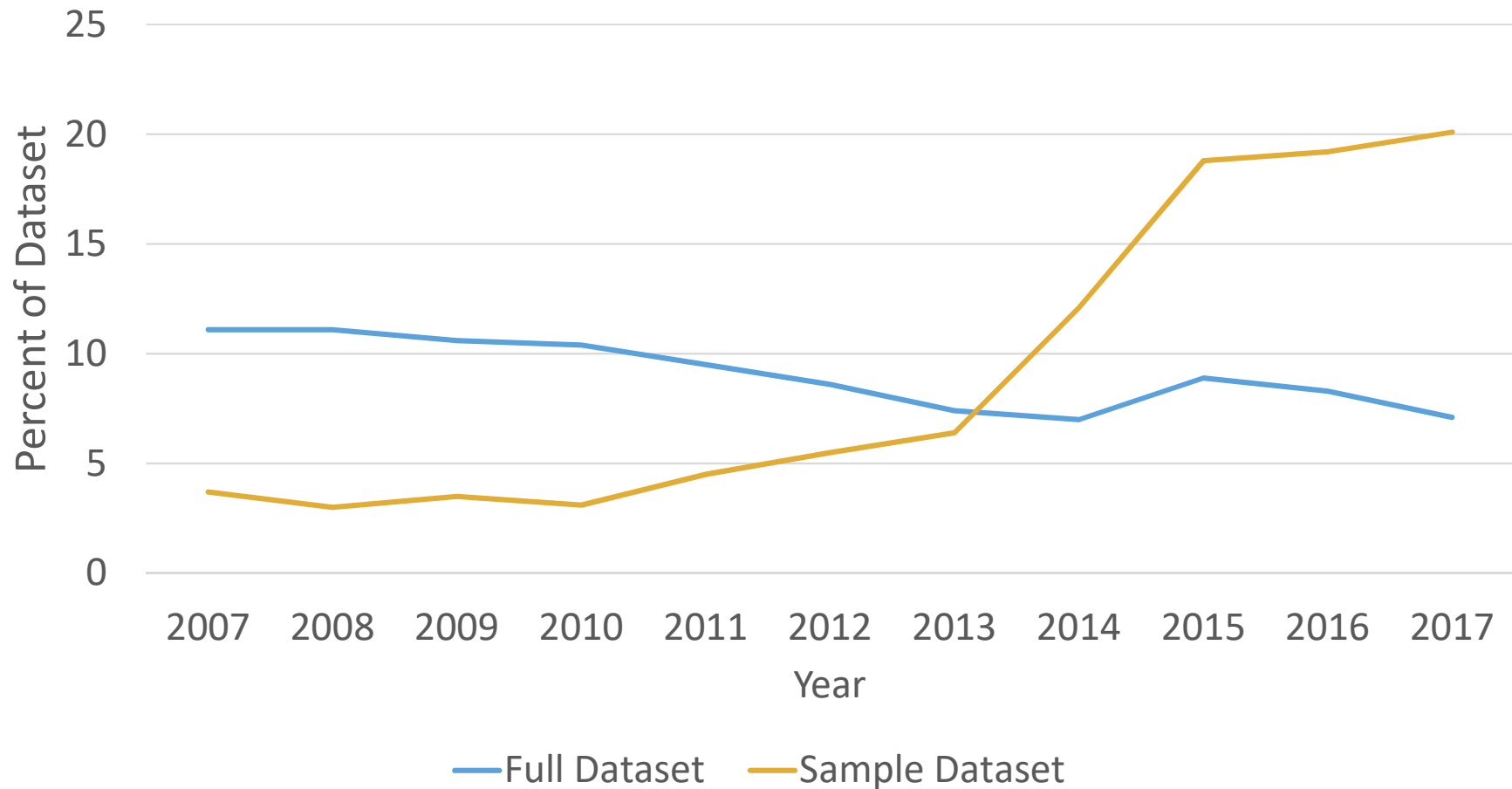
Sex	Non-cohort	Cohort
Male	78.6%	74.3%
Female	18.3%	23.6%
Unknown	0.9%	0.6%

Ethnicity	Non-cohort	Cohort
Non-Hispanic	78.7%	88.5%
Hispanic	19.2%	10.1%

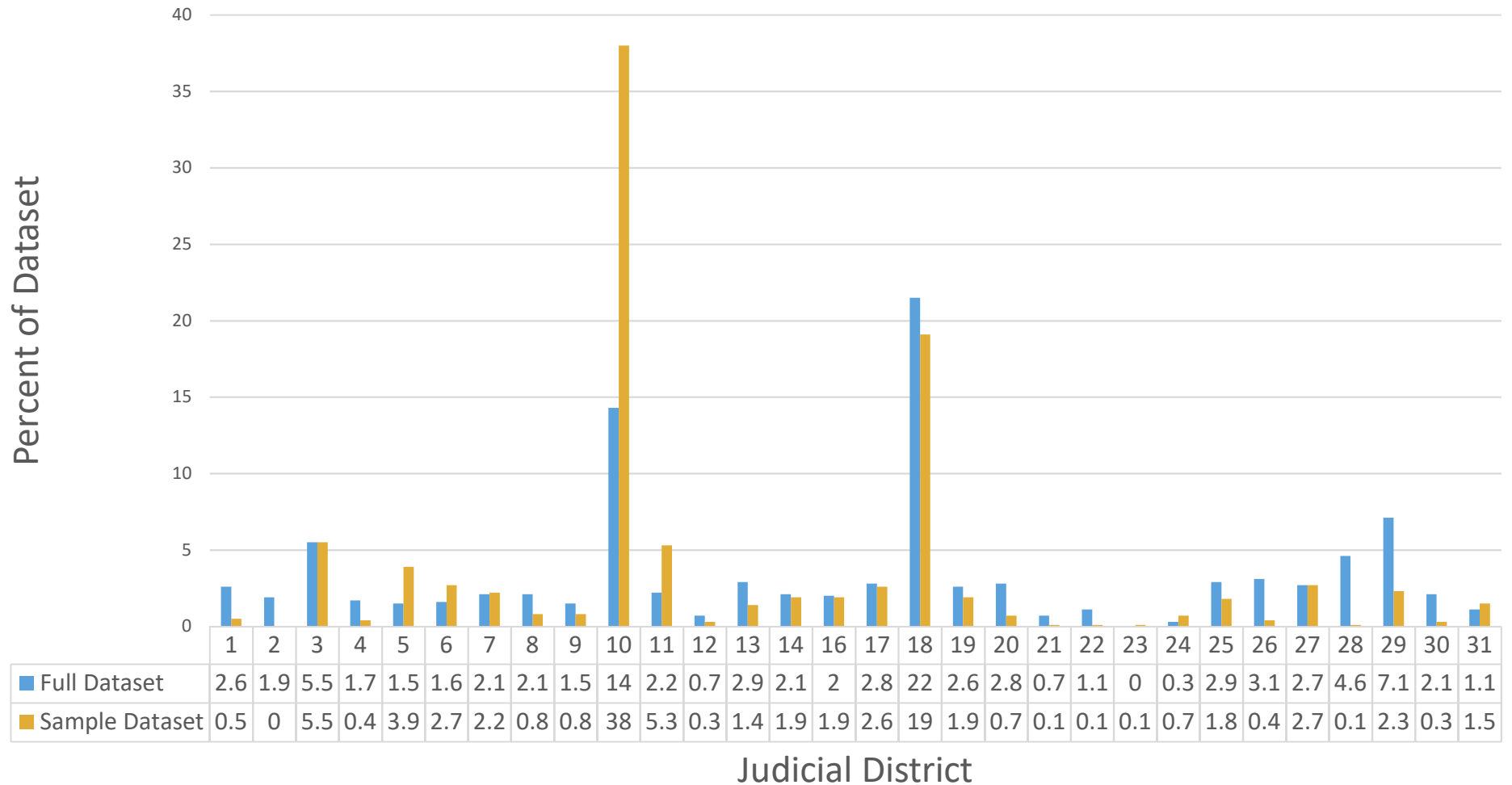
Severity	Non-cohort	Cohort
Felony	36.0%	29.2%
Misdemeanor	59.8%	68.3%
Other/Unknown	4.0%	2.5%

Age	Non-cohort	Cohort
Median	17	16
Average	16.5	16.3

Portion of Data Sets by Assessment Year



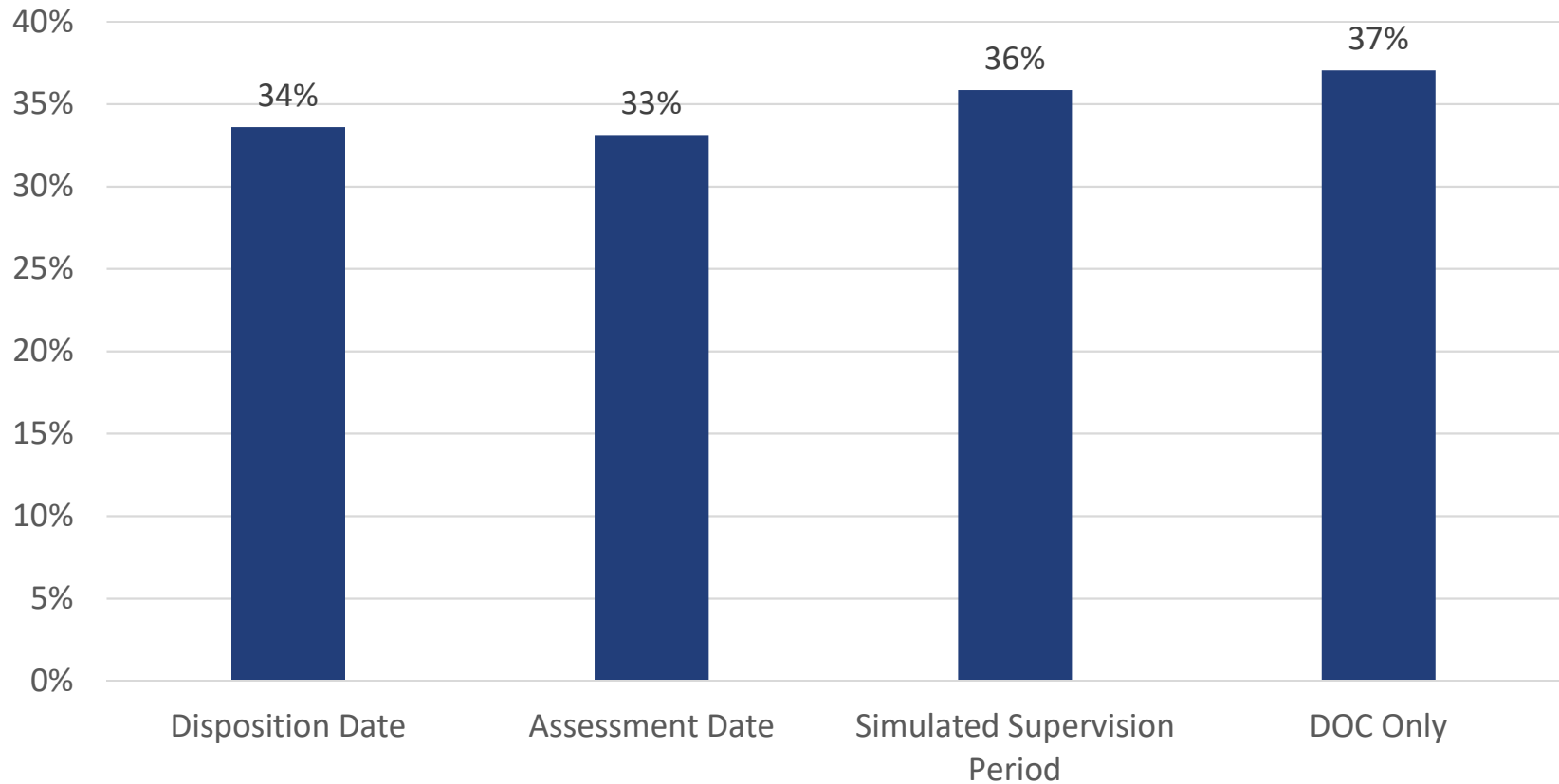
Portion of Datasets by Judicial District



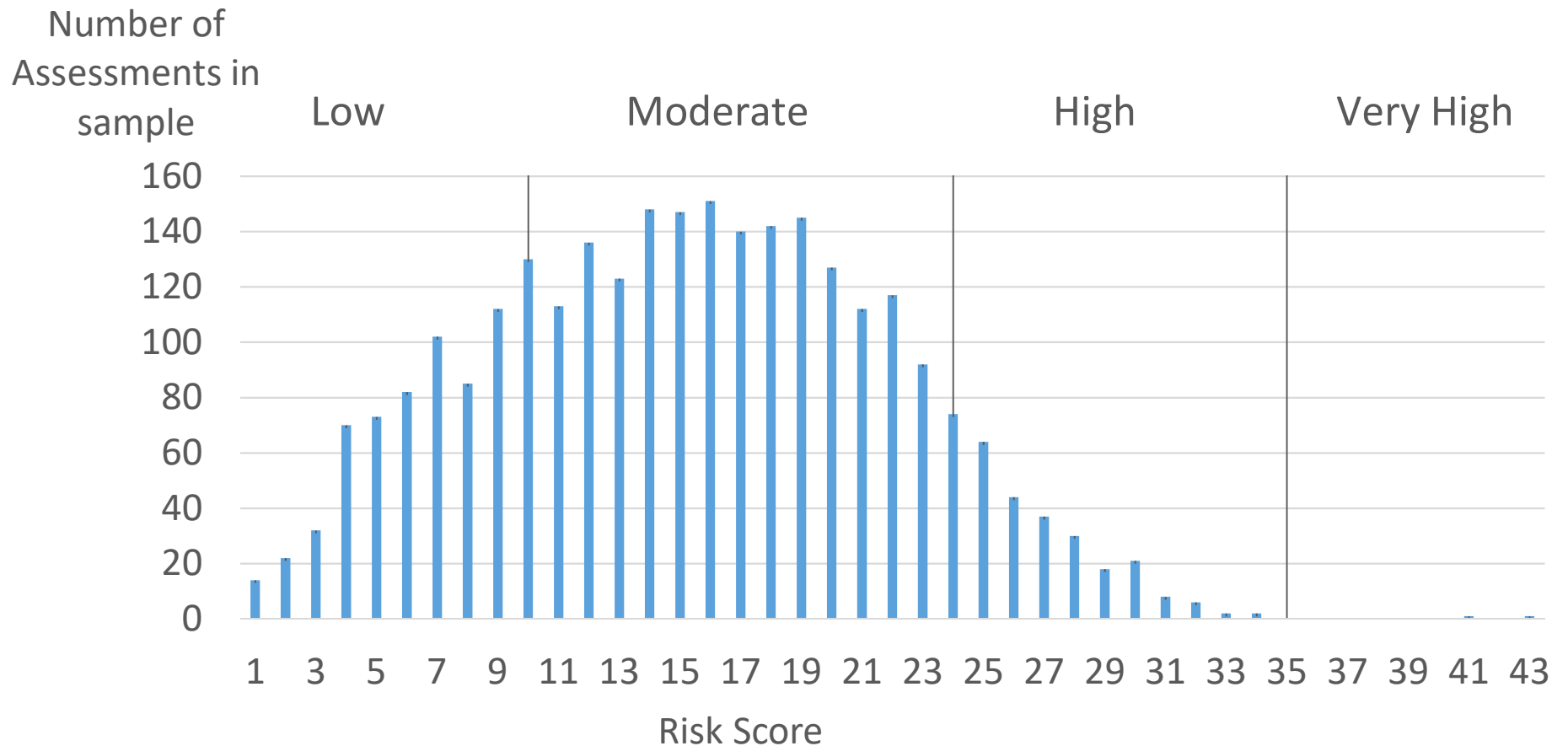
Portion of Datasets by Agency

Category	KDOC	KDOC % of Total Sample	Judicial Branch	Judicial Branch % of Total Sample
Sample Size	1,479	54%	1,244	46%
White	1,067	54%	894	46%
Black	339	52%	312	48%
Male	1,148	57%	881	43%
Female	277	43%	362	57%

Recidivism Rates Calculation Methods

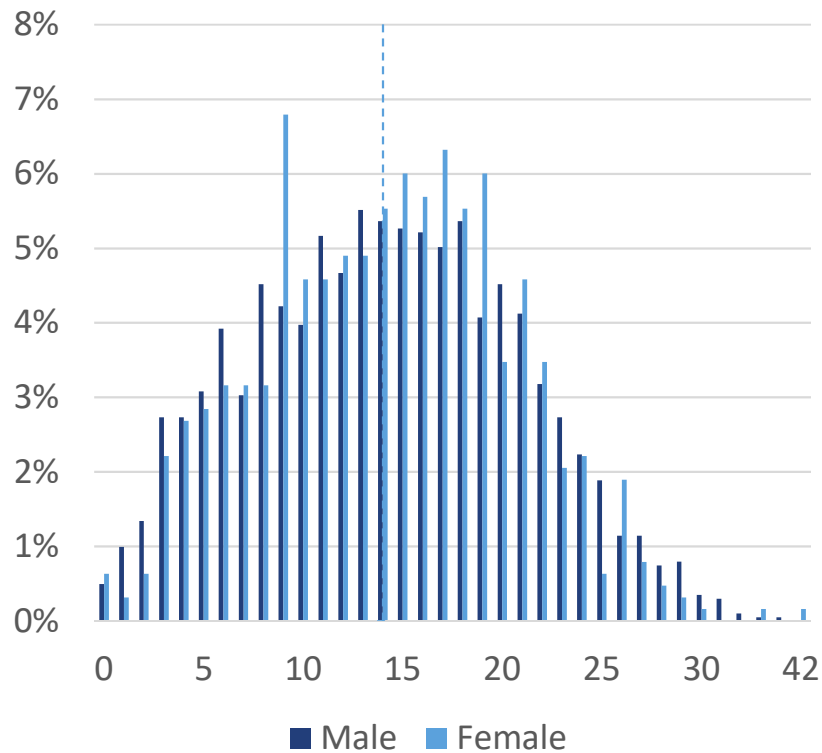


Risk Score by Level Distribution

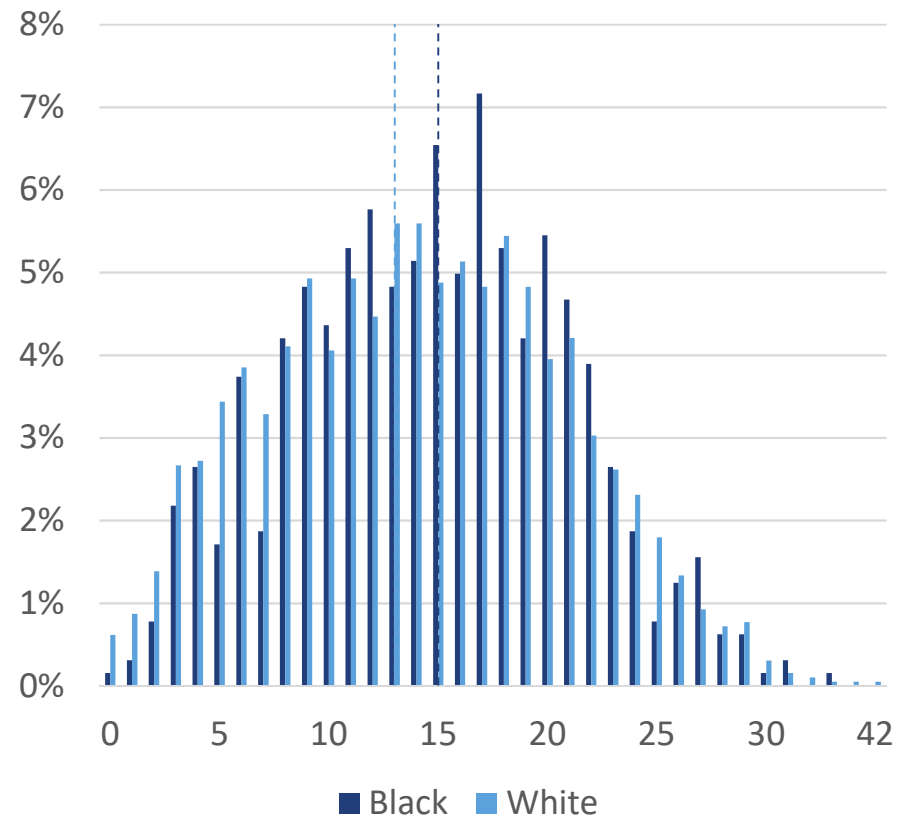


Risk Score Distribution

Risk Score Distribution by Gender



Risk Score Distribution by Race



Question #1

Is the YLS/CMI a Valid Instrument for Predicting Youth Recidivism in Kansas?

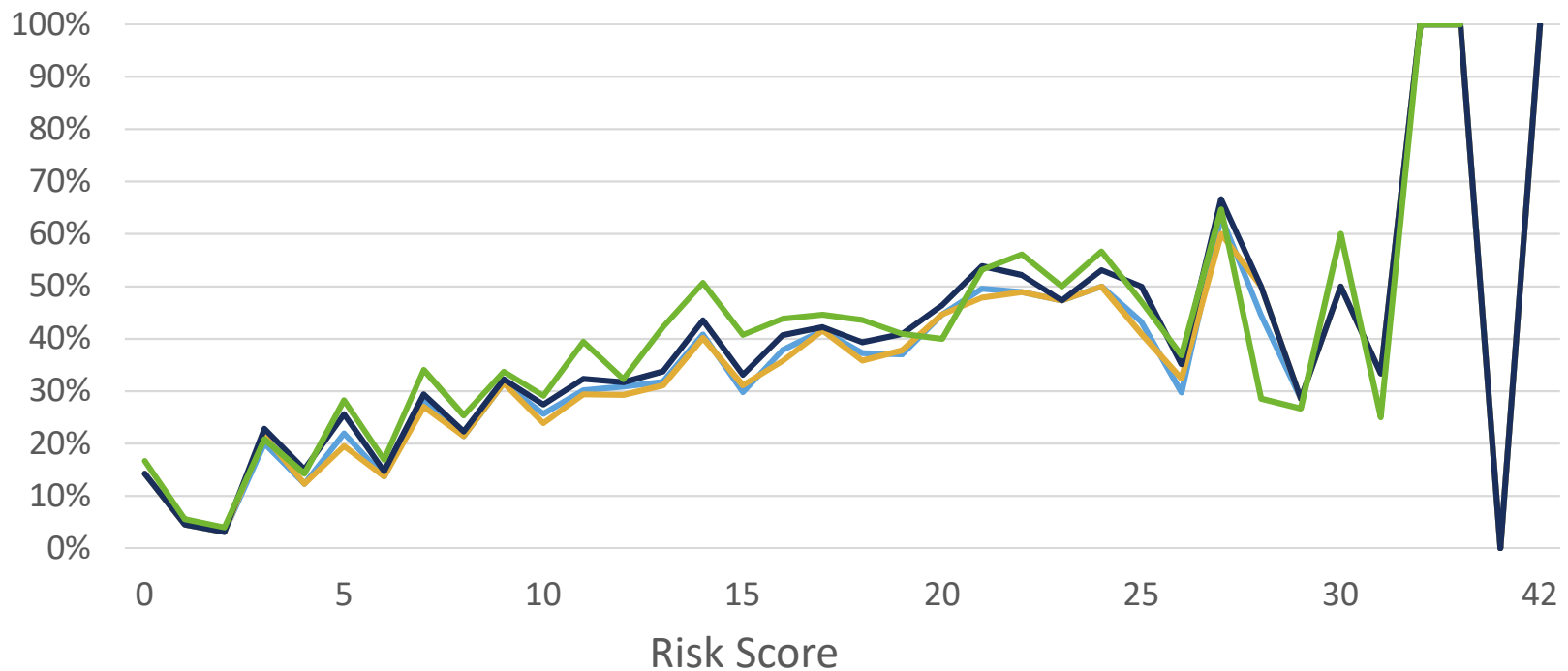


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Recidivism Rates by Risk Score

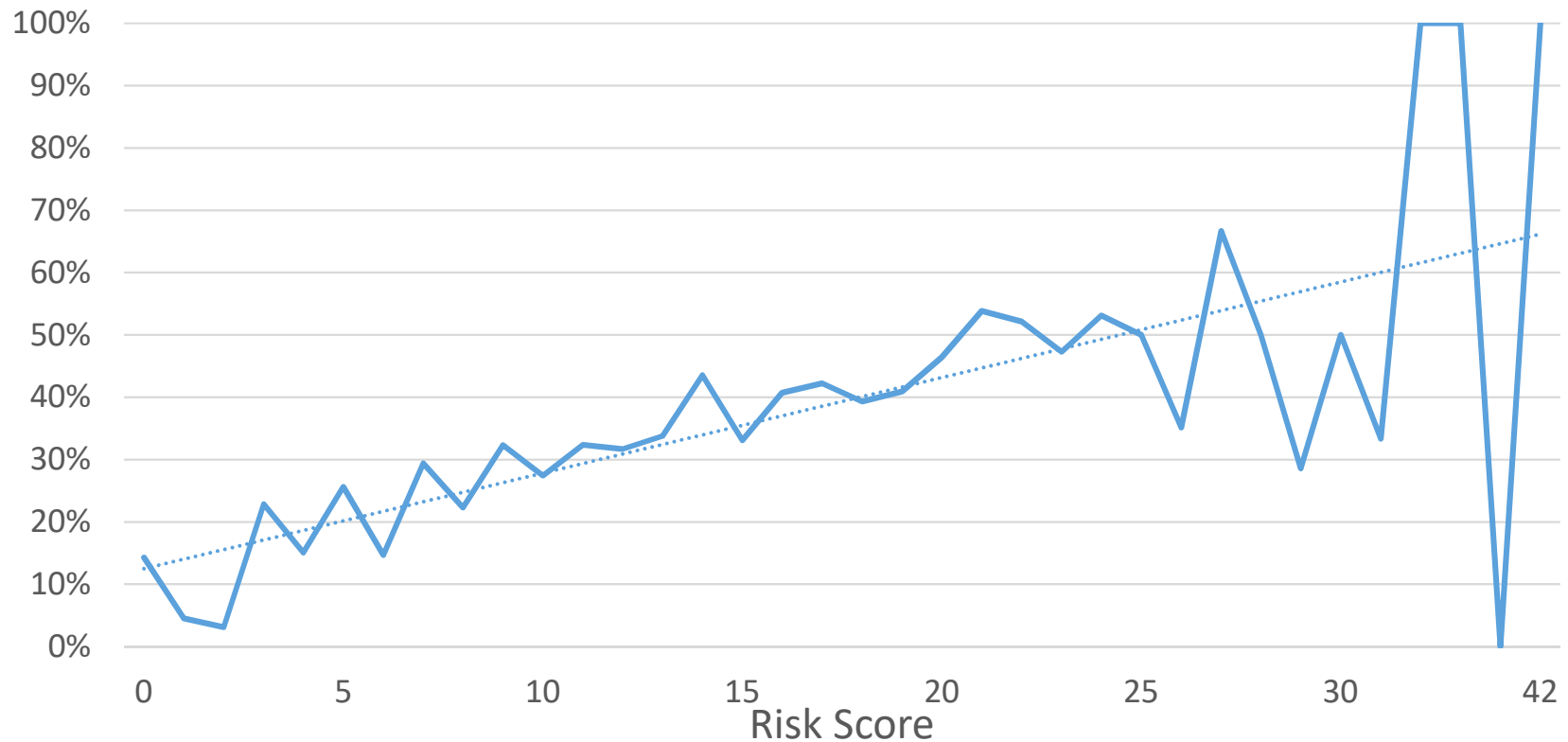
Estimated
Recidivism Rate



— Disposition Date — Assessment Date
— Simulated Supervision Period — DOC Only

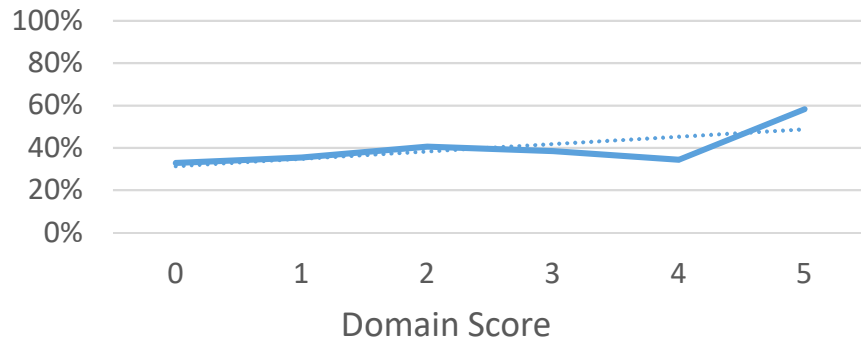
Recidivism Rate by Risk Score

Estimated
Recidivism Rate

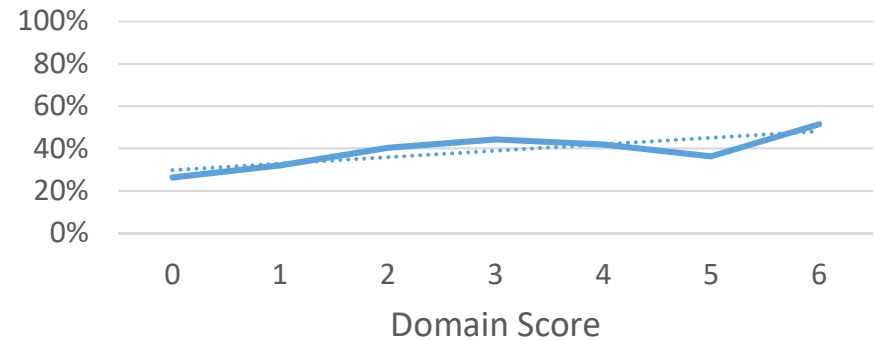


Individual Domain Scores

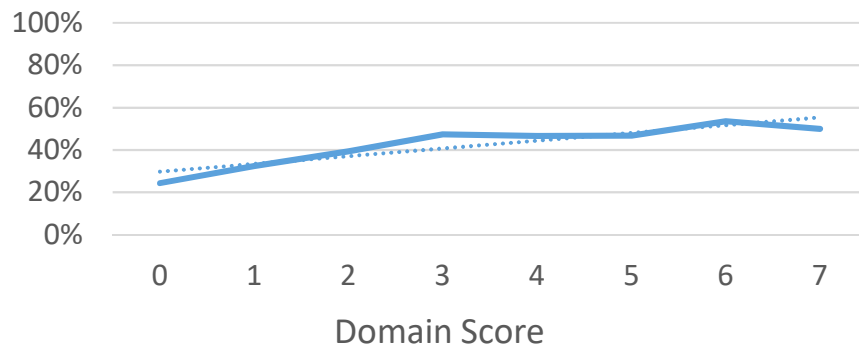
Offense Domain



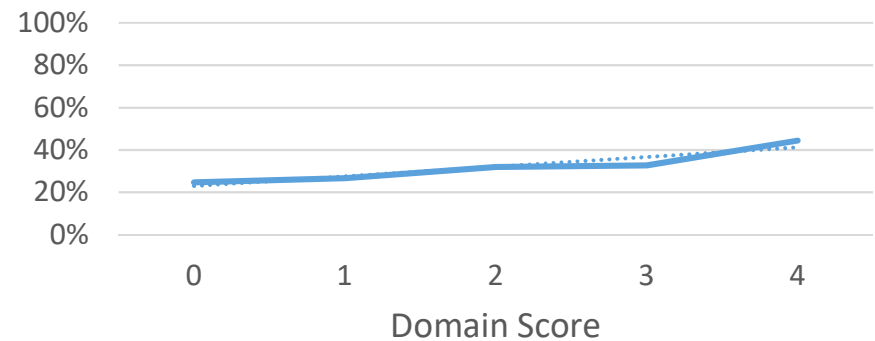
Family Domain



Education/Employment Domain

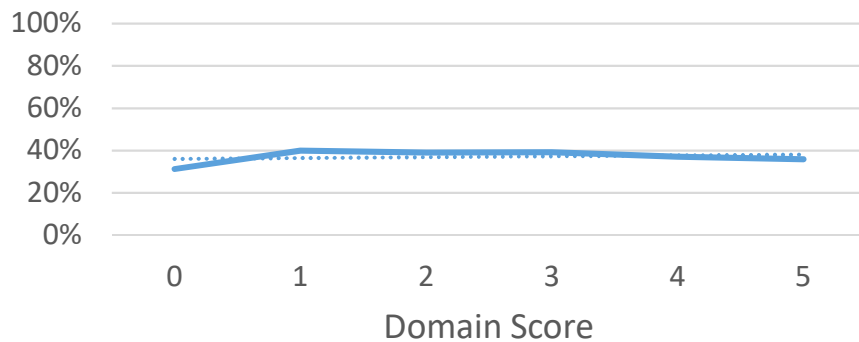


Peer Domain

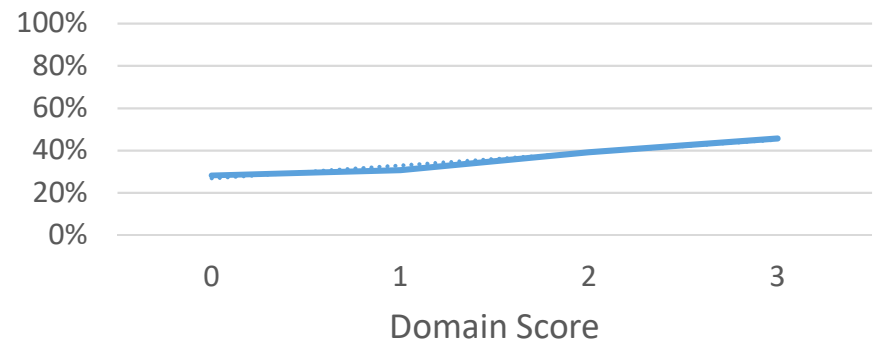


Individual Domain Scores

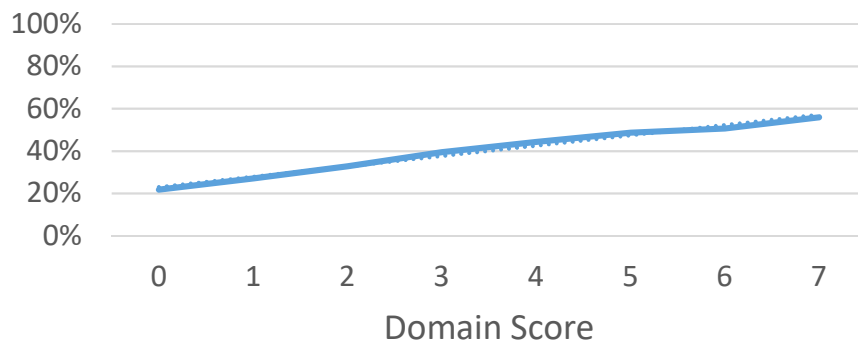
Substance Abuse Domain



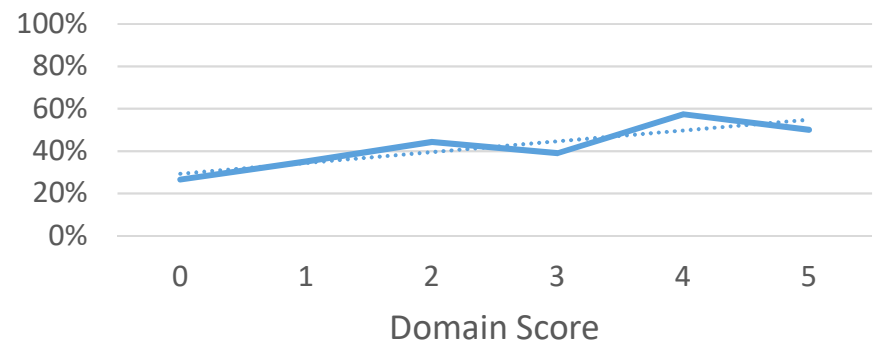
Leisure/Recreation Domain



Personality Domain



Attitude/Orientation Domain



Question One Summary

Is the YLS/CMI a Valid Instrument for Predicting Youth Recidivism in Kansas?

- Recidivism Increases as Risk Score Increases
- This result is robust to how different methods of accounting for when the recidivism window occurs
- Most individual domains are predictive, but not all

Question #2

Does the Kansas YLS-CMI Reliably Classify Risk Levels Based on Increasing Rates of Recidivism?

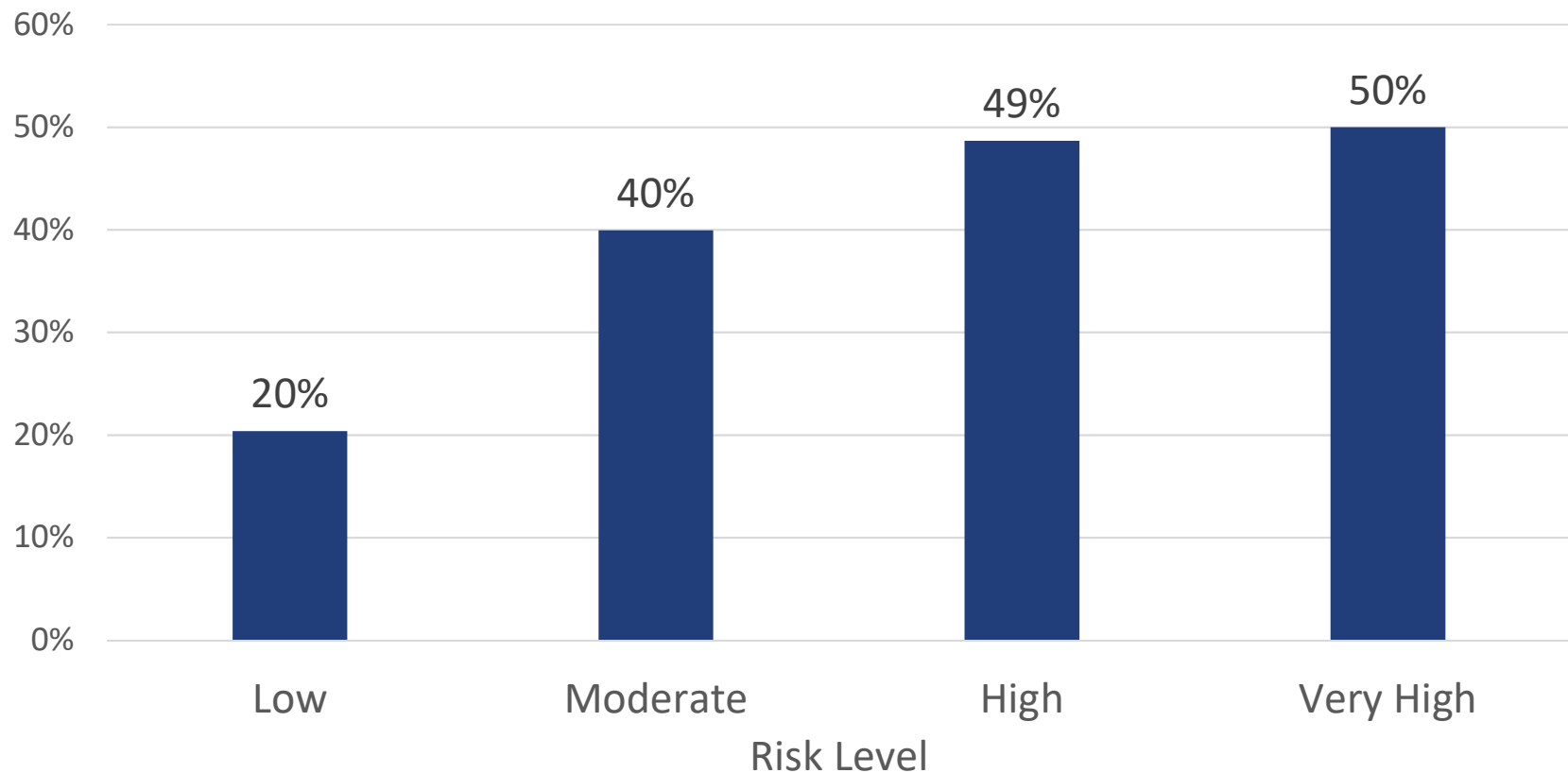


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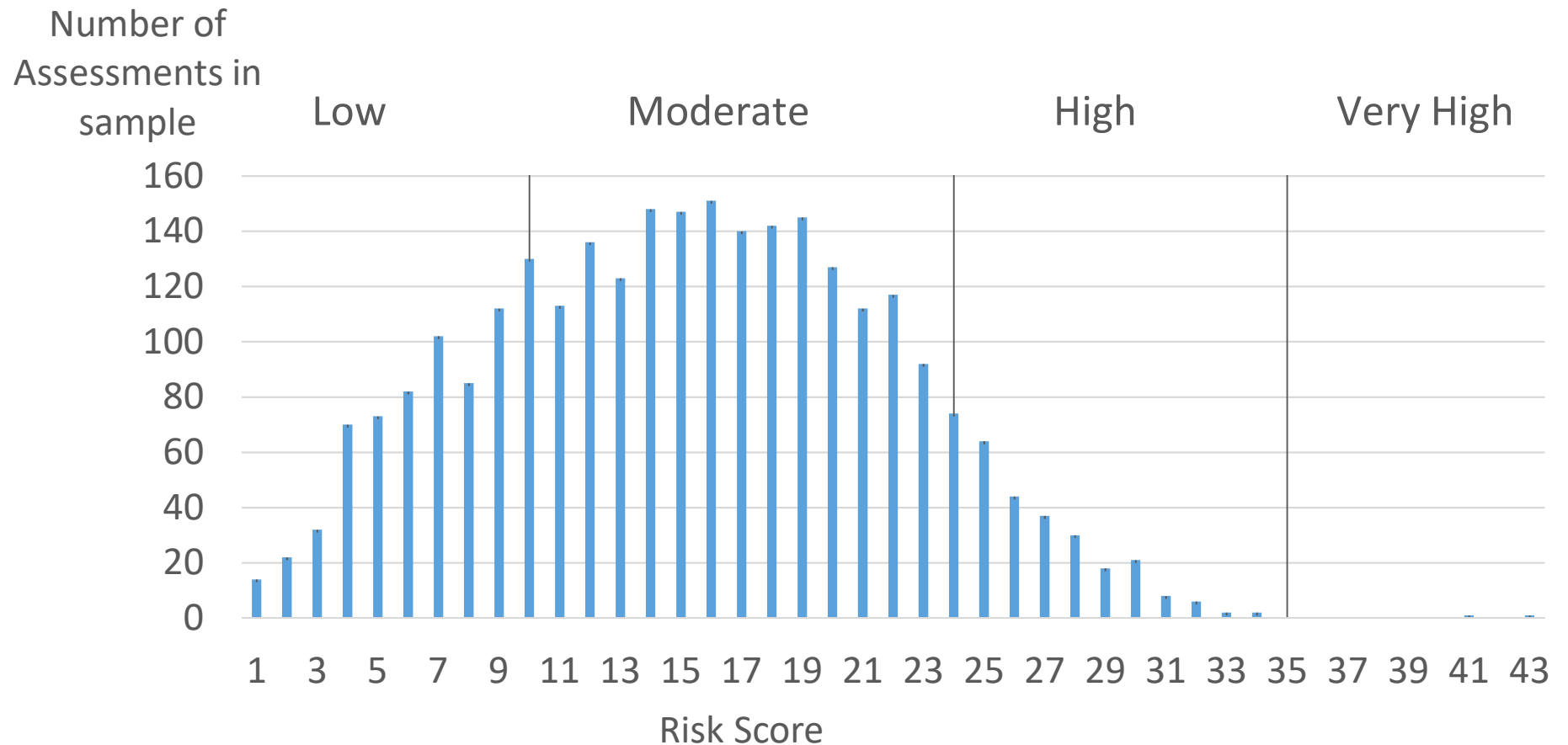
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Recidivism Rate by Risk Level

Estimated
Recidivism Rate



Risk Score by Level Distribution



Question Two Summary

Does the Kansas YLS-CMI Reliably Classify Risk Levels Based on Increasing Rates of Recidivism?

- Recidivism Risk increases as Risk level increases
- Risk levels are not evenly distributed across the population and raw risk scores are more predictive than risk levels
- Risk levels could be more accurate with new cutoffs

Question #3

Does the Kansas YLS-CMI consistently predict the risk of recidivism for various subgroups?

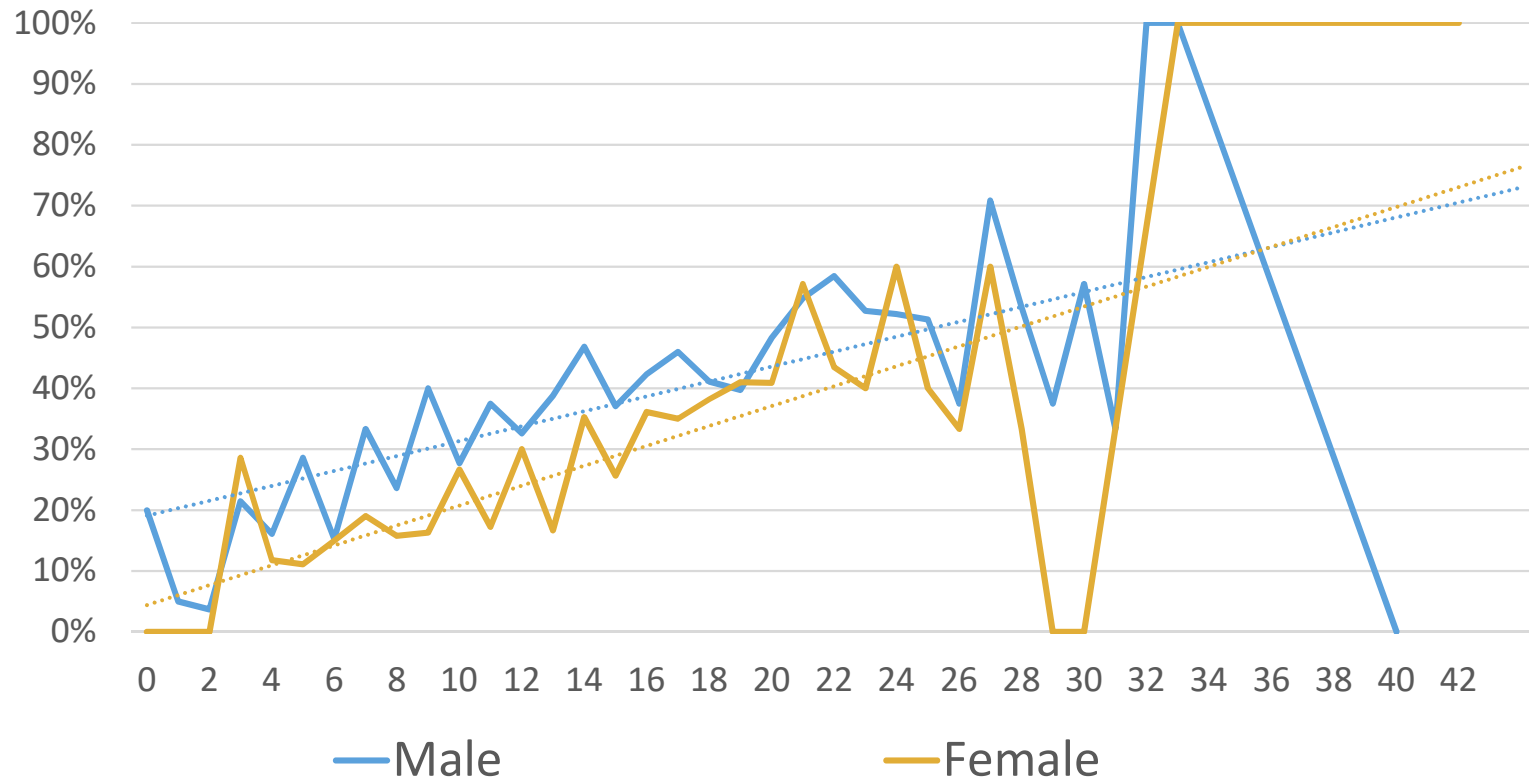


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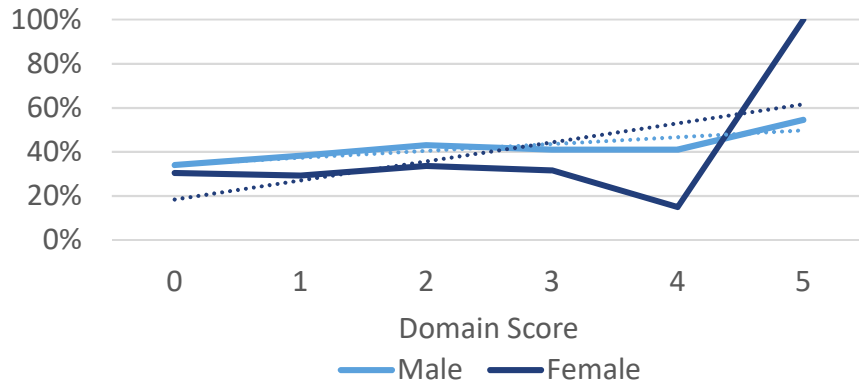
Recidivism Rate by Score and Gender

Estimated Recidivism Rate

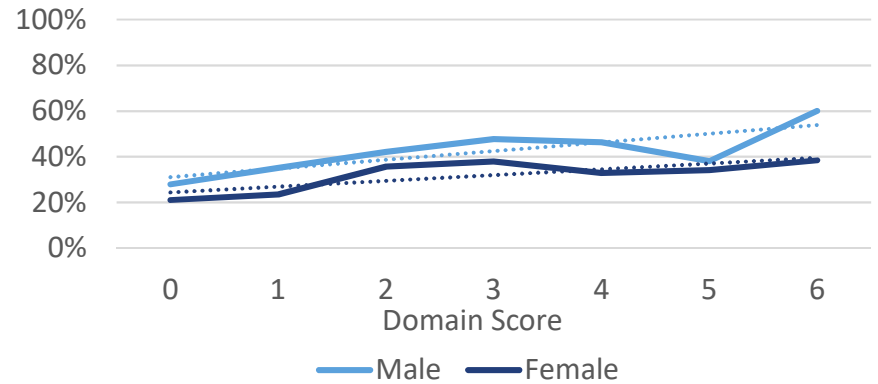


Individual Domain Scores

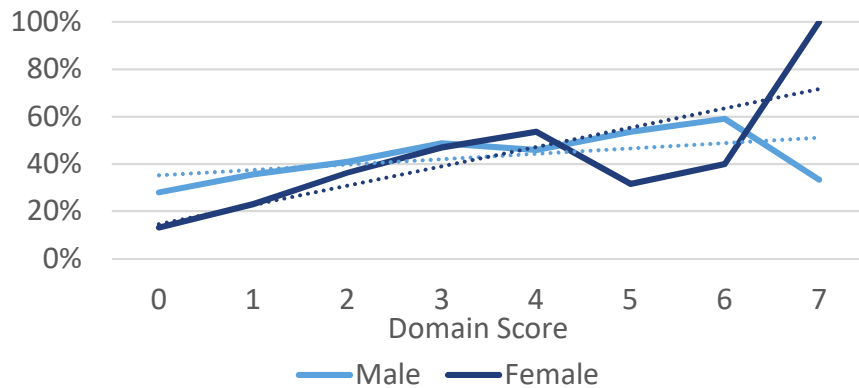
Offense Domain



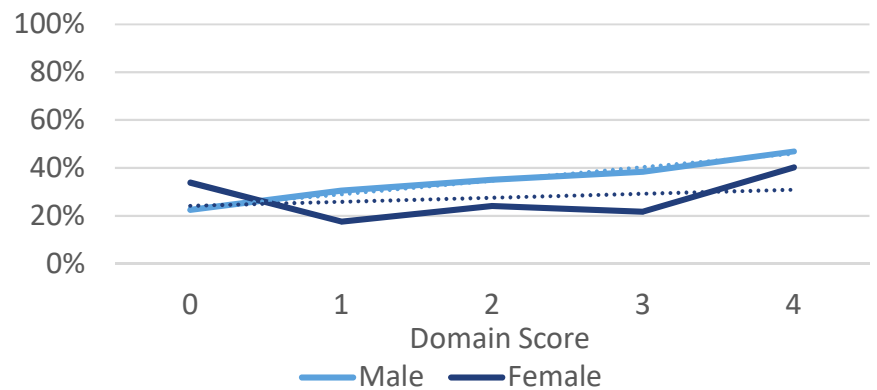
Family Domain



Education/Employment Domain

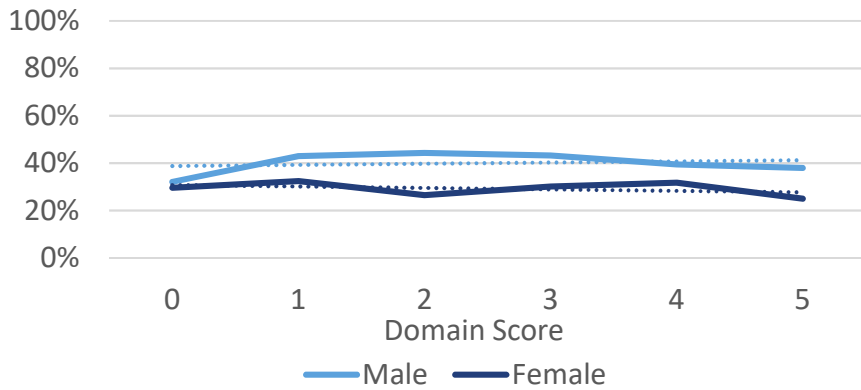


Peer Domain

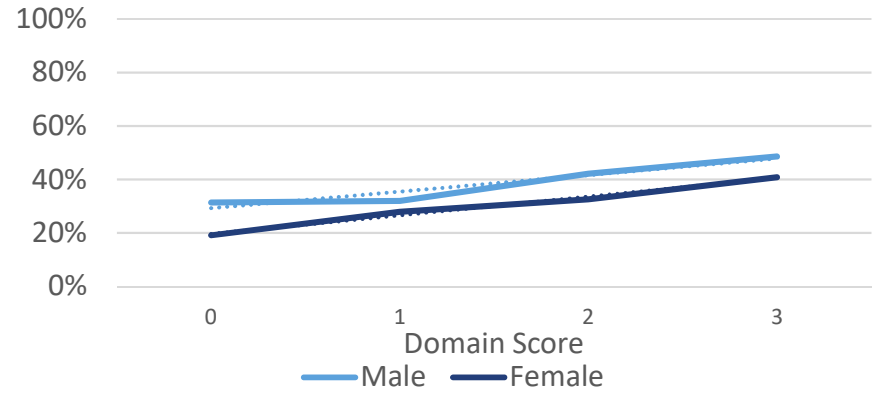


Individual Domain Scores

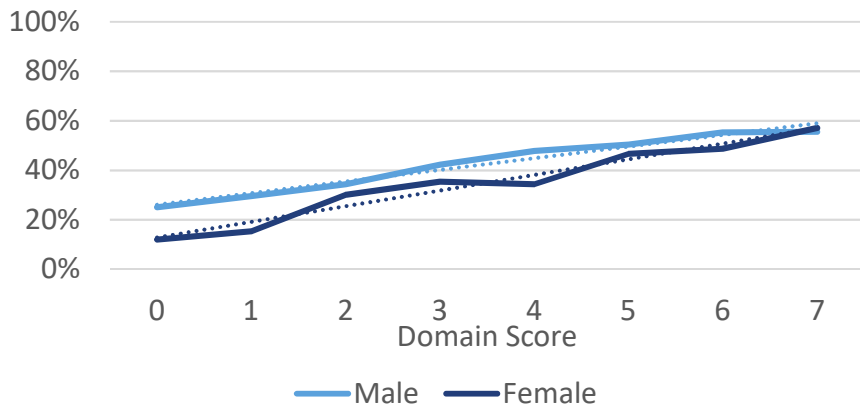
Substance Abuse Domain



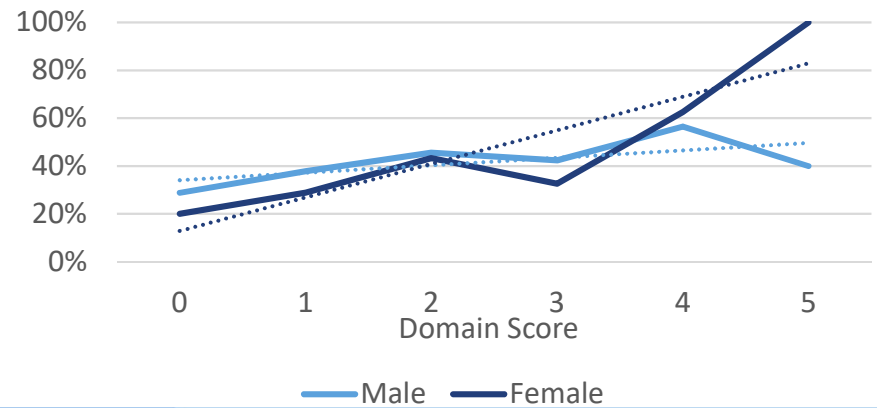
Leisure/Recreation Domain



Personality Domain



Attitude/Orientation Domain



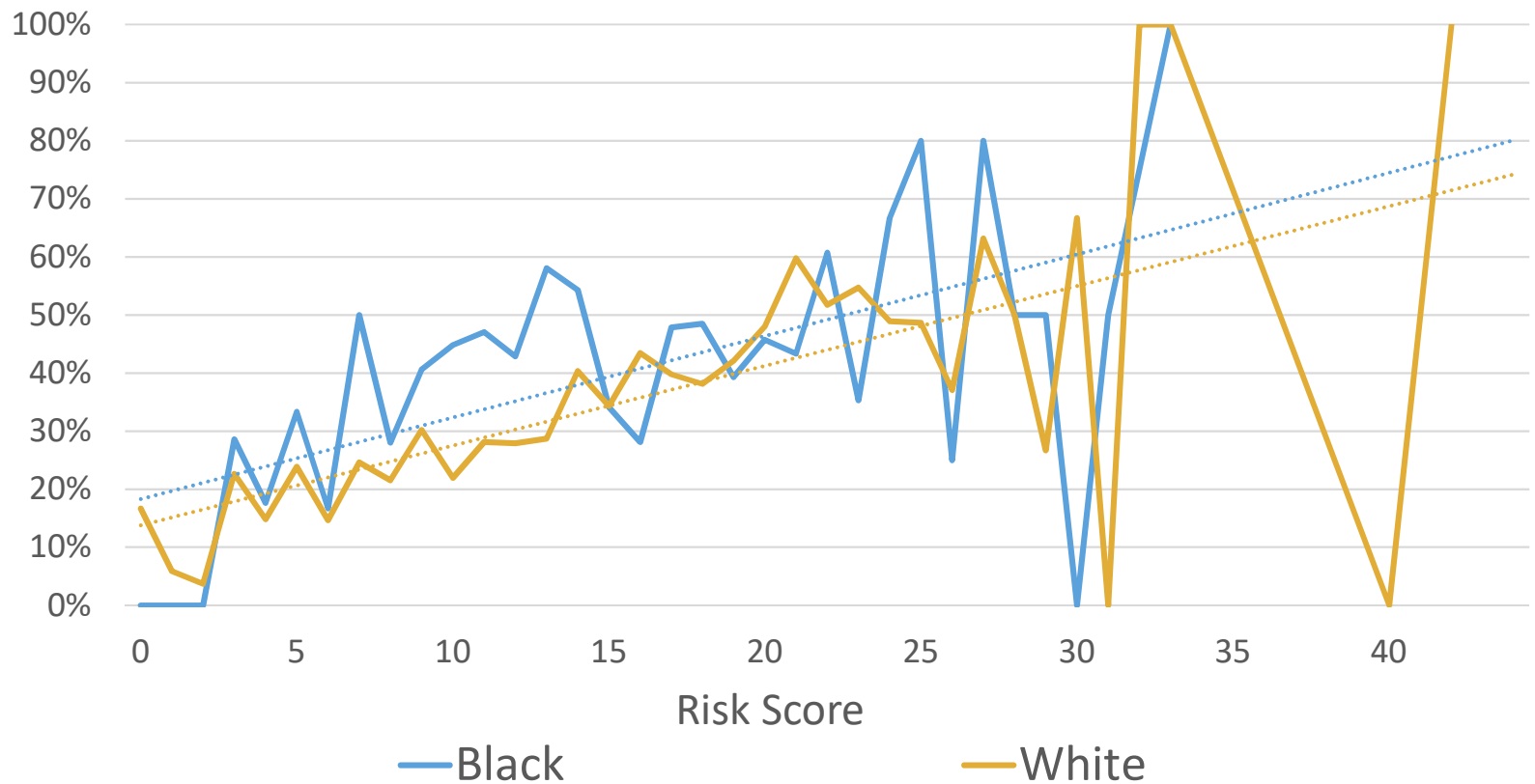
Question Three Gender Summary

Does the Kansas YLS-CMI consistently predict the risk of recidivism for various subgroups?

- Risk Score is correlated with recidivism for both men and women
- There are minor differences in the degree of correlation across domain scores

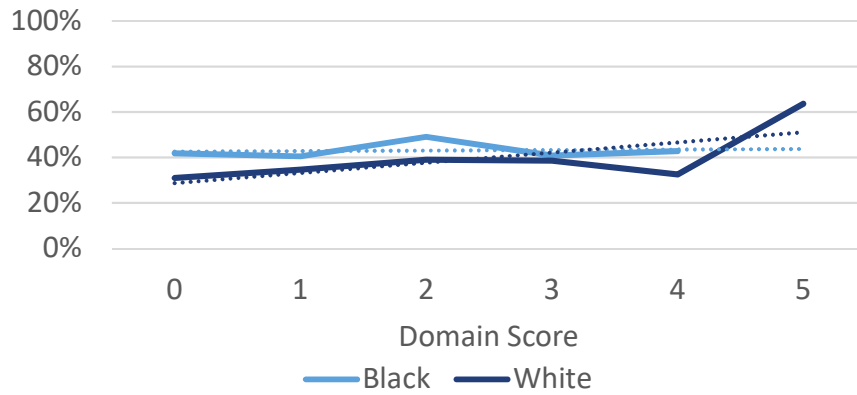
Recidivism Rate by Score and Race

Estimated
Recidivism Rate

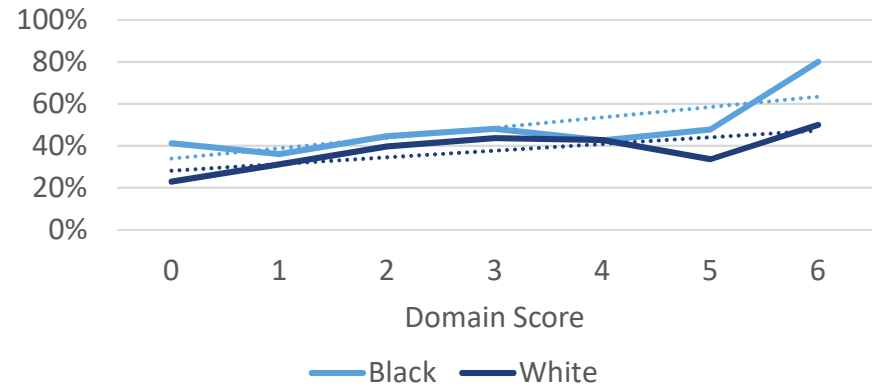


Individual Domain Scores

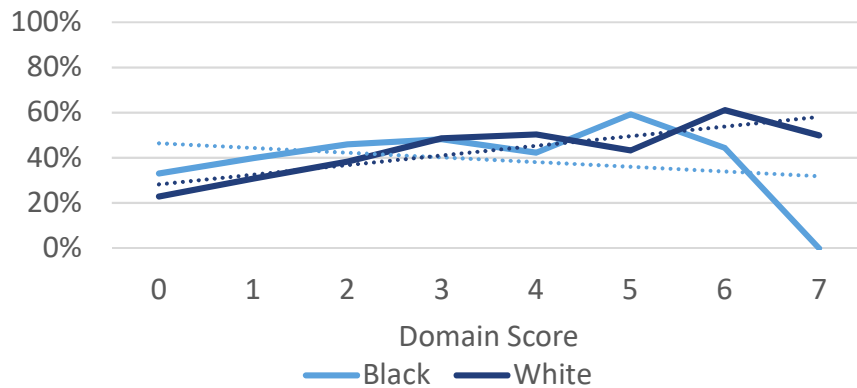
Offense Domain



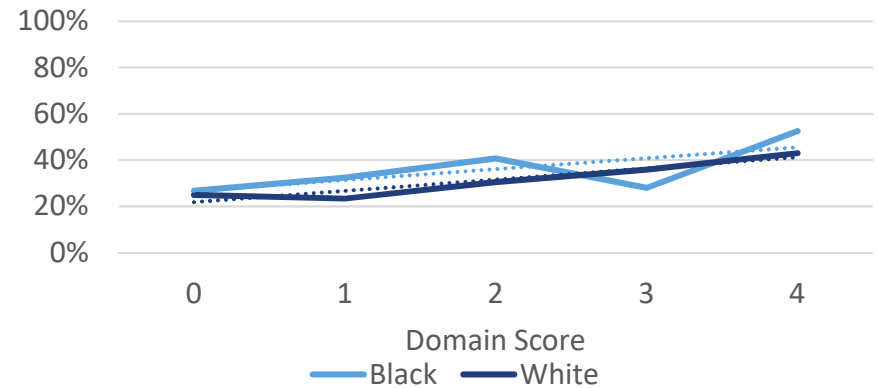
Family Domain



Education/Employment Domain

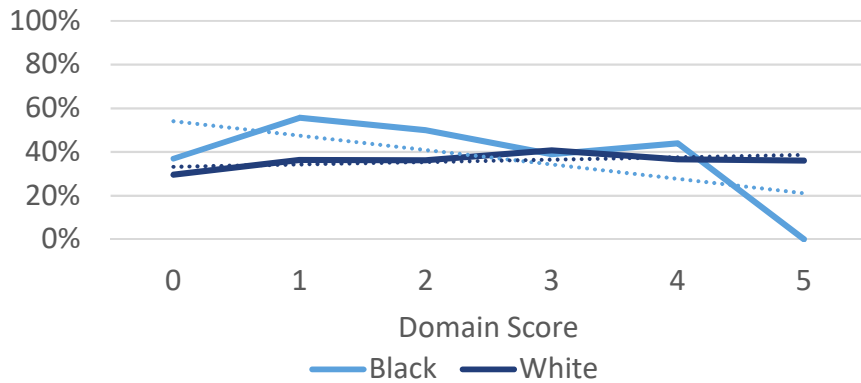


Peer Domain

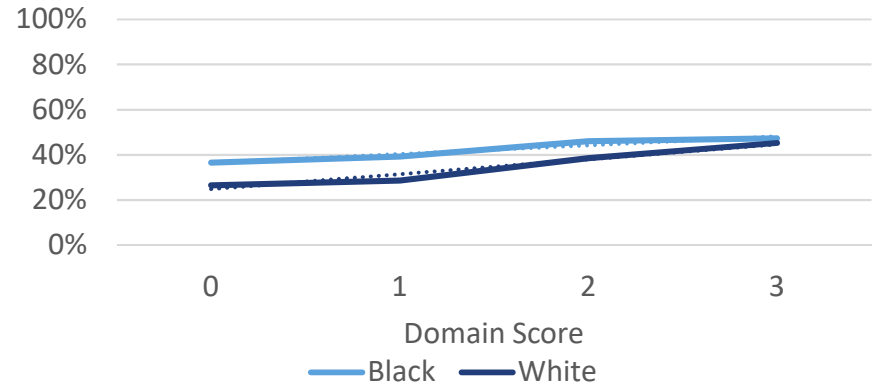


Individual Domain Scores

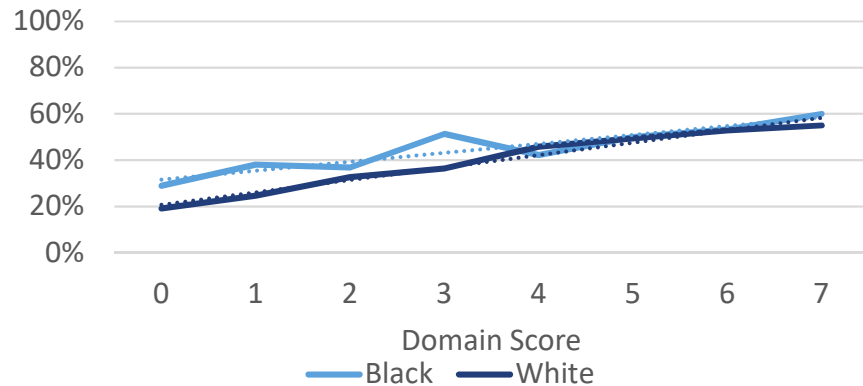
Substance Abuse Domain



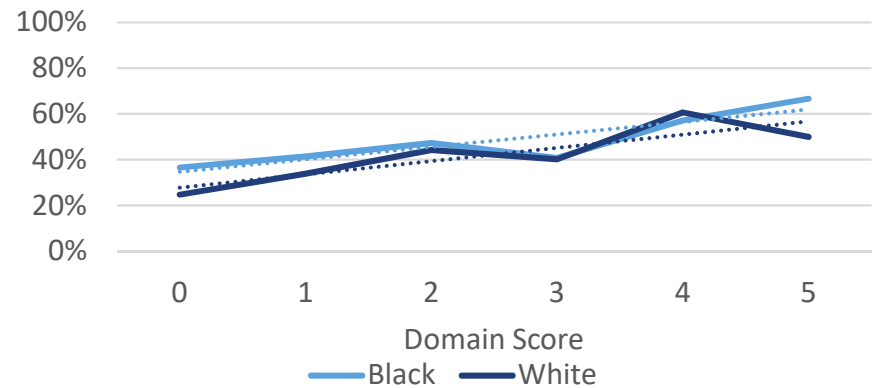
Leisure/Recreation Domain



Personality Domain



Attitude/Orientation Domain



Question Three Race Summary

Does the Kansas YLS-CMI consistently predict the risk of recidivism for various subgroups?

- Risk score is correlated with recidivism for both Black and White supervisees
- There are minor differences in the degree of correlation across domain scores

Recommendations



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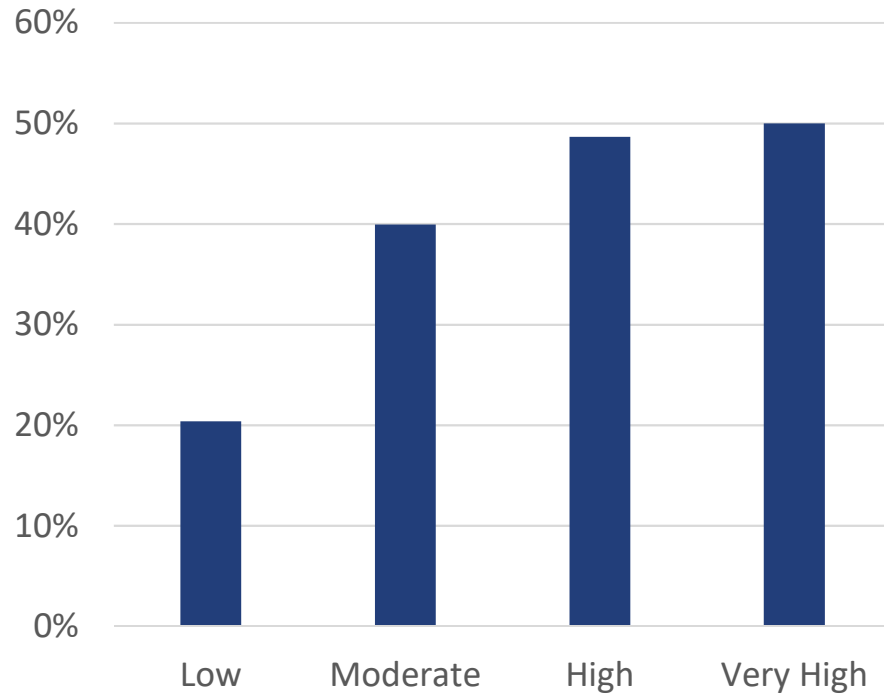
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Recommendations

1. Improve Data Collection
2. Use Consistent Case Numbers Across all Agencies
3. Increase IRR
4. Specific Validation for Underrepresented Hispanic Population
5. System Assessment Exploring Drivers of Disparate Findings across Racial Groups

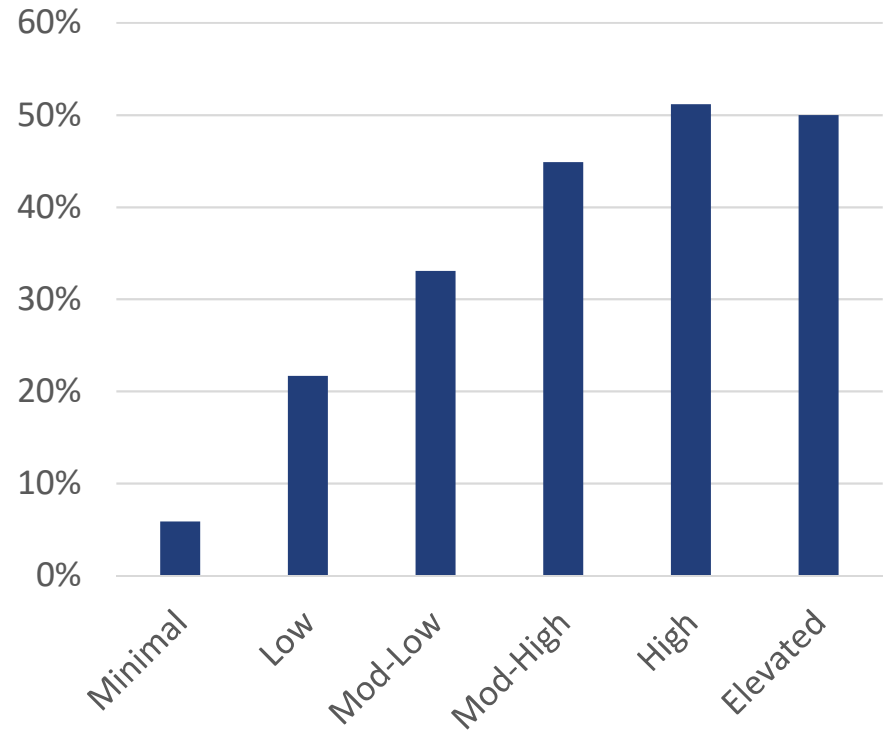
Risk Level Suggestions

Estimated
Recidivism
Rate



Current Risk Levels

Estimated
Recidivism
Rate



Potential New Risk Levels

Questions/Contact

- Contact information:

Noah Atchison

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Jen Christie

jchristie@cjinstitute.org

Correlations for Individual Items

YLS Item	Correlation
1a. Three or more prior convictions	0.02
1b. Two or more failures to comply	0.03
1c. Prior probation	0.02
1d. Prior custody	0.07***
1e. Three or more current convictions	0.01

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
2a. Inadequate Supervision	0.06*
2b. Difficulty in Controlling Behavior	0.16***
2c. Inappropriate Discipline	0.03
2d. Inconsistent Parenting	0.07***
2e. Poor relations/father-youth	0.03
2f. Poor relations/mother-youth	0.05*

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
3a. Disruptive classroom behavior	0.15***
3b. Disruptive behavior on school property	0.06**
3c. Low achievement	0.11***
3d. Problems with peer	0.12***
3e. Problems with teachers	0.06***
3f. Truancy	0.08***
3g. Unemployed/not seeking employment	-0.01

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
4a. Some delinquent acquaintances	0.09***
4b. Some delinquent friends	0.11***
4c. No/few positive acquaintances	0.12***
4d. No/few positive friends	0.12***

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
5a. Occasional drug use	0.09***
5b. Chronic drug use	0.04*
5c. Chronic alcohol use	0.02
5d. Substance abuse interferes with life	0.04*
5e. Substance use linked to offense(s)	-0.03

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
6a. Limited organized activities	0.06***
6b. Could make better use of time	0.13***
6c. No personal interests	0.09***

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
7a. Inflated self-esteem	0.06***
7b. Physically aggressive	0.18***
7c. Tantrums	0.15***
7d. Short attention span	0.05*
7e. Poor frustration tolerance	0.08***
7f. Inadequate guilt feelings	0.06***
7g. Verbally aggressive, impudent	0.17***

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$

Correlations for Individual Items

YLS Item	Correlation
8a. Antisocial/procriminal attitudes	0.10***
8b. Not seeking help	0.03
8c. Actively rejecting help	0.05*
8d. Defies authority	0.14***
8e. Callous, little concern for others	0.02

* significant at $p \leq .05$

** significant at $p \leq .01$

*** significant at $p \leq .001$