The Relationship between the Theory of Regulatory Compliance and the Fiene Coefficients

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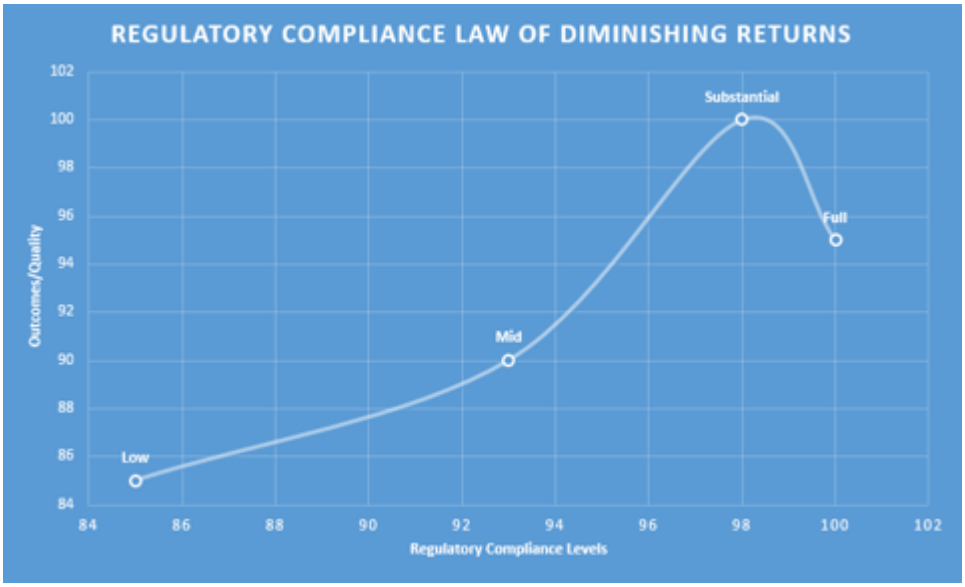
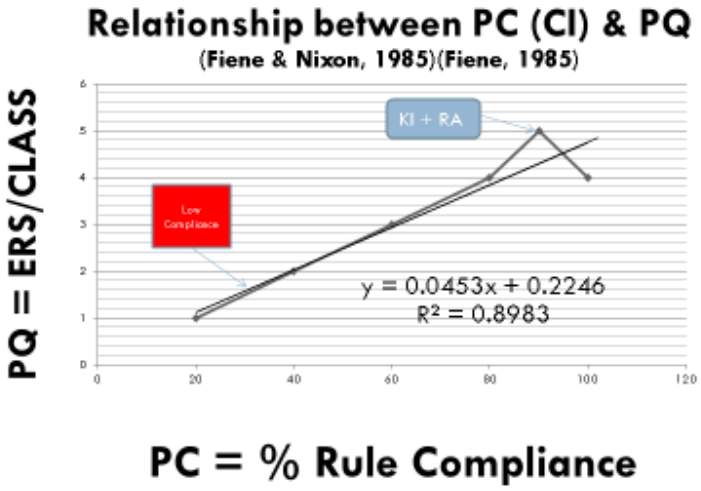
This paper will formalize the logical relationship between the theory of regulatory compliance and the Fiene Coefficients as demonstrated by key predictor rules and risk assessment rules. The relationship between the theory and the coefficients has been implicated in previous research but it is clear now from a public policy and research perspective that it is in everyone's best interest to move substantial regulatory compliance to the identification of key risk predictor rules. It is the only way to develop more effective and efficient program monitoring systems, not only in the human services but throughout regulatory science.



The above graph depicts the relationship between regulatory compliance and program quality that has been demonstrated in repeated studies over the past decade. It clearly shows how moving from substantial to full regulatory compliance does not produce an equal increase in quality. In fact, in the studies to date, either quality dropped off as depicted in the graphic or it plateaued out and showed no statistically significant increase. This is problematic from a public policy standpoint which requires full regulatory compliance with all rules. It just is not an effective or efficient approach. A more effective and efficient approach would be one of finding the rules that are predictor rules and those rules which place children/clients at greatest risk of harm. An approach that balances "Do No Harm" along with "Do Good". This is depicted more clearly in the next graphic.



The above graph builds upon the previous graphic in providing additional detail about the relationship between regulatory compliance and program quality and at the same time where risk assessment and key indicator predictor rules can come into play. The next group of figures will provide displays of the risk assessment methodology and the key indicator predictor methodology providing key decision points related to licensing decisions and how rules get included as key indicator predictor rules. The figure below presents the risk assessment matrix that is used in determining the relative risk of particular rules as well the key licensing decisions made from these determinations.

Risk Assessment Matrix (RAM)

Risk Assessment (RA) Matrix Revised

	Levels	High	Medium	Low
Risk/Severity	Immediate	9	8	7
	Short-term	6	5	4
	Long-term	3	2	1
			Probability	
Regulatory Compliance (RC): # of Rules out of compliance and In compliance		8+ rules out of compliance. 92 or less regulatory compliance.	3-7 rules out of compliance. 93 – 97 regulatory compliance.	2 or fewer rules out of compliance. 98 – 99 regulatory compliance.

*Regulatory Compliance (RC)(Prevalence/Probability/History + Risk/Severity Level)

Tier 1 = ((RC = 93 – 97) + (Low Risk)); ((98 – 99) + (Low Risk)) = Tier 1

Tier 2 = (RC = 92 or less) + (Low Risk) = Tier 2

Tier 3 = ((RC = 93 – 97) + (Medium Risk)); ((98 – 99) + (Medium Risk)) = Tier 3

Tier 4 = (RC = (92 or less) + (Medium Risk)) = Tier 4; ((93 -97) +(High Risk)) = Tier 4; ((98 – 99) + (High Risk)); ((92 or less) + (High Risk)) = Tier 4+

Using RAM to make licensing decisions

Key Indicator Formula Matrix

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Use data from this matrix in the formula on the next slide in order to determine the phi coefficients.

	Providers In Compliance with specific standard	*Programs Out Of Compliance with specific standard*	*Row Total*
High Group = top 25%	*A*	*B*	*Y*
Low Group = bottom 25%	C	D	*Z*
Column Total	*W*	*X*	Grand Total

The above figure provides the key indicator formula matrix in designing how the data will be organized for analysis in determining which rules are predictive of overall regulatory compliance. The below figure presents the expected results from the matrix.

Key Indicator Matrix Expectations

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- **A + D > B + C**
- **A + D** = 100% is the best expectation possible.
- If **C** has a large percentage of hits, it increases the chances of other areas of non-compliance (False positives).
- If **B** has a large percentage of hits, the predictive validity drops off considerably (False negatives). This can be eliminated by using 100% compliance for the High Group.

Key Indicator Statistical Methodology

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$$\phi = (A)(D) - (B)(C) \div \sqrt{(W)(X)(Y)(Z)}$$

A = High Group + Programs in Compliance on Specific Compliance Measure.
B = High Group + Programs out of Compliance on Specific Compliance Measure.
C = Low Group + Programs in Compliance on Specific Compliance Measure.
D = Low Group + Programs out of Compliance on Specific Compliance Measure.

W = Total Number of Programs in Compliance on Specific Compliance Measure.
X = Total Number of Programs out of Compliance on Specific Compliance Measure.
Y = Total Number of Programs in High Group.
Z = Total Number of Programs in Low Group.

The above figure provides the formula for generating the Fiene Coefficient for Key Indicator Predictor Rules. It takes the data from the key indicator formula matrix and generates those specific rules that meet the key indicator matrix expectations. The below figure provides the algorithm for generating the key indicator predictor rules.

Theory of Regulatory Compliance Algorithm (Fiene KIS Algorithm)

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- **1) ΣR = C**
- **2) Review C history x 3 yrs**
- **3) NC + C = CI**
- **4) If CI = 100 -> KI**
- **5) If KI > 0 -> CI or if C < 100 -> CI**
- **6) If RA (NC% > 0) -> CI**
- **7) KI + RA = DM**
- **8) KI = ((A)(D)) - ((B)(E)) / sqrt ((W)(X)(Y)(Z))**
- **9) RA = ΣR1 + ΣR2 + ΣR3 + ….. ΣRn / N**
- **10) (TRC = 99%) + (ϕ = 100%)**
- **11) (CI < 100) + (CIPQ = 100) -> KI (10% CI) + RA (10-20% CI) + KIQP (5-10% of CIPQ) -> OU**

Legend:

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- R = Rules/Regulations/Standards
- C = Compliance with Rules/Regulations/Standards
- NC = Non-Compliance with Rules/Regulations/Standards
- CI = Comprehensive Instrument for determining Compliance
- ϕ = Null
- KI = Key Indicators; KI >= .26+ Include; KI <= .25 Null, do not include
- RA = Risk Assessment
- ΣR1 = Specific Rule on Likert Risk Assessment Scale (1-8; 1 = low risk, 8 = high risk)
- N = Number of Stakeholders
- DM = Differential Monitoring
- TRC = Theory of Regulatory Compliance

These two figures on this page provide the legends for the key indicator predictor algorithm presented on the previous page. It provides the definitions of each of the terms utilized in the previous figures presented in this paper.

Legend (cont)

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- CIPQ = Comprehensive Instrument Program Quality
- KIPQ = Key Indicators Program Quality
- OU = Outcomes
- A = High Group + Programs in Compliance on Specific Compliance Measure (R1...Rn).
- B = High Group + Programs out of Compliance on Specific Compliance Measure (R1...Rn).
- E= Low Group + Programs in Compliance on Specific Compliance Measure (R1...Rn).
- D = Low Group + Programs out of Compliance on Specific Compliance Measure (R1...Rn).
- W = Total Number of Programs in Compliance on Specific Compliance Measure (R1...Rn).
- X = Total Number of Programs out of Compliance on Specific Compliance Measure (R1...Rn).
- Y = Total Number of Programs in High Group (ΣR = 98+).
- Z = Total Number of Programs in Low Group (ΣR <= 97).
- High Group = Top 25% of Programs in Compliance with all Compliance Measures (ΣR).
- Low Group = Bottom 25% of Programs in Compliance with all Compliance Measures (ΣR).

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