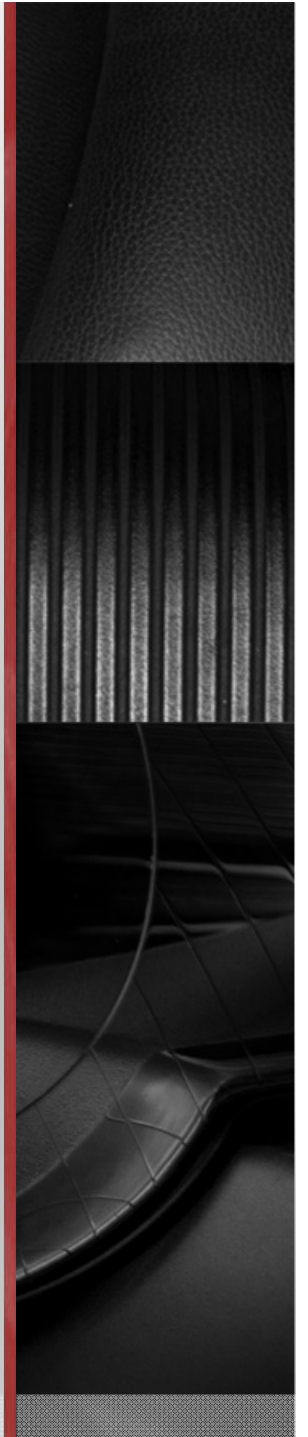


THE RELATIONSHIP BETWEEN
TRANSFORMATIONAL LEADERSHIP AND
SAFETY OUTCOMES: A
QUANTITATIVE STUDY IN SCRAP RECYCLING
FACILITIES

Ryan Nolte
MetalX, LLC





Ken Blanchard said...

**“The key to successful
leadership is influence, not
authority”**



The Study

- Investigated the relationship between Transformational Leadership scores in front-line supervisors and accident rates
 - Transformational leadership scores and OSHA recordable rates
 - Transformational leadership scores and Lost Workday Rates



The Study

- Hypotheses:
 - Higher transformational leadership scores = lower accident rates
 - Higher transformational leadership scores = lower lost workday rates
 - Higher transformational leadership scores = lower chance of experiencing a recordable accident
 - Higher transformational leadership scores = lower chance of experiencing a lost workday accident



Transformational Leadership Defined

- A form of leadership that inspires followers to perform at a level toward collective benefits that transcend ordinary expectations and outcomes (Burns, 1978), that demonstrates a positive impact on organizational cultures and ensures benefits for an organization (Bass, 1999).

Transformational Leadership

- Part of the Full Range Leadership Model
 - Assesses transactional leadership and laissez-faire leadership as well
 - Assessed using the Multifactor Leadership Questionnaire

Quantifies transformational leadership
- Multifactor Leadership Questionnaire (MLQ)
 - Likert scale (0 – 4)
 - 5 transformational components
 - Total score of these five divided by 20 produces a Transformational Leadership score

Can be 0.0 – 4.0



Transformational Leadership

- Transformational Leadership components:
 - Idealized Influence (Behavior/Attributed)
 - Individualized Consideration
 - Intellectual Stimulation
 - Inspirational Motivation



4-I's of Transformational Leadership

- Idealized Influence
(Behavior/Attributed)

- How subordinates identify with the leader

- Leaders as role models

Ethical presentation

High morality

- Individualized Consideration

- People as an end in themselves

- Individual concerns over the group

- Differences are viewed positively and constructively

- Concern for subordinates needs and expectations

- Development and growth of the individual



4-I's of Transformational Leadership

■ Intellectual Stimulation

- Encourage / generate ideas
- Involvement in the improvement process
- Improved problem solving
- Creativity embraced

■ Inspirational Motivation

- Sense of being part of something
- Sense of meaningful work
- Gives meaning to organizational objectives



Safety and Transformational Leadership

- Interest back to late 90's with earliest research dating c2002

- Early research was promising
- Additional research contained mixed results

Transactional showed some promise

No relationship between transformational and safety performance was found

- Variations in research results

- Sample size
- Organization type
 - Organic vs mechanistic
- Organizational level of leaders

Level of the leaders being evaluated

Responsibilities of leaders being evaluated



Safety and Transformational Leadership

- Greatest factor between positive results and no or negative results
 - Organizational level being evaluated
 - Level of the leader – front-line supervisory level showed promising results

Front-line supervisors provide immediate contact

Factors of motivation, instruction, ethics, individualism have greater gravitas at the front-line supervisory level

Carry influence over subordinates in all these areas



My Research


- Six scrap recycling organizations
 - All in Midwest
- 40 supervisors
 - Self rated
 - Direct-reports rated
- Average Transformational Leadership scores obtained
- Recordable rates and Lost Workday rates obtained for each supervisor

Results for Transformational Leadership Scores on Recordable Rates

Correlations			
		Transformational Leadership Score	OSHA Recordable Rate
Transformational Leadership Score	Pearson Correlation	1	-.507**
	Sig. (1-tailed)		.000
	N	40	40
OSHA Recordable Rate	Pearson Correlation	-.507**	1
	Sig. (1-tailed)	.000	
	N	40	40

** . Correlation is significant at the 0.01 level (1-tailed).

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507 ^a	.257	.238	6.09545
a. Predictors: (Constant), Transformational Leadership Score				
b. Dependent Variable: OSHA Recordable Rate				



Results for Transformational Leadership Scores on Recordable Rates

■ Pearson correlation

- Measure of significance of the relationship
- Correlation is significant
- -.507 indicates moderate negative correlation

As one number goes up, the other goes down

■ Regression

- Measure of predictability of the relationship
- Indicated as R^2
- $R^2 = .26$

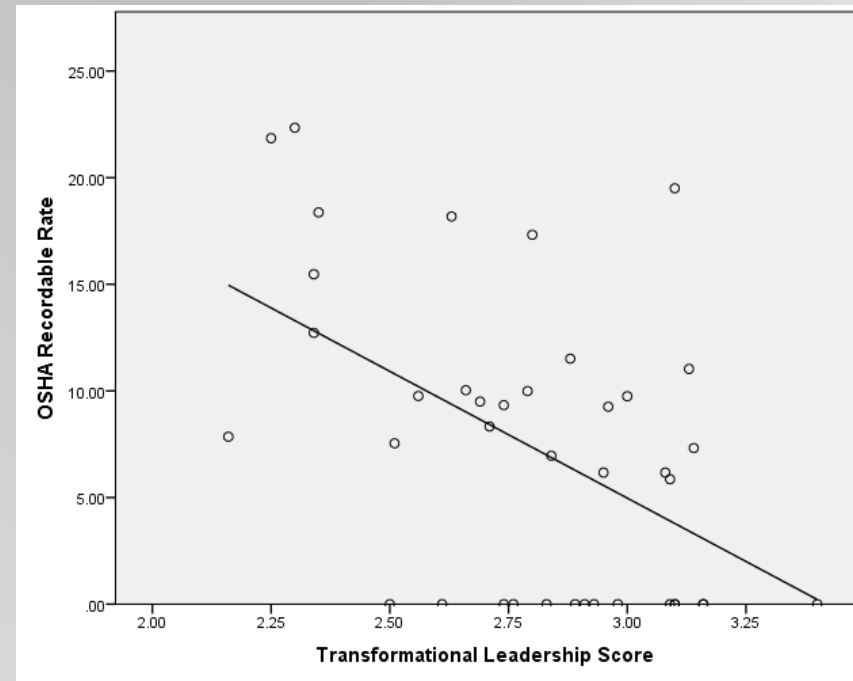
Indicates that 26% of data is causal

In other words, 26% of one variable is caused by the other

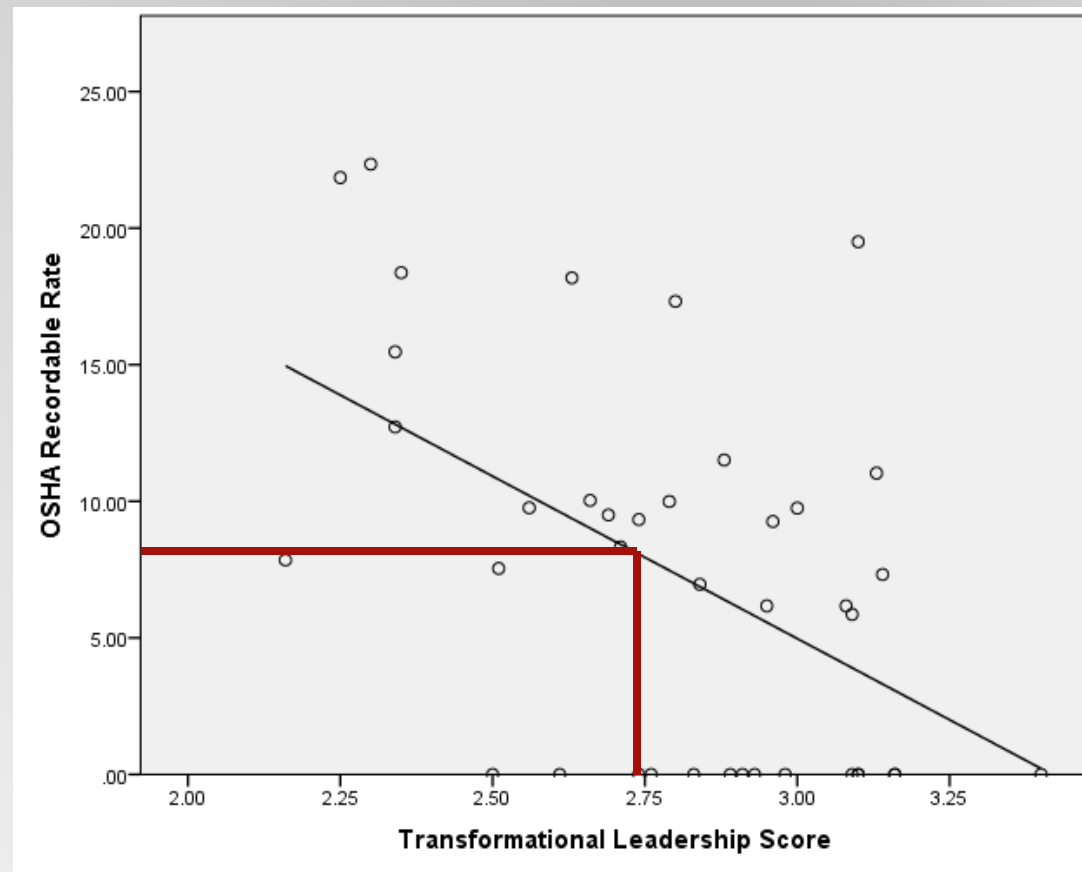
26% of the reason for a certain recordable rate is caused by the Transformational Leadership Score

Results for Transformational Leadership Scores on Recordable Rates

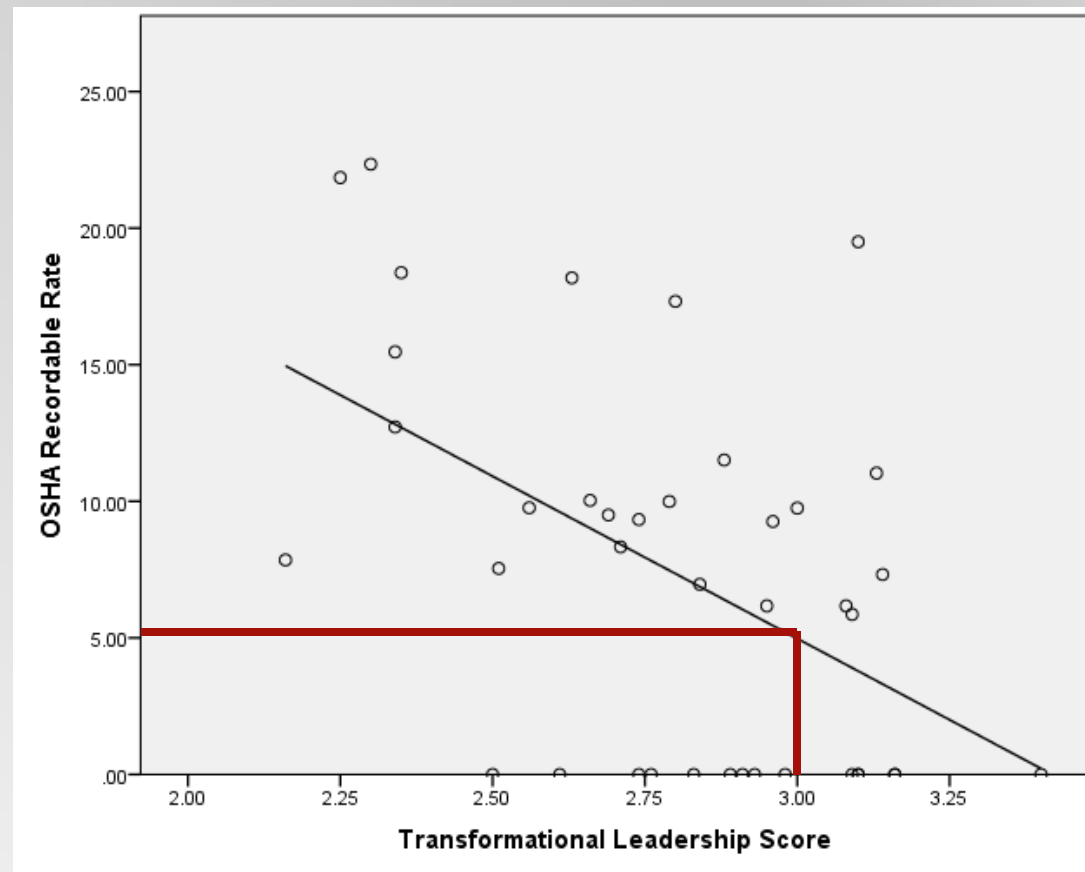
- A significant correlation was found between higher Transformational Leadership Scores resulting in lower recordable rates
- High level of predictability



Scale of Predictability



Scale of Predictability



Scale of Predictability




Results for Transformational Leadership Scores on Lost Workday Rates

Correlations			
		Transformational Leadership Score	OSHA Lost Workday Rate
Transformational Leadership Score	Pearson Correlation	1	-.567**
	Sig. (1-tailed)		.000
	N	40	40
OSHA Lost Workday Rate	Pearson Correlation	-.567**	1
	Sig. (1-tailed)	.000	
	N	40	40

** . Correlation is significant at the 0.01 level (1-tailed).

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567 ^a	.322	.304	2.83222
a. Predictors: (Constant), Transformational Leadership Score				
b. Dependent Variable: OSHA Lost Workday Rate				



Results for Transformational Leadership Scores on Lost Workday Rates

■ Pearson correlation

- Measure of significance of the relationship
- Correlation is significant
- -.567 indicates moderate negative correlation

As one number goes up, the other goes down

■ Regression

- Measure of predictability of the relationship
- Indicated as R^2
- $R^2 = .32$

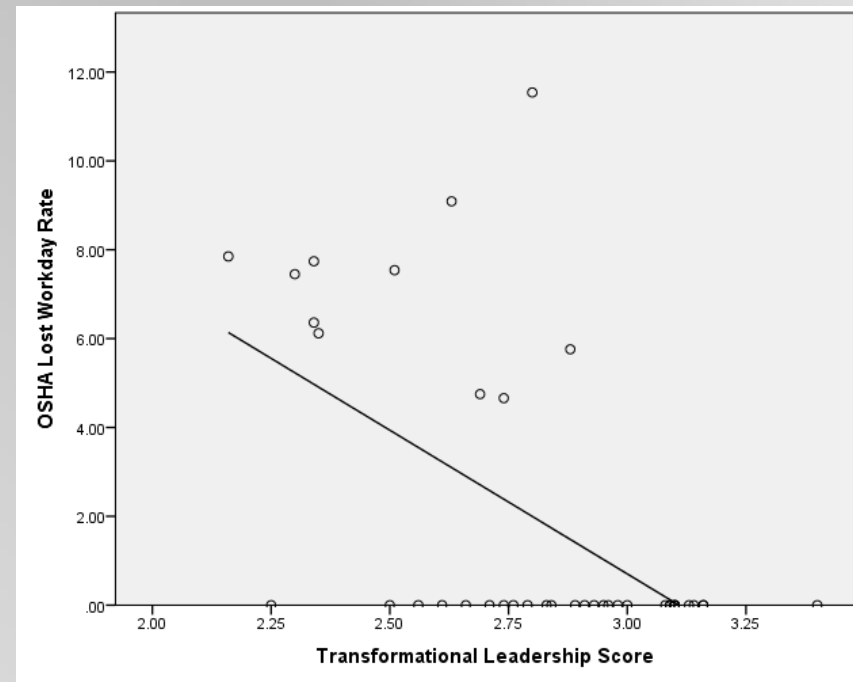
Indicates that 32% of data is causal

In other words, 32% of one variable is caused by the other

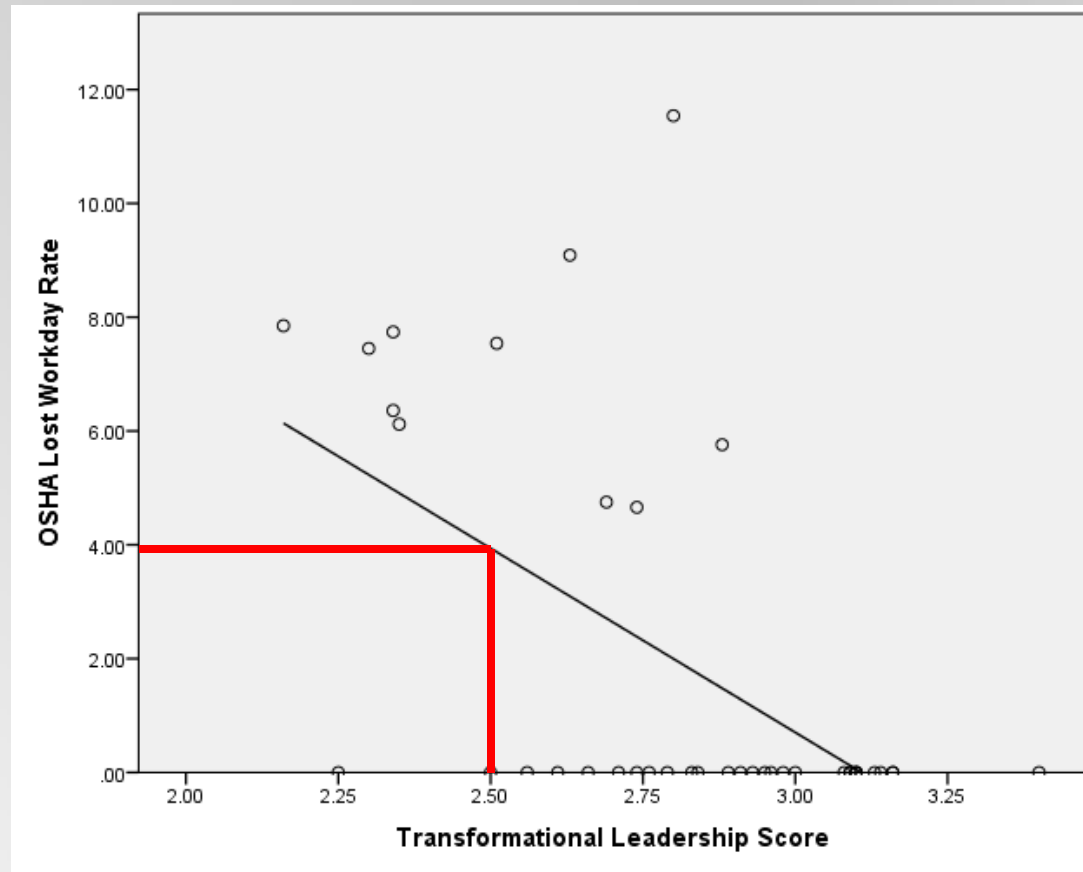
32% of the reason for a certain lost workday rate is caused by the Transformational Leadership Score

Results for Transformational Leadership Scores on Lost Workday Rates

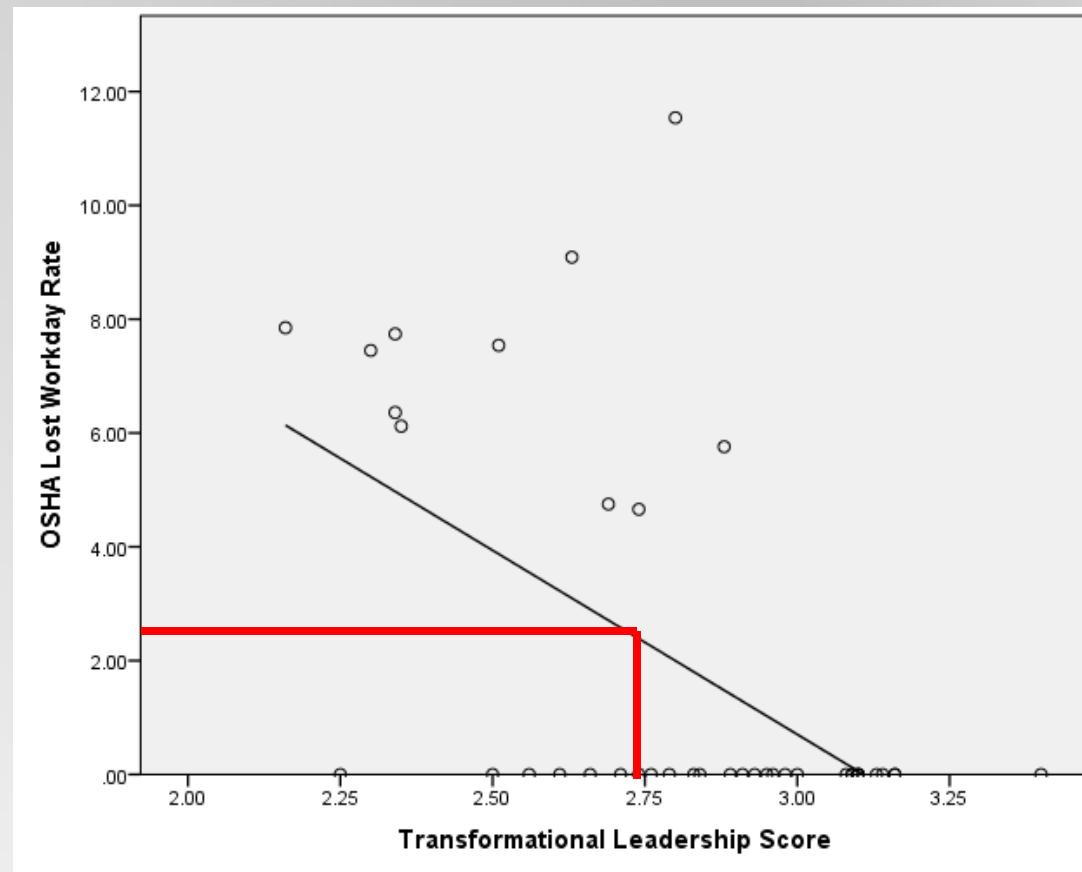
- A significant correlation was found between higher Transformational Leadership Scores resulting in lower lost workday rates
- High level of predictability



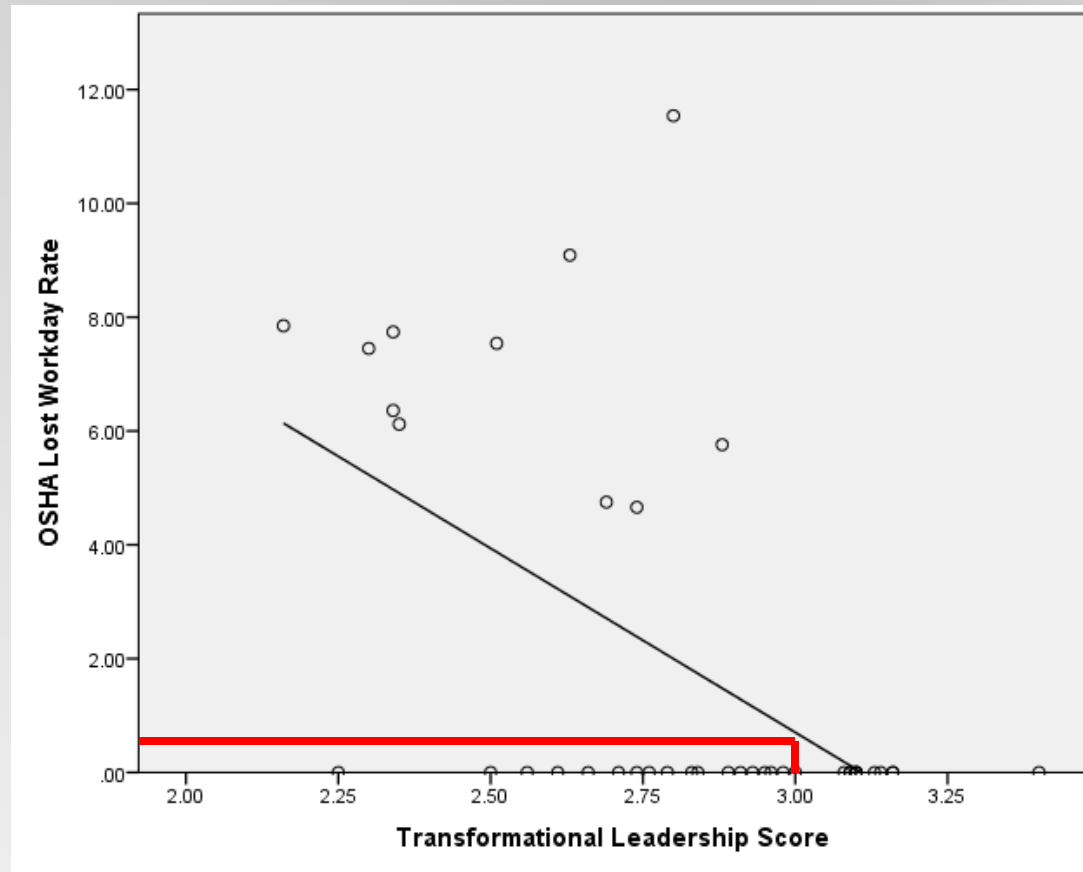
Scale of Predictability



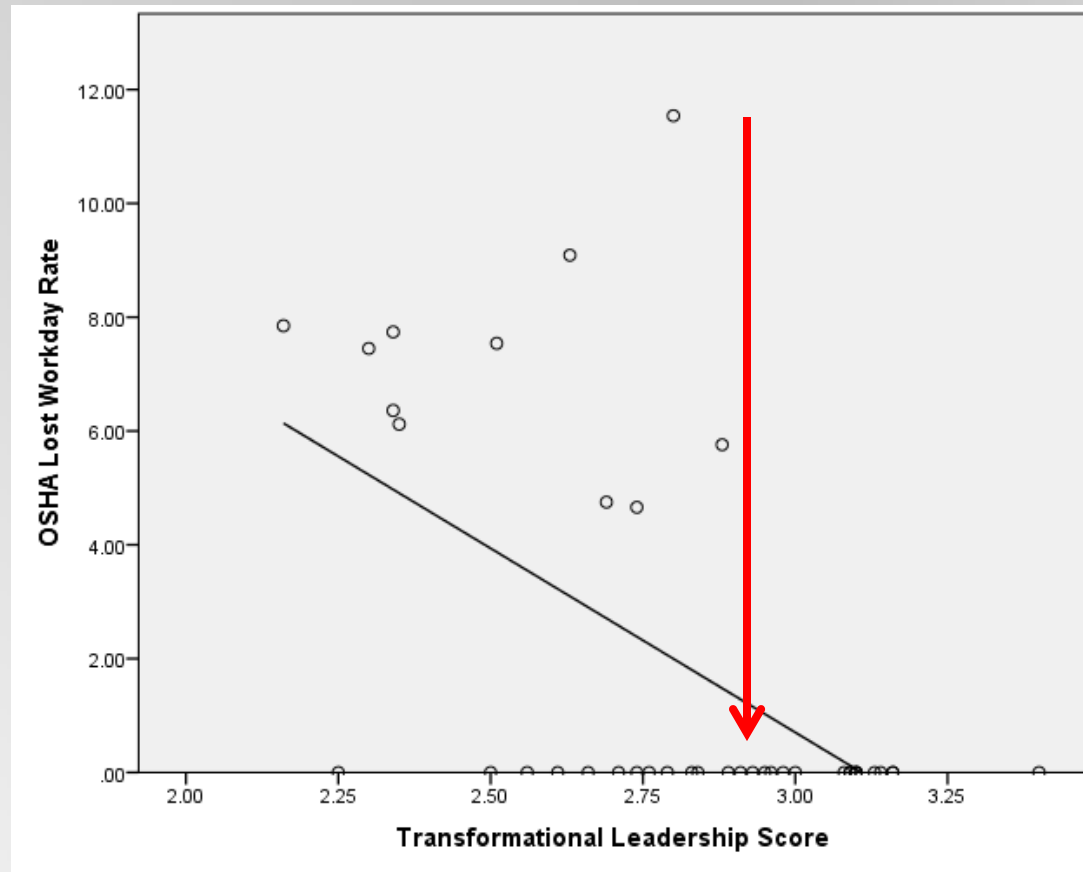
Scale of Predictability



Scale of Predictability



Scale of Predictability



2.89



What it means

- Transformational leadership behaviors identified and quantified with the Multifactor Leadership Questionnaire have a significant correlation and predictable relationship with improved safety performance
- Leading indicator of safety performance
 - Improving transformational leadership will reduce the occurrence of accidents



What it means

- Key at supervisory level
 - Supervisors who encourage, teach, engage, and demonstrate a high level of morality
 - Higher level of transformational leadership equals better organizational outcomes
- Front-line supervisors critical to leadership function
 - Transformational leadership behaviors are teachable/learnable
 - Selection of supervisors
 - Supervisory development



Questions?