



# **Evidence-Based H R Management**

**Inland Press Association  
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**In God we trust...  
everyone else  
must present  
evidence**

# Evidence-Based Management

- **Origin in evidence-based medicine**
- **SHRM, AOM & SIOP promoting**
- **Workforce management needs a major transformation**
  - **Decisions based on credible evidence**
  - **Decisions made using scientific method**
  - **Decisions that support the business**

# Required HR Competencies

- **Define business issues**
- **Define related people issues**
- **Identify alternative strategies**
- **Analyze all relevant evidence**
- **Formulate hypothesis for each**
- **Surface underlying assumptions**
- **Test the hypothesis**
- **Act on the results**

# The Newspaper Business Is Facing Challenges

- **Print ad revenue is declining... can online fill the gap?**
- **Writing for online not as sexy as print... can qualified people be found?**
- **People costs are under pressure... can they be better managed?**

# The Practitioner's World

What "evidence" is used in decisions?



# What Impedes Use Of Evidence In Decision-making?

**Don't know  
it exists**

**Don't  
understand  
it**

**Don't see its  
relevance to  
own issues**

**Don't know  
how to  
apply it**

# Two Approaches To Finding & Applying Evidence

- **Deductive (theory > findings)**
  - Identify testable theory in the form of a hypothesis (more pay > less turnover)
  - Identify the assumptions made
  - Test hypothesis
  - Assess, refine/confirm/reject theory
- **Inductive (evidence > findings)**
  - Accumulate evidence
  - Analyze patterns
  - Develop theory



# A Hypothesis

**“If you pay peanuts...  
you get monkeys”**

**Gunther Klaus**

# What Are The Underlying Assumptions?

- Pay is important to people
- Paying more is preferable to paying less
- Top contributors are attracted to high pay
- Top contributors are repelled by low pay
- Top contributors have a choice of employers

**Question: That may be what you believe...  
but how do you support your assumptions?**

# Inductive Is *“In The News”*

- Literature is full of “big data/analytics”
- All the stories are about successes: surprise? How many people write about their failures?
- Plus, trolling massive data sources is easy
- And, the chaotic environment makes theory formulation difficult
- And, above all, analytics is the “new best thing”

# But Danger Lurks

- *If sufficiently tortured data will confess to anything*
- **We are subject to cognitive bias**
  - We more readily accept information that agrees with what we believe/ want to be so
  - We see things in clouds when there are only clouds/random patterns
  - We develop conclusions from inadequate samples
  - We often assume correlation = causation

# Single Focus On Data Analytics Can Drive Out “Soft Stuff”

- Book/movie *“Moneyball”* was example of the value of using metrics to make better decisions (induction)
- But movie *“Trouble With The Curve”* illustrated that experience and knowledge (deduction) can be a valuable partner with data and analytics

# The “Soft Stuff” Counts

- Ryan Leaf was picked ahead of Peyton Manning in the NFL draft (*Ryan who?*)
- Leaf failed not on athletic ability, that can be measured objectively
- Leaf failed on personality, that can only be measured subjectively

# But Relying *Only* On Soft Stuff May Not Be Wise

- The *most widely* used selection tool is the one-to-one unstructured interview
- The *least valid* predictor is the one-to-one unstructured interview
- Using some hard data may prompt use of more valid process

# Data Analytics

- **Determining what you need**
  - Historical data
  - Trend data
  - Predictive data
  - Prescriptive data
- **Knowing what type of relationship you need**
  - Correlation
  - Causation



# Evaluating Data

- **From relevant contexts?**
- **Source of data valid?**
- **Age of data impact usefulness?**
- **Accuracy of data questionable?**
- **Quantitative or qualitative data?**
- **Evaluator have the qualifications and the neutrality to analyze impartially?**

# But What If There Is No Data?

- **Data can be found if an organization wants evidence about**
  - What has happened
  - What is happening
- **Innovation/invention may involve conditions that have never been**
- **So if the future will not be like the past/present is there useful data?**



# The Tools

# Making Sense Of Data

- When data points are numerous they need to be clustered into like “chunks”
- Often using an average (or median) disguises the true patterns
- Using histograms (frequency distributions) can enlighten the analyst  
“Getting into the weeds” can be key to understanding what the data says

# Employee Attitude Survey

- Common error: report “averages” rather than frequency distributions: what does the average tell you in data below?

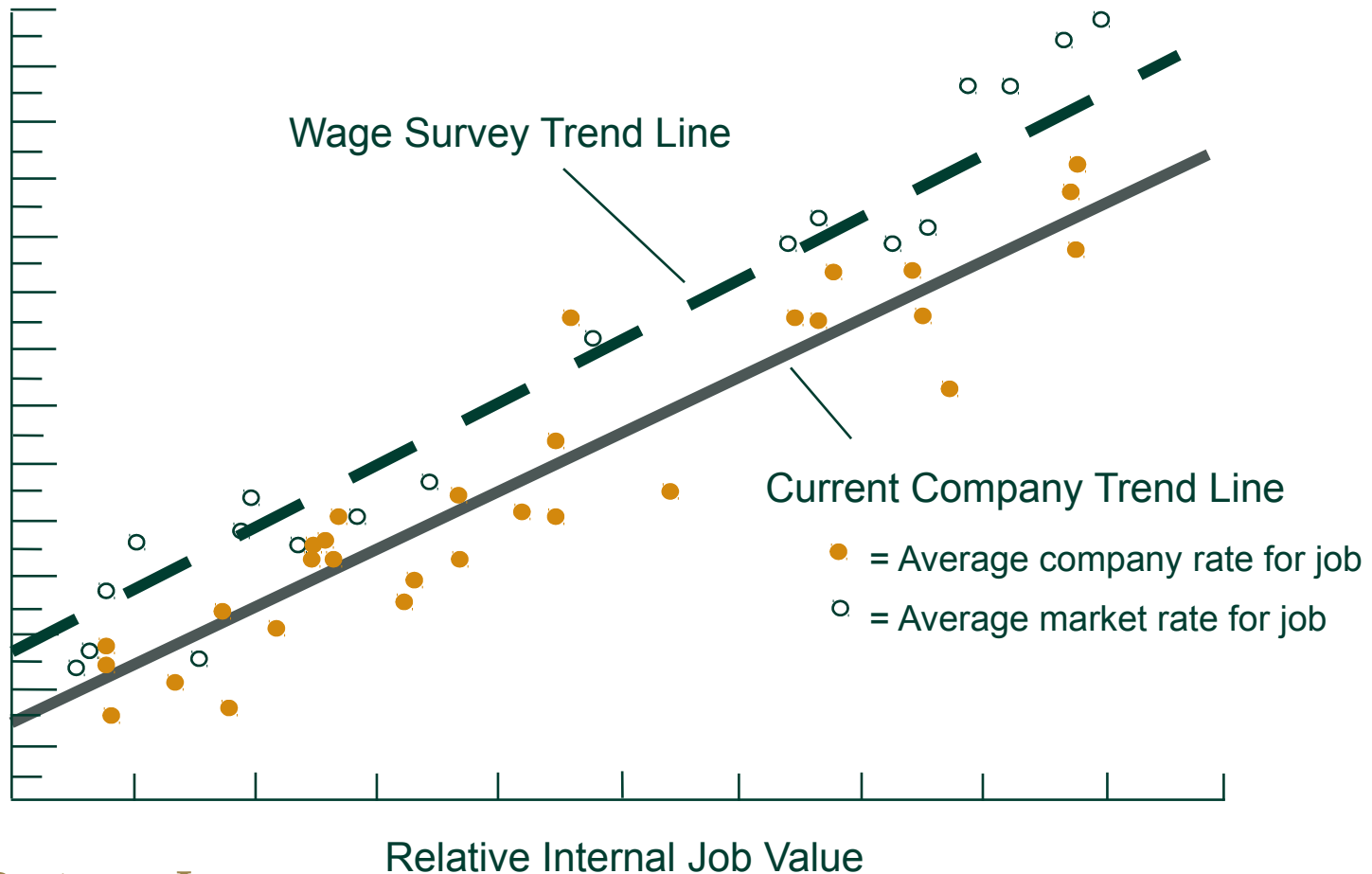
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# Regression Analysis: Exploring Relationships

Monetary Value

Example: Single Factor Linear Regression



# Multiple Factor Regression: Powerful Tool For HR

- **Statistically testing factors impacting selection of new hires**
- **Identifying potential departures**
- **Explaining pay rates... what factors are influencing pay (e.g., performance ratings, longevity in job, grade)**
- **Widely used in testing statistically for discrimination**

# An Example Of An Application

- Analysis done using multiple regression, finding what factors impact pay rates. The following are found to have statistically significant positive correlations with pay:
  - Education level
  - Years of experience
  - Job grade
  - Gender
  - Ethnicity
- What would your reaction be? What additional information would you want before you called your in-house/out-house counsel?



# Correlation & Causation

- If there is a high *correlation* between A and B it does not establish *causation*
  - A and B may both be caused by C
  - The correlation may be accidental
  - Causation unclear... taller people tend to weigh more, but does one cause the other (or do they co-vary)?
  - B may cause A or A cause B
- Causal path analysis enables relationships to be identified and implications understood

# Causation: The Direction Counts

- Does satisfaction impact performance?
- Does performance impact satisfaction?
- What do you think research shows?

# Trend Analysis

- **Be aware of trends in data over time**
  - Cyclical/seasonality
  - Upward or downward pattern
  - Extreme values: timing measurements of improvement (regression to mean)
- **Particularly important in HRM for:**
  - Scenario planning; forecasting future
  - Understanding how significant changes are
  - Incentive plan target setting

# Example: Setting Targets For An Incentive Plan

- **Need to set “baseline” to determine the size of the incentive fund, based on the performance level**
- **Need to determine if implementing the plan made a positive difference**

# Last 20 Periods: Where To Set Baseline?

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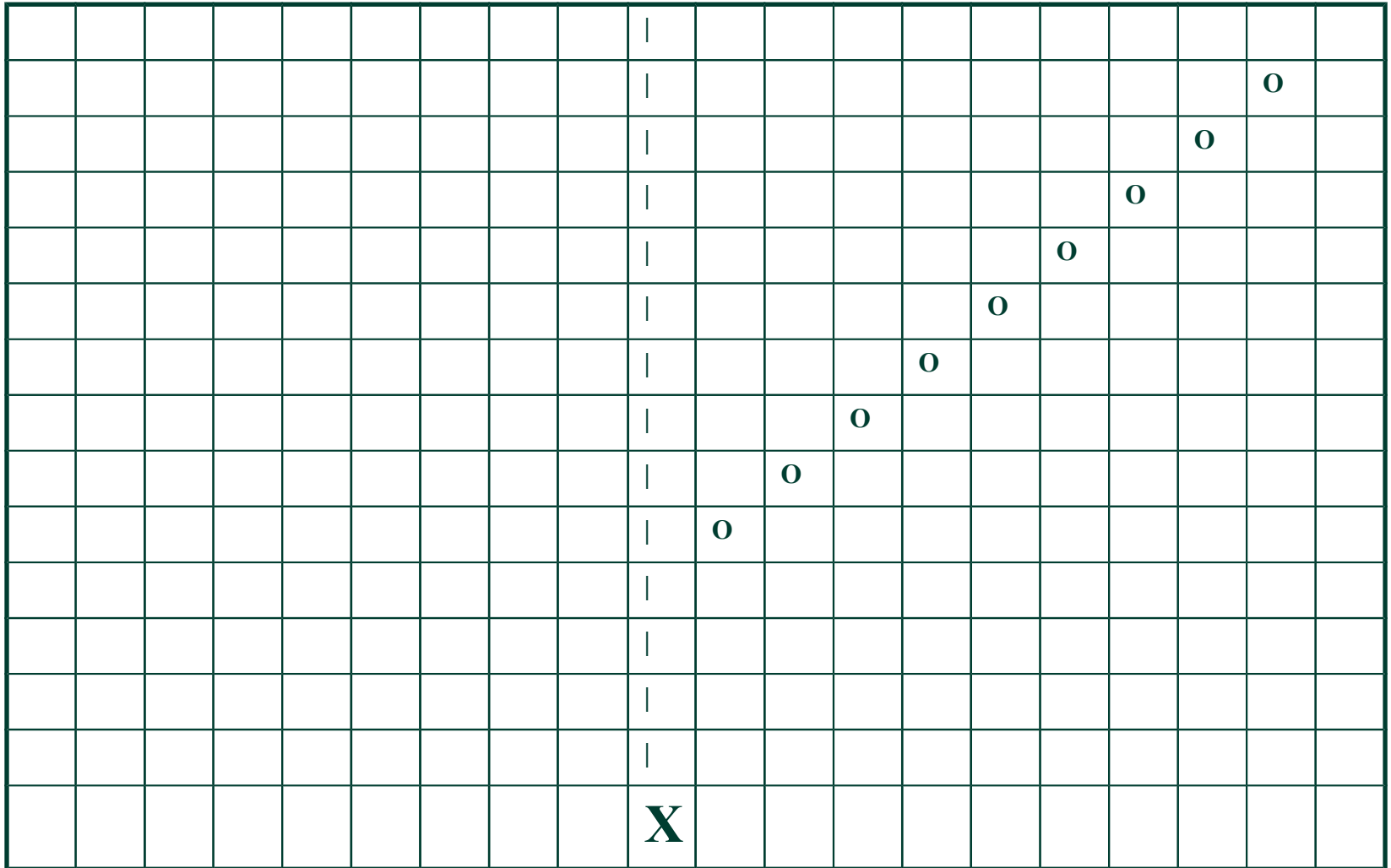
# Last 20 Periods: Where To Set Baseline?

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# Evaluating Interventions

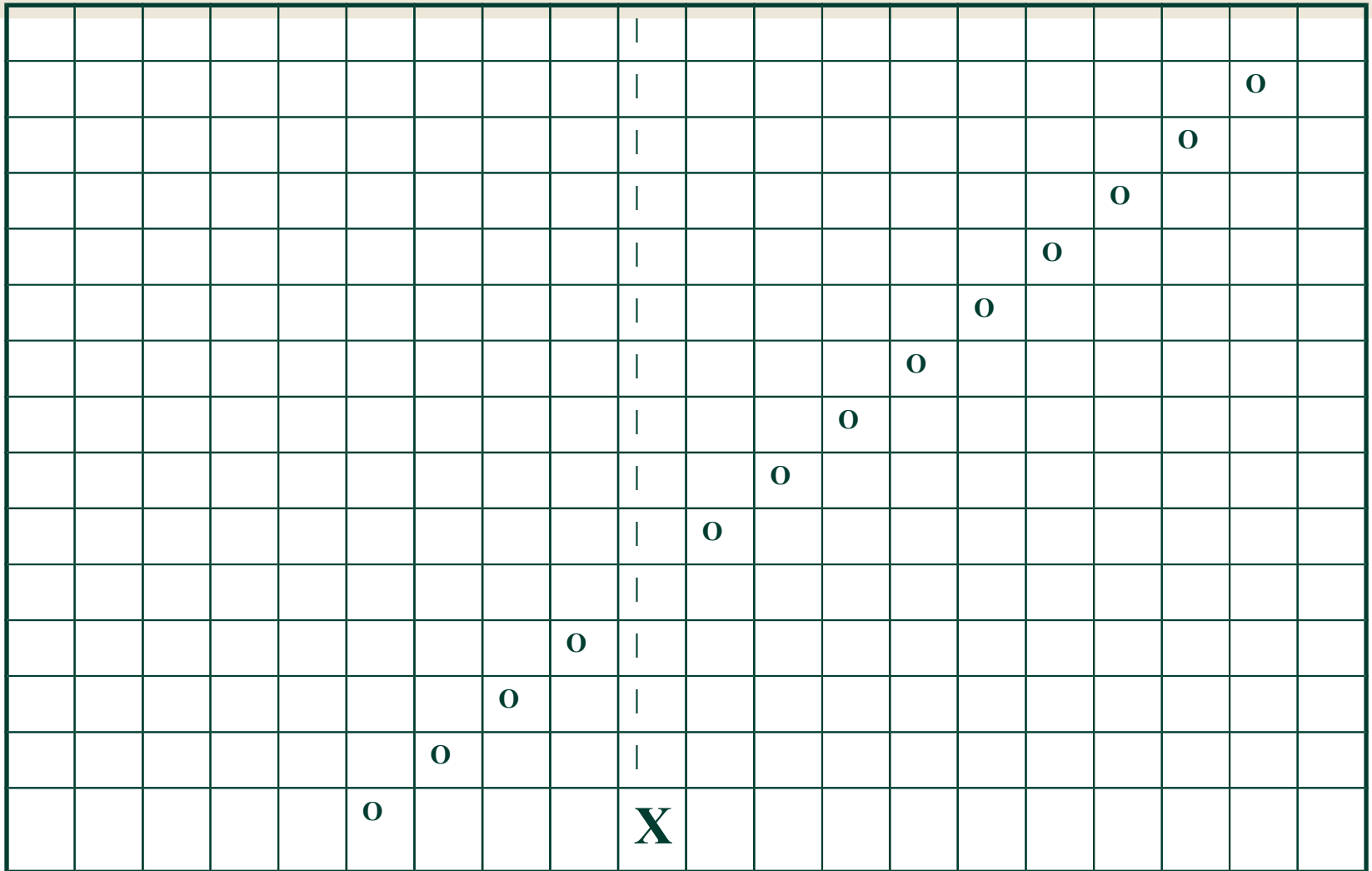
- **We attempt to intervene**
  - To fix problems
  - To improve performance
  - To change what has been to what we want
- **Evaluating an interventions requires**
  - Understanding what has been
  - Determining if the desired change has occurred

# Did "X" Make A Difference?

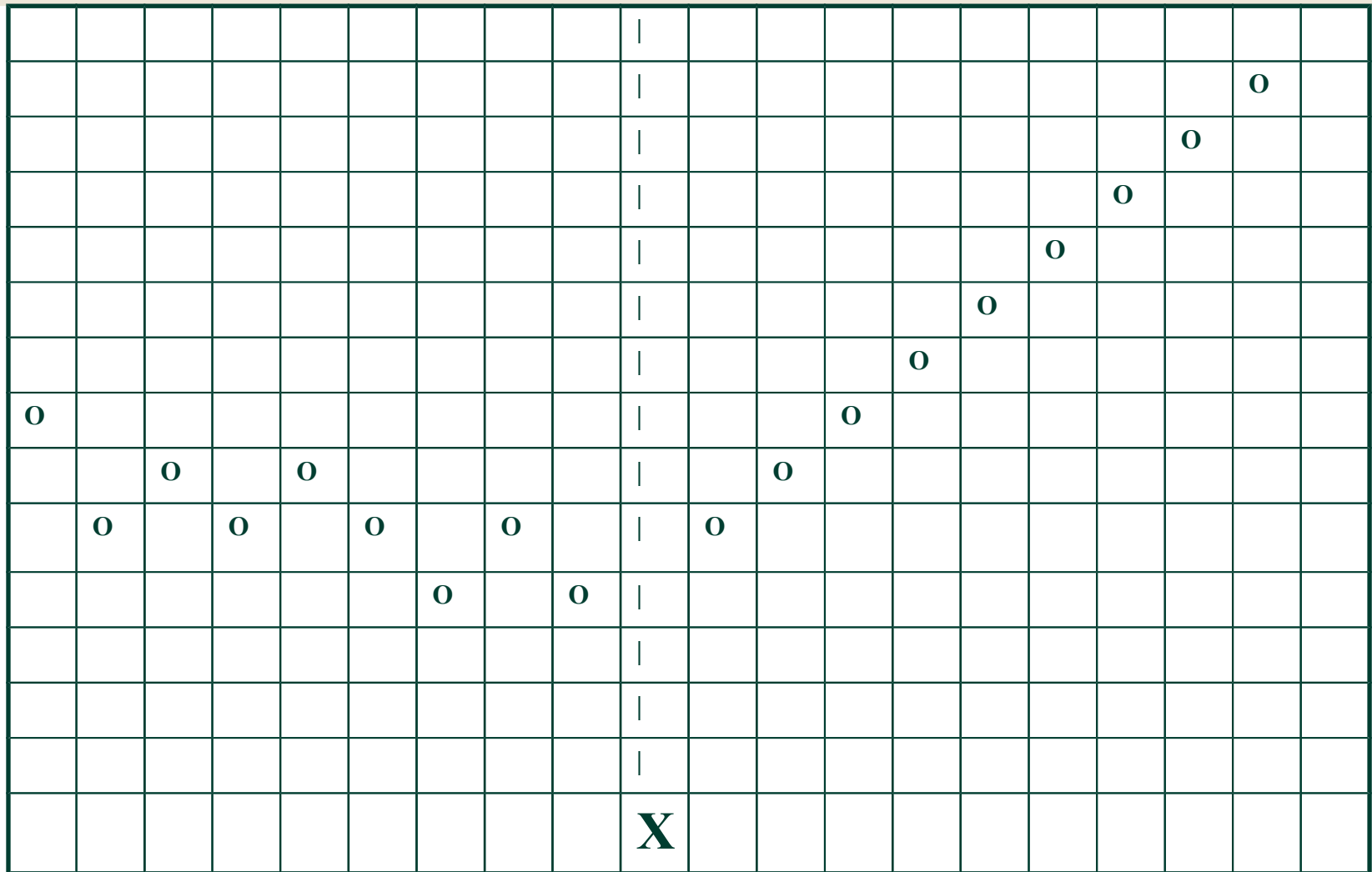




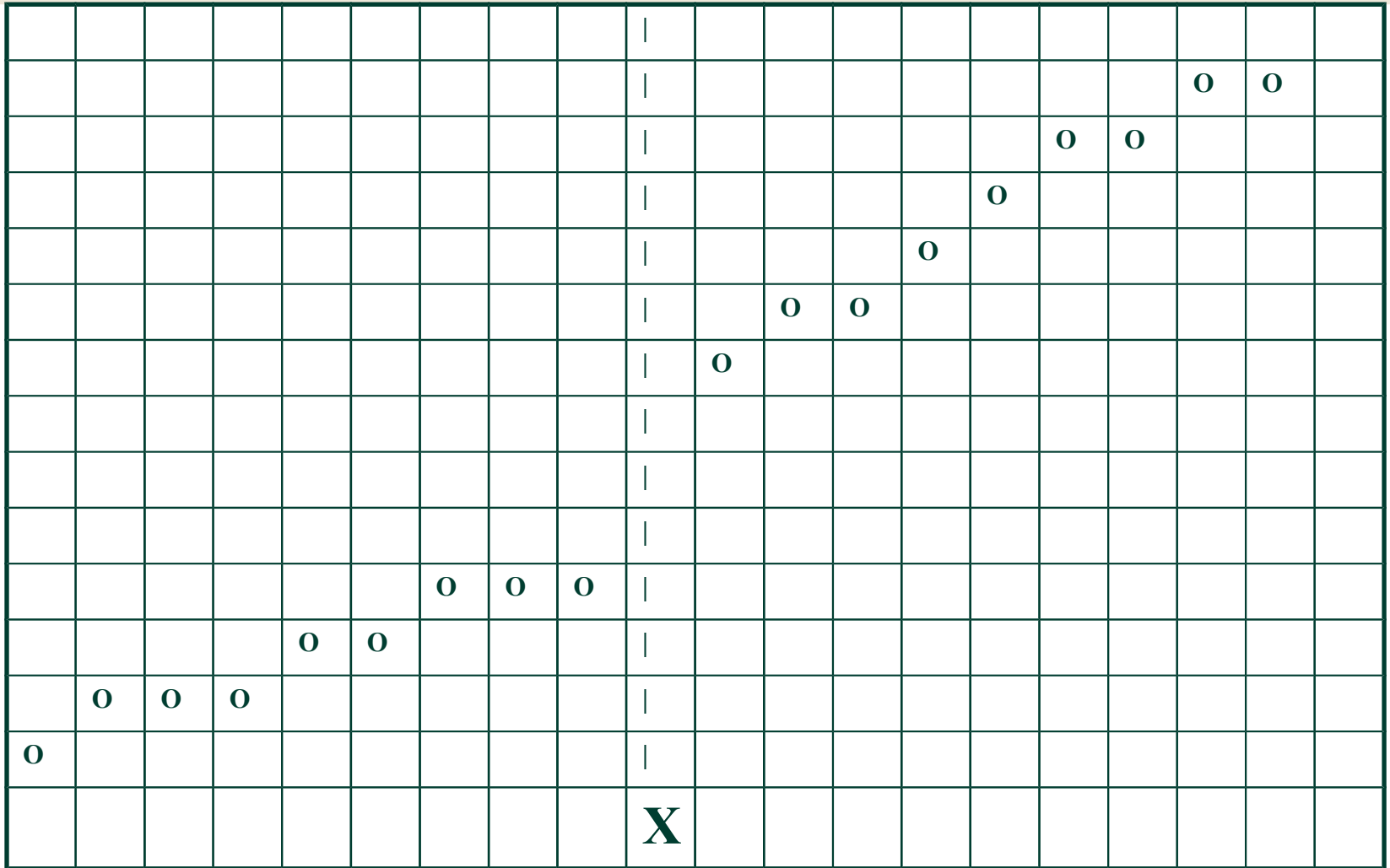
# Did "X" Make A Difference?



# Did "X" Make A Difference?



# Did "X" Make A Difference?



# But Are We Sure It Was “X”?

- Did X cause all of the difference?
- What else might have contributed?
- Would X make the same difference the next time?  
Under different conditions?

# Validity Of Measures

- **Measures used must avoid**
  - **Contamination:** including factors that are not related to what you intend to measure (e.g., rewarding sales person on \$ volume, which includes price increases over which reps had no control, in addition to units sold)
  - **Deficiency:** not including factors that are a part of what is being measured (e.g., appraising performance on quantity without considering quality)

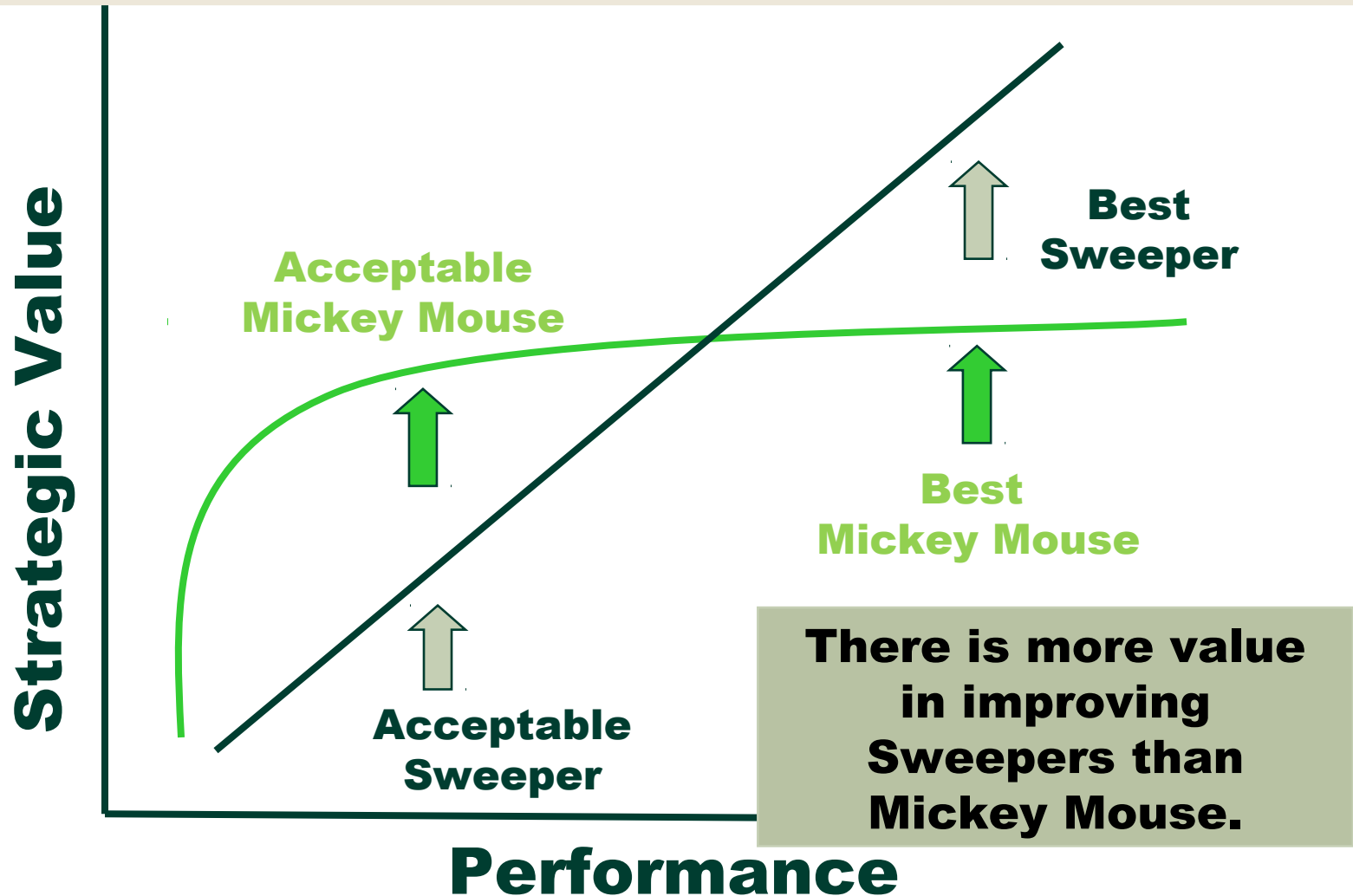
# Example Of Poor Measure For Determining Incentives

- Sales reps for manufacturer paid on total sales volume (\$)
- Included were parts orders to repair machines (up to 50% of volume for some of the reps)
- Company needed new machine sales
- Sales rep not involved in parts orders
- So paying for parts volume is \_\_\_\_\_?

# Challenge: Appropriate Scaling

- **5 point performance appraisal scale may not produce useful data**
  - Some jobs are “pass – fail”
- **Do differences make a difference?**
  - Need to know the return on improved performance

# How Important Is Performance Variation?



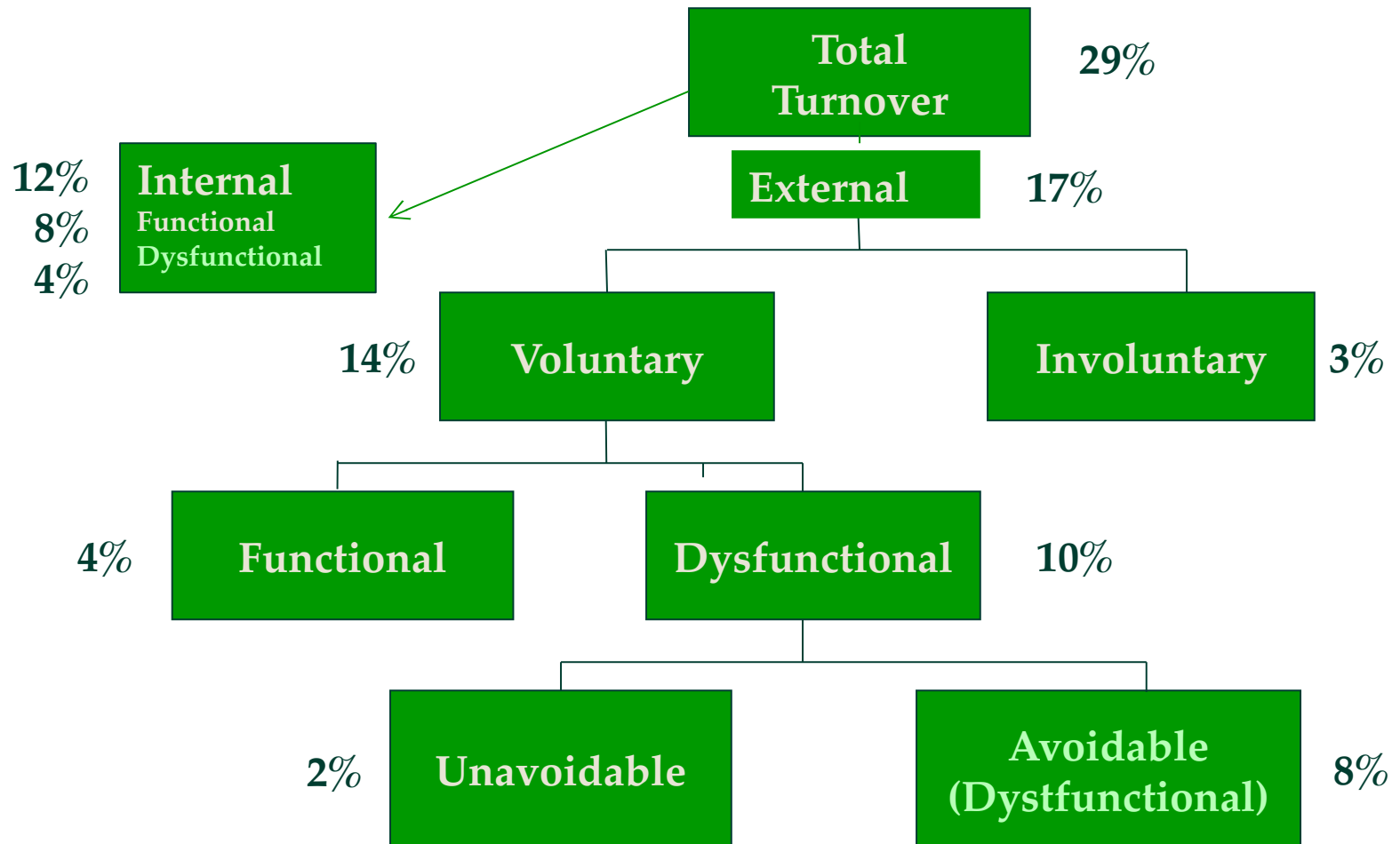


# Evaluating Turnover

- **How do you measure turnover?**
- **What is the acceptable range of turnover?**
- **Is it the same for all occupations/roles?**
- **What type of turnover?**
- **What is the impact of the turnover?**
- **What can be done about it?**

# Evaluate Turnover

*Is It Too High? What Are The Implications?*



# Is This An Objective Analysis? Not Totally

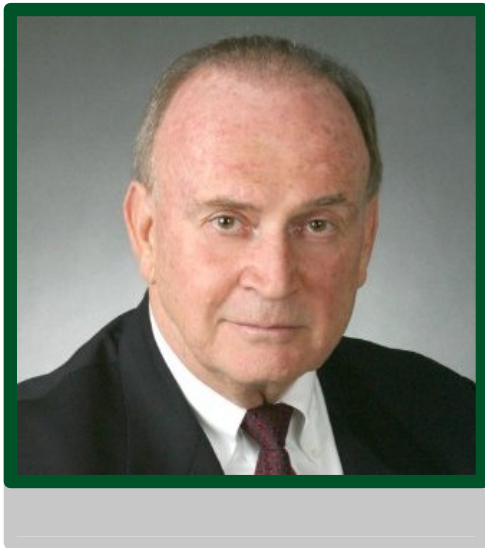
- **Is internal turnover good or a problem?**
  - Someone has to make an assessment
- **Is turnover to the outside “voluntary”?**
  - Managers can make someone want to leave
- **Is turnover to the outside “functional”?**
  - Was there a celebration when person left?
- **Was turnover avoidable?**
  - Could actions be taken earlier to avoid it?

# Bottom Line

- Evidence can be data based or judgment based
- Value of evidence varies depending on the application
- Data can support anything if it is manipulated or selection is poor
- Subjective opinions can be valid and provide unique insights
- We are not going to be replaced by machines!

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