Surveying the Audit Landscape

Joseph Mauriello
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My Background

• Director, Center for Internal Auditing Excellence, UTD
• 15+ years Internal Audit experience
• Public Accounting / Industry
• MBA (Cohort) and MS, Accounting – UT Dallas
• BA, History, Minor: Int’l Relations – Lehigh University
• Dallas IIA Chapter Involvement – Officer / Governor
• Dallas IIA Super Conference Chair (2016 – present)
• Fraud Summit Chair (2016-present)
• IIA International: CREA Committee (2017-2019)
• Gleim National CIA Instructor
Objectives

• Develop an understanding of how internal control questionnaires can be used to learn more about your client’s internal control environment.

• Identify effective survey techniques for use in implementing an internal control questionnaire.

• Gain an understanding of how to generate insights from your internal control survey responses.
What is an internal control questionnaire (ICQ)?

“An internal control questionnaire is a document which an auditor provides to employees of a company before performing an audit. The questionnaire is useful to determine which areas the audit should focus on.”

https://bizfluent.com/list-6789730-benefits-internal-control-questionnaire-.html

https://knowledgeleader.com
What is the purpose of using ICQs, i.e. surveys?

- Gain an understanding of the business environment
- Gain an understanding of the client’s controls
- Gain an understanding of the client’s risks
- Develop efficiencies for audit planning purposes
Internal Control Questionnaires

Form and Function

• A series of questions about internal controls and their application to groups of accounts and cycles.
• Typically a yes, no, "n/a" format
• Questionnaire design facilitates assessment of “no” responses as weaknesses in internal control
• May be administered electronically, paper-based, or through interviews
## Internal Control Questionnaires

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Quickly isolate potential areas of concern for planning</td>
<td>- Difficult to prepare</td>
</tr>
<tr>
<td>- Standardized approach across processes</td>
<td>- Time-consuming to administer</td>
</tr>
<tr>
<td>- Can be tailored to specific circumstances</td>
<td>- Anticipatory responses</td>
</tr>
<tr>
<td>- Improved quality of walkthroughs and interviews</td>
<td>- Lack of truthful responses</td>
</tr>
<tr>
<td></td>
<td>- Hard to address totality of circumstances</td>
</tr>
<tr>
<td></td>
<td>- Not insightful / valuable</td>
</tr>
</tbody>
</table>
So how can we rethink ICQs?

- Rethink our purpose
- Assess our level of focus
- Know our audience
- Incorporate a better understanding of survey methods
- Utilize data analytics techniques

https://hillaryhelpsulearn.com/rethink-aac-access-and-use/
Rethinking the ICQ

What can we accomplish and how?

• Identify the purpose
  – Governance considerations
  – Risk assessment
  – Control identification
  – Compliance

• What is the goal? i.e. What is the outcome or outcomes we’re trying to examine?
Rethinking the ICQ

Assess the Level of Focus

• Level of Focus
  – Enterprise-wide focus
  – Process-oriented focus
  – Customers
  – Vendors
  – Employees

• Reassess the level of focus in light of the purpose of the survey
Rethinking the ICQ

Knowing the Audience

• Survey purpose will dictate your audience or **target population** for **sampling purposes**

• Potential target populations for sampling include (but are not limited to):
  – Board members
  – Employees
  – Customers
  – Vendors
  – Senior Management
  – Outsourced Services
  – Business segments
  – Business regions
Rethinking the ICQ

Rethinking Survey Methods

Generally, ICQs follow a similar generic approach.....

• Typically a yes, no, "n/a" format

• Questionnaire design facilitates assessment of “no” responses as weaknesses in internal control

• Administered electronically, paper-based, or through interviews
Rethinking Survey Methods

That approach masks some challenges

- Illusion of authoritativeness due to “quantitative approach”
  - ICQs generally take an average “value” for each response, however this may not be indicative of whether that value is meaningful
  - Example: Weighted Average approach
    - Assumes validity of measures and generalizability

**Weighted Average Method**

\[
\frac{(\sum SA)\times 4 + (\sum A)\times 3 + (\sum D)\times 2 + (\sum SD)\times 1}{(\sum SA) + (\sum A) + (\sum D) + (\sum SD)}
\]

SA = the number of responses for strongly agree
A = the number of responses for agree
D = the number of responses for disagree
SD = the number of responses for strongly disagree
Rethinking the ICQ

Rethinking Survey Methods

How do we overcome these challenges? Let’s reconsider the following qualitative and quantitative factors:

- Quality of survey questions
- Question sequencing
- Levels of Measurement
- Scales of Measurement
- Execution time / effort
- Variables of interest
- Nature of inquiry (causal?)
- Descriptive / Inferential
Rethinking the ICQ

Analytical Approaches

Employ a data analytics approach depending upon the type and availability of your data…

• Simple measures of central tendency (most common ICQ approach)

• Descriptive statistics (good but not great, less insight)

• Inferential statistics (potential for insight, i.e. value)
Survey Methodology

Survey Development and Expectations

Considerations when developing a survey include:

• Participant time and effort for completion of survey
  – General rule of thumb: 10 minutes MAX overall

• Individual questions should be clear, concise, and not require maximum cognitive effort
  – Pay attention to the wording of questions to avoid bias

• Individual questions should not be burdensome time-wise
  – General rule of thumb: 10 to 20 seconds for each question response
Survey Methodology

Survey Development and Expectations

Question Types:

- Open ended
- Closed-ended
- Ranking
- Rating
- Likert scale
- Multiple choice
- Picture choice
- Demographic

These are the most common, however other examples may be built depending upon your survey software.
Survey Methodology

Survey Development and Expectations

Quality of Survey Questions: General Considerations

• Avoid leading questions
  – Example: “Should concerned control owners document their processes?”
    Instead, ask it this way: Do you think control owners should be required to
document their processes?

• Avoid loaded questions
  – Example: "In the past 12 months, have you considered leaving the firm?“
    Instead, ask it this way: What factors would lead you to consider leaving the
    firm?

Survey Methodology

Survey Development and Expectations

Quality of Survey Questions: General Considerations

• Avoid double-barreled questions
  – Example: How happy or unhappy are you with the rate of payroll increases and the performance compensation policy? *Instead, you could ask it this way:* How happy or unhappy are you with the rate of payroll increases? *And, next question:* What do you think of the performance compensation policy?

• Avoid the absolute question
  – Example: "Do you always review the transaction log during your shift?"
    *Ask it this way:* How many times a week do you review the transaction log?

Survey Methodology

Survey Development and Expectations

Quality of Survey Questions: General Considerations

• Avoid “unclear” questions (iPhone vs. smart phone)
  – Example: Do you use an iPhone to receive company email? Instead, you could ask it this way: Do you use a smart phone to receive company email?

• Avoid the multiple answer question
  – Example: "How many times a week do you review the transaction log?" Choices include 5-6 times, 4-5 times, 3-4 times and 1-3 times. Instead, you could offer the following choices: 6 or more times, 5 times, 4 times, 3 times, and 2 or fewer times.
Survey Development and Expectations

Quality of Survey Questions: General Considerations

• Offer “prefer not to answer”
  – Always offer this choice if you anticipate that eliciting a response may cause the respondent to feel uncomfortable or potentially drop out of the survey

• Include all possible answers
  – Not including all possible answers also creates bias. If you are unsure of all the options, you can always add “other” as a choice.

Survey Methodology

Survey Development and Expectations

Quality of Survey Questions: General Considerations

• Use Accurate Scales
  – Example: “Please rate your customer service experience.” and the choices are as follows: Excellent, Great, and Good. Instead, you need to offer these choices: Poor, Needs Improvement, Neutral, Good, and Excellent.

• Survey Structure (Sequencing)
  – The way you structure your questions from one to the other can also bias respondents. Study and test your survey to root out poor structure. For example, ask your more personal or in-depth questions at the end to avoid survey dropout.

Survey Methodology

Survey Development and Expectations

Scales of Measurement

1. Dichotomous
   - “Yes/No” “True/False” “Agree/Disagree”

2. Rating / Ranking Scales
   - “1-10” “1-5” “Likert Scale - > “SD, DA, N, A, SA”

3. Semantic Differential Scales (sliding scales)
   - Inexpensive __________________|__________________ Expensive
   - Effective __________________|__________________ Ineffective
   - Useful ____________________|__________________ Useless
   - Reliable ____________________|__________________ Unreliable

https://conversionxl.com/blog/survey-response-scales/
Levels of Measurement

- **Nominal**
  - Values are mutually exclusive and exhaustive categories that contain no information about order, rank, distance.

- **Ordinal**
  - Values are categorical, ordered, but no required metric that reflects the “distance” between the categories.
Survey Methodology

Survey Development and Expectations

Levels of Measurement

• Interval
  – Values are ordered and with a metric that reflects “distance” between values.

• Ratio
  – Values are ordered, with a metric that reflects “distance” between values, and there exists a “true zero” where 0 means the absence of the thing being measured.
Analytics Considerations

Stats 101 Refresher

Statistics is ….
The Normal Curve (Distribution)

- The distribution is unimodal
- Symmetrical
- MCT in the same location
- Constant relationship with standard deviation
- Extends from $-\infty$ to $\infty$
- Total area under the curve is always 1
Stats 101 Refresher

Why is the normal curve useful?

• Allows for comparisons of dissimilar quantities
• Allows for rudimentary probability statements
Analytics Considerations

Stats 101 Refresher

Branches of Statistics

• Descriptive
  Describes your data

• Inferential
  Trying to make generalizations from a sample of few to the general population
Analytics Considerations

Stats 101 Refresher

Sources of Bias for Inferential Statistics and Surveys

• Sample Selection
  – Probability issues (non-randomness)

• Measurement
  – Construct validity
  – Poorly constructed measure
  – Subjects not understanding
Analytics Considerations

Stats 101 Refresher

Beware the “Cult of Statistical Significance”

- Statistical significance doesn’t say that something is important or true
- It is probabilistic, i.e. the likelihood of something occurring randomly or by chance
Stats 101 Refresher

Causation vs. Correlation

**Correlation** is a statistical technique which tells us how strongly the pair of variables are linearly related and change together. It does not tell us the *why* and *how* behind the relationship but it just says the relationship exists.

**Causation** answers the why and/or how question.

https://en.wikipedia.org/wiki/File%3aPiratesVsTemp%28en%29.svg
Analytics Considerations

Stats 101 Refresher

Causation and Temporal Precedence

1. Single most important tool for determining the strength of a cause and effect relationship.
2. Isolating cause occurring prior to effect
3. Ensures internal validity
4. Control for potentially confounding variables
How will we generate insights from our internal control survey responses?

We will use “Regression” analysis….

• Method for investigating functional relationships among variables

• Variables:
  – Y is our dependent variable (outcome)
  – Our independent (predictor) variables are given by $X_1;X_2;\ldots;X_K$. 

Analytics Considerations
Analytics Considerations

Regression

Provided the survey has been designed and administered appropriately, we can build a regression model and use the estimates from this model to assess:

1. The importance of a predictor variable on the DV
2. The predicted value of the DV for a given observation whether it is existing or new
3. The change in the DV as the value of a predictor changes
Analytics Considerations

Example: Internal Control Survey Analytics

Firm: Papa Razzi Ristorante Supply

Motto:

• “Everything we supply is picture-perfect…….”

Background:

• Supplier of Italian food staples for restaurants across the U.S.
• Financial struggles – revenues stagnant / low margins
• Employee morale is waning according to mid-level managers
• C-Suite assumes morale is waning due to either lagging compensation
Example: Internal Control Survey Analytics

Firm: Papa Razzi Ristorante Supply

*Survey Purpose:* Take a COSO based approach to assess state of corporate culture and employee morale. (Governance)

*Level of Focus:* Employee levels below management level (Employees enterprise-wide)

*Target Population:* Employees (we plan to administer electronically across the entirety of the company)
Example: Internal Control Survey Analytics

Firm: Papa Razzi Ristorante Supply

Participants: 4,296 respondents, 26 locations

Scale: (1-5) 1 is strongly disagree and 5 is strongly agree

Questions: COSO based detail, demographic questions, and main inquiries (general).
Analytics Considerations

Example: Internal Control Survey Analytics

General Questions

Q1: How would you rate employee morale? (1-5 scale)
Q2: Am I happy with my job? (yes or no)
Q3: Gender
Q4: Age
Example: Internal Control Survey Analytics

Control Environment

Q1: Managers and employees are sensitive to ethical considerations, the impact on and perceptions of others when making decisions or taking action (1-5 scale)

Q2: An atmosphere of mutual trust and open communication between management and employees has been established within the organization (1-5 scale)

Q3: Personnel turnover impacts my work unit’s ability to effectively perform its function (yes or no)
Analytics Considerations

Example: Internal Control Survey Analytics

Risk Assessment

Q1: I have sufficient resources, tools and time to accomplish my objectives (yes or no)

Q2: The objectives and goals of my work unit are reasonable and attainable (yes or no)

Q3: Generally, I do not feel unreasonable pressure to get the job done at any expense (1-5) scale
Analytics Considerations

Example: Internal Control Survey Analytics

Control Activities

Q1: My work is adequately supervised (yes or no)

Q2: Employees who steal from the organization (physical property, money, information, time) will be discovered (1-5 scale)

Q3: My work unit has policies and procedures (yes or no)
Analytics Considerations

Example: Internal Control Survey Analytics

Information and Communication

Q1: A communication channel exists for reporting suspected improprieties (yes or no)

Q2: If I report wrongdoing to my supervisor, I am confident the wrongdoing will stop (1-5 scale)

Q3: Employees who report suspected improprieties are protected from reprisal (1-5 scale)
Analytics Considerations

Example: Internal Control Survey Analytics

Monitoring

Q1: Information reported to management reflects the actual results of operations in my work unit (1-5 scale)

Q2: I know what action to take if I become aware of unethical or fraudulent activity (1-5 scale)

Q3: I am aware that fraudulent activity is occurring within my workplace (yes or no)
Analytics Considerations

Example: Internal Control Survey Analytics

Research Questions of Interest

*RQ1:* What factors are driving employee morale?

*RQ2:* What affects job happiness?

*RQ3:* What’s driving employee perceptions about supervisor effectiveness?

*RQ4:* Are employees claiming awareness of currently ongoing fraudulent activity?
Example: Internal Control Survey Analytics

**RQ1:** What factors are driving employee morale?

**Results:**
- Personnel turnover and reasonable goals are significant drivers of employee morale
- Locations: Kansas City, Los Angeles
- Compensation is a minor negative factor
- Minor negative factors – compensation, resource sufficiency, and supervisor effectiveness
Analytics Considerations

Example: Internal Control Survey Analytics

**RQ2**: What affects job happiness?

**Results**:
- 3,453 yes, 843 no
- Locations: Houston, Cleveland, Portland
- Compensation not a factor with job happiness
- Gender / Age
- Effective supervision matters

<table>
<thead>
<tr>
<th>Probit Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variable:</strong> Am I Happy With My Job</td>
</tr>
<tr>
<td>gender</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>age</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Supervisor Effectiveness</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Fair Compensation</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Cleveland office</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Houston office</td>
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<td></td>
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<tr>
<td>Portland office</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Constant</td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

**Observations**: 4,296
**Log Likelihood**: -2,082.697
**Akaike Inf. Crit.**: 4,223.394

*Note: *p<0.1; **p<0.05; ***p<0.01*
Example: Internal Control Survey Analytics

RQ3: What’s driving employee perceptions about supervisor effectiveness?

Results:
- Locations: Boston, Chicago, Houston, and Nashville
- Adequacy of supervision not a factor for supervisor effectiveness
- Ethical considerations

<table>
<thead>
<tr>
<th></th>
<th>Supervisor Effectiveness</th>
<th>Dependent variable: Supervisor Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethical Considerations</td>
<td>0.048***</td>
<td>0.010</td>
</tr>
<tr>
<td>Adequacy of Supervision</td>
<td>0.033</td>
<td>0.022</td>
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<tr>
<td>Policies and Procedures</td>
<td>-0.007</td>
<td>0.008</td>
</tr>
<tr>
<td>Boston office</td>
<td>1.115*</td>
<td>0.067</td>
</tr>
<tr>
<td>Chicago office</td>
<td>1.125*</td>
<td>0.068</td>
</tr>
<tr>
<td>Houston office</td>
<td>1.143***</td>
<td>0.066</td>
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<tr>
<td>Nashville office</td>
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<tr>
<td>Constant</td>
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<tr>
<td>Observations</td>
<td>4,296</td>
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<tr>
<td>R²</td>
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<td>Adjusted R²</td>
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<tr>
<td>Residual Std. Error</td>
<td>0.603 (df = 4265)</td>
<td></td>
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<tr>
<td>F Statistic</td>
<td>2.985*** (df = 30; 4265)</td>
<td></td>
</tr>
</tbody>
</table>

* p<0.1; ** p<0.05; *** p<0.01
RQ4: Are employees claiming awareness of currently ongoing fraudulent activity?

Results:

- Locations: Boston, Brooklyn, Houston, and San Francisco
- Major factors: unreasonable pressures to perform, management sensitivity to ethical considerations, and reporting (actions to take of) of unethical / fraudulent activity

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Coefficients</th>
<th>Std. Error</th>
<th>t-Value</th>
<th>Significance</th>
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<tbody>
<tr>
<td>Managers are sensitive to ethical considerations</td>
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<td>0.035</td>
<td>3.047</td>
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<td>Unreasonable pressure to perform</td>
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<td>0.030</td>
<td>4.134</td>
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<tr>
<td>Channel exists for reporting</td>
<td>-0.134</td>
<td>0.178</td>
<td>-0.754</td>
<td>0.456</td>
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<tr>
<td>Reprisal for reporting suspected activity</td>
<td>0.065</td>
<td>0.037</td>
<td>1.743</td>
<td>0.083</td>
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<tr>
<td>Reporting unethical / fraud activity</td>
<td>0.073**</td>
<td>0.032</td>
<td>2.333</td>
<td>**&lt;0.05</td>
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<td>10.573</td>
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</table>

Observations: 4,796
Log Likelihood: 7,323.962
Akaike Inf. Crit.: 1,573.923

Note: *p<0.1; **p<0.05; ***p<0.01
Findings Summary for our Example Survey

• Employee morale and job happiness are not significantly impacted by compensation.

• Personnel turnover and reasonableness of goals are leading factors driving employee morale.

• Effective supervision matters. Ethics is a significant driver of this supervision perception.

• Occurrence of fraud perception driven by points 2 and 3.

• Houston…..we have a problem!
• Data Analytics
  – R, Stata, Python, Excel

• Data Visualization
  – Tableau, Power BI, R, Stata

• Survey Tools
  – Qualtrics, Survey Monkey, Survey Gizmo, etc.
An analytics-based approach to ICQ surveys brings insights to our results by:

- Identifying a probability based understanding of the significance of results (other than by chance)
- Isolate those factors that truly contribute to our variables of interest
- Identifies unique ‘hidden’ factors. (Houston we have a problem)
Questions?

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