

RUTGERS

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EXAMINATION OF AUDIT PLANNING RISK ASSESSMENTS USING VERBAL PROTOCOL ANALYSIS

What is Verbal Protocol Analysis (VPA)?

- VPA involves capturing an individuals' spoken thoughts while working on a task (i.e., thinking aloud).
 - Verbalizations are recorded verbatim and coded according to theory driven categories.
 - Data in conjunction with logical theoretical premises is used to generate hypotheses and to draw conclusions about cognitive processes.



Advantages and Limitations of VPA

- Advantages
 - Rich information regarding the contents of working memory while performing a task.
 - Reveals aspects of thinking and learning that are consciously available, or activated in working memory
 - Provides sequential observations
 - Reveals changes that occur in working memory over the course of the performance of the task
- Limitations
 - Can only verbalize conscious thought
 - May lead to over/under estimates of knowledge and processes used under normal task conditions
 - Strategically use knowledge or processes that might not normally used
 - Interference with abilities to use knowledge
 - Self-presentation issues (e.g., introversion/extroversion, desire to impress)
 - LABOR INTENSIVE!!!!

Objectives

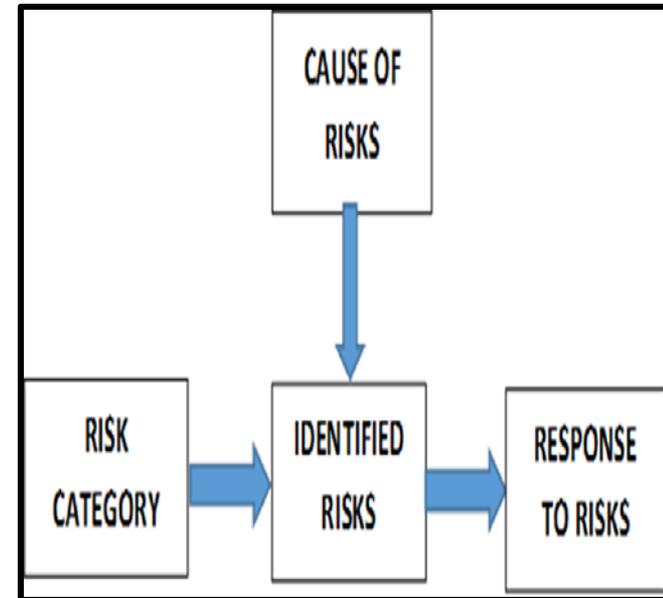
- Examine judgments of senior level audit professionals regarding audit risk assessments using VPAs
 - Auditor risk assessment is one of the major tasks influencing audit quality and is considered one of the more complex judgments that auditors make.
 - keen interest by regulators (i.e., PCAOB), practitioners, and academics in gaining a better understanding of how auditors identify and assess audit risk, as well as, how the auditor risk assessment process can be enhanced.
- Examination of the strategies auditors use during the risk assessment process and the resulting decisions reached will provide compelling data that can be used to improve the risk assessment task, as well as enhance the effectiveness of the audit process.

Expected contribution

- VPA will provide an understanding of how more experienced auditors evaluate and weight information to arrive at an assessment of audit risk.
- Data from the VPAs can then be used to improve the decision process and to educate less experienced audit personnel.
- We propose that the data derived from the verbal protocol analysis be leveraged in additional research projects
 - Decision models
 - Experimental study examining risk assessments under various scenarios
 - Rule based system based on expert knowledge derived from the VPAs

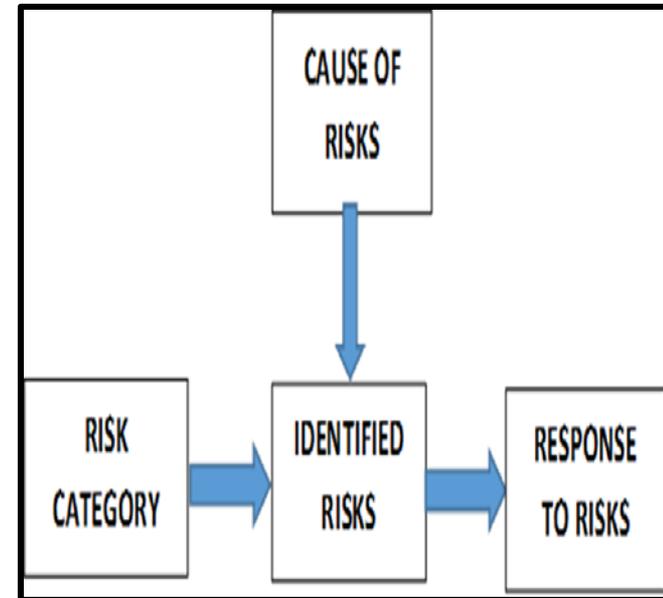
RESEARCH QUESTIONS

1. What is the nature of the information processing operations auditors perform in completing a planning stage client risk assessment task?
2. What is the nature and frequency of risks that are verbalized? Who [first] verbalizes these risks? What framework [schema] underlies the risks that are verbalized, how are the risks categorized?
3. What is the source of each verbalized risk in terms of the source of the information [evidence] that was verbalized and/or the information processing activity that preceded the risk identification?



RESEARCH QUESTIONS

4. What was the structure of the information search process underlying the task? To what degree did it follow and differ from the firm's decision aide? What queries, assumptions and premises were verbalized during the task?
5. What were the Audit Decisions, Decision Rules and Decision Support verbalized during the task? [To what degree do these map to the firm's decision aid].



Coding Summary

Table 1: Compilation and relative distribution of information processing operations (Codes)

Addresses RQ: What is the nature of the information processing operations auditors perform in completing a planning stage client risk assessment task?

	Total Operators Coded	% within Category	Overall % of total operations
Task Structuring operators	89		3%
SG: Assigned to verbalizations related to understanding the task.	89	100%	3%
Information Acquisition Operators	631		19%
R: Read a document [indicate what document if feasible, e.g. audit documentation, standards]	0	0%	0%
IRM: Information Retrieval from Memory	472	75%	14%
IRW: Information retrieval from workpapers, notes, etc.	102	16%	3%
IOET: Information obtained from other members of the engagement team	57	9%	2%
AC: Algebraic Calculation of relevant item	0	0%	0%
Information Processing Operators	1437		43%
GA: Generate an Assumption, a premise.	212	15%	6%
CN: Comparison	61	4%	2%
GQ: Generate a Query	260	18%	8%
E: an Evaluation, a risk assessment judgment	904	63%	27%
Decision Operators	1195		35%
DS: Decision support	834	70%	25%
DR: Decision rule	20	2%	<1%
AD: Audit Decisions	341	28%	10%
TOTALS	3352		100%

Table 3: Compilation of sources (*causes, decision support*) of identified risks (IRMs, IRWs, IOETs and ACs):

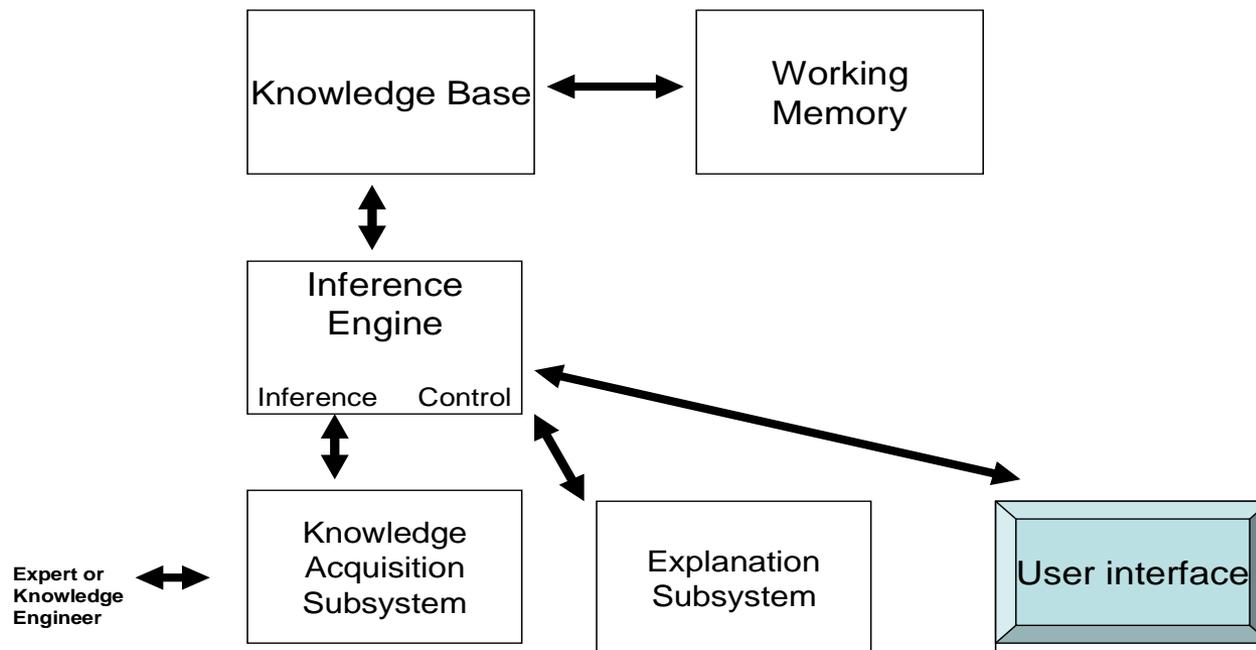
RQ: What is the source of each verbalized risk in terms of the source of the information [evidence] that was verbalized and/or the information processing activity that preceded the risk identification?

Protocol line #	'Risk statement'	Information Processing	Evidence source		Audit Area
155,157,158, 159	to address the risks related to the fact that the provisions are properly accounted for in this contracts that there are side agreements to be accounted for and things like that,	The contract management so how the company itself contracts with the customers and who controls those contracts in terms of the language that goes in there are the types of things from a revenue perspective that I think represent risks to those account balances.	DS		Revenue recognition
166	I think you are aware that half of their business roughly is with ten customers	that is why you got executives really focused on some of these.	DS		Understanding the business/revenue
167, 168	so that is fairly significant concentration and				
170	there is always going to be negotiations with the clients	but anytime you are talking about 600 million in sales	DS		Audit risk
183	but that is when we see a change to that	given the size of the acquisitions they have had	DS		Controls

Audit Decision Support Model

- Auditors have to make decisions about the types of evidence to gather, how to evaluate that evidence, when to gather additional evidence, and what conclusions are appropriate given the evidence they have obtained.
 - *How can these rules be “wired-in” on a decision guidance tool?*
- Use the information from the verbal protocols to develop decision models that represent the various types of decisions (i.e., inherent risk assessments, fraud risk assessments, etc.).
 - Map the risk assessment process for each stage of the audit (i.e., planning) and
 - Identify the relevant information cues and patterns to link different pieces of financial information used in formulating risk assessments.

Prototype of an Audit Analytics Support Expert System



Reasons to develop a formalized system

- To reduce the variance in risk assessment
- To have a court defensible method
 - The process is not optimal, but would be formal
- To understand what is actually being done in engagement and to be able to review the process with some formality

What to expect from the prototype

- Illustrative not operational
- Providing insights on how the process is currently being performed and how it can be improved
- Focused on one or two industries
- Incorporating an ever increasing set of alternatives
- Gathering a library of rules
- Affect our thinking on the issues
- A step in the automated audit

