

## CORE VARIABLES IN FORENSIC EARNING CAPACITY ASSESSMENT: RESEARCH RESULTS

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### Definitions of Earning Capacity

- Definitions of earning capacity vary semantically
- No universal language, model or method

## Models of Earning Capacity

- RAPEL
- Shahnasarian ECAF2
- Boyd & Toppino FVE Method
- Deutsch / Sawyer
- Labor Market Access (LMA)
- Dillman's Loss of Earning Capacity Model
- McCroskey Vocational Quotient System (MVQS)

## Methodological Inconsistency

- Despite published methods, there remains a high level of variability in the final evaluation product of rehabilitation consultants

## Research Question

- What are the core variables to be considered in an assessment of vocational earning capacity in a legal-forensic setting?

## Research Design Issues

- Inherent difficulty in achieving topical consensus on an issue
- Difficulty rests with problems in group decision making dynamics
- Needed an empirically valid and reliable research method to gain consensus on a topic where consensus does not exist

## Applications of the Delphi Method to Rehabilitation Research

- Delphi has been utilized since the 1950's in many different professional disciplines and applications
- Literature Review of Delphi studies in rehabilitation counseling; vocational evaluation and life care planning fields.
- One conference paper and eight peer reviewed journal articles.

## Review of Delphi Studies in the Field of Rehabilitation

- Hakim and Weinblatt (1993)
- Rubin et al. (1998)
- Currier et al. (2001)
- Thielsen et al. (2001)
- Chan et al. (2003)
- Pomeranz et al. (2006)
- Shaw et al. (2006)
- Vázquez-Ramos (2007)
- Baker and Moon (2008)

## The Delphi Technique and Process

- Five phases in carrying out a Delphi study include:
  - Selection
  - Exploration (round one)
  - Evaluation (round two)
  - Reevaluation (round three)
  - Final consensus

## Study Design

- To answer the research question, vocational consultant experts were asked to participate in a Delphi study to identify core variables to be considered in completing a vocational earning capacity assessment in a legal-forensic setting.
- To avoid panelist fatigue a three round Delphi study was used to sustain stability and convergence in panelist responses



## Expert Panelist Incentive to Participate

- Panelists completing all three rounds received 2 benefits from their participation in the study

## Panelist Qualification

- There is no clear definition of what constitutes a vocational expert
- The legal definition did not provide a sufficient operational definition for establishment of inclusion criterion
- Established 4 inclusion criteria for this study

## Expert Panelist Selection

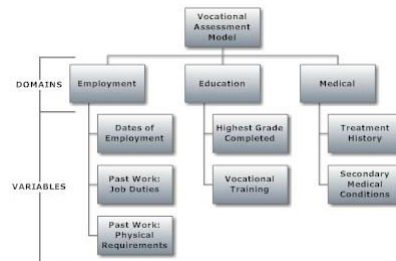
- The knowledge and expertise of each individual panelist contributes to the power and validity of the Delphi process
- Non-probabilistic sampling scheme

## Qualification Questionnaire

- Panelists self reported his / her eligibility for the study.

## Delphi Round 1

- Collected panelist demographics
- Data collected on Domains and Variables
- Panel was provided with a diagram to conceptually differentiate between domains and variables



## Delphi Round 2

- Panelists rated each of the 469 variables identified from Round 1 data analysis on a 7 point Likert type rating scale--“Level of Importance Rating Scale”.





## Delphi Round 3

- Following Round 2 ratings, descriptive statistics were calculated for each item
- For reference, panelists were provided:
  - ▣ His / her Round 2 rating for each item
  - ▣ 2 different measures of central tendency
  - ▣ 2 different measures of variability or dispersion
- Panelists re-rated each of the 469 items

## Delphi Round 3

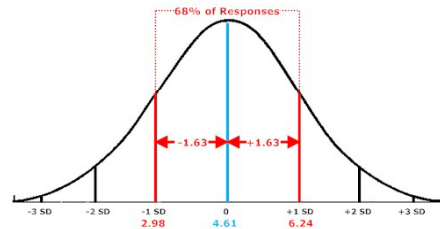
- Panelists were provided with the group mean and standard deviation for each item
- Panelists were provided interpretative guidelines

Example:

Mean: 4.61  
Standard Deviation: 1.63

The Mean is the mathematical average of a set of numbers

The Standard Deviation is a measure of the dispersion or variability in a set of numbers  
68% of responses will fall within +/- 1 standard deviation (SD) of the mean



Both the Mean (measure of central tendency) and the Standard Deviation (measure of variation) are susceptible to outliers or extreme values

## Delphi Round 3

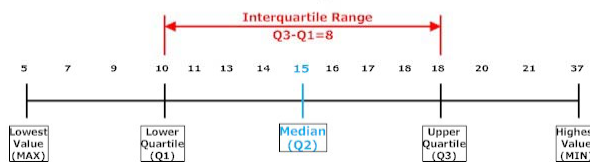
- Panelists were provided with the group median and interquartile range for each item

Example:

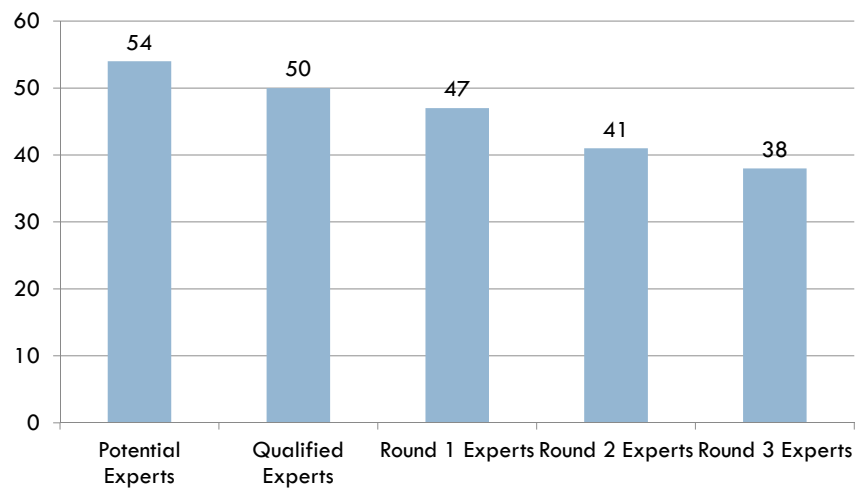
Median: 15  
Interquartile Range: 8

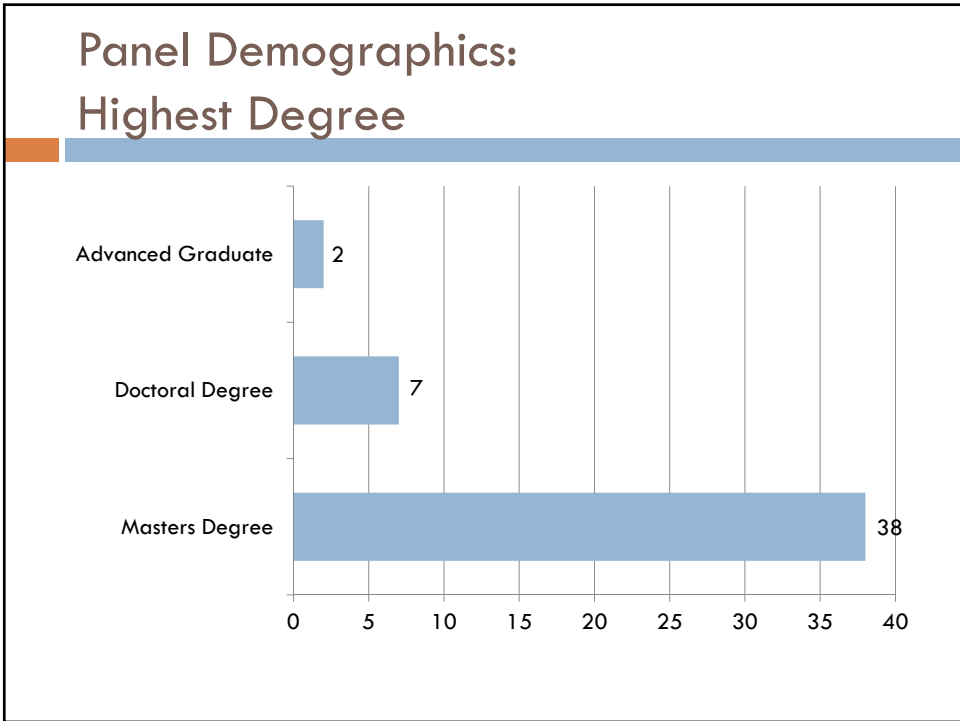
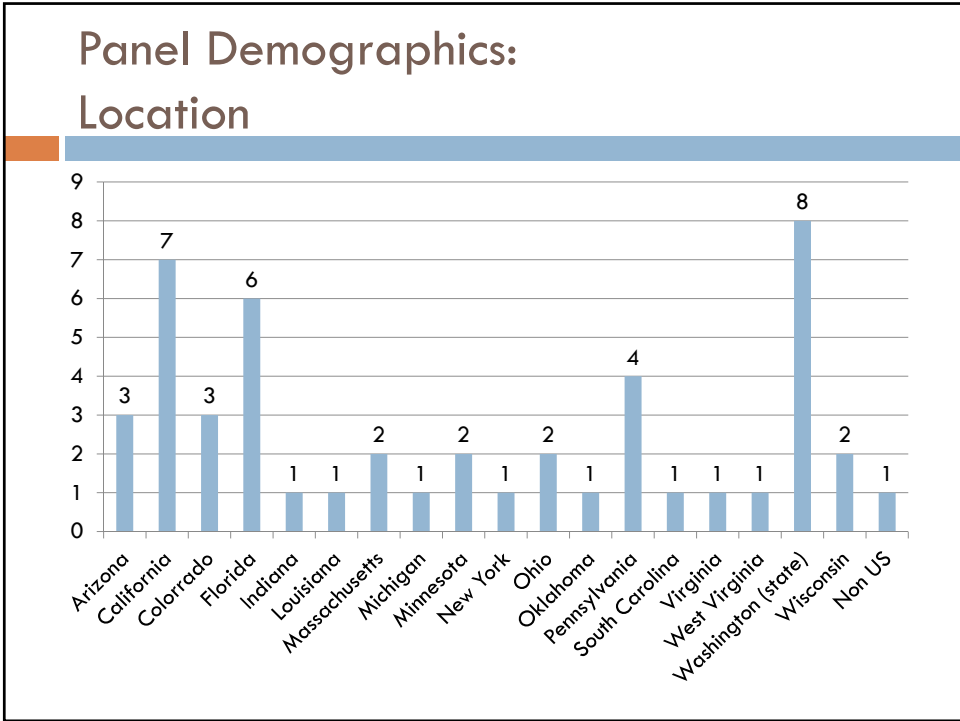
The Median is the value that lies in the middle of an ordered set of data

The interquartile range represents the range of the middle 50% of values in an ordered set up data

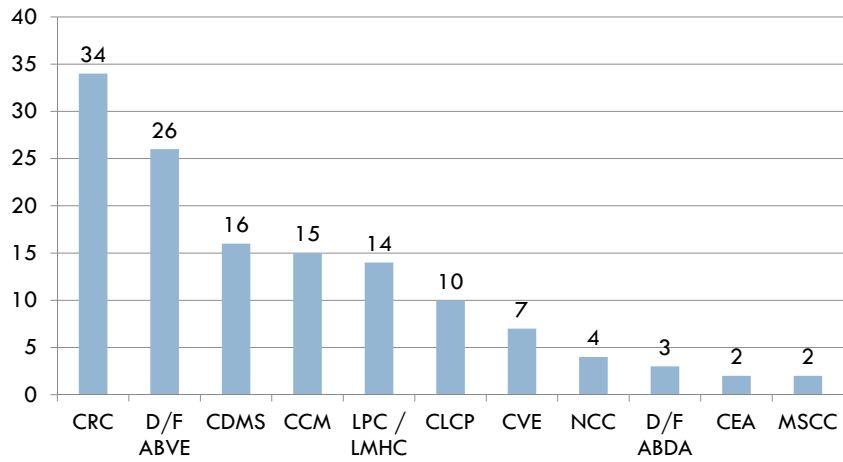


## Expert Panel Size and Response Rate

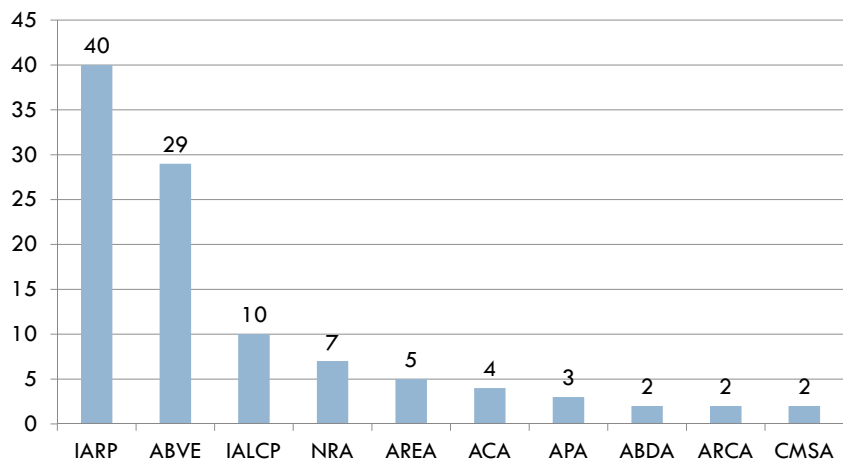




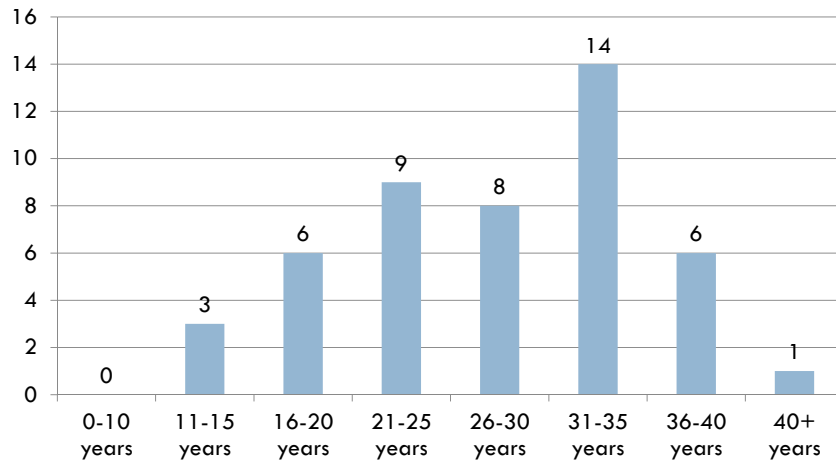
## Panel Demographics: Credentials



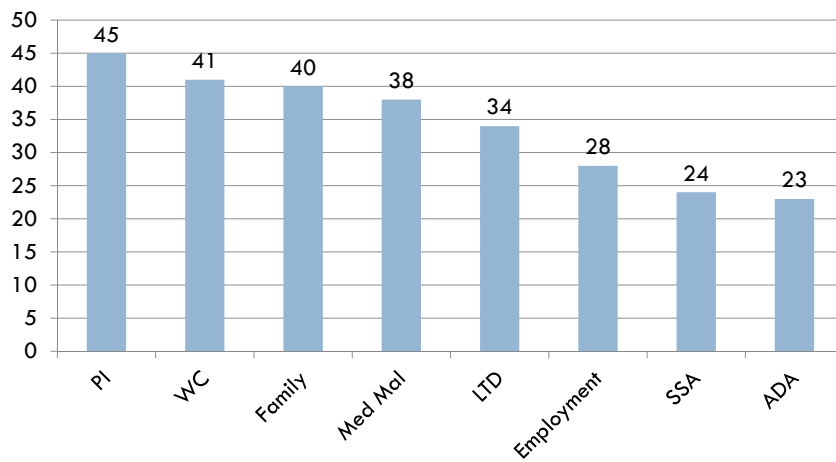
## Panel Demographics: Memberships

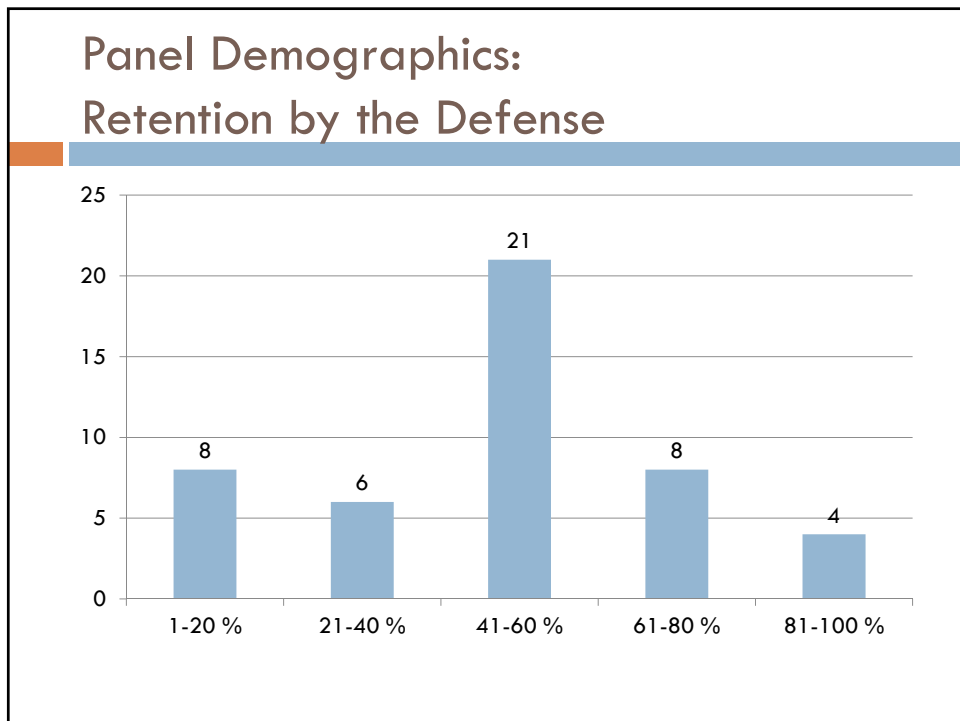
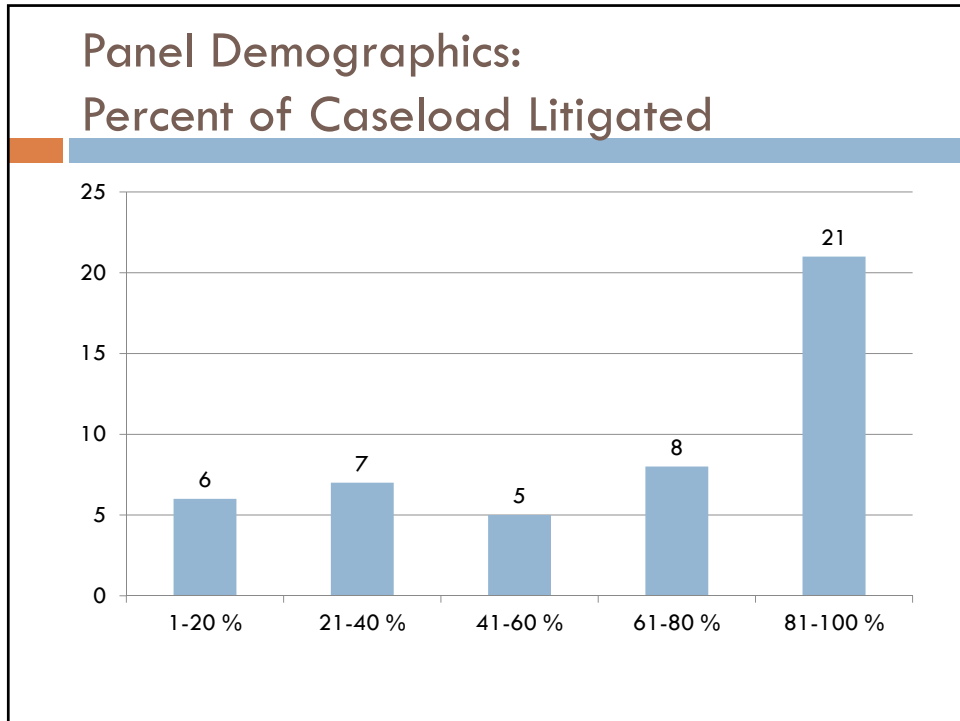


### Panel Demographics: Years of Practice

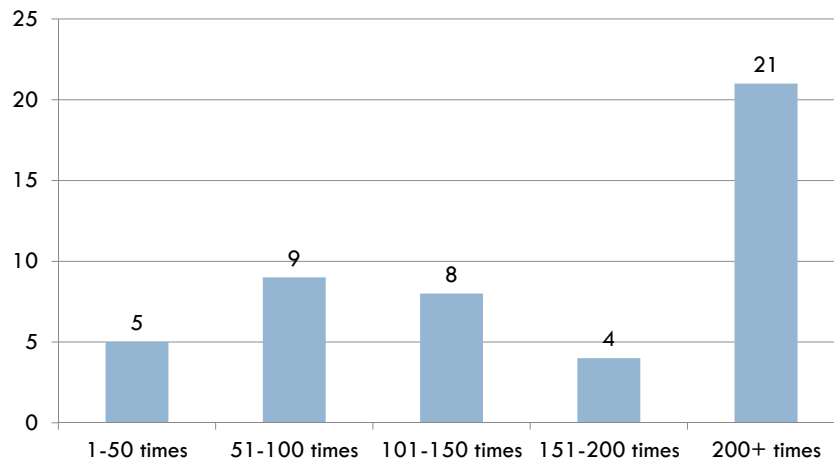


### Panel Demographics: Areas of Practice





## Panel Demographics: Testimony Experience



## Round 3 Item Acceptance Criterion

- 3 different measures were used as the acceptance criteria for the study
- Importance
- Convergence
- Stability

## Results

Percentage of Variables Accepted for Each Domain				
Variable Domain	Variables in Domain	Round 2 Met Criteria	Round 3 Accepted	Acceptance Percentage
Medical-Functional Capacity	18	16	17	94%
Labor Market Sampling Information	11	10	10	91%
Medical-History and Treatment	33	22	29	88%
Household Activities	5	4	4	80%
Past Work Experience-Variables Specific to the Job	10	9	8	80%
Education-General Variables	11	8	8	73%
Past Work Experience-Variables Specific to the Employee	15	11	11	73%
Work Life Participation	11	6	8	73%
Behavioral Health	37	24	26	70%
Rehabilitation Planning & Services	19	11	12	63%
Job Acquisition and Maintenance	25	14	14	56%
Activities of Daily Living	10	3	5	50%
Economic	4	2	2	50%
Language Skills	6	3	3	50%
Military Service Experience	4	0	2	50%
Transportation	14	2	7	50%
Transferable Skills	43	17	20	47%
Professional Resources	7	3	3	43%
Education-Higher Education (college)	17	6	6	35%
Past Work Experience-Variables Specific to the Employer	12	4	4	33%
Psychometric Measurement	34	10	11	32%
Education-Vocational and Apprenticeship	14	4	4	29%
Labor Market Statistical Information	11	4	3	27%
Financial	10	2	2	20%
Socioeconomic	39	5	6	15%
Legal Jurisdiction	7	1	1	14%
Avocational Activities	8	0	1	13%
Education-Compulsory (k-12)	18	4	4	2%
Cultural	16	0	1	.06%
	<b>N=29</b>	<b>N=469</b>	<b>N=232</b>	

## Results:

### Items Unique to Legal-Forensic Setting

- Economic Variables
  - Historical annual earnings of the evaluatee
  - Age of the evaluatee as of the date of loss



## Results:

### Items Unique to Legal-Forensic Setting

- Work Life Participation Variables
  - Evaluee consistency of past work as a reflection of future work participation
  - Evaluee option to engage in part time or full time work
  - Reason for periods of unemployment between jobs (over evaluees past work history)
  - Medical and behavioral health treatment plan impact on work schedule
  - Average duration of unemployment between jobs (over evaluees past work history)
  - Evaluee proximity to retirement eligibility
  - Evaluee post incident retirement plans
  - Evaluee pre incident retirement plans

## Results

### Items Unique to Legal-Forensic Setting

- Legal Jurisdiction Variables
  - Deposition transcript(s) of the parties involved in the action or cause

## Results:

### Unexpected Domain Findings

- Labor Market Sampling
  - Intended to provide insight into local labor market conditions within the geographic area most germane to the evaluatee
  - Contributes to the ecological validity of an opinion by providing a “slice of reality” for a specific job and geographical location (Neulicht, 2007)

## Results:

### Unexpected Domain Findings

- Cultural Domain
  - Rate of acceptance was the lowest rate of acceptance of all domains
  - Results inconsistent with general rehabilitation literature, and literature addressing cultural issues in a forensic application
  - Potential explanations

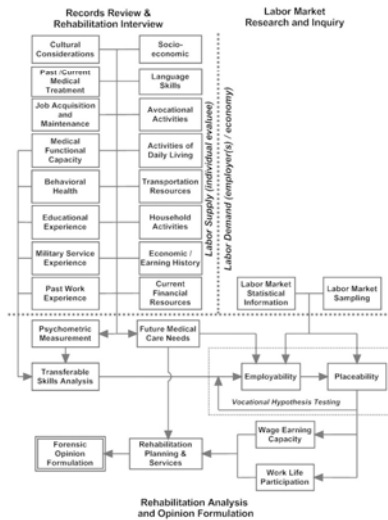
## Study Assumptions

- It is assumed that if a panelist met the study inclusion criteria, he / she possessed the requisite expertise to provide quality input
- It is assumed that the opinions of the panelists are congruent with and representative of the best practices of the forensic rehabilitation consultant community
- It is assumed the only effect of the participation incentive, was upon the expert panelists propensity to full participate in the study
- It is assumed that each panelist was motivated to fully participate in the study and did so by providing sincere, honest and full effort.

## Limitations of the Study

- Caution should be exercised in applying the study results outside of the limited forensic focus
- The pre-determined limitation to only 3 Delphi rounds, may have impacted the number of items meeting final acceptance criteria.
- The sample of experts was limited primarily to two professional associations to which forensic vocational experts belong

## Implications of the Study: Structural Data Modeling



- Robinson, R., & Pomeranz, J. (2011). The vocational and rehabilitation assessment model (VRAM): Introduction of an empirically derived model of forensic vocational and rehabilitation assessment. *The Rehabilitation Professional*, 19(4), 91-104.

## Implications of the Study: Self Assessment

- Practicing vocational experts may analyze his / her current practices to determine variables that both met and did not meet acceptance criteria

## Implications of the Study: Training & Education

- Council on Rehabilitation Education (CORE) requires exposure to training in forensic rehabilitation and vocational expert practice
- Post graduate training in forensic rehabilitation
- Study represents a significant empirically based advancement in forensic assessment of vocational earning capacity
- Represents empirically derived foundation of variables that could be useful for training new rehabilitation counselors or advanced practitioners

## Recommendations for Future Research

- Additional research is recommended to validate these findings
- Need to analyze relationship between each of the core variables and opinions rendered in actual cases involving the assessment of vocational earning capacity

## Study Availability

**The complete study is available for no cost  
download from**

**<http://purl.fcla.edu/fcla/etd/UFE0043197>**

## Thank You!!

**Questions and Comments?**

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