

Correlates of AC Performance across Contexts:

An Investigation of Aggregated
Measures of Executive Performance

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Overview

- Common findings regarding personality and executive performance findings
- Sample and methods, machine learning focus
- Results across several methods



Personality Correlates of Executive Performance

Approach	Representative Finding
Single trait studies	Narcissism correlates with exec performance (e.g., Chatterjee & Hambrick, 2011)
Big-5 meta-analyses	Extraversion and Openness to Experience relate to leadership performance (e.g., Judge et al., 2002)
	Ambition (E), Learning orientation (OE), adjustment (N), show stronger correlations than other traits for exec performance (Hogan, 2008)
Exec performance studies	Extraversion, Openness, correlate with exec experience and strategic thinking competency (Dragoni et al., 2011)

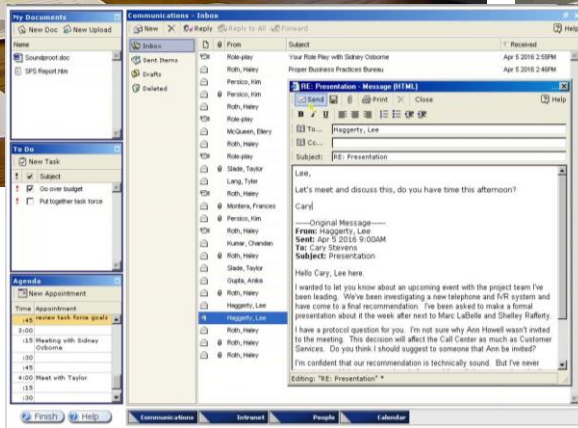


Sample and Methods

- Executive assessment results aggregated across industries and regions
- Assessments included behavioral measures of executive competencies and personality tests
- Machine learning techniques used to explore resulting database



Data source: tech-facilitated assessment center



Key characteristics:

- Day-in-the-life format
- Paired personality testing
- Live interactions
- Deployed globally





Karen Gates
 Vice President , Operations

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 Started: 02.04.2000
 Previous Position: Director, Operations
 Education: MBA, Wharton Business School
 Known Aspirations: VP of Eastern Region

Sample Output

COMPETENCIES

Interpersonal Skills

- P** Compelling Communication
- P** Cultivating Networks
- S** Navigating Politics
- D** Influence

Business Management

- D** Building Organizational Talent
- S** Driving Execution
- P** Financial Acumen
- P** Operational Decision Making
- P** Entrepreneurship
- P** Establishing Strategic Direction

Leadership

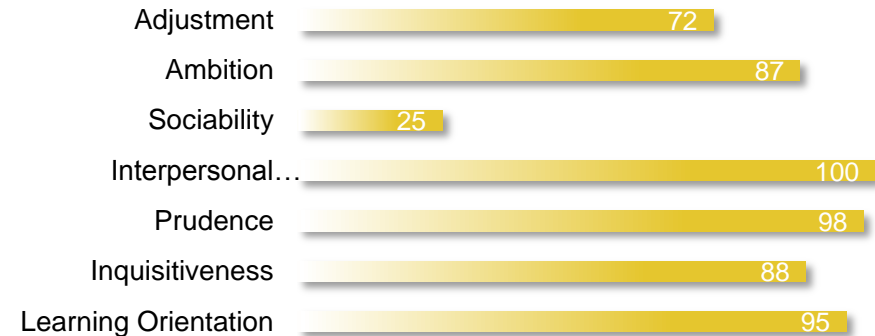
- S** Leading Change
- P** Coaching and Developing Others
- S** Selling the Vision
- P** Empowerment/Delegation

Personal Competencies

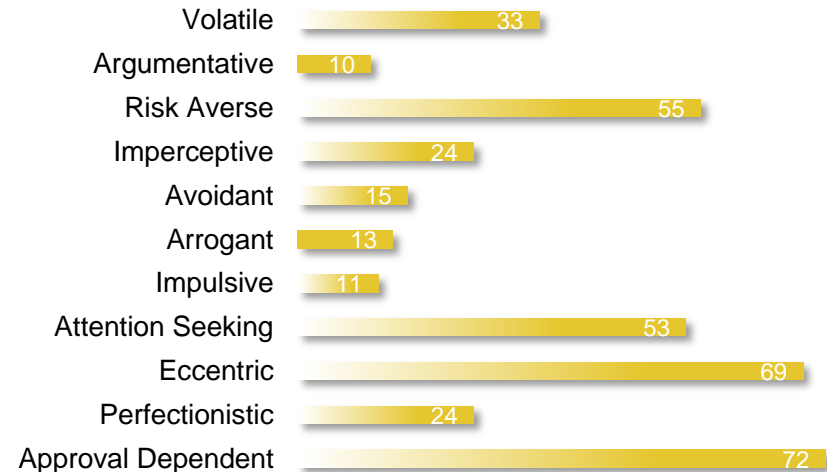
- P** Executive Disposition
- S** Passion for Results

PERSONALITY PATTERNS

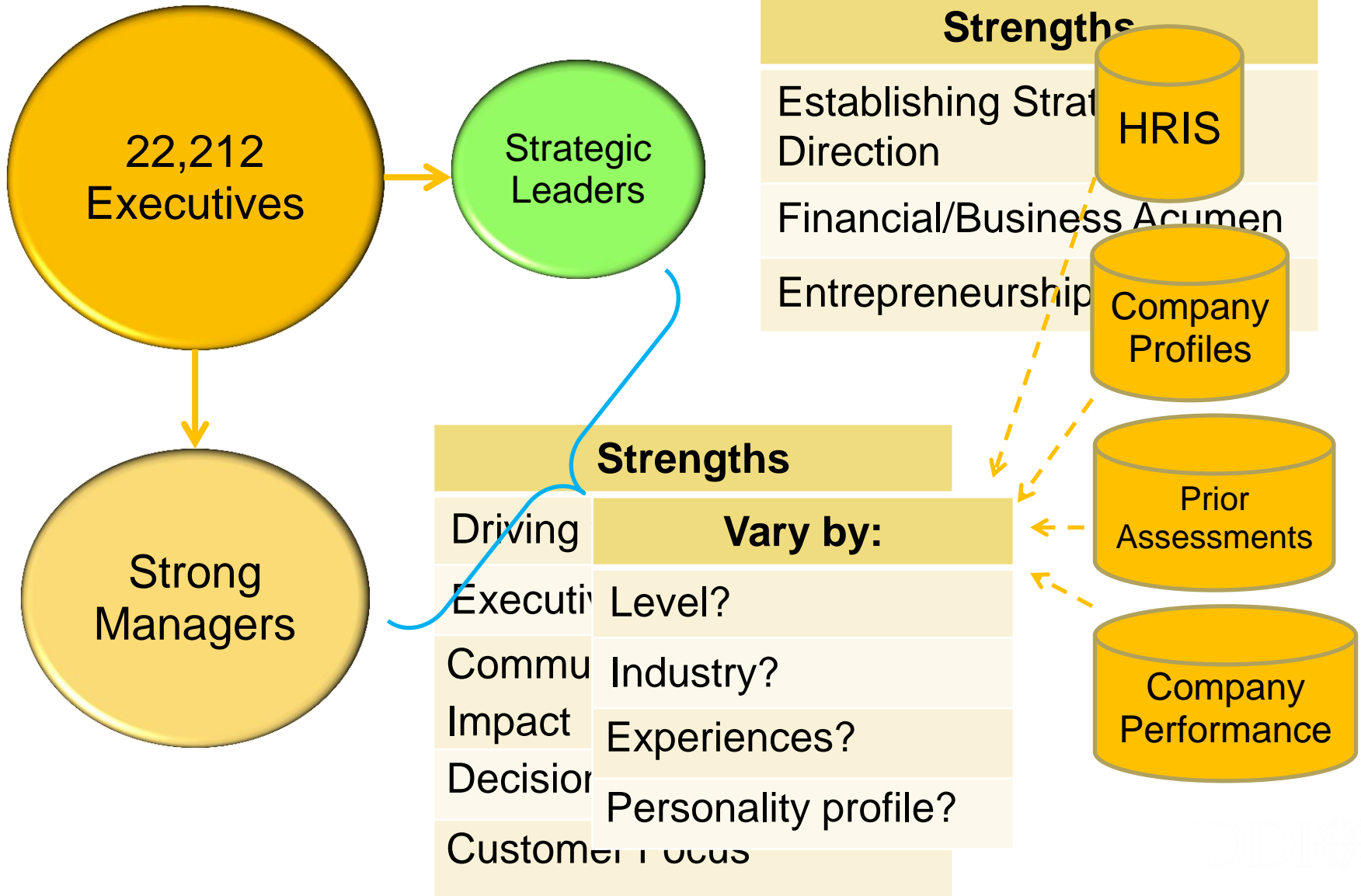
Leadership Effectiveness Inventory



Leadership Challenge Inventory



Aggregated database



Machine Learning/Data Mining: When to Use?

- Noisy predictor and criterion data
- Minimal theoretical grounding
- Limited experimental control



Analysis design:

- Executive assessment database
- Predictors: 18 personality scales
- Outcome:
 - Strategic vs. Non-Strategic profiles
 - Interpersonal vs. Non-Interpersonal profiles
- Predictive Accuracy: Cross-Validation

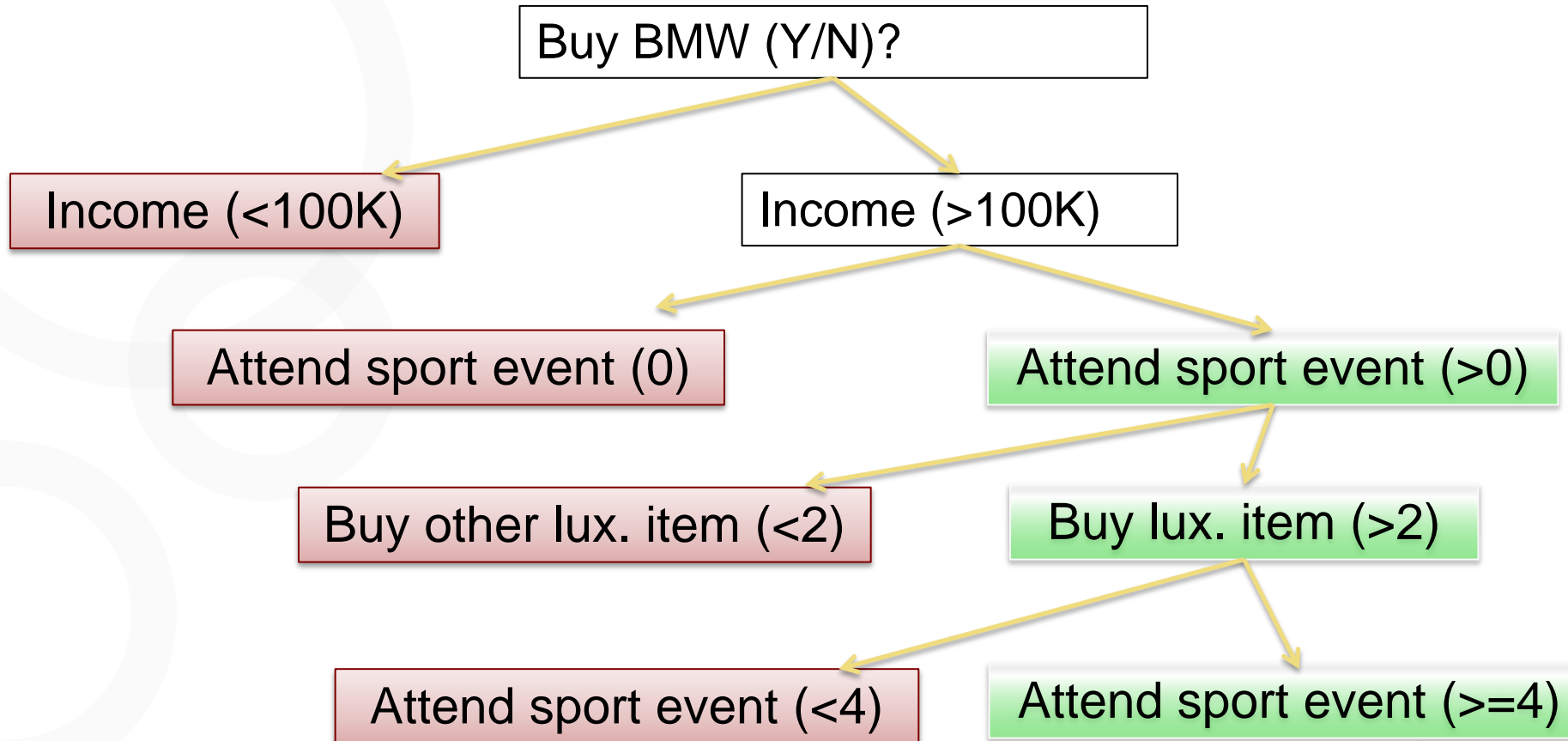


Variable Importance: Comparison of Three Methods

	Traditional Regression	Relative Importance	Random Forests
Multicollinearity	X	√	√
Non-normality	X	X	√
Non-linearity	X	X	√
No A-Priori-Model	X	X	√



Example: Classification Tree

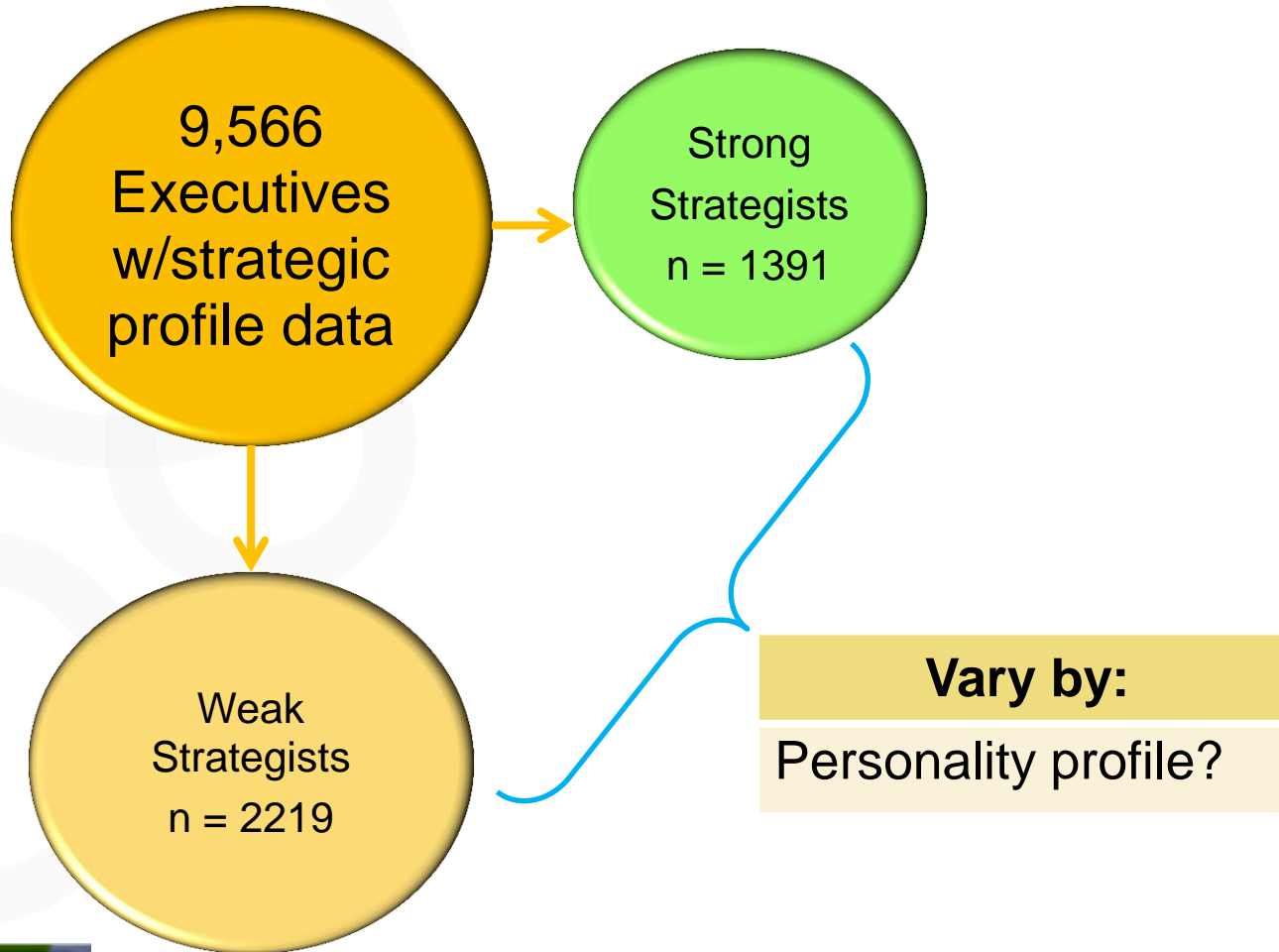


Study 1: Predict Strategic Profiles

- Predictors: 18 personality traits (pos. & neg.)
- Criterion: ratings on strategic competencies
 - Business Acumen
 - Establishing Strategic Direction
 - Entrepreneurship



Study 1: Sample



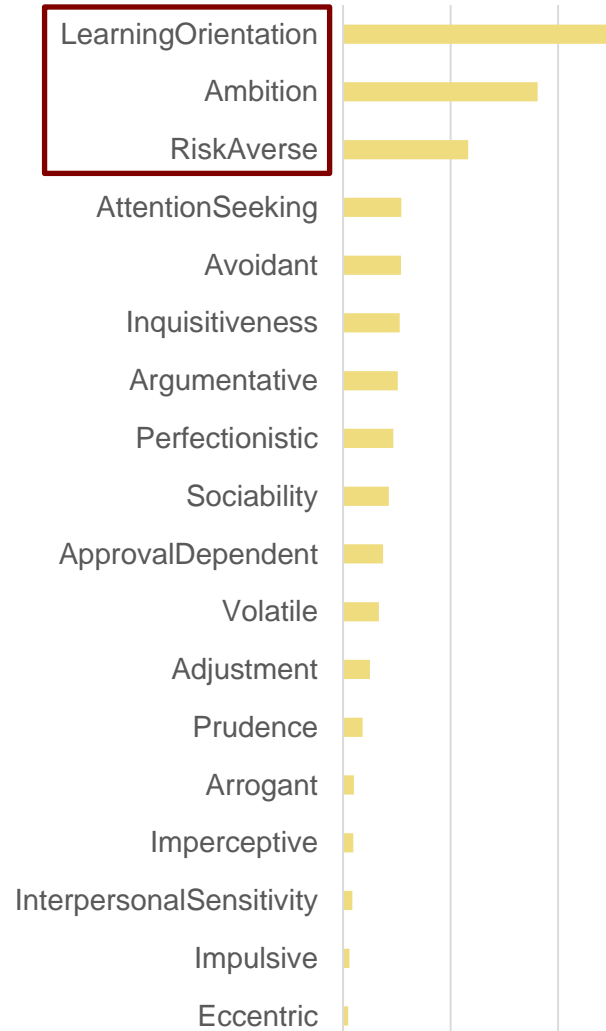
Study 1: Variable Importance

Logistic Regression:

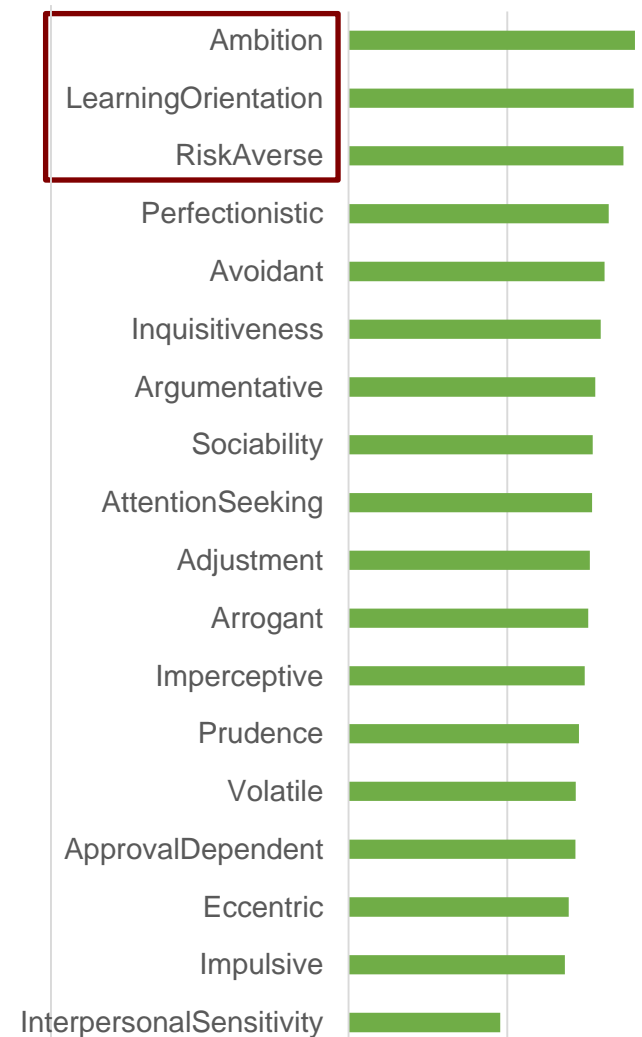


Accuracy: 65.05%

Relative Importance:

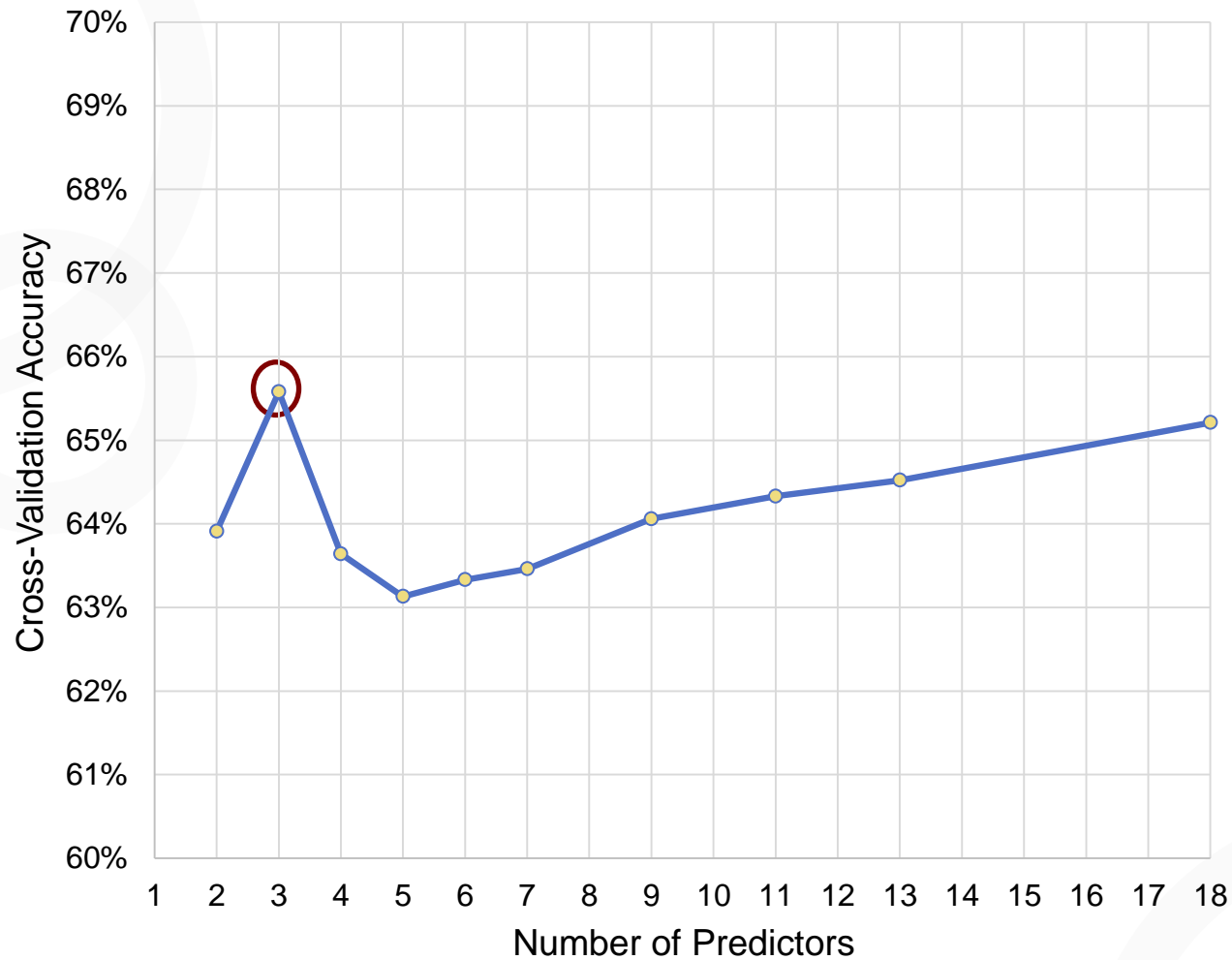


Random Forests:

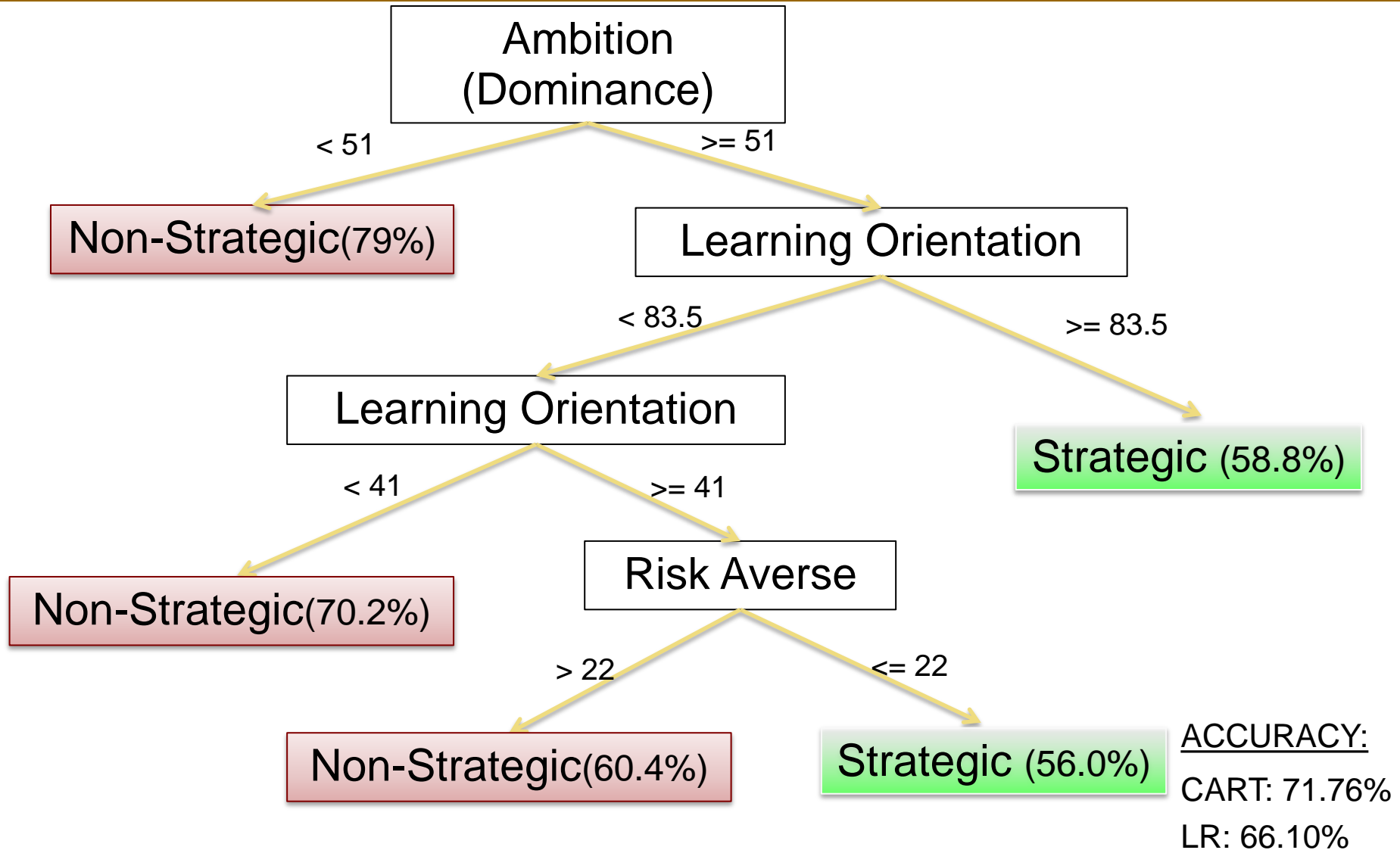


Accuracy: 66.02%

Study 1: Feature Selection



Study 1: Sample Classification Tree

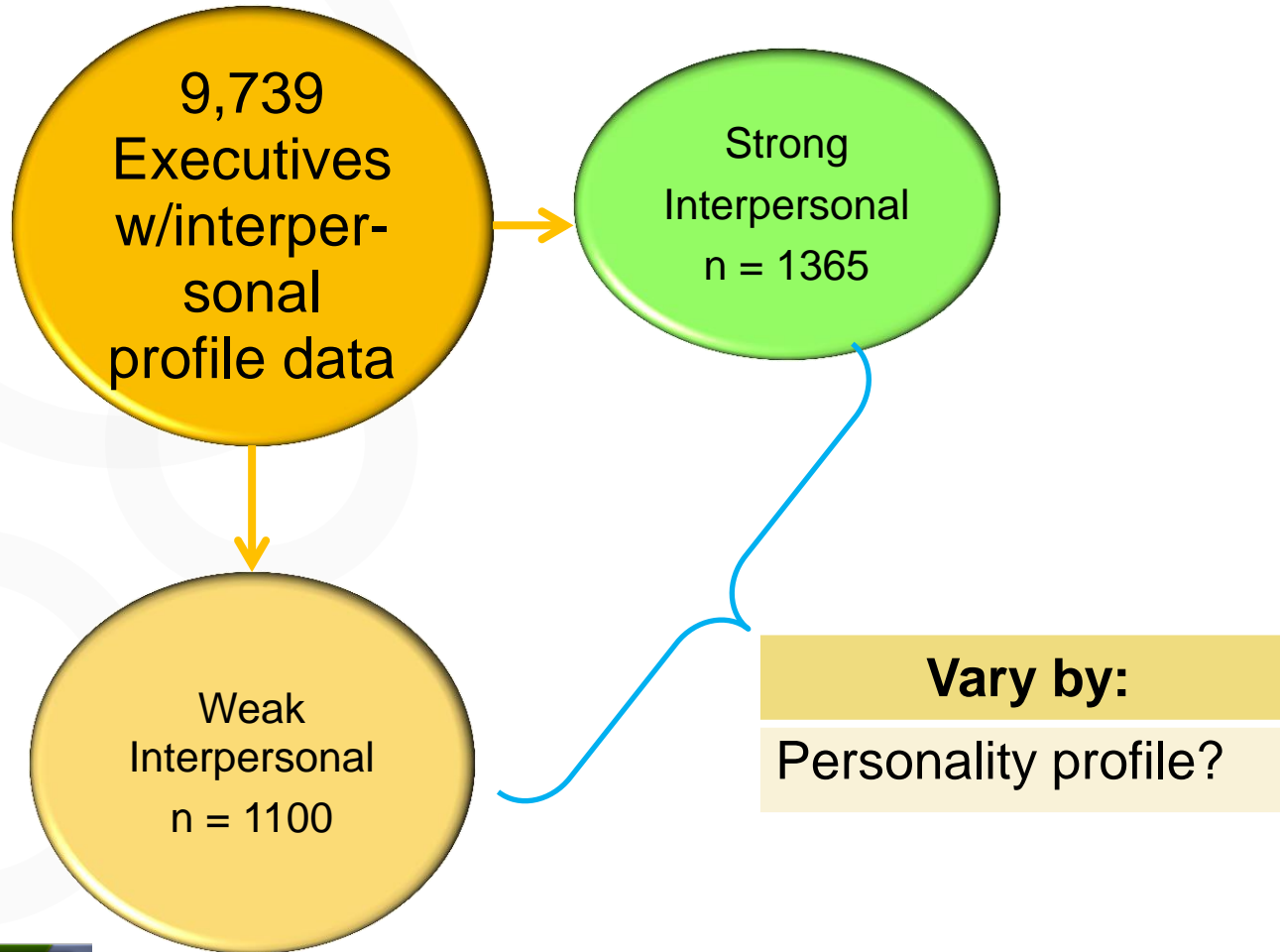


Study 2: Predict Interpersonal Profiles

- Predictors: 18 personality traits (pos. & neg.)
- Criterion: ratings on interpersonal competencies
 - Cultivating Networks
 - Communicating with Impact
 - Influence

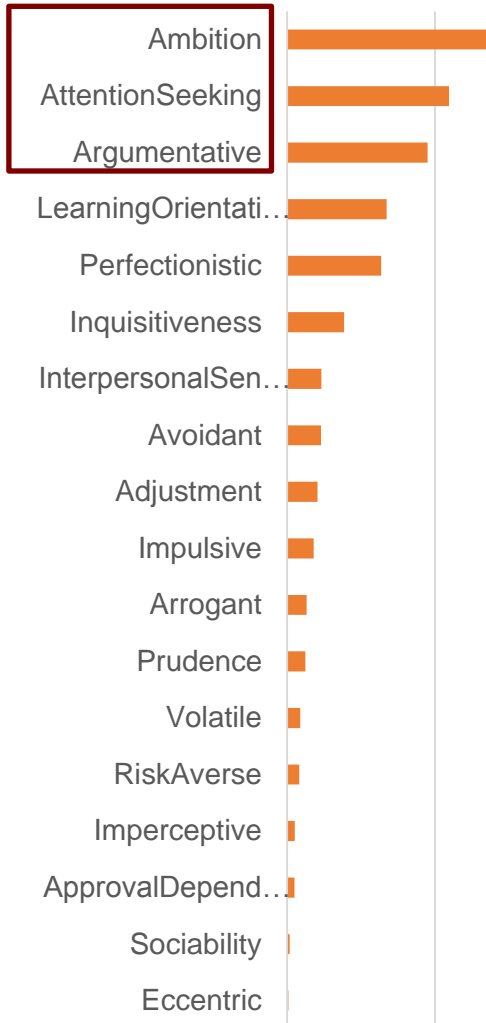


Study 2: Sample



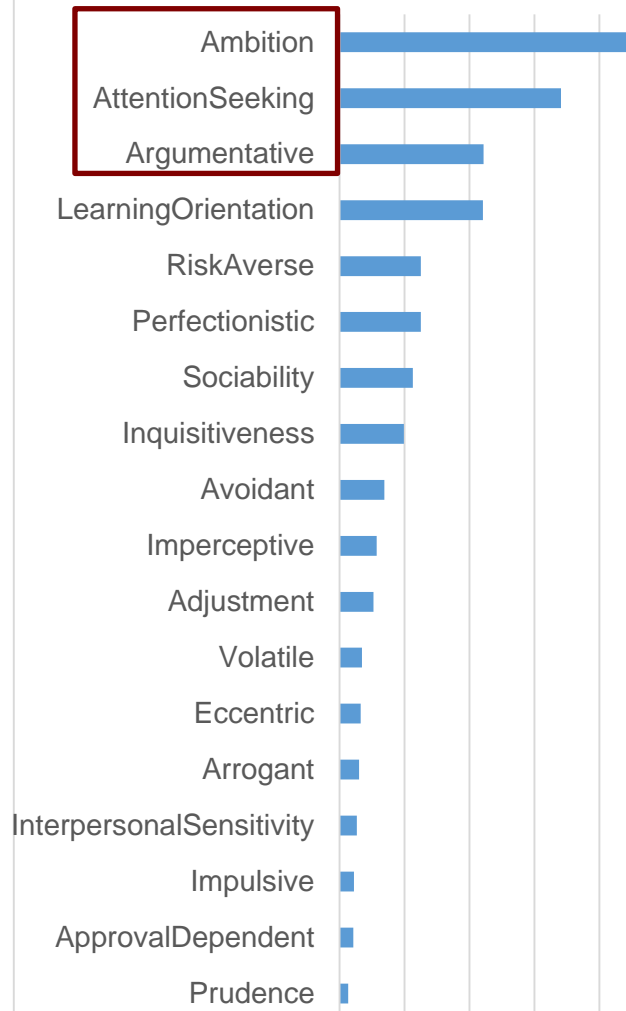
Study 2: Variable Importance

Logistic Regression:

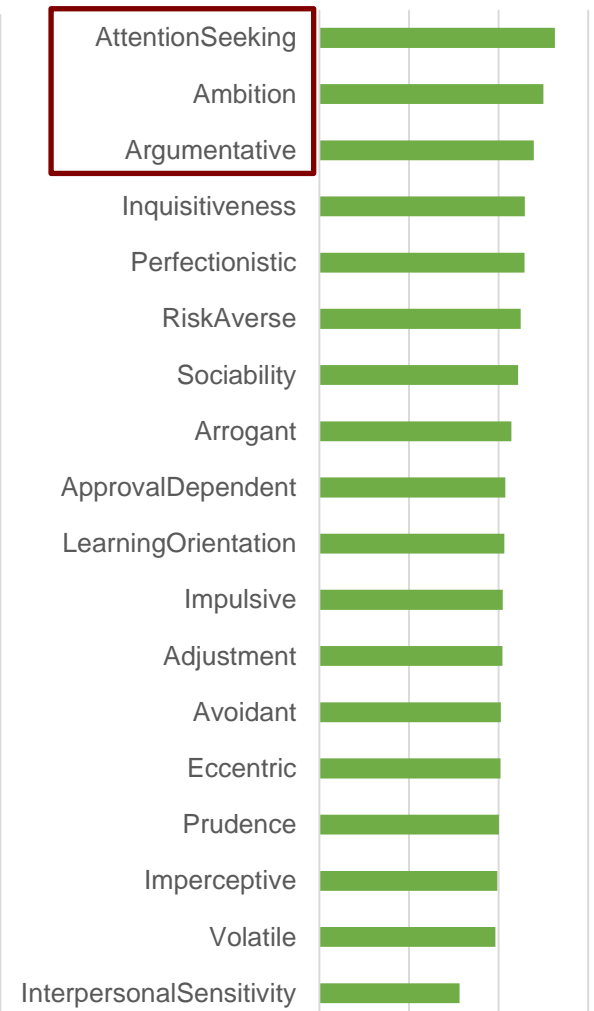


Accuracy: 64.27%

Relative Importance:

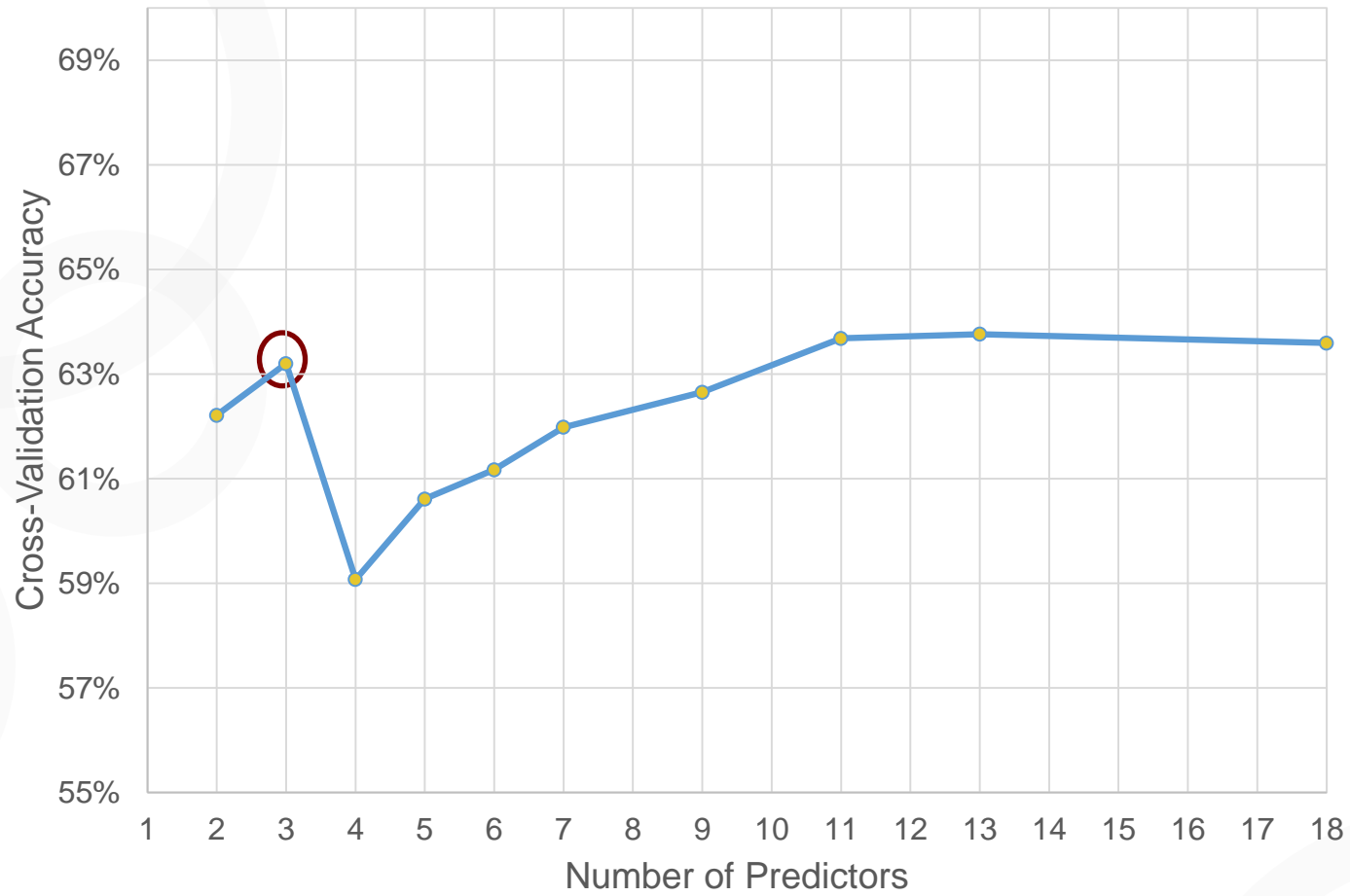


Random Forests:

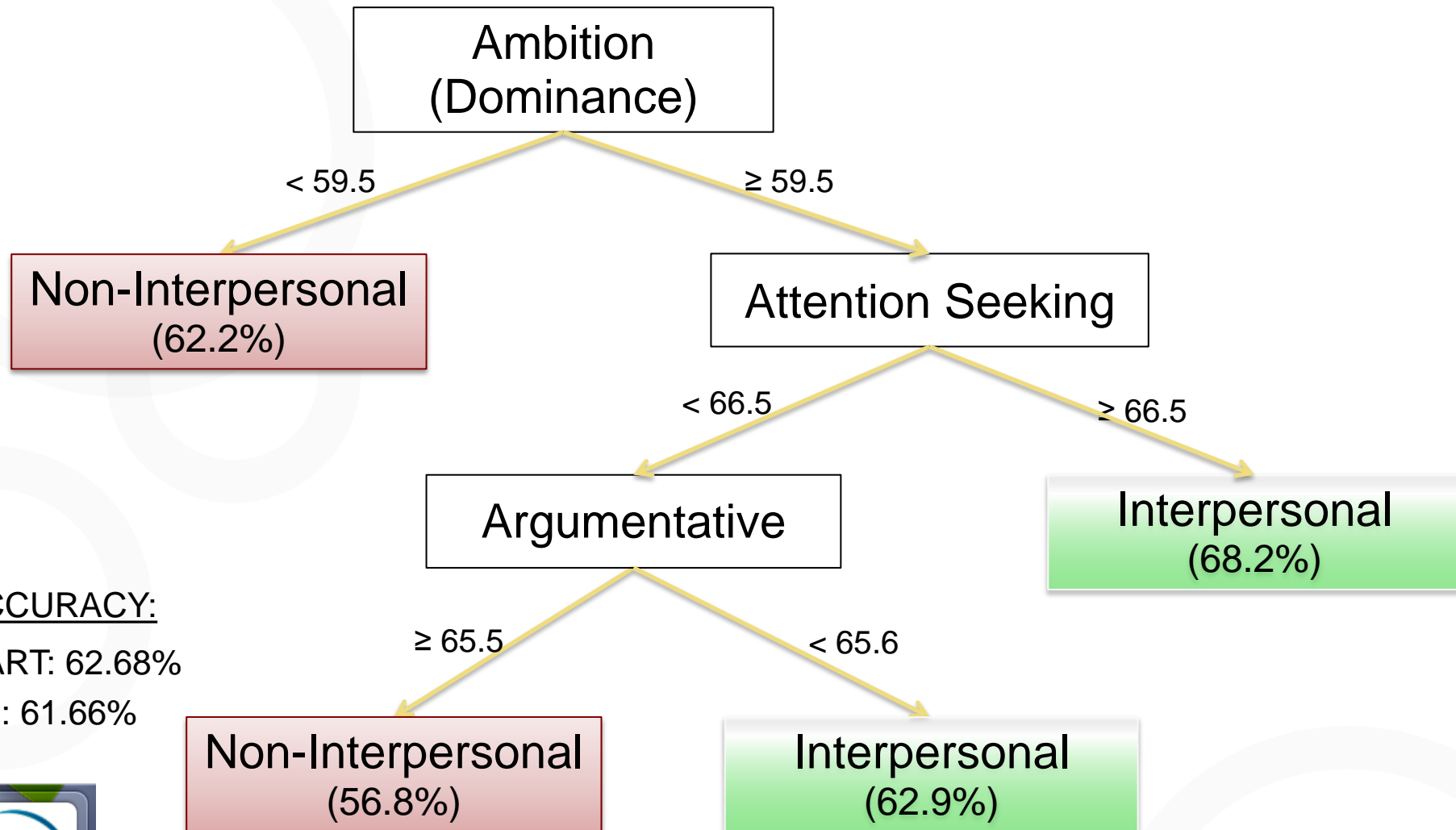


Accuracy: 64.18%

Study 2: Feature Selection



Study 2: Sample Classification Tree



ACCURACY:

CART: 62.68%

LR: 61.66%



Conclusions:

- Personality variables have consistently shown relationships with executive performance
 - Strategic: ambitious, willing to learn, not afraid of risks
 - Interpersonal: ambitious, willing to be on the spot, not argumentative
- Complex relationships among variables may be obscured by traditional analyses
- Machine learning and “big data” analytics provide useful tools for extending our understanding of these complex relationships

