Board 131: Methods for Assessing the Impact of Counterfactual Thinking on the Career Motivation of Practicing Women Engineers

Ms. Renee Desing, Ohio State University

Renee Desing is currently a graduate student at the Ohio State University in the Department of Engineering Education. Ms. Desing holds a B.S. in Industrial Engineering from the Georgia Institute of Technology and a M.S. in Industrial Engineering and Operations Research from the Pennsylvania State University. Most recently, Ms. Desing worked as a managing consultant for IBM Public Sector Advanced Analytics.
Methods for Assessing the Impact of Counterfactual Thinking on the Career Motivation of Practicing Women Engineers

Renee Desing, PhD Student, Advised by Dr. Rachel Kafjez

INTRODUCTION
Navigating the workplace as an early career professional is daunting for anyone, especially women entering a technical field such as engineering. This may include being unprepared for the culture and environment of an engineering workplace, such as overcoming challenges due to work-life balance, discrimination, or harassment. By understanding how women process the situations they are experiencing, we are better able to understand their motivation to persist in the careers.

Through assessing the effects of counterfactual thinking on women engineers’ reactions to challenging situations that they encounter in the workplace during their early career, we are better able to provide guiding strategies for overcoming obstacles, forming career goals, and persisting in engineering careers.

RESEARCH QUESTION
How does counterfactual thinking impact the career motivation of early career women engineers to persist in their career when encountering challenging situations, such as discrimination and harassment?

THEORETICAL FRAMEWORK
Counterfactual thinking and career motivation theory are used to assess how women react to difficult situations in the workplace and how that impacts their future career goals.

Counterfactual Thinking
Counterfactual thinking1–3 is defined as thoughts about what might have been or alternatives to reality. They are comprised of two components: (1) an activation, often triggered by a negative experience, and (2) its content. Counterfactual thoughts are also categorized by their direction, whether the imagined reality is better (upward) or worse (downward) than their actual reality.

Career Motivation Theory
Career motivation theory4 is defined as the motivation associated with career decisions and behaviors (e.g. establishing career goals) as well as their interactive relationship with individual characteristics (career identity, career insight, and career resilience) and situational conditions (e.g. organizational support for career development).

METHODS
This study employs a convergent mixed methods design5 by collecting qualitative and quantitative data concurrently and mixing during the analysis and results. The data are collected simultaneously through an interview and survey with participants.

Recruitment
The participants are recent women engineering graduates that are working in a variety of engineering roles and industries.

Data Collection
Data is collected concurrently through:
• Surveys: open- and closed- ended questions using constructs, such as the Counterfactual Thinking for Negative Events Scale6, to understand the types of counterfactuals generated and how women determine their future goals
• Interviews: semi-structured questions to capture the strategies women use during challenging situations and how counterfactual thinking plays a role

Data Analysis
The qualitative data will be analyzed using open-coding and thematic coding. The quantitative data will be analyzed through descriptive statistics, ANOVAs, t-tests, and psychometric analyses. The data will be mixed through using the rich interview data to explain the comparisons and differences between the qualitative and quantitative data.

REFERENCE

NEXT STEPS
The next steps of this study include completing the data collection, performing the data analysis and interpreting the results. The results are expected to be a collection of common experiences, how counterfactual thinking is utilized during these experiences, and the types of career goals and decisions that women make. Ultimately, the results will identify how counterfactual thinking impacts the career motivation for women engineers.

REFERENCES