Engineering Practice Research Summit 2024, Melbourne, Australia

Work in progress: Understanding the Interplay of Reproduction and Career Cycle among Australian Female Engineers from a Sustainability Perspective

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Summit Themes: Sustainability of Engineering Employment and Careers

In the Australian engineering profession, female engineers experience notably shorter career cycles compared to their male counterparts and other women with university-equivalent qualifications. Statistical evidence suggests a reciprocal relationship between reproduction, including the timing of childbearing and reproductive outcomes, and the career longevity of female engineers. For female engineers with children, the childbearing years often trigger shorter career longevity and can lead to early retirement from the engineering profession. Conversely, female engineers who do not have children tend to delay childbearing.

This study explores the relationship between reproduction and career cycles among female engineers in Australia through a sustainability lens. The study commences by analysing recent reproductive statistics across different age groups and the career cycle of qualified engineers, drawing on cross-sectional data from the Australian Bureau of Statistics.

To enrich understanding, the study then employs semi-structured interviews with a total of nineteen female and male engineers in Australia. These interviews include an interactive element where participants create graphical timelines of their engineering and life careers, reflecting on their parental aspirations and the factors influencing the timing of their reproductive decisions throughout various stages of their professional journeys. The study highlights several delaying factors that contribute to reproductive delays among female engineers, which include professional identity that reflects personal values associated with being an engineer, perception of childbearing impacts on career, hypercompetitive organisational culture, hostile work environments towards females, lack of role models, and the agility of knowledge and skills within the engineering field and industries.

Future studies will focus on analysing the motherhood penalties experienced by female engineers. Understanding the interplay between reproduction and career cycles is

crucial for developing strategies that foster sustainable engineering careers, which nurture and balance human and career development.

Bio

Maharti is a PhD scholar in the joint program between the Faculty of Engineering and the Melbourne Social Equity Institute at the University of Melbourne. She holds double bachelor's degrees in Petroleum Engineering (Hons) and Commerce from the University of Western Australia and has a decade of global experience in the oil and gas exploration sector, advancing from field engineer to line management. Transitioning towards sustainability, she completed her Master of Environmental Engineering at the University of Melbourne. Currently, she coordinates research projects related to upcycling of decommissioned oil and gas infrastructure. Her passion for sustainability drives her to pursue PhD research that focuses on exploring sustainable career pathways to address reproductive inequities faced by female engineers. This research is personal to her, as she has witnessed the low retention rate of female engineers and the conflicts between reproductive intention and professional ambitions in the profession.