

FW-HTF-RM: Collaborative Research: Supervise It! Optimizing Intelligent Robot Integration Through Feedback to Workers and Supervisors

[Award #2026611]

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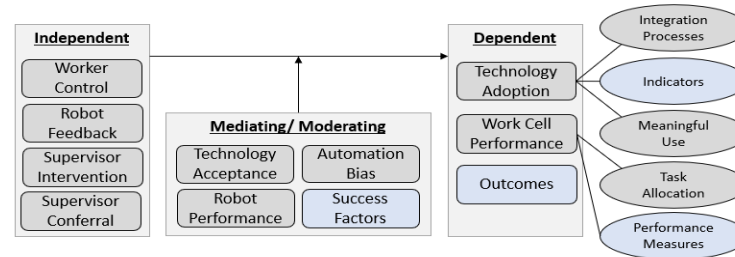
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Aim: Explore worker-robot-supervisor (WR-S) teams at the level of a work cell and investigate the benefit of assessment-based feedback from the robot to the worker and to the supervisor.

1] Grounded Theory Study – Manufacturing and Intelligent Automation

Target: Small to medium manufacturing businesses in the United States.

1. Grounded Theory study
2. Instrument development



3] Deployment and Validation w/Boston Whaler

Boston Whaler is a boat manufacturer in FL.

1. Develop a robotic system for hull inspection
2. Assess readiness for organizational change
3. Action research study of adoption success



Expected Outcomes: Findings will help manufacturing firms reliably evaluate and structure effective worker-robot partnerships, optimize work outputs, and ensure quality, while minimizing technology integration risks.

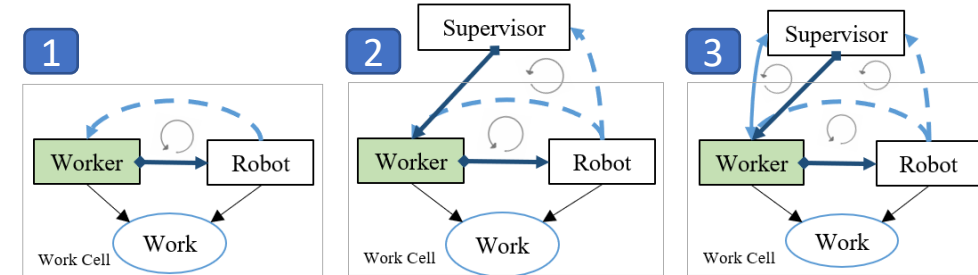
2] Laboratory Investigation: Puzzle solving w/a robot.

Design of experiments study to inform worker-robot-supervisor effectiveness model (WR-SEM) instrument.

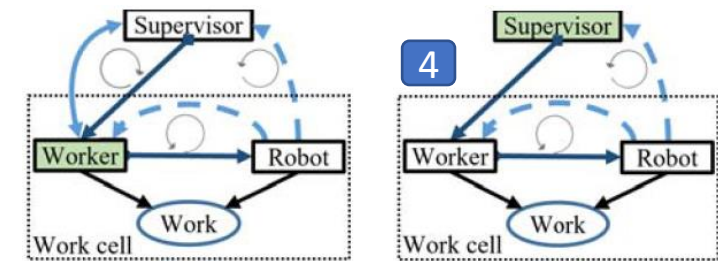


Mary the Puzzlebot: an intelligent multi-function robot.

Human subject study 1: Between subjects.



Human subject study 2: Within subjects.



Legend: Manage (solid arrow), Execute (dashed arrow), Feedback (dashed arrow), Confer (dashed arrow)