

# Beyond Team Makeup Diversity in Teams Predicts Valued Outcomes in Computer- Mediated Collaborations

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## BACKGROUND:

In a globalized economy, people must engage in computer-mediated collaborative problem solving on diverse teams. However, diversity across many dimensions in concert with team makeup measures is seldom analyzed. Accordingly, we investigate the link between team-level outcomes and diversity across multiple dimensions (demographic, personality, attitudes, and prior experience diversity) after controlling for base makeup of the team.

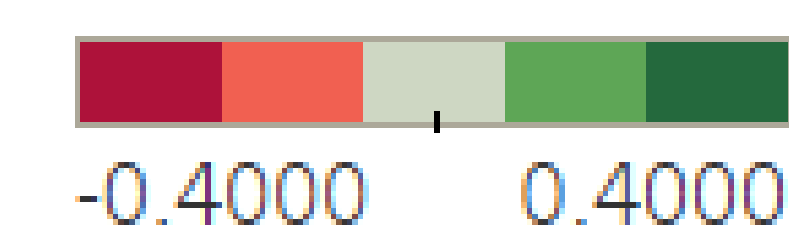
## METHODS:

1. Collect data from 96 triads engaging in a 30-minute physics problem solving game.
2. Create a vector for each participant and diversity dimension, which describe the participant in that dimension.
3. Calculate a team makeup value for each measure in each vector as the mean across the team.
4. Calculate team diversity for each dimension as the mean pairwise-Euclidean distance of vector's across the triad.
5. Regress outcomes onto diversity, including the relevant makeup measures as covariates.

# Team diversity predicts subjective and objective outcomes after controlling for makeup of the team.

Dimension	Predictor	Dependent Variable				
		Task Score	Posttest Score	Valence	Arousal	Collaboration Perception
Demographics	Demographic Diversity		■	■		
	English First Language				■	
	Female	■				
	Race		■			
	Age					■
Personality	BFI Diversity		■			
	Extraversion			■		
	Agreeableness	■			■	
	Conscientiousness				■	
	Emotional Stability				■	
Attitudes Towards Teamwork	Attitudes Diversity				■	
	Collectivism		■			
Prior Domain Experience	Leader/Teamwork Self-Efficacy					■
	Prior Domain Experience Diversity					
	Prior Physics Courses					
	Physics Self-Efficacy		■	■		
Pretest Score		■				

Standardized Beta



Only significant ( $p < .10$ ) predictors are shown.

## EXAMPLE TEAM MAKEUP CALCULATION:

For teammates, a, b, and c, the team extraversion score is  $\text{mean}(\text{extraversion}(a), \text{extraversion}(b), \text{extraversion}(c))$ . Repeat for all other measures in that dimension (i.e. agreeableness, conscientiousness, emotional stability, and openness for personality).

## EXAMPLE TEAM DIVERSITY CALCULATION:

For teammates a, b, and c, with a personality vector  $v_p$ , and a Euclidean distance function  $d$ , team diversity is  $\text{mean}(d(v_p(a), v_p(b)), d(v_p(a), v_p(c)), d(v_p(b), v_p(c)))$ .

## EXAMPLE REGRESSION:

Predict task score from personality diversity, and control for the mean team extraversion, agreeableness, conscientiousness, emotional stability, and openness.