

ABSTRACT & LITERATURE REVIEW

✈ Many organizations utilize a team-focused work structure in the workplace. Researchers have studied how working as a team can improve organizational outcomes such as productivity and employee satisfaction.^[4]

✈ However, not all teams make positive outcomes.^[2]

✈ Various models of teamwork process have been developed.^{[7][13][14]} A meta-analysis found a consistent relationship between the ten dimensions of teamwork identified by Marks et al. (2001) and team performance.^[5]

✈ Previous research has shown that team members with high cognitive ability, certain personality characteristics, and job-related knowledge and skills may contribute to better performance.^{[1][8][10][11]}

✈ Among those characteristics, having aggregate member knowledge of teamwork showed a positive relationship with team performance,^[9] but the relationship between individual teamwork knowledge and individual teamwork behaviors has not been widely examined.

✈ Certain characteristics of core team members, whose position would not be easily replaced and could not be completed by any other teammates, are known to be more important for overall team performance.^[3]

Purpose of the Study

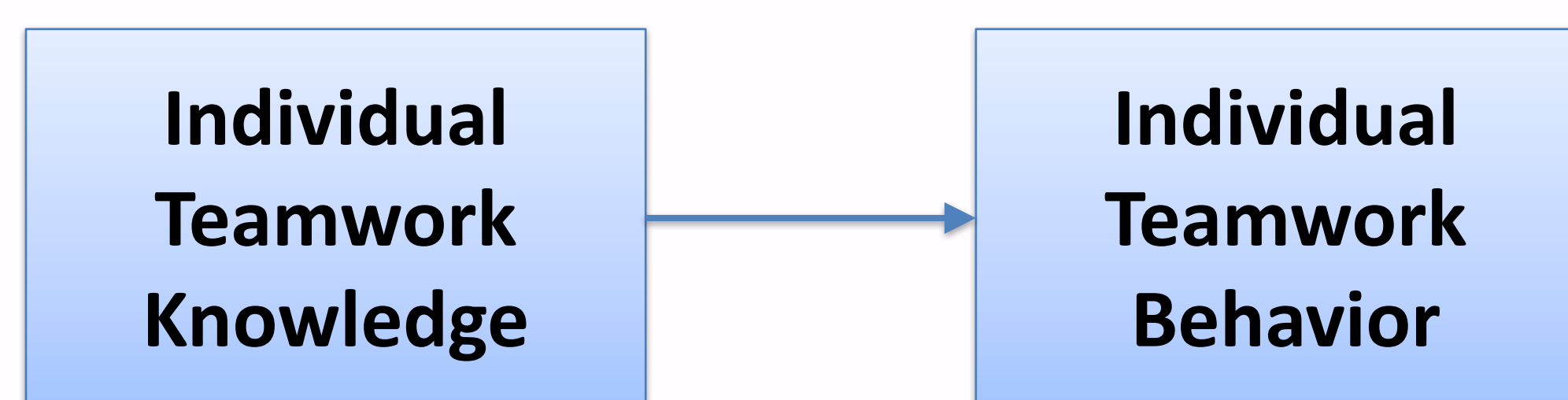
✈ The current study will ultimately explore the relationship between teamwork knowledge and teamwork behaviors. Building on the main relationship, this study will also investigate the impact of persons in core roles within a team.

✈ The study will utilize teams participating in high-fidelity simulations of airline operations.

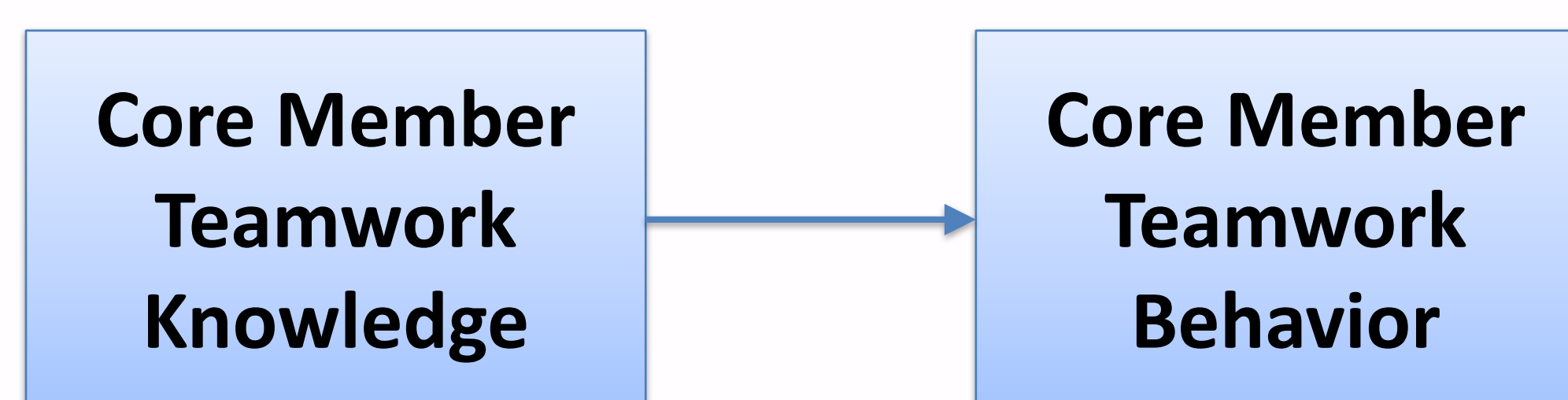
Hypothesis

Individual Level

Hypothesis 1: At the individual level, teamwork knowledge is positively related to teamwork behavior.

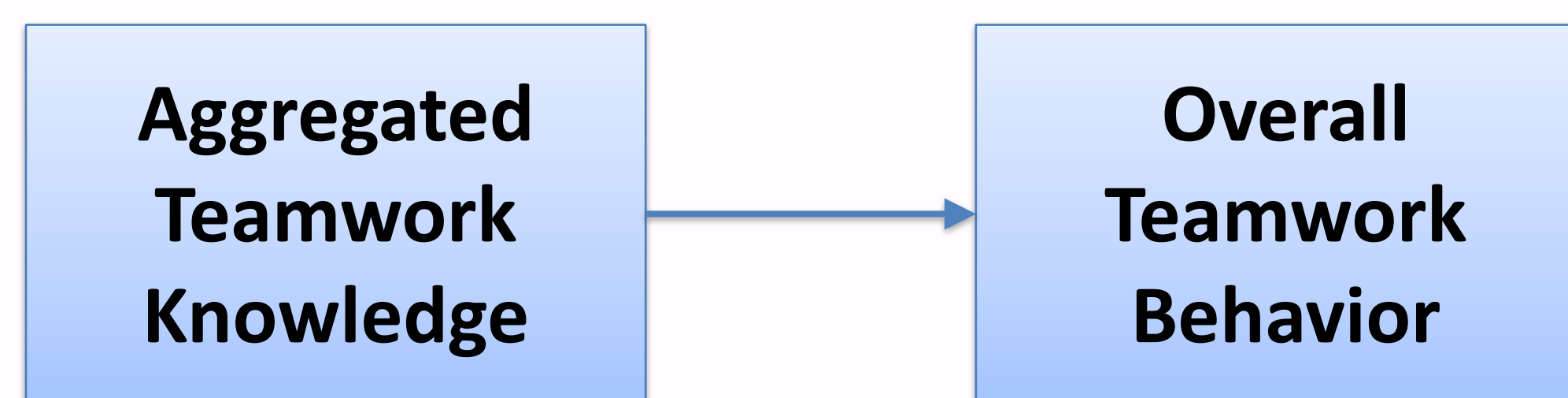


Hypothesis 2: Teamwork knowledge (Teamwork SJT score) of the core member is positively related to teamwork behavior of the core role-holder.

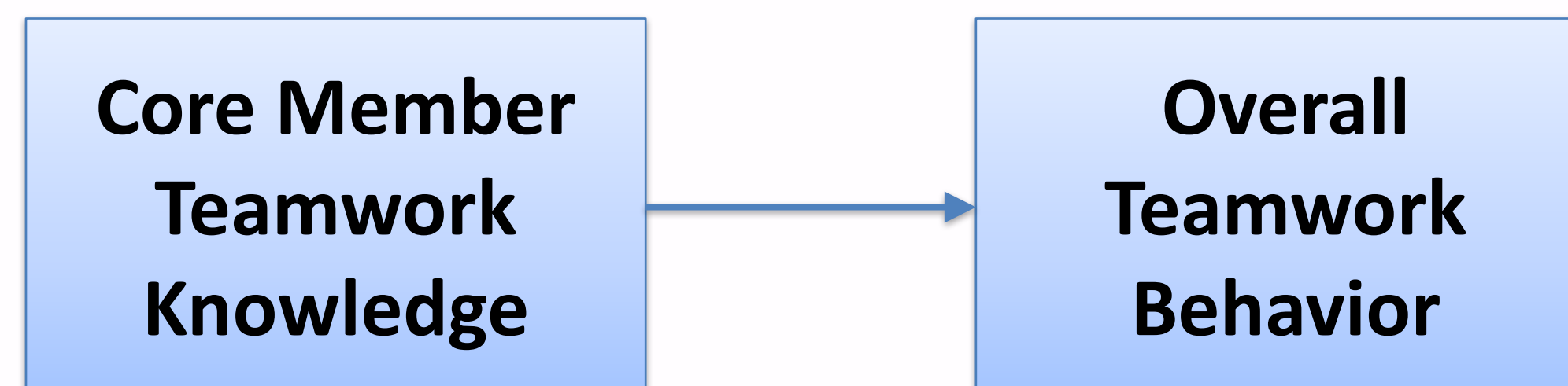


Group Level

Hypothesis 3: At the team level, there will be a positive correlation between teamwork knowledge and teamwork.



Hypothesis 4: There is a positive relationship between the core member's teamwork knowledge and team-level teamwork.



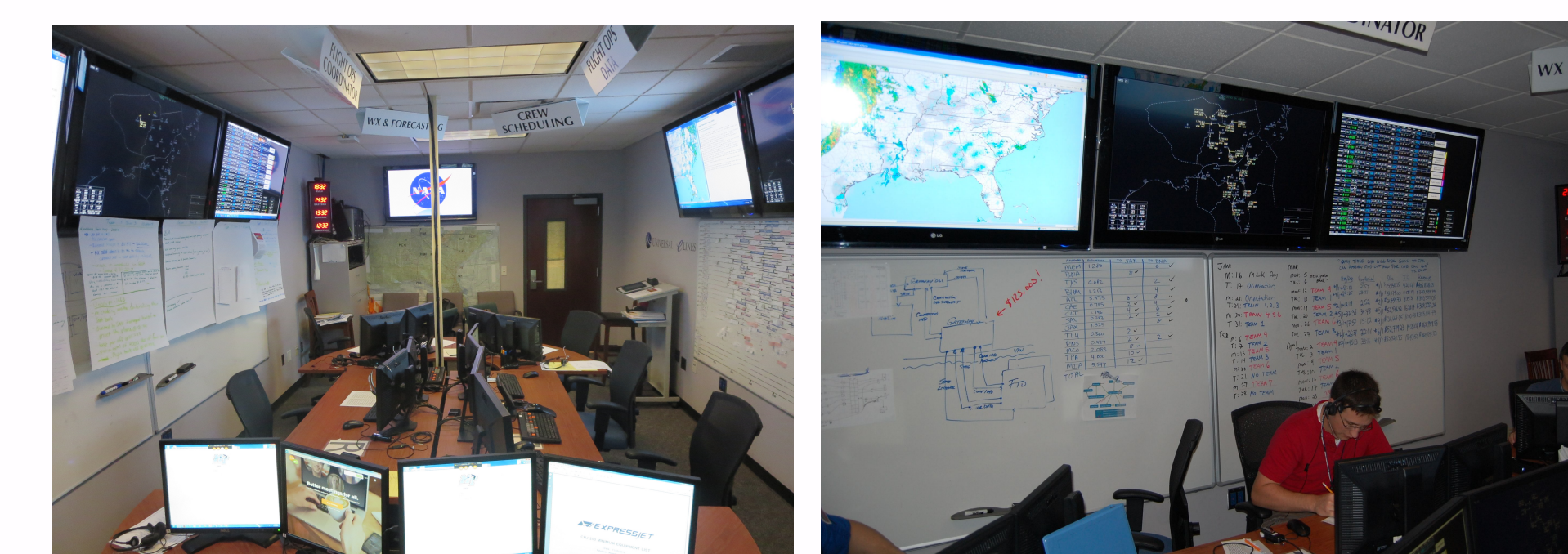
METHODS

Participants and Data

✈ Aerospace undergraduate students at Middle Tennessee State University (MTSU) must participate in the NASA Flight Operations Unified Center Simulation (FOCUS) Lab, a senior-level capstone course, for graduation.

✈ The FOCUS lab is a simulation laboratory class.

- Each team were composed of 10 senior Aerospace students with differing specializations.
- Each team member has a specific role such as crew scheduler, weather forecasting, and flight planning.
- Each team participates in a series of 2.5 hour simulations in which they conduct airline operations involving approximately 60 flight events (takeoffs and landings) and must also deal with non-routine situations.



✈ The present study will utilize an archival research data collected by the FOCUS Lab.

Measures

Type	Scale	Citation
Teamwork Knowledge	Teamwork Situational Judgment Test	Littlepage et al. (2015)
Teamwork Behavior	Behaviorally-anchored version of the Comprehensive Assessment of Team Member Effectiveness (CATME-B)	Ohland et al. (2012)
	Individual Teamwork Performance	Developed Internally
Core Member	The position of Flight Operations Coordinator (FOC) is the core role within the FOCUS Lab.	Turnquest (2018)

Data Analysis

✈ To test Hypotheses 1, 2, 3, and 4, correlation analyses will be conducted. Because the FOCUS Lab is highly team-oriented and individuals are nested in teams, a multilevel modeling analysis will be conducted.

✈ For team's overall teamwork knowledge level, a composite of the total SJT scores of each team member will be calculated.

✈ A single team's overall teamwork behavior score will be computed in the same vein; i.e., a composite of the individual's CATME / Individual Teamwork Performance / Observer-rated teamwork scores will represent the overall teamwork behavior.

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