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The Effects of Team Surface-level Diversity on Creativity & innovation

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THE EFFECTS OF TEAM SURFACE-LEVEL DIVERSITY ON CREATIVITY &
INNOVATION: THE MODERATING EFFECT OF TEAM INCLUSIVE BEHAVIORS AND
THE MEDIATING EFFECT OF PSYCHOLOGICAL SAFETY

A Dissertation

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in

The School of Leadership &
Human Resource Development

by

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I am the epitome of the adage, "It takes a Village to Raise a Child." While this dissertation has my name listed as the author, it is by no means suggesting that this dissertation was made possible solely through my efforts only. One of the many difficulties in writing this acknowledgment is that irrespective of how much I write and list, I will never suitably convey my appreciation to the numerous people who have aided me through this ride. However, I would be remiss if I did not take this chance to recognize a few of the many people who assisted me on this journey.

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BIOGRAPHY

Roman Bennett-Wilkes Mitchell was born in Nashville, Tennessee, on April 11th, 1992. Roman graduated from Brentwood High School in Brentwood, Tennessee, in 2010. He earned a Bachelor of Arts degree in psychology from Fisk University in 2014, a Master of Science in Human Resource and Leadership Development from Louisiana State University in 2016, and a Master of Arts in Applied Research, Measurement, and Evaluation from Louisiana State University in 2020.

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ABSTRACT

During the last 20 years, the global marketplace has become more competitive due to increased globalization, aggressive market competition, and changing customer demands. This has forced organizations to assemble teams with diverse knowledge, skills, and abilities to remain competitive. However, previous meta-analytic investigations examining the relationship between team surface-level diversity (i.e., race or gender identity), creativity, and innovation have indicated a small negative relationship. Despite the said positive effects of team diversity, theory and empirical evidence suggests that increased surface-level team diversity leads to decreased team collaboration, team cohesion, and diminished creativity and innovation (Bell, 2007).

This study explores the effects of team inclusive behaviors on surface-level diverse teams. Drawing on social identity theory, it was hypothesized that team inclusive behaviors would moderate the indirect effects of team surface-level diversity on team creativity and innovation, such that the relationships between team surface-level diversity and team creativity and innovation would be stronger when team inclusive behaviors were high as opposed to low. Undergraduate students and working adults completed an experiment to test the manipulation. Participants were randomly appointed to 1 of 2 study conditions (low or high team inclusion) and completed assignments in two to four-person teams (100 total). Results from regression analyses did not provide support for the hypothesis mentioned above. However, results from exploratory analyses demonstrated that team setting (virtual or in-person) predicted levels of team creativity. However, there was a significant interaction effect between team setting and team inclusive behaviors when predicting team psychological safety such that teams high in team inclusive

behaviors will have higher levels of team psychological safety. Implications for theory and practice are further discussed.

CHAPTER 1: INTRODUCTION

1.1 Background

Scholars and practitioners alike have recognized that creativity and innovation are fundamental components for achieving a competitive advantage. Creativity is the formation of novel ideas, or solutions to problems (Bechtoldt, De Dreu, Nijstad, & Choi, 2010; Harvey, 2013; Hu, Erdogan, Jiang & Bauer, 2018), whereas innovation is the process of executing creative ideas or solutions (Anderson & West, 1998; Bucherer, Eisert, & Gassmann, 2012; de Jong & den Hartog, 2010). Diversity within teams may foster creativity and innovation due to interactions among members with diverse perspectives and experiences. Diverse viewpoints can lead to new ideas, services, products and foster creative thinking (Pisano, 2019). Globalization has created a complex and competitive global environment where organizations must repeatedly develop new products, services, and goods to achieve a competitive advantage (Edmondson, 2019). Organizations now recognize that team diversity is paramount in separating themselves from competitors and can help attract and retain new customers.

As a case in point, Hunt, Layton, and Prince (2015) conducted a study of 300 C-Suite Level executives involved in developing, implementing, or managing diversity and inclusion programs for their respective organizations. The authors concluded that a diverse workforce is necessary to drive creativity and foster innovation. Hunt, Layton, and Prince (2015) reported that companies in the highest quartile for racial and ethnic diversity are 35% more likely to have economic returns higher than their trade medians. In contrast, organizations in the lowest quartile in these parameters are statistically less likely to achieve above-average returns. Similarly,

Herring (2009) argues that the value-add that a diverse workforce provides, relative to a homogenous one, is more beneficial for business, including but not limited to the bottom line. There is a positive relationship between racial and gender identity diversity and sales. For every one-unit increase in racial diversity, corporate sales increased by approximately 3% (Herring, 2009). Organizations that promote team surface-level diversity (e.g., race, gender identity, ethnicity) should experience increased innovative product breakthroughs and sustained profitability (Herring, 2009). Leaders of organizations often stress that diversity matters, and many agree that team diversity is a means to foster creativity and innovation.

Though in practice, diverse teams create unique challenges and mixed results in terms of performance. On the other hand, advocates of diversity stress the positive effects of heterogeneous groups concerning performance (van Knippenberg, De Dreu, & Homan, 2004). In theory, teams high in surface-level diversity (e.g., race, gender identity, age) offer varying viewpoints, backgrounds, and skills. However, on the other hand, meta-analytic evidence shows a weak and negative relationship between surface-level diversity and team performance (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Horwitz & Horwitz, 2007). This evidence may be attributed to the fact that, in practice, teams high in surface-level diversity face barriers to social integration and effective communication. Both social integration and effective communication are essential as they lead to creative and innovative ideas (Bell et al., 2011). These factors present a situation where diversity is portrayed as a “double-edged sword” in modern organizational theory (Carter & Phillips, 2017).

Anderson and West (1998) suggest that team climate is a critical factor that enables teams to be more creative and innovative. Further research supports the notion that team climate—specifically team psychological safety climate—is an antecedent condition of team creativity (Hu et al., 2018). Psychological safety is a collective belief held by team members that the team is safe for interpersonal risk-taking (Edmondson, 1999). Given that teams high in surface-level diversity tend to suffer from social integration issues and likely lack psychological safety, this begs the question of how teams high in surface-level diversity can become more psychologically safe and thus more creative and innovative? Research shows that inclusive behaviors, such as words or deeds displayed by members within a team that invites and appreciates others' contributions, may help facilitate psychological safety in groups (Nembhard & Edmondson, 2006). However, it remains an intriguing possibility that team members' inclusive behaviors can promote psychological safety, creativity, and innovation within teams high in surface-level diversity.

1.2 Purpose of Study and Research Questions

Given the adverse effects associated with surface-level diversity concerning team creativity and innovation (Bell et al., 2011), the purpose of this research study is to better understand *how* and *when* teams high in surface-level diversity become more creative and innovative. By examining psychological safety as a mediator of the relationships between team surface-level diversity and outcomes (i.e., creativity, innovation), this research attempts to identify a critical mechanism that may help explain why teams high in surface-level diversity are not more creative and innovative. By examining psychological safety, researchers and practitioners may better understand why team surface-level diversity has yet to yield positive and significant effects on team creativity and innovation. Also, recognizing the limited empirical evidence regarding the

conditions under which teams high in surface-level diversity become more psychologically safe, creative, and innovative, this research adds that inclusive behaviors can be a critical factor in facilitating desirable outcomes.

The following research questions guided this study:

1. When are teams high in surface-level diversity more or less likely to be creative and innovative?
2. How does team surface-level diversity relate to team creativity and innovation?

1.3 Theoretical Framework

The following theoretical frameworks will be critical to understanding *how* and *when* surface-level diversity relates to team creativity and innovation: team climate theory, psychological safety, social identity theory, and the Input-Process-Model (IPO) Model of Team Effectiveness.

1.3.1 Team Climate Theory

Anderson and West (1998) developed an instrument to assess team climate and identified team characteristics in innovative organizations. The authors contend that vision, participative safety, task orientation, and support for innovation are the four (4) primary features that promote team innovation. Vision represents a higher-order goal and a motivating force at work. Task orientation stresses the importance of accountability within a team to assess and modify its current performance compared to its desired performance. Support for innovation is the belief, approval, and practical support of efforts to introduce new and improved practical methods of producing goods or services in the work environment.

Participative safety comprises two interrelated concepts: participation in decision-making and intra-group safety. The construct of participative safety measures the active involvement in a team where the atmosphere is non-threatening, supportive, and can inspire trust. Involvement in decision-making refers to the extent to which individuals are involved in decision-making processes, share information, and listen to each other's ideas. Intra-group safety refers to a non-threatening team psychological atmosphere characterized by mutual support.

1.3.2 Team Psychological Safety

Psychological safety is a team-level construct, referring to the collective confidence that a team is safe for interpersonal risk-taking (Edmondson, & Lei, 2014; Baer & Frese, 2003; Edmondson, 1999). Psychological safety and participative safety are interconnected concepts, but psychological safety encompasses a broader aspect of team innovative climate than participative safety (Peltokorpi & Hasu, 2014; Baer & Frese, 2003). In teams low in psychological safety, the free exchange of concepts, apprehensions, or questions is frequently hindered by interpersonal fear (Edmonson, & Lei, 2014; Edmondson, 1999). Previous research finds that high-performing teams openly discussed the risks of errors, often trying to find new methods to catch and prevent them (Edmondson, 1999). Psychological safety is not a behavior difference but rather a feature of the team context that can be promoted (Edmondson, 1999). Psychologically safe environments can empower team members to voice their opinion(s), enabling open and authentic communication. Ultimately, psychologically safe environments may assist surface-level diverse teams to realize their strengths, weakness, and opportunities for improvement.

Rozovsky (2015) conducted a two-year study at the company Google, interviewing over 200 employees and testing more than 250 attributes. The results suggested that psychological

safety was the most important of the five (i.e., psychological safety, dependability, structure & clarity, meaning, and impact) top attributes to create a successful team. Rozovsky (2015) determined that individuals in teams are often reluctant to engage in behaviors that could negatively affect how others distinguish their competence, awareness, and positivity. However, individuals on teams with higher levels of psychological safety are more likely to harness the power of diverse ideas from their teammates, making the organization more profitable. They are often rated as effective twice as often by executives. Rozovsky (2015) concluded that the team composition (i.e., surface-level diversity) matters less than how the members cooperate, structure their work, and view their contributions.

In this study, psychological safety was examined in controlled low stake environments. However, findings from previous research suggest that psychological safety is even more essential in high stakes (i.e., life or death situations) team environments. Edmondson (1999) designed a study to investigate the effects of psychological safety and the rate of medication errors. To the author's surprise, higher-performing teams reported more errors than lower-performing teams. However, it was not that these teams were committing more mistakes, but they were reporting more mistakes and learning from them (Edmondson, 1999). Members of higher-performing teams operated in a team climate where it was self-evident that speaking up was natural and necessary. In contrast, lower-performing teams worked in an environment where speaking up was viewed as a last resort. Essentially, a team's level of psychological safety may be contingent upon members' unprompted descriptions of the team's climate and how reporting errors are viewed.

Another vivid example where a poor, psychologically safe environment had horrific consequences is the 1977 tragedy on the Spanish island of Tenerife. This tragedy resulted in five-

hundred and eighty-three (583) fatalities, still the deadliest accident in aviation history. Findings from the crash demonstrate that it could have been avoided if crew members had spoken up. However, the team environment did not permit the freedom to voice ideas or concerns contrary to the team's views. Consequently, airlines have strived to create cultures where even low-ranking flight attendants may approach the aircrew directly regarding safety concerns. The Google and Tenerife Island tragedies provide examples of the importance of psychological safety and explain why it should continue to be implemented in a team context.

1.3.3 Social Identity Theory

The social identity theory suggests that part of a person's sense of self depends on the groups they belong to or categorize themselves a member (Hogg, van Knippenberg, & Rast, 2012; Tajfel & Turner, 2004). Essentially, individuals in a group adopt the group's values as a part of their self-concept. This creates conditions where they evaluate themselves and other people from their membership in specific groups (Goldberg, 2003; Tajfel & Turner, 2004). This categorization process is the core of the social identity process. Through categorization the similarities and differences between an individual and the members of an outgroup are exaggerated (Tajfel & Turner, 2004).

Individuals create a perception that they are identical to other members of the same category and behave accordingly with the category membership. Tajfel and Turner (2004) argue that categorization may create the conditions where individuals behave differently towards members of their in-group and outgroup even when they gain no benefit from such behavior. Social identity and categorization perspectives may help explain why teams high in surface-level diversity suffer from social integration issues. Teams who suffer from these issues are often less psychologically safe and thus less creative and innovative. Members within teams high in

surface-level (i.e., more diverse in terms of gender identity, age, ethnicity, etc.) diversity are likely to perceive other members as more or less similar, depending on whether members share similar attributes.

During the early formation stages of teams, the observable surface-level features (gender identity, age, ethnicity, etc.) impact team performance (Fisher, Bell, Belohav, & Dierdorff, 2012; Harrison, Price, Gavin, Florey, 2002). That team members initially have not had the opportunity to learn about the other team members' deep-level (knowledge, skills, abilities, etc.) characteristics. The social identity theory suggests that in the absence of deep-level information about other members (i.e., personality, shared goals, intelligence, etc.), ingroups and outgroups based on surface-level features may form during the early development stages of teams (Fisher et al., 2012). These early categorizations may lead to inaccurate perceptions of other group members (Harrison et al., 2002). Over time, group members are more likely to realize similarities in shared goals, norms, and expectations, eventually establishing a shared group identity created and shared by others. The social identity perspectives are key to understanding how group identity is formed and developed throughout a team's lifecycle.

1.3.4 Input-Process-Output (IPO) Model of Team Effectiveness

This study will utilize the Input-Process-Output (IPO) model of team effectiveness to understand how team surface-level diversity influences creativity and innovation through psychological safety. The main idea behind the team effectiveness theory is that teams can become more effective by maximizing process gains (i.e., psychological safety) and minimizing process loss. Inputs (i.e., surface-level diversity) are the conditions that exist before group activity (i.e., team composition). Whereas processes (e.g., psychological safety) are the interactions among the group members, outputs (e.g., creativity, innovation) are the results of

team activity that are valued by the team or organization (Hulsheger, Anderson, & Salgado, 2009). In the next chapter, the IPO logic will be detailed to explain the link between team surface-level diversity and team outcomes.

1.4 Study Contribution & Significance

Previous literature shows a weak and negative correlation between surface-level diversity and creativity and team innovation (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Horwitz & Horwitz, 2007). Considering the weak empirical support for the effects of surface-level diversity on team creativity and innovation, the objective of this study is to make three contributions to the literature. First, this study identifies a potential mediating mechanism (i.e., psychological safety) that may help explain why teams high in surface-level diversity are less creative. Second, this study investigated if team inclusive behaviors moderated the relationship between team surface-level diversity and psychological safety. Specifically, this research attempted to pinpoint the conditions when team surface-level diversity is more or less likely to influence psychological safety. Lastly, an integrated (moderated-mediation) model was developed to examine the indirect effects of surface-level diversity on creativity and innovation through psychological safety as conditional on team inclusive behaviors. Therefore, this research may offer recommendations to researchers and practitioners regarding how and when surface-level diversity leads to increased creativity and innovation in teams.

1.5 Definition of Key Terms

The following terms are listed and defined for this study:

Gender identity: A person's sense of self as male, female, blend of both, or neither. A person's gender identity can be the same or different from the sex assigned at birth (Griffin, Clyde, Byng, & Bewley, 2020).

Psychological Safety: A collective belief that it is safe to take interpersonal risks within a team (Edmonson, 1999).

Surface Level Diversity: Specific demographic variables such as race, age, gender identity, and easily identifiable attributes (Bell, 2007).

Team: A group of people who perform independent tasks to work toward accomplishing a common goal or specific objective (Bell, 2007).

Team Inclusive Behaviors: Actions exhibited by team members (e.g., words, deeds, etc.) that invite and appreciate the importance of other people's contributions to a team (Nembhard & Edmondson, 2006).

Team Creativity: The creation of concepts, solutions to problems, or perceptions that are original and suitable to obtrusive difficulties (Bechtoldt et al., 2010).

Team Innovation: A team's behavior, which aims to achieve the initiation and implementation of new and valuable ideas, processes, goods, or methods (Bucherer, Eisert, & Gassmann, 2012).

1.6 Summary and Organization of the Document

Chapter 1 offers the introduction, statement of the problem, significance and purpose of the study, the relevant theoretical frameworks, research questions, and definition of terms. Chapter 2 presents a review of literature related to the variables of the study. The methodology and procedures used to gather and analyze data for the research are presented in Chapter 3. The

results of the study will be detailed in Chapter 4. Findings and implications will be discussed in Chapter 5.

CHAPTER 2: LITERATURE REVIEW AND STATEMENT OF HYPOTHESES

2.1 Diversity in Teams

Diversity in teams refers to differences amongst individual members of a team that revolve around numerous dimensions such as age, race, religious background, functional background, sexual orientation, or political preferences (Horwitz & Horwitz, 2007). Essentially, team diversity is the distributional differences between team members concerning a mutual attribute (Harvey, 2013). A team's composition can positively or negatively impact performance, team member satisfaction, or the creative and innovative capabilities of a team (Uitdewilligen & Waller, 2018).

Typically, team diversity is defined as either deep or surface-level diversity (Bell, 2007). Deep-level composition variables refer to underlying psychological characteristics such as knowledge, character, morals, and attitudes. Surface-level diversity refers to visible traits such as age, gender identity, and ethnicity (Bell et al., 2011; Goldberg, 2003). Research suggests that surface-level diversity is essential, but deep-level composition variables may substantially influence a team's performance (Bell, 2007; Bell et al., 2011). Surface-level diversity tends to hinder the ability of group members to collaborate effectively. Whereas heterogeneity of knowledge and personality (e.g., deep-level diversity), task-relevant is more often associated with positive group performance (Horwitz & Horwitz; Harvey, 2013).

Previous meta-analyses have failed to find a positive and strong relationship between surface-level diversity and innovation within teams. However, a small but statistically significant positive relationship exists between deep-level diversity and innovation within teams (Bell et al.,

2011; Horwitz & Horwitz, 2007). Specifically, Bell et al. (2011) conducted a meta-analysis and distinguished amongst the various types of diversity and how they relate to innovation. The researchers found that only functional background diversity, a subset of deep-level diversity, had a small positive relationship with creativity and innovation in teams. Deep-level diversity can stimulate different knowledge, skills, and abilities to increase communication and diversity of team perspectives (Bell, 2007; Bell et al., 2011; Harvey, 2013).

Researchers have suggested that differences in surface-level variables may be positively or negatively related to team performance. The idea that diversity improves team performance is based on the informational diversity-cognitive resource perspective, suggesting that distributional differences can serve as indicators of available knowledge and differing views (Horwitz & Horwitz, 2007; van Knippenberg et al., 2004). A team that is more diverse in terms of surface-level variables may be more innovative than a homogenous team because the homogenous team cannot draw on a larger pool of knowledge or experiences (Bechtoldt et al., 2010; Bell et al., 2011; Fisher et al., 2012; Horwitz & Horwitz, 2007; Shin et al., 2012).

Despite the potential positive effects of team diversity on some variables, research also suggests that increased surface-level team diversity can lead to decreased collaboration, direction, and cohesion among team members, which may lead to reduced team creativity and innovation (Anderson & West, 1998; de Jong & den Hartog et al., 2010; Dreu & West, 2001). These inconsistent findings offer limited direction to researchers and practitioners regarding strengthening the relationship between surface-level diversity and creativity and innovation in teams. This study examines the connection between team surface-level diversity and psychological safety. Further, this study provides recommendations to increase the relationship

between team surface-level diversity, psychological safety, and team creativity and innovation by investigating the role of team member inclusive behaviors.

2.2 Team Surface-Level Diversity & Psychological Safety

The social identity and self-categorization theories explain that observable in-group and out-group categories play a critical role in regulating how individuals perceive themselves in teams (Hogg et al., 2012; Tajfel & Turner, 2004). Fundamentally, when a team-specific attribute is salient, team members tend to focus on the shared attributes (e.g., race, gender identity, age, etc.) among in-group members instead of characteristics shared with out-group members. The similarity-attraction theory proposes that demographic similarity leads to perceptions of attitudinal similarity, leading to interpersonal attraction (Goldberg, 2003). This is especially true during early team formation stages and in the absence of information regarding deep-level characteristics (e.g., knowledge, skills, abilities etc.). Surface-level demographic characteristics (e.g., race, gender identity, age, etc.) are easily recognized and are often the basis for how members categorize each other (Tajfel & Turner, 2004). The social identity and social-categorization perspectives suggest that team surface-level diversity negatively affects team performance, making social processes and integration more difficult (Bell et al., 2011; Horwitz, & Horwitz, 2007). In teams high in surface-level diversity, social integration issues may cause team members to feel less likely to feel psychologically safe.

Minorities in teams high in surface-level diverse teams (e.g., race, gender identity, age, etc.) frequently find themselves excluded from equitable networks of information and access to resources in surface-level diverse teams. Bell and Nkomo (2003) contend that there are various reasons to explain these phenomena: overt and covert racism, sexism, or ageism. As a case in point, Bell and Nkomo (2003) found that African American women in teams are subjected to a

specialized state of sexism that was shaped by racism and racial stereotyping. The authors concluded that African American women in these positions tend to have limited access to informal social networks in their respective teams. Informal social networks provide feedback and support for career choices, which can positively impact career development. However, these women felt cut off from crucial organizational information and less accepted than members of the dominant group.

Similarly, Frick, Rose, and Kolle (2017) conducted a study on gender diversity and team performance and concluded that gender diversity is harmful to team performance. The researchers' findings indicate that all-men and all-women teams outperformed gender heterogeneous teams due to social integration issues. Gender homogenous teams faced fewer social integration issues and were able to perform more efficiently. These researchers argue that if a psychologically safe environment were implemented, the gender diverse teams would have outperformed the gender homogenous teams (Frick, Rose, and Kolle (2017)).

2.3. Psychological Safety: The Link for Surface-Level Diverse Teams to be Creative and Innovative

As mentioned previously, the input-process-out model (IPO) developed by McGrath (1970) is an approach to analyzing the factors that influence team effectiveness. Teams are effective through maximizing synergistic gains and minimizing process loss. The influence of the input variable(s) on the output variable(s) is influenced or mediated via processes (McGrath, 1970). The Bell & Nkomo (2003) study exemplifies how the formation of in-groups may lead to process loss and interrupt social integration within a team. Process loss is any act, procedure, or dynamic that prevents a group from achieving its full potential (Bechtoldt et al., 2010; McGrath, 1970). In this study, the researcher theorizes that inputs (e.g., team diversity) influence team outcomes

(e.g., creativity, innovation) via processes (e.g., team psychological safety) and emergent states (e.g., team inclusive behaviors).

As aforementioned, the level of psychological safety in a surface-level diverse team may mediate the levels of creativity and innovation. Psychological safety is likely to affect performance related to learning and improvement (Edmondson & Lei, 2014; Edmondson, 1999; Edmondson, 2019). A supportive team climate has been shown to positively affect creativity and innovation. Similarly, other research has shown that teams with higher levels of psychological safety will influence team members to participate in the decision-making process, lowering resistance to change and offering new and improved working methods (Edmondson, 1999). This increased interaction leads to the cross-fertilization of ideas which is vital to creativity and innovation. Essentially, psychological safety promotes information sharing, encouraging team members to share more significant amounts of information and new ideas (Edmondson, 1999). Anderson and West (1998) argue that teams' psychological safety boosts the freedom to offer novel ideas and experiment with different behaviors without the anxiety of looking stupid or embarrassed. Psychological safety may influence the quality and quantity of creative and innovative ideas produced in surface-level diverse teams (Edmondson & Lei, 2014).

Hu et al. (2018) suggest three (3) main reasons why a psychologically safe environment leads to higher team creativity. First, creativity and innovation require taking risks and facing uncertainty (Hu et al., 2018). A psychologically safe team environment will promote calculated risk-taking and indicate to team members that making errors and taking risks are acceptable. As such, team members are not afraid of owning mistakes, which assists in generating a climate of safety in the team. Secondly, a psychologically safe environment may develop confidence in team members allowing them to feel secure and capable of speaking up. This may assist team

members to break away from a risk-averse mindset and have the confidence to change through failures and risks. Finally, psychological safety can facilitate growth and embrace a learning orientation. Psychological safety may influence members of a surface-level diverse team to appreciate novel ways of thinking and display respect and support when teammates contribute to discussions (Edmondson & Lei, 2014; Edmondson, 1999). This creates a shared belief that members will not disrespect or embarrass someone for making new suggestions (Anderson and West, 1998; Edmondson, 1999).

2.4 The moderating effect of Team Member inclusive behaviors

One possible way to create psychological safety in diverse teams is for team members to engage in inclusive behaviors (Carmeli et al., 2010; Nembhard & Edmondson, 2006). In teams where members display unsupportive behaviors, conditions can occur where team members are less likely to feel psychologically safe speaking up (Edmondson, 1999). Thus, creating a team climate that is unsafe for interpersonal risk-taking. However, if teams operate in a democratic and supportive manner (e.g., words and deeds that indicate an appreciation for other contributions) that welcomes diverse perspectives and is interpersonally safe, greater levels of psychological safety may occur (Carmeli et al., 2010; Nembhard & Edmondson, 2006).

Team-inclusive behaviors can break down power or status differences and invite others' views or perceptions (Nembhard & Edmondson, 2006). Such behaviors can help change social identity dynamics such that, in racially diverse teams where team members perform high levels of inclusive behaviors, they are less likely to perceive members with different surface-level attributes as dissimilar because everyone identifies with one another, feels included, more psychologically safe and these conditions facilitate creativity and innovation. Team-inclusive behaviors are fueled by the meaningful drive to support other team members (Carmeli et al.,

2010; Edmondson, 1999; Nemhard & Edmondson, 2006). Therefore, creating a team-inclusive team permits other members to share ideas and not be afraid to voice viewpoints that differ from others (Nemhard & Edmondson, 2006). Teams in which inclusive behaviors are promoted tend to focus less on calculating their gains or losses while being more attentive and open to others' opinions (Nemhard & Edmondson, 2006). Creating productive task conflicts and reducing process losses due to ingroup/outgroup formation promotes positive team outcomes (Edmondson, 1999; Frazier et al., 2016).

Building on these insights, I propose that team-inclusive behaviors (e.g., words and deeds that indicate an appreciation for other contributions) can alter the level of psychological safety in surface-level diverse teams. Team-inclusive behaviors may foster an atmosphere of mutual respect across the different cultures and develop specialized expertise held by minorities (e.g., race, gender identity) in teams (Nemhard & Edmondson, 2006). Furthermore, team-inclusive behaviors can balance the value associated with all members' contributions, promoting an atmosphere of equality and openness. These efforts could increase the level of psychological safety experienced by everyone on the team. However, in the absence of high team-inclusive behaviors, in-group/outgroup dynamics are likely to impact team functioning.

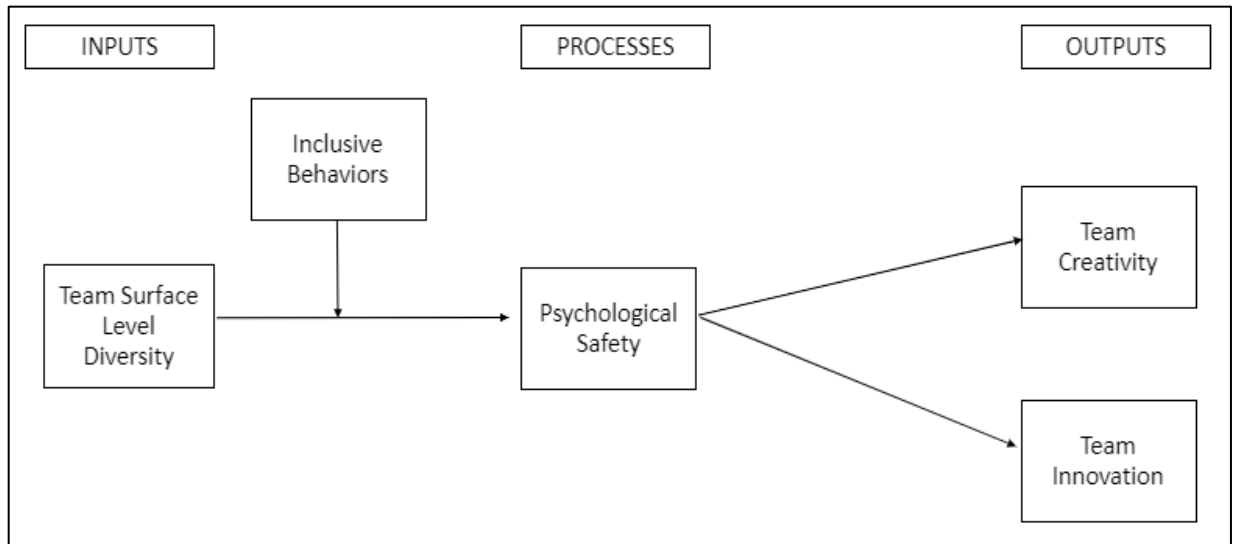


Figure 1. Theoretical Model

2.5 Statement of Hypothesis

- Hypothesis 1a: High team gender identity diversity will be negatively related to psychological safety.
- Hypothesis 1b: High team racial diversity will be negatively related to psychological safety.
- Hypothesis 2a: High team gender identity diversity will be negatively related to team creativity through psychological safety.
- Hypothesis 2b: High team racial diversity will be negatively related to team creativity through psychological safety.
- Hypothesis 2c: High team gender identity diversity will be negatively related to team innovation through psychological safety.
- Hypothesis 2d: Teams high in racial diversity will be negatively related to team innovation through psychological safety.

- Hypothesis 3a: Team inclusive behaviors will moderate the indirect effect of high team gender identity diversity on team creativity through psychological safety, such that the indirect effect of team gender identity diversity on creativity via psychological safety will be positive when team inclusive behaviors are high.
- Hypothesis 3b: Team inclusive behaviors will moderate the indirect effect of high team racial diversity on team creativity through psychological safety, such that the indirect effect of team racial diversity on team creativity via psychological will be positive when team inclusive behaviors are high.
- Hypothesis 3c: Team inclusive behaviors will moderate the indirect effect of high team gender identity diversity on team innovation through psychological safety, such that the indirect effect of team gender identity diversity on team innovation via psychological will be positive when team inclusive behaviors are high.
- Hypothesis 3d: Team inclusive behaviors will moderate the indirect effect of high team racial diversity on team innovation through psychological safety, such that the indirect effect of team racial diversity on team creativity via psychological will be positive when team inclusive behaviors are high.
- Hypothesis 4a: Team inclusive behaviors will moderate the relationship between high team racial diversity and psychological safety, such that teams high in racial diversity and in the inclusive behaviors condition will have higher levels of psychological safety than teams high in racial diversity that are in the control condition.
- Hypothesis 4b: Team inclusive behaviors will moderate the relationship between high team gender identity diversity and psychological safety, such that teams high in gender identity

diversity and in the inclusive behaviors condition will have higher levels of psychological safety than teams high in gender identity diversity that are in the control condition.

CHAPTER 3: RESEARCH DESIGN & METHODOLOGY

3.1 Participants

This study utilized an experimental research design, splitting participants into two independent groups (i.e., experimental or control). Data were collected from three hundred and thirty-eight (338) participants. Of the three-hundred and thirty-eight (138) participants, one-hundred and forty-one (141) participants were undergraduate students enrolled in leadership development courses (large Southeastern university), and one-hundred and ninety-seven (197) participants were working adults from a web platform, Prolific Co. This platform provides researchers with fast and reliable access to their target audiences. Midway through the study, the researcher included working adults from Prolific Co. because the study was converted to a 100% asynchronous format to adhere to all federal, local, and state guidelines because of Coronavirus (COVID-19). The one-hundred and forty-one (141) undergraduate students were recruited from entry-level leadership and human resource development courses. The one-hundred and ninety-one (191) working adults were recruited using Prolific Co.'s database. All participants signed up based on scheduling availability and were randomly assigned to either the experimental or control conditions based on scheduling availability to avoid self-selection bias.

Of the undergraduate sample from the large Southeastern university, 28% ($N = 39$) were males, with ages ranging from 18 to 31 ($M = 20.95$, $SD = 2.54$) years of age. 72% ($N = 102$) were female, with ages ranging from 18 to 52 ($M = 21.30$, $SD = 4.74$) years of age. Participants were members of White (65.25%), Black (24.11%), Asian (4.96%), Hispanic (4.96%), and Native Hawaiian or Pacific Islander (0.72%) ethnic groups. At the team level, 15% of the teams were evenly balanced in terms of gender identity composition (50% male and 50% female), and 70% of teams were mostly female (15% were mostly male). Teams ranged in size from three to five members ($M = 4.15$, $SD = 0.70$) per team.

Of the working adults from Prolific Co., 42% ($N = 83$) were males with ages ranging from 18 to 57 ($M = 29.35$, $SD = 10.10$) years of age. Fifty-seven (57) percent ($N = 112$) of the sample were female, with ages ranging from 18 to 58 ($M = 30.20$, $SD = 10.60$). 1% ($N = 2$) of the working adults from Prolific Co. decided not to disclose their gender identity. These two (2) participants were 24 and 35 years of age, respectively. The sample of participants from Prolific Co. were members of White (59.39%), Asian (16.75%), Black (14.72%), Hispanic (5.58%), and Other (3.55%) ethnic groups. At the team level, 17% of the teams were evenly balanced in terms of gender identity composition (50% male and 50% female), and 65% of teams were mostly female (18% were mostly male). Teams ranged in size from two to four members ($M = 3.02$, $SD = 0.56$) per team.

Of the entire sample, 37% ($N = 122$) were males, with ages ranging from 18 to 57 ($M = 26.66$, $SD = 9.29$) years of age. 63% ($N = 214$) of the sample were female, with ages ranging from 18 to 58 ($M = 25.95$, $SD = 9.43$) years of age, and two (2) participants elected not to disclose their gender identity. Participants were members of White (61.8%), Black (18.6%), Asian (11.8%), Hispanic (5.3%), and Native Hawaiian or Pacific Islander (0.3%) ethnic groups. At the team level, 18% of the teams were evenly balanced in terms of gender identity composition (50% male and 50% female), and 59% of the teams were mostly female (23% were mostly male). Teams ranged in size from two to six members ($M = 3.38$, $SD = 0.85$) per team.

Data were collected from 100 teams. The one-hundred and forty-one (141) undergraduate students received extra credit for participating in the study, and the one-hundred and ninety-six (196) working adults via a virtual platform, Prolific Co., received monetary compensation (\$3.40 per completion). Prolific Co. stipulates that the minimum participants may be compensated per hour is \$6.50. Therefore, participants were paid \$3.40 for forty-five (45) minutes of the

experiment. Thirty-four (34) teams were composed of undergraduate students, and sixty-six (66) teams were composed of working adults from Prolific Co. Fifty-eight (58) teams were in the experimental condition, and forty-two (42) teams were in the control condition.

3.2 Procedures

3.2.1. Pilot Study

A pilot test was conducted to ensure that the inclusive team behaviors manipulation effectively induced teams to engage in more inclusive behaviors. The researcher recruited eleven (11) teams comprised of forty-one (41) undergraduate students enrolled in leadership development courses at a large Southeastern university for the pilot study. Resembling the instructions that participants in the main study received, participants in the pilot study were asked to imagine being selected to a task force whose goal is to produce new ideas to improve the university (see Appendix F&G).

Participants in the experimental condition watched a prerecorded video that offered research-based information about the benefits of team inclusive behaviors and examples of how to be inclusive in teams. The video emphasized that inclusive teams integrate individual differences and are inclusive in the decision-making process. Furthermore, the instructed teams in the experimental condition were asked to take 10-12 minutes to create a team charter before beginning the assessment (see Appendix D) to spur inclusive behaviors. A team charter is a document created during the early formation stages of a team, which lays the groundwork for how the team will operate (Mathieu & Rapp, 2009). Previous research finds that teams who create high-quality team charters early in their life span will display improved performance trajectories (Mathieu & Rapp, 2009).

Teams in the experimental condition were required to develop their own rules and norms around inviting others into the conversation. Teams in the control (i.e., low team inclusion) condition did not receive information regarding the positive effects of team inclusive behaviors and did not create a team charter. Instead, teams in the control (i.e., low team inclusion) condition watched a prerecorded video that encouraged them to mentally prepare for the assessment and meet with their team (see Appendix E). The video instructions for the control condition took 1:13 to administer. The video instructions for the experimental condition took 1:34 to administer.

Pilot study results revealed that there were significant mean differences between participants in the experimental ($M = 4.86$, $SD = .178$) condition, and the control ($M = 3.86$, $SD = .667$) condition on the manipulation check measure $t(39) = 3.25$, $p = .010$. These results suggest that the team inclusive manipulation would effectively induce participants with high and low levels of team inclusion. Table 1 also summarizes the pilot study manipulation check results.

TABLE 1:

PILOT STUDY MANIPULATION CHECK RESULTS: MEANS AND STANDARD DEVIATIONS OF TEAM MEMBERS' LEVELS OF TEAM INCLUSION ACROSS THE EXPERIMENTAL AND CONTROL CONDITIONS

Experimental	Control	t	p
4.86 (.178)	3.86 (.667)	3.25	.010

Note. $N = 11$ (6 in the Experimental Condition, 5 in the Control Condition). * $p < .05$ (2-tailed).

3.2.2. Main Study

In the main study, consent forms were distributed, thoroughly discussed, and clarified before obtaining verbal and written consent. Participants were only asked for age, gender identity, major, classification, and involvement in a student organization to perform demographic analyses (see Appendix A). Participants were informed that they could turn in their materials and be destroyed if they decided to no longer participate in the study. Aside from the consent forms,

participants did not receive any additional information before starting the experiment. Afterward, the participants were randomly assigned to either the experimental or control conditions.

Like the pilot study, teams in the experimental condition watched the same one-minute and thirty-four (1:34) prerecorded video that offered research-based information regarding the benefits of team inclusive behaviors and how to be inclusive in teams. The prerecorded video emphasized that inclusive teams integrate individual differences and are inclusive in the decision-making process. Furthermore, the prerecorded video instructed teams in the experimental condition to take 10-12 minutes to create a team charter before beginning the assessment (see Appendix D) to spur inclusive behaviors. Teams in the control (i.e., low team inclusion) condition watched the same one-minute and thirteen seconds (1:13) prerecorded video (as the pilot study) that encouraged them to mentally prepare for the assessment and meet with their team (see Appendix E).

After the consent forms were completed and the directions were distributed to both conditions (i.e., experimental & control groups), the teams completed the “University Institutional Improvement Project” (e.g., Baruah & Paulus, 2011). Participants in both conditions (i.e., experimental & control groups) were assigned the role of members in leaderless teams within the office of institutional advancement (see Appendix F & H). Leaderless teams are self-managed not have an appointed leader. Instead, leaderless teams make decisions and delegate workload as a group. Participants were instructed to envision that they have been appointed to a team whose goal is to produce new ideas that improve the university (see Appendix I). Participants worked in teams consisting of two (2) to six (6) members for thirty (30) minutes on this task, and teams were given reminders at the 15th and 30th minutes. The only element that differed from the in-person procedures to the virtual methods was that teams submitted e-copies

of Appendices A, B, C, D, E, F, and I instead of hard copies that teams in the in-person sessions completed.

After each session, all participants received a 17-item assessment (see Appendix A). This assessment contained a 7-item measure of team psychological safety, a 3-item measure of team inclusive behaviors, a 4-item measure of team innovation, and a 3-item measure to assess team creativity. The experiment lasted no longer than forty-five (45) minutes. This study's primary data was collected following protocol approval through the Louisiana State University (LSU) Institutional Review Board.

	Experimental Group	Control Group
Phase #1	Consent Forms	Consent Forms
Phase #2	Manipulation-Video Regarding the importance of team inclusive behaviors	Control-Video giving basic directions
Phase #3	Inclusive Team Charter	Meet team members
Phase #4	Institutional Improvement Project	Institutional Improvement Project
Phase #5	Respondents will complete a demographic questionnaire and a 17-item post-experiment assessment	Respondents will complete a demographic questionnaire and a 17-item post-experiment assessment.

FIGURE 2: DESCRIPTION OF EXPERIMENTAL AND CONTROL CONDITIONS

3.2.3. Coder Training

Eight (8) people (working adults from Prolific Co.; blind to the study purpose and manipulation) were hired to code each leaderless team's output for the levels of team psychological safety, team inclusive behaviors, team creativity, and team innovation in both conditions (i.e., experimental and control). The coders were prescreened for a basic understanding of research methods and data coding. Coders were paid \$300 each and received two (2) hours of in-depth training over the course of one (1) week. Coders were compensated per

Prolific Co.'s payment guidelines. The researcher followed Syed and Nelson's (2015) three (3) step methodology to train the coders for quantitative research. First, the coders received an extensive lecture on the study's variables to establish a team mental model for completing the coding. Next, the researcher provided sample data randomly drawn from the dataset, which coders used to practice the coding scheme.

Finally, coders were randomly assigned twenty-five (25) cases each for coding. The coders were given two (2) weeks to code their assigned twenty-five (25) cases, with a goal of twelve (12) cases the first week and thirteen (13) cases the final week. Each coder was assigned a private folder on a shared drive (i.e., OneDrive) to place their coding sheets. The researcher conducted weekly reliability checks of those coding sheets throughout the coding process to prevent "coder drift," which is the tendency for raters to veer away from each other in their interpretations of the coding scheme over time (Syed & Nelson, 2015).

The coders' scores were paired to determine the score for each dimension of psychological safety, team inclusive behaviors, team creativity, and team innovation on a scale of 1 (not at all) to 5 (To a great extent); these scores were averaged to yield a single rating for each item. The coders used a coding sheet similar to the one that the participants received. This coding sheet contained a seventeen (17) item assessment that had a seven (7) item measure of team psychological safety, a three (3) item measure of team inclusive behaviors, four (4) item measure of team innovation, and a three (3) item measure to assess team creativity.

3.3. Measures

3.3.1. Team Surface-Level Diversity

Blau's (1977) index was used to assess the levels of team surface-level diversity (i.e., gender identity, race) in each team. The computation of Blau's index is: $1 - \sum_{i=1}^k p_i^2$, where p_i corresponds to the proportion of group members in i th category and k denotes the number of categories for an attribute of interest. Essentially, this index reaches its minimum value (0) when there is no diversity and its maximum value of (1) when there is complete diversity. The participant's self-report measures of race and gender identity were gathered to calculate racial and gender identity diversity in each team. Racial categories included the following: White/Caucasian, Asian/Pacific Islander, Black/African American, Hispanic, and Other (see Appendix A). In this study, teams ranged from entirely homogenous to 75% (0.75) diverse in terms of racial diversity. Regarding gender identity diversity, teams went from entirely homogenous to 50% (0.50) diverse in terms of gender identity diversity.

3.4 Instrumentation

3.4.1 University Institutional Advancement Project

The researcher followed Baruah and Paulus' (2011) experimental procedures to examine creativity and innovation in teams. The goal of this assessment was to produce new ideas to improve their university. In the study, teams were given three (3) categories (see Appendix I) to brainstorm ideas to improve the university. The researcher utilized the coder's ratings of team-level creativity and innovation to assess the levels of each in the teams.

3.4.2. Team Innovation Scale

In the main study, coders were asked to rate the degree to which they agreed with a series of statements regarding their team's level of innovation (e.g., Team members implemented new ideas to improve the quality of our team's suggestions). Coders completed a four (4) item measure to assess the team's level of innovation (see Appendix J). The response format was a 5-

point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Overall, the coders were similar in rating teams on team innovation (89% agreement).

3.4.3. Team Creativity Scale

In the main study, coders were asked to rate the degree to which they agreed with a series of statements regarding their team's level of creativity (e.g., This team came up with new ideas to solve problems). Coders completed a three (3) item measure to assess the team's level of creativity (see Appendix K). The response format was a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Overall, the coders were similar in rating team creativity (78% agreement).

3.4.4. Team Psychological Safety Scale

In the main study, participants were asked to rate the degree to which they agreed with a series of statements regarding their team's level of psychological safety (e.g., If you make a mistake on this team, it was held against you). Participants completed a seven (7) item measure to assess the team's level of psychological safety (see Appendix B). The response format was a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Cronbach's alpha coefficient of reliability for this measure was 0.43, which falls outside of the generally accepted level of reliability.¹ In previous research studies (e.g., Edmondson, 1999; Nembhard & Edmondson, 2006), Cronbach's alpha reliability coefficients have ranged from .72 to .90 for this measure.

3.4.5. Manipulation Check

¹ The Item-Total Statistics were examined to determine if any items from this scale could be deleted to increase reliability. None of the items increased the reliability coefficient (i.e., Cronbach's Alpha) enough to justify deletion. Also, the researcher did not create construct underrepresentation due to deletion of items.

Participants completed a three-item measure to assess the team's levels of team inclusive behaviors (see Appendix C). This measure was used as the manipulation check to determine if team members' levels of creativity and innovation were influenced by the manipulation. In the study, participants were asked to rate the degree to which they agreed with a series of statements regarding their team's level of inclusive behaviors (e.g., Members of this team asked for my input when completing assignments). The response format was a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Cronbach's alpha coefficient of reliability for this measure was 0.48, which falls outside of the generally accepted level of reliability.

CHAPTER 4: RESULTS & ANALYSES

4.1. Main Study Manipulation Check

Independent *t*-tests for the difference in means were performed to test for differences in team members' responses to the main study manipulation check measure in the experimental

condition. Results revealed significant differences in the mean manipulation check measures between experimental and control groups members, $t = 2.66$ on 98 df , $p = .009$. These results suggest that there were differences in team members' perceptions of inclusive behaviors. Table 2 summarizes the main study manipulation check results.

Table 2:

MANIPULATION CHECK RESULTS: MEANS AND STANDARD DEVIATIONS OF TEAM MEMBERS' LEVELS OF TEAM INCLUSION ACROSS THE EXPERIMENTAL AND CONTROL CONDITIONS

Experimental	Control	t	p
4.70 (.245)	4.53 (.422)	2.66	.009

Note. $N = 100$ (58 in the Experimental Condition, 42 in the Control Condition). * $p < .05$ (2-tailed).

4.2. Analytical Strategy

First, version 27 of the Statistical Package for the Social Sciences (SPSS) was utilized to identify errors and remove outliers from the dataset. Next, the measures of central tendency (e.g., mean, mode, and median) were analyzed to gather descriptive statistics. The researcher conducted Levene's test for homogeneity of variance to detect if the residual variances were not significantly different from the two conditions. Levene's test for equality of variance was not statistically significant, indicating no difference in variances of both groups. Then, the researcher calculated Cook's distance to identify outliers in the dataset. Cook's distance is used in regression analysis to identify influential outliers. The general rule of thumb is that observations with a Cook's distance value of more than 1 indicate an influential value (e.g., outlier). The researcher did not find any influential cases in this dataset.

Before hypothesis testing, the researcher identified several potentially relevant control variables (i.e., team size, setting, team age, and the number of ideas). However, only team size demonstrated significant associations with both team creativity and team innovation. Thus, team

size was included as a covariate in the analyses. Afterward, the researcher followed Preacher and Hayes' (2008) methodology to examine the mediating effects of team psychological safety on team racial and gender identity diversity, team creativity, and team innovation. Mediation analysis was used to indirectly assess the effect of a proposed cause (i.e., team surface-level diversity) on an outcome (i.e., team innovation and team creativity) through a proposed mediator (i.e., team inclusive behaviors). Mediation analysis is helpful because it allows the researcher to go beyond merely descriptive analysis to a more functional understanding of the relationships among variables. Specifically, Preacher and Hayes' (2008) model allowed the researcher to utilize bootstrapping methods to generate confidence intervals for estimates of the product of a and b model coefficients for the indirect effect, alleviating concerns of violations of normality. Since this method is non-parametric, it does not violate assumptions of normality. Hayes' method allows researchers to measure the effects of mediation. The idea that a variable can be causally related to another variable via a mediator variable will explain more of the variable's variability. Lastly, following the procedure outlined by Edwards and Lambert (2007), the researcher utilized a bootstrapping method to calculate the compound coefficients required by indirect and conditional indirect effects and bias-corrected confidence intervals to estimate indirect effects.

TABLE 3:

DESCRIPTIVE STATISTICS AND INTERCORRELATIONS OF VARIABLES

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1 PsychSafe	4.22	.46											
2 TeamInc	4.63	.34	.30**										
3 TeamCrea	4.50	.40	-.01	.55**									
4 TeamInn	4.43	.41	.02	.61**	.80**								
5 TeamSiz	3.38	.85	-.43**	.17	.47**	.44**							
6 BlauRac	0.40	.22	-.07	-.02	-.04	-.06	.11						
7 BlauGen	0.31	.20	.02	-.07	-.06	-.05	.06	-.07					
8 Condition	0.42	.50	.29**	-.26**	0.0	-0.9	.10	.11	.18				
9 Setting	0.66	.48	.79**	-.14	-.40**	-.41**	-.65**	-.01	.06	-.20*			
10 Ideas	21.65	10.06	.14	-.04	-.09	-.17	-.11	.05	-.03	.12	.23*		
11 Age	26.89	7.44	.60**	.16	-.11	-.04	-.36**	-.14	.02	-.38**	.55**	.08	

Note. $N = 100$ teams for all variables. Correlations greater than or equal to $|\text{.20}|$, $p < .05$, correlations greater than or equal to $|\text{.25}|$, $p < .01$, (2-tailed). PsychSafe = Psychological Safety, TeamInc = Team Inclusion, TeamCre = Team Creativity, TeamInn = Team Innovation, , TeamSiz = Team Size, BlauRac = Team Racial Diversity, BlauGen = Team Gender identity Diversity, Condition = (0 = Control, 1 = Experimental), Setting = (0 = In Person, 1 = Virtual), Ideas (Average Number of Ideas Created by Each Team), Age (Average Age of Participants)

4.3. Hypothesis Testing

It was hypothesized that high team gender identity diversity (Hypothesis 1a) and high team racial diversity (Hypothesis 1b) would be negatively related to team psychological safety. As displayed in Table 3, results suggest that team psychological safety was not significantly related to high team gender identity diversity ($b = .051$, $SE = .228$, $p = .824$), or high team racial diversity ($b = -1.47$, $SE = .209$, $p = .482$). This research also failed to find support for the hypothesized indirect effect of high team gender identity diversity on team creativity (Hypothesis 2a, ($b = .022$, $SE = .051$, ns) or high team racial diversity on team creativity (Hypothesis 2b, ($b = -.010$, $SE = .043$, ns) through psychological safety.

Similarly, the research failed to find support for the hypothesized indirect of high team gender identity diversity on team innovation (Hypothesis 2c, ($b = -.025$, $SE = .054$, ns) or high team racial diversity on team innovation (Hypothesis 2d, ($b = -.010$, $SE = .044$, ns) through psychological safety. These results fail to support the mediational hypotheses that team psychological safety may mediate the relationship between high team gender identity and high team racial diversity on team creativity and innovation, respectively. However, it is interesting to note that team psychological safety is a statistically significant predictor of team creativity and innovation in both models. Table 4 provides a detailed summary of the results.

TABLE 4:

MEDIATION ANALYSES PREDICTING TEAM CREATIVITY AND TEAM INNOVATION THROUGH PSYCHOLOGICAL SAFETY

Hypothesis	Models	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
2a	Outcome: Team Creativity						
	Team Gender identity Diversity	-0.196	0.173	-1.127	0.262	-0.539	0.149
	Team Psychological Safety	0.210	0.085	2.485	0.015*	0.042	0.378
	Team Size	0.274	0.046	6.021	0.000	0.183	0.364
2b	Outcome: Team Creativity						
	Team Racial Diversity	-0.157	0.159	-0.985	0.327	-0.474	0.159
	Team Psychological Safety	0.203	0.085	2.400	0.018*	0.035	0.371
	Team Size	0.274	0.046	6.010	0.000*	0.184	0.365
2c	Outcome: Team Innovation						
	Team Gender identity Diversity	-0.186	0.178	-1.043	0.299	-0.539	0.168
	Team Psychological Safety	0.229	0.087	2.645	0.009*	0.057	0.402
	Team Size	0.266	0.047	5.688	0.000*	0.173	0.359
2d	Outcome: Team Innovation						
	Team Racial Diversity	-0.194	0.164	-1.184	0.239	0.175	0.131
	Team Psychological Safety	0.223	0.087	2.569	0.012*	0.051	0.395
	Team Size	0.268	0.047	5.721	0.000*	0.175	0.361

Notes: * $p < .05$ (2-tailed). $N = 100$. Unstandardized regression coefficient = b , Standard Error = SE ; LL = lower limit. CI = confidence interval. UL = upper limit.

To investigate the moderating role of team inclusive behaviors and mediating role of team psychological safety, two different regression models using model 7 of Hayes' PROCESS macro and 5000 bootstraps were adopted to examine the moderated-mediation effects in hypotheses 3a, 3b, 3c, and 3d. In moderated-mediation models, the first regression model estimates the *a* paths with the mediating variable, team psychological safety, as the outcome variable in Hayes' model. The second regression model estimates *b* and *c*' paths with team creativity or innovation as the outcome variables. This research failed to find support for hypotheses 3a, 3b, 3c, and 3d. Results for hypothesis 3a revealed that team inclusive behaviors did not moderate the effect of high team gender identity diversity and team creativity ($b = .904$, $SE = .603$, *ns*).

Results for hypothesis 3b demonstrate that team inclusive behaviors did not moderate the effect of high team racial diversity and team creativity ($b = .112$, $SE = .651$, *ns*). Results for hypothesis 3c show that team inclusive behaviors did not moderate the effect of high team gender identity diversity and team innovation ($b = .904$, $SE = .603$, *ns*). Results for hypothesis 3d demonstrate that team inclusive behaviors did not moderate the high team racial diversity on team innovation ($b = .116$, $SE = .651$, *ns*). Taken together, these results fail to support the moderated mediational hypotheses that team inclusive behaviors may moderate, and team psychological safety may mediate the relationship between high team gender identity and high team racial diversity on team creativity and innovation, respectively.

TABLE 5:
REGRESSION RESULTS FOR CONDITIONAL INDIRECT EFFECT

Hypothesis	Models	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>R</i> ²
3a	Outcome: Team Creativity					0.28
	Team Gender identity Diversity	-0.195	0.173	-1.127	0.262	
	Team Psychological Safety	0.210	0.085	2.485	0.015*	
	Team Size	0.274	0.046	6.021	0.000*	
3b	Outcome: Team Creativity					0.27
	Team Racial Diversity	-0.157	0.159	-0.985	0.327	
	Team Psychological Safety	0.203	0.085	2.400	0.018*	
	Team Size	0.274	0.046	6.010	0.000*	
3c	Outcome: Team Innovation					0.25
	Team Gender identity Diversity	-0.186	0.178	-1.043	0.299	
	Team Psychological Safety	0.229	0.087	2.645	0.009	
	Team Size	0.266	0.047	5.688	0.000*	
3d	Outcome: Team Innovation					0.26
	Team Racial Diversity	-0.194	0.164	-1.184	0.239	
	Team Psychological Safety	0.223	0.087	2.569	0.012*	
	Team Size	0.268	0.047	5.721	0.000*	

Notes: * $p < .05$ (2-tailed). $N = 100$. Unstandardized regression coefficient = *b*, Standard Error = *SE*

It was hypothesized that team inclusive behaviors would moderate the relationship between high team racial diversity (hypothesis 4a), high gender identity diversity (hypothesis 4b), and psychological safety. Such that teams high in racial diversity and teams high in gender identity diversity in the inclusive behaviors condition would have higher levels of psychological safety than teams high in racial diversity and teams high in gender identity diversity that are in the control condition. Results demonstrate that team inclusive behaviors did not moderate the relationship between high team racial diversity ($b = .108$, $SE = 1.052$, $p = .918$) or high team gender identity diversity ($b = .176$, $SE = 1.073$, $p = .870$) and psychological safety. Table 6 provides a detailed summary of the results.

TABLE 6:

MODERATION ANALYSES PREDICTING TEAM PSYCHOLOGICAL SAFETY THROUGH TEAM INCLUSIVE BEHAVIORS

Hypothesis	Model	Variable	b	SE	t	p
4a	1	Racial Diversity	0.004	0.239	0.018	0.986
		Team Inclusive Behaviors	0.360	0.233	1.546	0.128
	2	Racial Diversity	-0.506	4.964	-0.102	0.919
		Team Inclusive Behaviors	0.321	0.444	0.723	0.473
		Racial Diversity x Team Inclusive Behaviors	0.108	1.052	0.103	0.918
4b	1	Gender identity Diversity	0.279	0.272	1.028	0.308
		Team Inclusive Behaviors	0.316	0.234	1.351	0.182
	2	Gender identity Diversity	-0.547	5.047	-0.108	0.914
		Team Inclusive Behaviors	0.275	0.342	0.803	0.426
		Gender identity Diversity x Team Inclusive Behaviors	0.176	1.073	0.164	0.870

Notes: $*p < .05$ (2-tailed). $N = 100$. Unstandardized regression coefficient = b , Standard Error = SE

4.4. Exploratory Analyses

4.4.1. Analytical Strategy for Exploratory Analyses

An exploratory stepwise linear regression analyses was conducted to examine the moderating effects of team inclusive behaviors on team setting (i.e., Virtual or Face-to-Face). The purpose of the exploratory stepwise linear regression analyses was to determine if the virtual context was an additional factor that influenced the relationships between the study's variables. The researcher followed Aiken and West's (1991) procedures to conduct the exploratory analyses. Before completing the exploratory analyses, the researcher mean-centered the independent variable (i.e., team setting) and moderator variable (i.e., team inclusive behaviors) to lessen the correlation between the interaction term (i.e., Team Setting X Team Inclusive Behaviors) and reduce multicollinearity. Aiken and West (1991) specify that control variables (i.e., Team Size) are entered in Step 1, the predictor variables (i.e., Team Setting, Team Inclusion) in Step 2, and the interaction term (i.e., Team Setting X Team Inclusion) in Step 3.

4.4.2. Exploratory Analyses

Results demonstrate that there was a significant interaction between team setting and team inclusive behaviors ($b = .432$, $SE = .166$, $t = 2.596$, $p = .01$) when predicting team psychological safety. However, results did not demonstrate a significant interaction between team setting and team inclusive behaviors when predicting team creativity ($b = -.220$, $SE = .245$, $t = -.898$, $p = .371$) or team innovation ($b = -.366$, $SE = .236$, $t = -1.550$, $p = .124$). Regarding team psychological safety, the slopes suggest that virtual and face-to-face teams had higher levels of psychological safety when team members practiced team inclusive behaviors (e.g., words or deeds to invite and appreciate others' contributions). To interpret the forms of the interactions, the researcher inspected the simple slopes at one standard deviation above and below the means

(see Figures 3-5). Interestingly, virtual teams exhibited higher levels of team psychological safety than face-to-face teams.

Regarding team creativity, teams that operated in highly inclusive team environments had higher team creativity levels. However, results demonstrate that team innovation suffered for teams in highly inclusive environments. This finding is contradictory to a degree because previous research has found that higher levels of team creativity are an antecedent to higher levels of team innovation (Sarooghi, Dirk & Burkemper, 2015). These findings are further discussed in Chapter 5 of this document.

TABLE 6:

REGRESSIONS FOR TEAM SETTING AND TEAM INCLUSION AS PREDICTORS OF TEAM PSYCHOLOGICAL SAFETY

	Step 1				Step 2				Step 3			
Step	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²
Step 1: Control Variables				0.18				0.59				0.60
Team Size	-0.228	0.049	-4.643***		0.051	0.33	1.547		0.54	0.032	1.672	
Step 2: Predictors												
Team Setting					0.871	0.059	14.867***		0.852	0.057	14.841***	
Team Inclusion					0.549	0.063	8.698***		0.471	0.068	6.889***	
Step 3: Interaction												
Team Setting X Team Inclusion									0.432	0.166	2.596*	

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed). $N = 100$. *b* = Unstandardized regression coefficient. *SE* = Standard Error. Team Setting X Team Inclusion = Interaction between team setting and team inclusion. Team Setting and Team Inclusion were mean-centered in step 2 before creating the product variable in step 3.

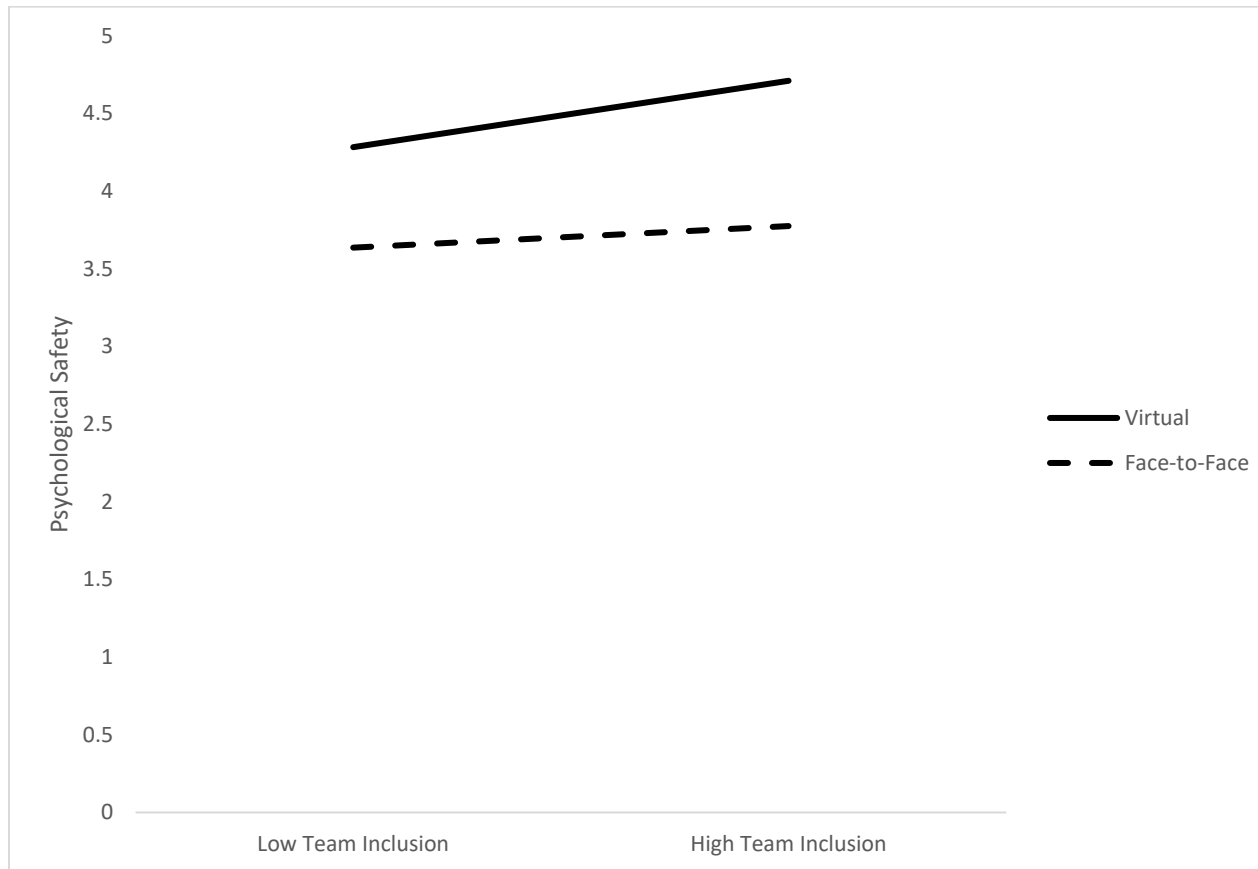


FIGURE 3: SLOPES FOR THE INTERACTION OF TEAM RACIAL SETTING AND TEAM INCLUSION PREDICTING TEAM PSYCHOLOGICAL SAFETY.

TABLE 8:

REGRESSIONS FOR TEAM SETTING AND TEAM INCLUSION AS PREDICTORS OF TEAM CREATIVITY

	Step 1				Step 2				Step 3			
Step	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²
Step 1: Control Variables				0.22				0.46				0.46
Team Size	0.223	.042	5.298***		0.142	0.047	3.020		0.141	0.047	2.987**	
Step 2: Predictors												
Team Setting					-.115	.084	-1.374		-0.105	0.085	-1.245	
Team Inclusion					0.563	0.090	6.246***		0.603	0.101	5.996***	
Step 3: Interaction												
Team Setting X Team Inclusion									-0.220	0.245	-0.898	

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed). $N = 100$. b = Unstandardized regression coefficient. SE = Standard Error. Team Setting X Team Inclusion = Interaction between team setting and team inclusion. Team Setting and Team Inclusion were mean-centered in step 2 before creating the product variable in step 3.

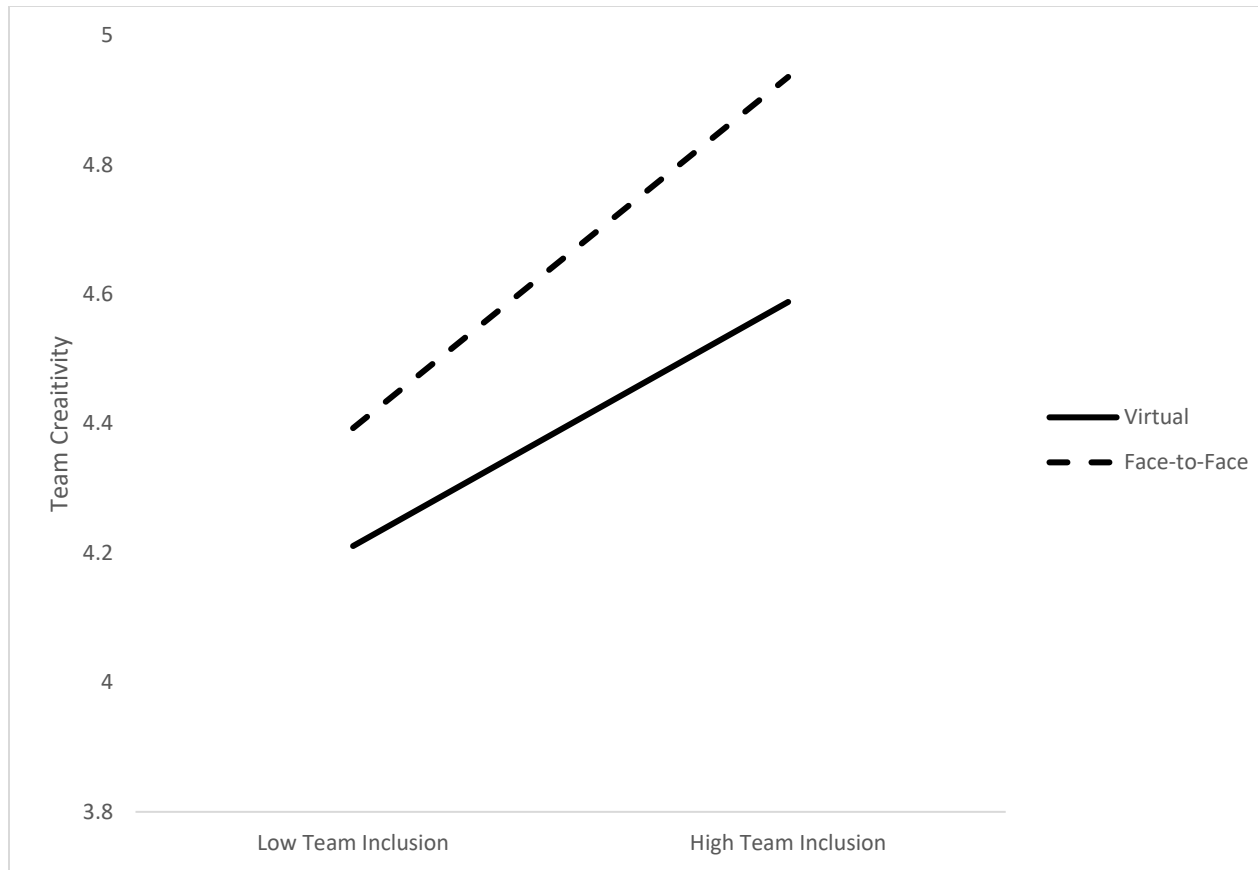


FIGURE 4: SLOPES FOR THE INTERACTION OF TEAM SETTING AND TEAM INCLUSION PREDICTING TEAM CREATIVITY.

TABLE 9**REGRESSIONS FOR TEAM SETTING AND TEAM INCLUSION AS PREDICTORS OF TEAM INNOVATION**

	Step 1				Step 2				Step 3			
Step	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²	<i>b</i>	<i>SE</i>	<i>t</i>	<i>R</i> ²
Step 1: Control Variables				0.19				0.50				0.51
Team Size	0.211	.043	4.855***		0.110	0.046	2.411*		0.108	.045	2.379*	
Step 2: Predictors												
Team Setting					-0.153	.081	-1.885		-0.137	0.081	-1.682	
Team Inclusion					0.647	0.088	7.387***		0.713	0.097	7.361***	
Step 3: Interaction												
Team Setting X Team Inclusion									-0.366	0.236	-1.550	

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed). $N = 100$. b = Unstandardized regression coefficient. SE = Standard Error. Team Setting X Team Inclusion = Interaction between team setting and team inclusion. Team Setting and Team Inclusion were mean-centered in step 2 before creating the product variable in step 3.

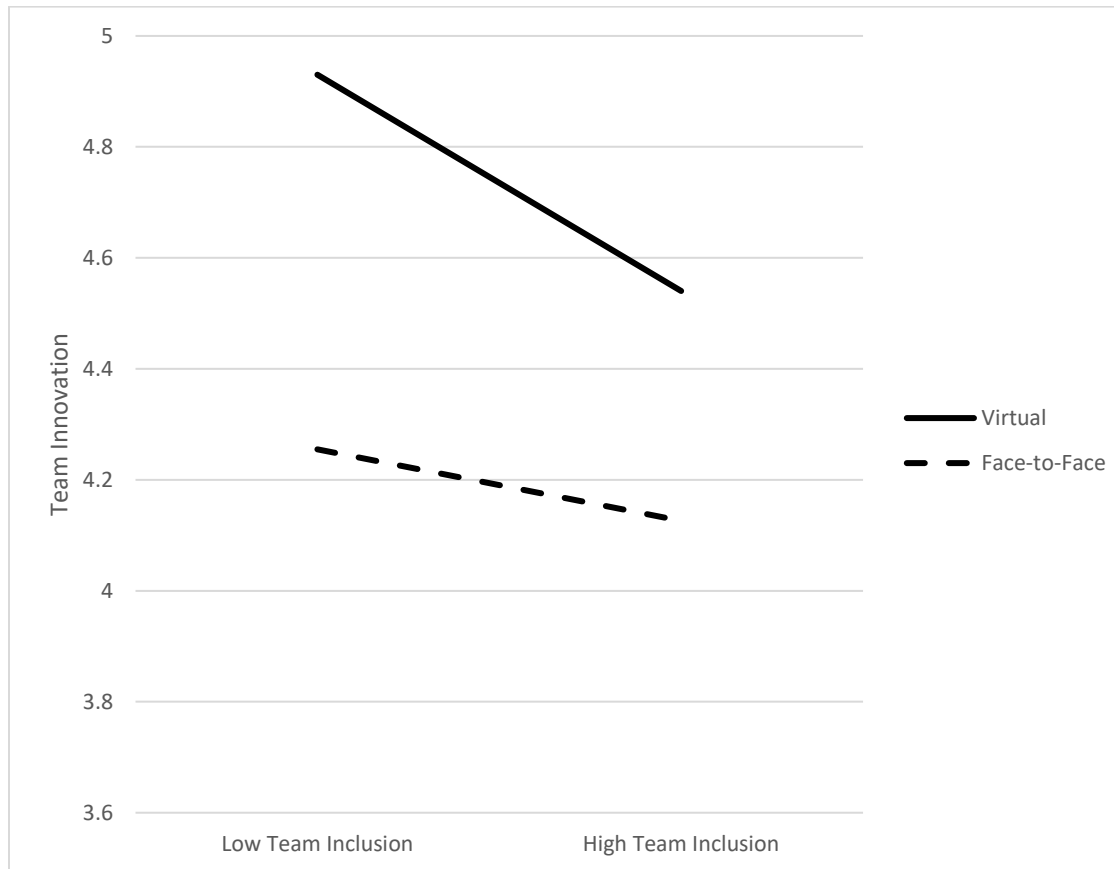


FIGURE 5: SLOPES FOR THE INTERACTION OF TEAM SETTING AND TEAM INCLUSION AS PREDICTORS OF TEAM INNOVATION

4.5. Summary of Hypotheses Testing

Hypothesis	Supported?	Finding
Hypothesis 1a: High team gender identity diversity will be negatively related to psychological safety.	No	High team gender identity diversity was not related to psychological safety.
Hypothesis 1b: High team racial diversity will be negatively related to psychological safety.	No	High team racial diversity was not related to psychological safety.
Hypothesis 2a: High Team gender identity diversity will be negatively related to team creativity through psychological safety.	No	High team gender identity diversity was not related to team creativity through psychological safety.
Hypothesis 2b: Teams high in racial diversity will be negatively related to team creativity through psychological safety.	No	High team racial diversity was not related to team creativity through psychological safety.
Hypothesis 2c: High team gender identity diversity will be negatively related to team innovation through psychological safety.	No	High team gender identity diversity was not related to team innovation through psychological safety.
Hypothesis 2d: Teams high in racial diversity will be negatively related to team innovation through psychological safety.	No	High team racial diversity was not related to team innovation through psychological safety.
Hypothesis 3a: Team inclusive behaviors will moderate the indirect effect of high team gender identity diversity on team creativity through psychological safety, such that the indirect effect of team gender identity diversity on creativity via psychological safety will be positive when team inclusive behaviors are high.	No	Team inclusive behaviors did not moderate the indirect effect of high team gender identity diversity on team creativity through psychological safety.

Hypothesis 3b: Team inclusive behaviors will moderate the indirect effect of high team racial diversity on team creativity through psychological safety, such that the indirect effect of team racial diversity on creativity via psychological will be positive when team inclusive behaviors are high.	No	Team inclusive behaviors did not moderate the indirect effect of high team racial diversity on team creativity through psychological safety.
Hypothesis 3c: Team inclusive behaviors will moderate the indirect effect of high team gender identity diversity on innovation through psychological safety, such that the indirect effect of team gender identity diversity on innovation via psychological will be positive when team inclusive behaviors are high.	No	Team inclusive behaviors did not moderate the indirect effect of high team gender identity diversity on team innovation through psychological safety.
Hypothesis 3d: Team inclusive behaviors will moderate the indirect effect of high team racial diversity on innovation through psychological safety, such that the indirect effect of team racial diversity on creativity via psychological will be positive when team inclusive behaviors are high.	No	Team inclusive behaviors did not moderate the indirect effect of high team racial diversity on team innovation through psychological safety.
Hypothesis 4a: Team inclusive behaviors will moderate the relationship between high team racial diversity and psychological safety, such that teams high in racial diversity and in the inclusive behaviors condition will have higher levels of psychological safety than teams high in racial diversity that are in the control condition.	No	Team inclusive behaviors did not moderate the relationship between high team racial diversity and psychological safety, such that teams high in racial diversity and in the inclusive behaviors condition did not have higher levels of psychological safety than teams high in racial diversity that are in the control condition.
Hypothesis 4b: Team inclusive behaviors will moderate the relationship between high team gender identity diversity and psychological safety, such that teams high in gender identity diversity and in the inclusive behaviors condition will have higher levels of psychological safety than teams high in gender identity diversity that are in the control condition.	No	Team inclusive behaviors did not moderate the relationship between high team gender identity diversity and psychological safety, such that teams high in gender identity diversity and in the inclusive behaviors condition did not have higher levels of psychological safety than teams high in gender identity diversity that are in the control condition.

CHAPTER 5: DISCUSSION

5.1. Discussion

Previous studies suggest that increased surface-level team diversity may lead to decreased collaboration, direction, cohesion among team members, and decreased team innovation (Anderson & West, 1998; de Jong & den Hartog et al., 2010; Dreu & West, 2001). These inconsistent findings offered limited direction to researchers and practitioners to strengthen the relationship between surface-level diversity, creativity, and team innovation. This study examined if team psychological safety and team inclusive behaviors were the missing links to understanding if surface-level diverse teams could be creative and innovative. However, this study failed to find evidence that team inclusive behaviors and team psychological safety mediated and moderated the indirect effects of team creativity and team innovation. Nonetheless, this study found evidence that team inclusive behaviors are a statistically significant predictor of psychological safety in teams high in gender identity and racial and gender identity diversity. If teams want to emphasize higher levels of psychological safety, they must increase team inclusive behaviors. These results indicate that team inclusive behaviors will increase psychological safety in teams high in racial and gender identity diversity, possibly leading to better team conditions and positive outcomes.

5.2. Implications for Theory and Practice

Even though no direct or indirect effects were found, this study still has several implications for theory and practice. First, this research has implications for researchers seeking to understand better the role of team surface-level diversity on team creativity and innovation. This research finds that team inclusive behaviors and team psychological safety positively affect

team creativity and team innovation, respectively. For surface-level diverse teams to experience higher levels of creativity and innovation, they must function in an inclusive team environment that practices psychological safety.

Anderson and West (1998) suggested that team climate is a critical factor that enables teams to be more creative and innovative. Further, previous research supports the notion that team climate—specifically team psychological safety climate—is an antecedent of team creativity and innovation (Hu et al., 2018). Nembhard and Edmondson (2006) found that teams high in surface-level diversity suffer from social integration issues and likely lack team psychological safety. Research on inclusive behaviors, such as words or deeds displayed by members who invite and appreciate others' contributions, can help facilitate psychological safety in teams (Nembhard & Edmondson, 2006). However, it remained an intriguing possibility that team members' inclusive behaviors could foster team psychological safety, team creativity, and team innovation within teams high in surface-level diversity. This research found evidence that a team climate that promotes a culture of inclusivity may facilitate higher levels of team psychological safety, creativity, and innovation.

This study addresses the scholarly debate regarding the necessary conditions for surface-level diverse teams to achieve higher levels of creativity and innovation (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Horwitz & Horwitz, 2007). First, findings from this study suggest that surface-level diverse teams should operate in psychologically safe environments to achieve higher levels of creativity and innovation. These findings also demonstrate that psychological safety is a statistically significant predictor of team creativity and innovation in teams high in surface-level (i.e., high racial and high gender identity) diversity. Indicating that surface-level diverse teams who want to attain higher levels of creativity and innovation should operate in

environments that promote psychological safety. Next, this study's findings demonstrate that team inclusive behaviors are a significant predictor of team psychological safety. Combined, these findings show that surface-level diverse teams should operate in environments that practice team inclusive behaviors because this will build psychological safety for team members to bring novel (i.e., creative) and different (i.e., innovative) ideas to the team.

Implications from this study may extend to the field of higher education. Universities routinely leverage teams to define the roles and responsibilities of the university, create efficiencies and performance, raise funds, and numerous other critical functions for a college or university. However, suppose these teams lack the proper team structure. In that case, they may not make recommendations in the university's best interest. This study posed participants with a scenario where they were charged with creating ideas to improve a university. Results from this study may offer administrators at colleges and universities insights into forming better teams.

Providing a psychologically safe environment that allows team members to speak freely means that some ideas will be risky (Edmondson & Lei, 2014; Edmondson, 1999). However, this type of environment may spark higher levels of creativity and innovation within the team. Therefore, these findings indicate that surface-level diverse teams need to create an environment where everyone understands and adheres to the same values and rules (e.g., team charter) about listening, sharing, and mutual respect. If this can occur, team members may understand and accept that risk is inevitable and okay. Thus, freeing people up to offer ideas and make them happen. These findings demonstrate that by placing these measures into place early in team formation, surface-level diverse teams may be able to proceed with confidence and mitigate potential failures before they happen.

5.3. Implications for Virtual Teams

Initially, this study was developed to be administered in a face-to-face format, but in the middle of data collection, the Coronavirus (COVID-19) virus infected millions of people in the United States and abroad. Therefore, data collection for this study was moved online to accommodate all federal, local, and state guidelines. However, virtual teams added a timely and relevant element to this study. As aforementioned, results from the exploratory analyses demonstrate a significant interaction between team setting and team inclusive behaviors ($b = .432$, $SE = .166$, $t = 2.596$, $p = .01$) when predicting team psychological safety. Further, the findings suggest that virtual teams exhibited higher levels of team psychological safety in both conditions (i.e., high team inclusion and low team inclusion) than teams who were face-to-face. Research conducted during the COVID-19 pandemic indicates that employees who work from home are more productive and engaged than when in the office.

In addition, to increased productivity and engagement, many organizations have realized a boost to their bottom line due to the reduction of leased office space during the COVID-19 pandemic. Therefore, this has created the condition where many organizations that shifted to telework during the pandemic are likely to permanently embrace this work method in the future (Phillips, 2020). For example, the tech giant, Twitter, announced that it would allow employees to work from home “forever” if they wish to, even after the COVID-19 pandemic has ended (Katsabian, 2020). Similar decisions were announced by ViacomCBS, and Cerner, which declared that their employees would telecommute until the beginning of 2021 at least (Phillips, 2020). Seemingly overnight, millions of U.S. office workers transitioned to working at their homes (i.e., teleworking) due to COVID-19 (Katsabian, 2020). In practice, telework allows employees to work at an alternative worksite (e.g., home) during regular business hours (e.g., 8

am-5 pm). From an employer's perspective, teleworking reduces overhead expenses (i.e., office space, utilities, etc.), decreases travel-related problems (i.e., bad weather, traffic, etc.), and creates a broader base of applicants for recruiting.

Teleworking presents several advantages to employees, such as flexible schedules, reduced traveling to an office, and fewer work-related travel costs (i.e., parking, gas, etc.). However, several suggestions regarding the potentially disruptive medium and long-term impacts of the COVID-19 pandemic on team cohesion (Katsabian, 2020). Teleworking may negatively affect team creativity, team innovation, and decrease the positive social aspects of working in an office setting. This study demonstrated that virtual and face-to-face teams can establish trust (e.g., psychological safety), enabling them to be creative and innovative.

This study demonstrated that team charters are integral for organizations to foster desirable outcomes (i.e., better team dynamics). Team charters are essential to outline the basic operating principles and procedures that govern a team (Nembhard & Edmondson, 2006). Essentially, team charters outline communication protocols (i.e., videoconferencing, meetings) and decision-making mechanisms. However, this study took it a step further and leveraged team charters to promote team inclusion and allow self-managing teams to develop and create their own rules. This study provides a roadmap for organizations to leverage team charters as a mechanism to develop better and more effective in-person and virtual teams. Developing and reinforcing team charters is integral in the early team formation stage.

5.4. Limitations

Although the researcher failed to find statistical support for the model, there is a possibility teams were not completing the correct tasks. Below the researcher will provide additional limitations that may have limited support for the hypothesized model. First,

approximately one-third (34) of the teams in this study was composed of undergraduate students enrolled in introductory leadership development courses, which may decrease the external validity of the study's findings to more traditional settings and work teams. However, the majority (66) of teams in this study were composed of working adults from Prolific Co. employed in various industries, have different academic backgrounds, and possess distinct surface-level (i.e., race, gender identity, etc.) characteristics. Further research should be conducted to replicate or expand upon findings with workers from a single organization (i.e., workplace).

Second, only 15% (n=15) of the teams were evenly balanced in terms of gender identity composition (50% male and 50% female) and 70% of teams were mostly female. This may have affected the amount of gender identity diversity in this study and lessened the effects of the manipulation. Further research should seek to replicate this study with more balanced teams in terms of gender identity.

Third, though it may be appropriate to study teams in these types of settings (i.e., classrooms, virtual meeting rooms), there are still limitations to studying such occurrences within these settings. One limitation is the relatively short nature of the team meetings. Team meetings lasted forty-five (45) minutes and may not have allowed team members adequate time to practice team inclusive behaviors. In Tuckman's (1965) seminal work on team development, the author finds it often takes 4-6 months before a group begins to function as a high-performing team. Tuckman (1965) details that in the first phase of team development, 'forming', most people are generally agreeable and polite and do not try to "rock the boat". However, in the second phase of team development, 'storming' can change, and personality clashes may occur as expectations

rise. Future research should examine the effects of team inclusive behaviors in a longitudinal setting to allow sufficient time for team creativity and team innovation to foster.

5.5. Future Directions

Based on this study's findings, there are several opportunities for future research to build upon these findings. First, while this research assessed a universal measure of team creativity and team innovation, other researchers have examined specific types of creativity (e.g., perceptual or artistic) and innovation (e.g., disruptive or radical). Specifically, previous research has found that informal thought about the nature of mental operations is essential to creative and innovative human behavior. This suggests that perceptual processes are of considerable importance and should be examined in detail. For example, Shepard (1981) documented self-reports from several creative scientists and authors that emphasizes the role of graphic imagery and the influence of graphic codes in the creative process. Future research should explore how the effects of team inclusive behaviors on specific forms of creativity and innovation could be applied.

Second, future studies should consider the effects of other factors that may affect team creativity and innovation, such as conflict (i.e., relationship and task conflict) within teams. Inconsistent findings from previous research indicate that relationship conflict negatively affects team creativity (Lee, Avagar, Park, & Choi, 2019). In contrast, task conflict has a curvilinear relationship with team creativity. Indicating that conflict (i.e., group dissent) is necessary for more creative and innovative solutions. Future research should examine the moderating effect of team inclusive behaviors and the mediating effect of psychological safety on task and relationship conflict to determine if these processes will have an impact.

Third, further research should also consider different measures of diversity (i.e., sexual orientation, experiential, age, etc.) and how the intersection of these experiences affects people's

views of the world. These dimensions are components of “otherness” and do not quite fitting in with distinct social categories. Just as people from different racial and ethnic groups may perceive social interactions differently, people from different social categories may view the world differently. However, the researcher does not simply imply that if a person has a different sexual orientation or different life experiences, they will be more creative or innovative. The researcher is only stating other experience allows them to observe certain circumstances differently and should appreciate it.

Finally, additional research should focus on the Future of Work (FoW) and how virtual teams who are geographically dispersed will develop team norms that promote team inclusive behaviors and practice psychological safety. The COVID-19 pandemic accelerated existing trends in remote work. Before COVID-19, the most prominent disruptions to work involved new technologies and growing trade links. Nonetheless, COVID-19 has, raised the importance of the physical aspect of work and the concept of being with colleagues in one space. Perhaps the most apparent impact of COVID-19 on the labor force is the dramatic increase in employees working from home (Katsabian, 2020). Some companies are already planning to shift to flexible workspaces after positive experiences with remote work during the pandemic, which will reduce the organization’s overall footprint (i.e., office space) that they need and bring fewer workers into offices each day (Katsabian, 2020). Additionally, telework has reduced business travel as videoconferencing (e.g., Zoom, Microsoft Teams, etc.) during the pandemic has created a new acceptance of virtual meetings and other aspects of virtual work that previously did not exist. Future research should examine how telework will affect team climate dispersed teams.

5.6. Conclusion

Due to increased globalization, aggressive market competition, the COVID-19 global pandemic, and changing customer demands, the global workforce has become more diverse. This has created conditions where organizations must assemble teams with diverse knowledge, skills, and abilities to remain competitive in this ever-changing environment. However, creativity and innovation are resource-intensive processes where teams must constantly create and capitalize on diverse skills, perspectives, and capabilities. Given this growing dependence on team-based creativity and innovation, composing teams for optimal performance and managing various teams have become of utmost importance for organizations.

This study considered the distribution of member attributes as inputs leading to processes that affect team outcomes. However, this study departed from most research in this area by studying the moderating effect of team inclusive behaviors and the mediating effect of psychological safety on surface-level diversity and innovation in teams. This study found to support that psychological safety mediated the impact of team racial and team gender identity diversity on team creativity and team innovation. Although this study failed to find support, team inclusive behaviors moderated the indirect effects of team racial and team gender identity diversity on team creativity and team innovation. These findings demonstrate that surface-level diverse teams can achieve higher levels of creativity and innovation if provided the proper team climate to operate.

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Appendix A: Background Questionnaire

Background Questionnaire

Participant ID: _____

Please answer the following questions about yourself:

1. What is your age? _____
2. What is your gender identity? Male _____ Female _____
3. What is your classification?
 - a. Freshman: _____
 - b. Sophomore: _____
 - c. Junior: _____
 - d. Senior: _____
 - e. Graduate Student (i.e., MBA): _____
4. What is your major? _____
5. What is your race or origin?

Mark one

- a. White (i.e., German, Irish, Lebanese, etc.) _____
 - b. Black, or African American (i.e., African American, Haitian, Nigerian, etc.) _____
 - c. Hispanic, Latino, or Spanish Origin (i.e., Mexican, Puerto Rican, etc.) _____
 - d. American Indian or Alaska Native (i.e., Navajo, Mayan, etc.) _____
 - e. Asian (i.e., Asian Indian, Chinese, Filipino, Japanese, etc.) _____
 - f. Native Hawaiian or Other Pacific Islander (i.e., Guamanian, Samoan, etc.) _____
 - g. Other _____
6. Are you apart of any Student Organizations at LSU? _____
 - a. If so, which one(s)? _____
 7. Are you a member of a fraternity or sorority at LSU? _____
 - a. If so, which one(s)? _____

Appendix B: Team Psychological Safety Scale

Participant ID: _____

Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. If you make a mistake on this team, it was held against you.	1	2	3	4	5
2. Members of this team were able to discuss problems and difficult issues.	1	2	3	4	5
3. People on this team rejected others for being different.	1	2	3	4	5
4. It is safe to take a risk on this team.	1	2	3	4	5
5. It was difficult to ask other members of this team for assistance.	1	2	3	4	5
6. No one on this team would deliberately act in a way that undermines my efforts.	1	2	3	4	5
7. Working with members of this team, my unique skills and talents were utilized.	1	2	3	4	5

Appendix C: Team Inclusive Behaviors Scale

Participant ID: _____

Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Members in this team took the initiative to complete assignments.	1	2	3	4	5
2. Members of this team asked for my input when completing assignments.	1	2	3	4	5
3. Team members do not value the opinion of others equally.	1	2	3	4	5

Appendix D: Manipulation for Experimental Condition

Team Charter

Goals: This team charter will simplify the team's direction, while establishing boundaries. Team Charters serve as a resource for team members to illustrate the focus and direction of the team. All team members should play an active role in creating the team charter.

The following questions will guide your discussion:

- How will team members invite the participation of all members in the decision-making process?
- What kind of participation and level of commitment do you expect from one another?
- How will team members hold each other accountable for living by these rules and for task completion?

Signees

Have each member initial and date the charter to signify that the contents are agreed upon by the whole team.

Appendix E: Script for Experimental Condition

Organizations are increasingly relying on diverse teams which combine the collective capabilities of women and men, people of different cultural heritage, and younger and older members. However, simply throwing a mix of people together doesn't guarantee high performance; it requires team inclusion. Team inclusion is defined as the achievement of a work environment in which all individuals are treated fairly and respectfully, have equal access to opportunities and resources, and can contribute fully to the team's success.

Inclusiveness isn't just nice to have on teams, but research demonstrates that team inclusion directly enhances performance. Teams that are inclusive are 17% more likely to report that they are high performing, 20% more likely to say they make high-quality decisions, and 29% more likely to report behaving collaboratively. To be more inclusive your team should show humility by listening to others and giving team members their credit when due. Inclusive teams should also be aware of any unconscious bias, that may exist in their team. Unconscious biases are learned negative stereotypes or prejudices in favor or against another person, or group of people (i.e., race, religion, gender identity, sexual orientation, weight, etc.). Unconscious biases are automatic, unintentional, and often mismatched with a person's actual values.

Here are some tips to help you be helpful on your tasks:

- Sharing personal weakness: A team member should openly share information that he/or she is not aware of. This may put others at ease, enabling them to speak out and voice their opinions and insights. Thus, enabling the team to be higher performing. If a team member is not speaking invite them to share.
- Acknowledging team members as individuals: Team members should address each member by name, understands each member's workstream, and offer support when possible.

Some real examples of actions that may not foster team inclusive behaviors are:

- Not inviting others into the conversation: If someone is not speaking, invite their input into the conversation. When asking someone to talk, your tone of voice must reflect that your intention is not be inviting, not commanding. You are not putting them on the spot but inviting them into the conversation because you want to hear what they have to say.
- Overpowering others: Members who are very direct and overbearing limit those who contribute to meetings or participate in conversations. For example, if someone has not contributed to the team, invite their input into the conversation

Before you begin your task, you will first be asked to take ten (10) minutes as a team to complete the team charter. Team Charters serve as a resource for team members to illustrate the focus and direction of the team.

Appendix F: Task Instructions for Experimental Condition

Directions:

The problem you will be working on today is called the “University Institutional Improvement Project.” I want you to imagine that you have been appointed to a task force whose goal is to produce new ideas to improve the university. Any statements and suggestions you have about how to improve the university are appropriate.

Your group will be assigned three (3) general topics directly related to the “University Institutional Improvement Project.” Please generate as many ideas as you can on the given topics, but feel free to express any other ideas about improving the university that may occur to you.

You will have thirty (30) minutes to work on the problem.

Appendix G: Script for Control Condition

Welcome to the experiment; the researcher sincerely appreciates your time and attention. This experiment will allow you to work on a task as a team. Combining the right people with the right combination of skills and training and giving companies can accomplish big things.

Over the past couple of decades, a cult has grown up around teams. The belief that working in teams makes us more productive is so widespread that leaders are quick to assume that teams are the best way to get the job done when faced with a challenging new task. Too often, organizations focus merely on the functional role and hope that good team performance somehow follows. Therefore, even the most expensive professional sports teams often fail to perform according to the individual talents of each player.

Once this video is complete, I encourage each of you to take 5-10 minutes, quietly read the directions, and meet with your team members before the experiment begins.

Appendix H: Task Instructions for Control Condition

Directions:

The problem you will be working on today is called the “University Institutional Improvement Project.” I want you to imagine that you have been appointed to a task force whose goal is to produce new ideas to improve the university. Any statements and suggestions you have about how to improve the university are appropriate.

Your group will be assigned three (3) general topics directly related to the “University Institutional Improvement Project.” Please generate as many ideas as you can on the given topics, but feel free to express any other ideas about improving the university that may occur to you.

You will have 30 minutes to work on the problem.

Appendix I: University Institutional Improvement Project Worksheet

University Institutional Improvement Project Worksheet

Team ID: _____

Directions:

- Develop as many ideas as possible to improve the university in the areas listed below.
- Please number each idea and write as clearly as possible.
- Your team will only turn in one (1) Institutional Improvement Project Worksheet.

Topic	Definition of Topic	Ideas
Campus Life	<ul style="list-style-type: none">• Campus life is the overall aspect of you being a student; meaning that it goes beyond what you learn in the classroom.• How can the campus life at your university be improved?	

Dining & Food Options	<ul style="list-style-type: none">• The average college or university charges \$4,500.00 per year for a meal plan, with many schools charging much more.• What ideas or suggestions do you have for your college to improve their food or dining options?	
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<p>Campus Safety</p>	<ul style="list-style-type: none">• Campus security and safety is an essential feature of any college or university.• What ideas or suggestions do you have for your college to improve campus safety?	
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Appendix J: Team Innovation Scale

Participant ID: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Team members implemented new ideas to improve the quality of our team's suggestions.	1	2	3	4	5
2. This team gave little consideration to new and alternative methods and procedures for completing our work.	1	2	3	4	5
3. Team members often produced new services, methods, or procedures.	1	2	3	4	5
4. This is an innovative team.	1	2	3	4	5

Appendix K: Team Creativity Reported by Team Leaders Scale

Participant ID: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. This team came up with new ideas to solve problems.	1	2	3	4	5
2. This team quickly developed new ideas to improve the university.	1	2	3	4	5
3. This team generated creative solutions, even when faced with confrontations	1	2	3	4	5

Appendix L: Psychological Safety Coding Sheet

Psychological Safety Coding Sheet

Team Number: _____

Coder Initials: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Mistakes were held against members of this team.	1	2	3	4	5
2. Members of this team were able to discuss problems and difficult issues.	1	2	3	4	5
3. People on this team rejected others for being different.	1	2	3	4	5
4. It is safe to take a risk on this team.	1	2	3	4	5
5. It was difficult to ask other members of this team for assistance.	1	2	3	4	5
6. No one on this team would deliberately act in a way that undermines my efforts.	1	2	3	4	5
7. Working with members of this team, my unique skills and talents were utilized.	1	2	3	4	5

Appendix M: Team Inclusion Coding Sheet

Team Inclusion Coding Sheet

Team Number: _____

Coder Initials: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Members in this team took the initiative to complete assignments.	1	2	3	4	5
2. Members of this team asked for each other's input when completing assignments.	1	2	3	4	5
3. Team members do not value the opinion of others equally.	1	2	3	4	5

Appendix N: Team Innovation Coding Sheet

Team Innovation Coding Sheet

Team Number: _____

Coder Initials: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. Team members implemented new ideas to improve the quality of our team's suggestions.	1	2	3	4	5
2. This team gave little consideration to new and alternative methods and procedures for completing their work.	1	2	3	4	5
3. Team members often produced new services, methods, or procedures.	1	2	3	4	5
4. This is an innovative team.	1	2	3	4	5

Appendix O: Team Creativity Reported by Team Leaders Scale Coding Sheet

Team Creativity Reported by Team Leaders Scale Coding Sheet

Team Number: _____

Coder Initials: _____

Directions: Please indicate on a scale from 1-5 your level of agreement or disagreement with the following statements.

1	2	3	4	5
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

1. This team came up with new ideas to solve problems.	1	2	3	4	5
2. This team quickly developed new ideas to improve the university.	1	2	3	4	5
3. This team generated creative solutions, even when faced with confrontations	1	2	3	4	5