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## Emotional intelligence, psychological safety, and team decision making

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# Emotional intelligence, psychological safety, and team decision making

Emotional  
intelligence

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## Abstract

**Purpose** – As teamwork becomes more prevalent in organizational decision-making, the influence of emotional intelligence (EI) on team decision-making process demands more research attention. This study aims to investigate the impact of EI on team psychological safety and decision-making performance.

**Design/methodology/approach** – Team decision-making performance and decision quality from a team decision task were obtained from 54 decision-making teams composed of 241 undergraduate business students from a Mid-Atlantic university. Regression analyses were used to test individual and team's EI relationship with team decision performance and the mediation effect of psychological safety.

**Findings** – This study provides empirical evidence that individual EI is positively related to individual influence on team decisions. Team-level EI improves team decision-making performance through increases in psychological safety.

**Research limitations/implications** – The sample size is relatively small, and the participants were business students; therefore, the research results may lack generalizability. Future research is encouraged to explore this topic further.

**Practical implications** – As teamwork becomes more prevalent in organizational decision-making, the influence of EI on team decision-making process demands more research and managerial attention. The findings of this paper provide insights on the importance of individual/team EI and psychological safety in team decision performance.

**Originality/value** – This study furthers research showing that emotions are pertinent to social interactions, including group decision-making, and therefore suggests the desirability of investigating other social processes affecting group decision-making.

**Keywords** Emotional intelligence, Psychological safety, Team decision-making

**Paper type** Research paper

## 1. Introduction

Rational individual decision-making has both a cognitive and an emotional component. On the one hand, decision-making has long been categorized as a basic cognitive process of human behavior through which a preferred course of action is chosen amongst a set of alternatives based on certain criteria (Wang and Ruhe, 2007). On the other hand, Nobel Laureate Herbert Simon (1967, 1983) emphasized the important role of emotions in his decision theory concept of bounded rationality. Since then, the relevance of emotions to decision-making has been recognized in several academic disciplines, including philosophy (Solomon, 1993), economics (Rick and Loewenstein, 2008) and neuroscience (Phelps *et al.*, 2000). Research is increasingly showing that emotion is becoming more intimately related to cognitive processes and is critical to rational decision-making (Damasio, 1994). For example,



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positive emotions can enhance problem-solving skills (Isen, 2000). Rational decision-making requires individuals to have the ability to experience emotions effectively because emotions provide vital information for our interpretations of the world around us, including through the application of memory (Dane and Pratt, 2007). The ability to effectively experience emotions within and outside workplaces is captured by the concept of emotional intelligence (EI), which is defined as being aware of the emotions of self and others, having behavioral control over one's own emotions and being strategic in reacting to others' emotions (Goleman, 1995). Empirical studies have shown a considerable influence of EI on outcomes in organizations, such as leadership effectiveness, teamwork, relationship development, academic performance and pro-social behaviors (Côté, 2014).

Although the number of studies on the impact of emotions on decision-making is accumulating, research on group-level emotional processes is surprisingly scant, given that so many organizational decisions are made in teams (Lerner *et al.*, 2015; Johnson and Hollenbeck, 2007) and the possibility of emotional contagion (Tee, 2015). Existing research on team decision-making has emphasized the cognitive aspects of decision-making, such as identifying and ranking decision objectives, searching for information, generating alternatives and analyzing decision consequences (Jackson *et al.*, 1995). Research with this perspective has focused on the degree to which cognitively processed information and ideas are shared, with outcomes occurring at both individual and team levels (Hinsz *et al.*, 1997). Although information sharing is important to team decision-making, Stasser and Titus (1985) found that teams often do not take advantage of members' unique expertise, thus not fully using each team member's potential to contribute to team performance. In view of the importance of emotional expression to social interaction, a cause for teams not leveraging members' potential contributions may be inadequate EI. Specifically, limitations in some members' EI may generate behavior that inhibits others' participation. Although studies show that EI improves interpersonal relationships and individual work outcomes (Goleman, 1998; Mayer *et al.*, 2000; Brief and Weiss, 2002), limited research has examined EI as a team characteristic with possible consequences for team decision-making, and the existing findings are not conclusive. Although the research on emotions within teams has advanced (Ackermann *et al.*, 2016; Druckman and Olekalns, 2008; Eden, 1992; Fisher and Ellis, 1980; Ghuman, 2011; Koman and Wolff, 2008; Peterson, 2012) and group-level EI has been explored in workgroups in the public sector (Ghuman, 2016), additional theoretical and applied studies are needed to further understand the emotional dynamics of team decision-making. Building on the existing literature on group synergy (Curşeu *et al.*, 2013; Larson, 2010; Meslec and Curşeu, 2013; Melec *et al.*, 2014), this study addresses these needs at both the individual level and the team level, by assessing participants' individual-level decision-making quality, team-level average decision-making quality and team decision-making performance, in a classroom setting with a decision task that is highly relevant to participants' learning experience.

At the individual level, further research is needed on why individual team members have different degrees of influence on team decisions. Thus, a goal of this study is to examine the relationship between individual EI and individual influence on decision-making teams. At the team level, one possible explanation for the inconclusive research results on the relationship between EI and team decision-making lies in the failure to identify the variables mediating the link. More studies need to focus on the process through which EI impacts team decision-making.

A likely process would involve an intervening emergent state of psychological safety, defined as a shared belief by members of a team that the team is safe for interpersonal risk-taking (Edmondson, 1999). For teams to function successfully, team members must readily

participate in sharing information, accepting responsibility and soliciting guidance, which partially depend on the degree of felt psychological safety within the team environment (Edmondson, 1999). Although the importance of psychological safety for social interaction has been noted (Edmondson, 1999; Nembhard and Edmondson, 2006), its antecedents have garnered limited empirical interest (Harper and White, 2013). Teams may develop an emergent state consisting of members' collective attributes and team norms that define a level of psychological comfort, and thus research should examine whether team members' abilities to recognize and regulate their own and others' emotions influence this state. That is, a team's emergent state of psychological safety may be derived to some extent from team members' EI. Research on this process can improve our understanding of team decision-making. Therefore, the second goal of this study is to explore the association between team EI and team decision-making performance – the current study explores the possible mediating effect of psychological safety on the relationship between team EI and team decision-making performance.

## 2. Theory and hypotheses

EI is a set of psychological and social sensibilities and skills that provides a framework to understand and experience emotions more adaptively (Mayer *et al.*, 1990). Unlike cognitive intelligence, which revolves around the ability to understand, learn and manipulate symbols and abstract ideas (Lang *et al.*, 2010), EI focuses on the ability to understand the self and others. EI specifically refers to an individual's ability to understand and regulate his or her own emotional responses whereas at the same time sensing and reacting to others' emotional behavior (Mayer and Salovey, 1997; Pellitteri, 2002). In the context of the workplace, EI consists of affective tendencies that enable people to use emotional information advantageously to achieve desired work outcomes (Mehart, 1998). Research on task-performing group synergy has identified differentiated levels of group synergy where weak synergy leads to group performance above a team member's individual performance, whereas strong synergy refers to group performance that is better than even the best individual member's solo performance (Larson, 2010). It is possible that members' EI interacts with group processes that contribute to different levels of group synergy, which sheds light on achieving effective teamwork and obtaining not only weak but even strong synergy. Some studies have suggested that EI is a primary predictor of individual job performance (Boyatzis, 2008), and Goleman (1995) claimed that cognitive intelligence contributes less to life success than EI does. EI can be further described as an array of competencies that enhance one's ability to effectively communicate ideas and intentions (Goleman, 1995, 1998). Thus, EI may affect team decision-making at both individual and team levels. At the individual level, a team member's EI may affect how much influence he/she exercises, whereas at the team level, EI can affect the amount and diversity of information surfaced.

### 2.1 Individual emotional intelligence and decision-making in teams

Decision-making teams are frequently used in workplaces (Wong *et al.*, 2011), which implies that many social influence attempts occur among team members. These influence attempts may be characterized as informational and/or normative (Deutsch and Gerard, 1955; Kaplan, 1989). Informational influence refers to efforts to persuade team members through informed argument, and normative influence emphasizes social cohesiveness (Kaplan, 1989). Although research has demonstrated the importance of individual attributes for team performance (Bell, 2007), the specific attributes leading to incremental influence on team

decision-making processes remain elusive. Which dispositional attributes make some individuals more influential than others in the team decision-making context?

One possible answer to this question is EI. According to [Goleman \(2001\)](#), EI encompasses self-awareness, self-management, social awareness and social skills. Self-aware individuals have an understanding of their own emotions and needs and are able to incorporate that knowledge behaviorally. Self-regulation refers to the ability to control one's behavior rather than reacting impulsively. Social awareness consists of sensitive insight into interpersonal processes, and social skill essentially involves demonstrating intentional friendliness. These components of EI can potentially enhance observation and interpretation of social interaction on decision-making teams and thus foster strategic influence attempts. In addition, the components of EI resemble the social skills needed for teamwork, such that with high EI, individuals can discover team members' strengths and weaknesses ([Bar-On, 1997](#)) and leverage those insights for informational and normative influence. Therefore, at the individual level, we propose that team members with higher levels of EI are more likely to have more influence on team decision-making.

*H1. A team member's EI is positively related to his/her influence on team decision-making.*

### *2.2 Team emotional intelligence and decision-making*

Because teamwork is inherently a social activity, emotions can play an important role in team performance. [Feyerherm and Rice \(2002\)](#) found a positive correlation between a team leader's ability to understand emotion and team performance on a customer service metric. Regarding EI specifically, team EI can influence how a team responds to stimuli that elicit emotion ([Druskat and Kayes, 1999](#)), and one study found that teams with higher levels of EI performed better than teams with lower levels of EI ([Jordan and Troth, 2004](#)). In [Luca and Tarricone's \(2001\)](#) study, EI was found to strongly correspond to team harmony and success, and a lack of EI was a primary cause for failures in teams. [Günsel and Açıköz \(2013\)](#) found that team EI was an important factor affecting software project teams' performance in terms of the speed to market and functionality of the new software products.

Team-level EI has been conceived differently by researchers. [Druskat and Wolff \(2001\)](#) define team EI as the normative climate that shapes members' interpretations of and responses to emotional issues. This perspective sees team-level EI as an emergent state of the team that, if positive, facilitates harmonious intrateam processes. Another conceptualization views team EI as a pool of resources team members bring to their teams that can leverage teamwork ([Elfenbein, 2006](#)). This study examines the role of team EI as a compositional input for team functioning that accounts for a subsequent team emergent state that can affect performance. This aligns with the idea that EI is a dispositional attribute that individuals can collectively provide as a resource to teams for task accomplishment, including decision-making ([Chang et al., 2012](#); [Jordan and Troth, 2004](#); [Quoidbach and Hansenne, 2009](#); [Troth et al., 2012](#)). Decision-making teams undertake sequential, cumulative processing of information and analysis of decision alternatives through complex social interaction. How individuals' traits interact during this complex decision-making social interaction depends in part on tasks ([Barrick et al., 1998](#); [Steiner, 1972](#)), personalities ([Cogliser et al., 2007](#)) and leadership ([Srivastava et al., 2006](#)). Each of these sources can generate complex problems, and EI can help resolve these problems.

Team EI has the potential to improve team decision-making in several ways. Effective regulation of emotional expression may encourage more diverse participation in decision deliberations, and EI could result in increased support for implementation of decisions. In

addition, EI can serve as a resource for conflict prevention and resolution. Team decision-making processes involve moving from a diverse set of individual positions to some degree of agreement on a consensus choice (Kerr and Tindale, 2004), and this process of reconciling disagreement often requires conflict management. Team EI serves important social functions and can facilitate coordination of actions (Druckman and Olekalns, 2008). Teams with lower EI tend not to develop synergistic team cohesiveness, and members are more likely to feel excluded from decision-making processes (Luca and Tarricone, 2001). Therefore, we propose *H2*.

*H2.* Team EI is positively related to team decision-making performance.

### *2.3 The mediating role of psychological safety within the emotional intelligence – team decision-making relationship*

Effective team decision-making requires a supportive climate for social influence to occur (Steiner, 1972; Stasser and Davis, 1981; Kerr and Tindale, 2004). Seeking compliance, asserting and absorbing preferences and engaging in argumentation to influence others (Pavitt, 2014) carries potential risk. Information elaboration (van Knippenberg *et al.*, 2004) refers to the sequential process of exchanging information, analyzing information and communicating analytical results to a group for discussion. The informing, analyzing and persuading process of team decision-making can be experienced as psychologically risky.

Effective information sharing in teams demands a climate of psychological safety, which refers to individuals' perceptions of the consequences of taking interpersonal risks in their work environment (Edmondson, 1999; Edmondson *et al.*, 2004). When an individual feels psychologically safe in the workplace he or she can freely communicate without fear of negative consequences to status or career (Kahn, 1990). Psychological safety consists of confidence about how others will respond when an individual acts in a risky way. When people feel psychologically safe, they can disagree with peers or authority figures, ask naive questions, own up to mistakes or present a minority viewpoint (Garvin *et al.*, 2008). Research evidence suggests that psychological safety is positively related to team learning behaviors (Edmondson, 1999), experimenting with creative ideas (Gilson and Shalley, 2004) and firm performance (Baer and Frese, 2003). Therefore, a climate of psychological safety should positively affect team decision-making effectiveness (van Ginkel and van Knippenberg, 2008, 2009).

*H3.* Team psychological safety is positively related to team decision-making performance.

Although team EI can enhance team decision-making through interpersonal processes, these processes are likely affected by the extent to which team members perceive a climate of psychological safety that encourages the expression of varying information and views. Some empirical evidence suggests that EI can influence team-level psychological safety and that will in turn affect team learning (Ghosh *et al.*, 2012) and factors such as demographic characteristics and status differences of work groups can affect members' perception of psychological safety (Harper and White, 2013). The antecedents to team psychological safety remain largely unexamined by researchers. We propose that team EI will not only foster continuous quality information sharing and decision-making, but also partially determine if a facilitating climate of psychological safety develops. Low levels of team EI may result in an inability of the team to encourage participation, smooth implementation and cope with conflict, thus reducing feelings of psychological safety. Teams with lower EI



are less capable of perceiving and reacting to harmful emotions of team members and thus will be prone to lessen psychological safety (Harper and White, 2013). As such, the relationship between team EI and team decision-making is likely mediated by team psychological safety. Therefore, we propose that:

- H4. Team EI is positively related to team psychological safety.
- H5. Team psychological safety mediates the relationship between team EI and team decision-making performance.

Figure 1 displays the theoretical framework and hypotheses for this study.

3. Methods

3.1 Sample and procedure

A total of 241 undergraduate business students from a Mid-Atlantic university participated as subjects. In Week 1, students were randomly placed in teams consisting of five to seven students for each team depending on class size. Because students could drop the class during the first three weeks of the semester, finally 54 teams were included in this study with team size varying from three (11 teams), four (15 teams), five (21 teams), six (6 teams) or seven students (1 team). The teams were required to work together throughout the semester to complete in-class team activities and a final team project. In Weeks 2 and 3, students were asked to take a series of self-assessment surveys including a measurement of EI. In Week 8, student teams participated in the lost at sea survival task (Warwick, 1994). This in-class activity accompanies in-class lectures on team building, cooperation, leadership and team decision-making and facilitates in-class discussions on these topics. The task required teams to rank order for survival importance of 15 items available to them in a rubber life raft that they occupied in a remote region of the South Pacific Ocean as a result of abandoning their larger ocean-going vessel. First, students were asked to complete the ranking task individually within 20 min. After the individual ranking was completed, students were asked to deliberate with team members and complete a team ranking. Then students completed a survey on psychological safety.

3.2 Decision task and measures

The decision task was adapted from the lost at sea survival exercise (Warwick, 1994). The detailed description of the task is displayed in Appendix. Table I displays detailed information about the decision task and related measurement calculations. Column 1 in the

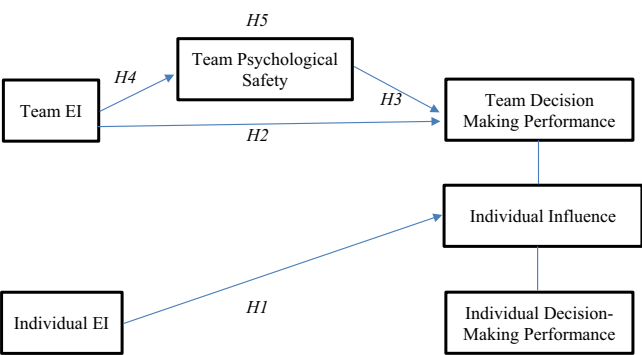


Figure 1.  
Theoretical  
Framework

Items	Expert ranking	Worst decision	Best decision	Student A's ranking	Student B's ranking	Student C's ranking	Team ranking
Shaving mirror	1	15	1	2	10	5	10
2 gallons of gas	2	14	2	1	9	6	9
5 gallons of water	3	13	3	4	15	10	14
1 case of rations	4	12	4	3	14	15	15
20 sq.ft. plastic tarp	5	11	5	6	6	14	1
2 boxes of chocolate	6	10	6	5	5	13	5
fishing Kit	7	9	7	10	4	1	4
15 ft. nylon rope	8	8	8	7	2	2	2
Floating cushion	9	7	9	8	1	3	6
Shark repellent	10	6	10	9	3	4	3
Proof rum	11	5	11	11	7	7	7
Transistor radio	12	4	12	15	8	8	8
Maps	13	3	13	14	13	9	13
Mosquito netting	14	2	14	13	12	11	12
Sextant	15	1	15	12	11	12	11
Decision quality (sum of all absolute differences between expert ranking and student ranking)		112	0	92	34	28	36
Team average decision-making quality					51		-15
Team decision-making performance							
Influence				36	100	66	

**Table I.**  
Decision task and  
measurement  
example and  
illustration



table displays the 15 items to be ranked in the decision-making task. Column 2 displays the expert ranking of the 15 items (Warwick, 1994), with “1” being the most important item and “15” being the least important item. Column 3 displays one hypothetical ranking (worst decision), which is reversed from the expert ranking. Column 4 displays the other hypothetical ranking (best decision), which is the same as the expert ranking. Columns 5, 6 and 7 display sample rankings by three students in one team. And the last column displays the item ranking by that team.

*3.2.1 Team decision-making quality.* The difference between student ranking and expert ranking indicates the quality of the decision. For example, the worst decision in Table I, Column 3 has the maximum difference from the expert ranking, whereas the best decision in Column 4 has no difference with the expert ranking. To capture this difference, we calculate the absolute value of the ranking difference on each of the 15 items, and then sum up all the absolute differences. Mathematically, the maximum absolute difference is 112 (worst decision), and minimum absolute difference is 0 (best decision). To make the interpretation of the score more intuitive, the score is then reversed such that the higher the score the better the quality of the decision. To summarize, the quality of the decision is indexed by a discrepancy score of the rankings by experts and subjects with the following formula:

$$\text{Decision Quality} = 112 - \sum_{n=1}^{15} |\text{Student's Ranking} - \text{Expert Ranking}|$$

Using this index, three decision quality scores were calculated, including:

- individual decision-making quality (the discrepancy score between individual rankings and expert rankings);
- team average decision-making quality (the mean score of all individual decision-making quality scores within a team); and
- team decision-making quality (the discrepancy score between team rankings and experts rankings).

For example, in Table I, student A’s decision quality is 92, indicating a better decision than student B (34) and student C (28). And the decision quality of this team is 36, which is worse than student A’s decision in the team. The team average decision-making quality is 51, the average of three students’ quality scores (92, 34 and 28).

*3.2.2 Team decision-making performance.* It is important to differentiate team decision-making performance from team decision-making quality. Team decision-making quality captures how good the team’s decision is in comparison with the expert ranking. However, it does not capture whether team discussion adds value to the team’s final decision. In other words, team decision-making performance should assess whether the team’s decision quality improved because of the team discussion. Therefore, team decision-making performance is measured with the discrepancy score between team decision-making quality and team average decision-making quality. Team decision-making performance is positive when team decision is better than team average decision. For example, the team decision-making performance in Table I is –15, which indicates an ineffective team discussion process for this team.

*3.2.3 Individual influence.* To measure how much influence a student has on his/her team’s decision, a discrepancy score of the rankings by each subject and by his/her team decision was calculated. This discrepancy score was reversed to measure an individuals’ influence on team decisions. Individual influence is high when his/her decision is close to the

team's decision. For example, in the sample team in Table I, student B has more influence (100) than student A (36) on the team decision.

**3.2.4 Psychological safety.** Psychological safety was measured by a seven-item scale from Edmondson (1999) ( $\alpha = 0.79$ ). Item responses were on a five-point scale that ranged from "strongly disagree" to "strongly agree". The scale includes such items as "Members of this team are able to bring up problems and tough issues".

**3.2.5 Emotional intelligence.** Individual EI was measured with a 25-item skill-based EI scale ( $\alpha = 0.93$ ) from Hunsaker's (2005) study. For each of the items in the EI measure, participants were asked to rate on a five-point scale how well they are able to display the ability described. Sample items include: the ability to "Associate different internal physiological cues with different emotions" and "Know the impact that your behavior has on others". The average of individual EI scores from each team was used to measure team EI.

**4. Results**

Because team EI scores were aggregated from individual scores, the viability of aggregation needed to be examined. This was done by calculating within-group agreement ( $r_{wg(j)}$ ) for each team (James *et al.*, 1984). The average  $r_{wg(j)}$  values were above 0.70, indicating that that it was statistically appropriate to analyze EI at the team level (George, 1990).

Table II and III presents the means, standard deviations (SDs) and zero-order correlations for all team-level variables and individual-level variables used in the analysis, respectively.

*4.1 Individual's emotional intelligence and individual's influence on team decision*

H1 predicted that an individual's EI is positively related to the individual's influence on a team decision, such that individuals with a high level of EI are more likely to influence a

	Mean	SD	1	2	3	4	5	6	7
1. Team size	4.46	1.00							
2. Team EI	76.40	5.88	0.02						
3. Best Score in team	66.77	10.80	0.21	0.06					
4. Worst Score in team	42.50	10.08	-0.16	-0.15	0.44**				
5. Average score in team	53.55	7.69	0.04	0.04	0.80**	0.69**			
6. Team decision-making score	57.99	13.77	-0.04	0.28*	0.58**	0.48**	0.68**		
7. Psychological safety	3.18	0.73	0.05	0.41**	0.10	0.04	0.18	0.53**	
8. Team decision-making performance	4.25	10.07	-0.06	0.36**	0.20	0.06	0.16	0.82**	0.59*

Notes:  $N = 54$  teams; \*  $p < 0.05$ ; \*\*  $p < 0.01$

**Table II.**  
Team-level  
descriptive statistics

	Mean	SD	1	2	3
1. Individual decision score	53.54	12.53			
2. Influence	68.65	16.45	0.26**		
3. Individual EI	77.72	8.76	-0.05	0.135*	
4. Gender	0.4523	0.50	-0.05	0.03	0.08

Notes:  $N = 241$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$

**Table III.**  
Individual-level  
descriptive statistics

team decision. To test *H1*, individual influence scores were regressed on individual EI scores with gender and individual decision quality as control variables. Individual decision quality was controlled in the analysis because it might impact the level of influence the member has. Results in Table IV indicate that individual EI is positively related to individual influence on team decision ( $\beta = 0.146, p < 0.05$ ). Thus, *H1* was supported.

*H2, H3, H4* and *H5* predict that team EI is positively related to team decision performance, with psychological safety mediating this relationship. To test the mediation effect of psychological safety on the relationship between team EI and team decision-making performance, the Baron and Kenny's (1986) method was used. First, psychological safety was regressed on team EI to test the relationship between team EI and psychological safety. Second, team decision-making performance was regressed on team EI, psychological safety and the control variables to establish the mediating effect of psychological safety. Table V displays the results for these hierarchical regression analyses. Team EI is positively related to team decision-making performance ( $\beta = 0.348, p < 0.05$ ); therefore, *H2* was supported. *H3* predicted that team psychological safety is positively related to team decision-making performance and it was also supported ( $\beta = 0.529, p < 0.05$ ). *H4*, asserting that team EI is positively related to team psychological safety, received support too ( $\beta = 0.423, p < 0.05$ ). When psychological safety was included in the regression model, the regression coefficient for team EI in model 5 became insignificant, indicating a mediation effect for psychological safety on the relationship between team EI and team decision-making performance.

**Table IV.**  
Individual EI and  
individual's influence  
on team decision-  
making

	Step 1	Step 2	Step 3
Gender	0.026	0.038	0.026
Individual decision quality		0.257**	0.264**
Individual EI			0.146*
Model F statistics	0.16	8.48*	7.59*
$R^2$	0.00	0.07	0.09
Adjusted $R^2$	0.00	0.06	0.08
<b>Notes:</b> $N = 54$ teams; * $p < 0.05$ ; ** $p < 0.01$			

**Table V.**  
Team EI,  
psychological safety  
and team decision-  
making performance

	Psychological safety		Team decision performance		
	Model 1 $\beta$	Model 2 $\beta$	Model 3 $\beta$	Model 4 $\beta$	Model 5 $\beta$
Team size	0.028	0.051	-0.13	-0.112	-0.138
Team best score	0.093	0.020	0.263	0.202	0.192
Team worst score	0.001	0.099	-0.075	0.005	-0.047
Team EI		0.423*		0.348*	0.124
Psychological safety					0.529*
Model F statistics	0.18	2.72*	0.998	2.548*	6.425*
$R^2$	0.01	0.18	0.07	0.17	0.40
Adjusted $R^2$	0.00	0.12	0.00	0.11	0.34
<b>Notes:</b> $N = 54$ teams; * $p < 0.05$ ; ** $p < 0.01$					

## 5. Discussion

The main purpose of this study is to investigate the impact of EI on team psychological safety and decision-making performance. We explore the functioning of EI on decision-making at both individual and team levels while examining the mediating role of psychological safety in the team decision-making process. Because emotions are pertinent to social interaction, the possible facilitating role of EI on decision-making teams deserves examination.

### *5.1 Individual emotional intelligence and influence*

Individuals vary in EI and in influence on team decisions, and the findings of this study reveal that higher level EI is associated with a higher level of individual influence on team decisions. Research on decision-making influence has identified two fundamental types of influences: informational influence and normative influence (Deutsch and Gerard, 1955; Kaplan, 1989), and EI can affect both. EI can assist an individual in determining what information to contribute with what communication style, and it can also guide an individual's behavior about conforming to or deviating from group norms. The process by which individuals assert influence on team decision-making remains largely unexplored, and this study suggests that emotional awareness and regulation affect that process. When teams are assembled, social skills, which include emotional behavior, as well as technical skills should be used as criteria for composition. Considering EI can result in team composition that generates effective influence behavior. An individual predisposed to expressing anger, for example, may prove problematic for decision-making groups. Thus, the findings of this study contribute to understanding team decision-making by identifying EI as an important personal attribute that increases an individual's influence on team decisions.

### *5.2 Team emotional intelligence, psychological safety and team decision-making*

That individual EI is associated with individual influence on teams is useful knowledge, but the complexity of team functioning, especially on decision-making teams, requires additional focus on team EI. Expanding on the group synergy literature (Larson, 2010), this study establishes that team EI plays a key role in group processes and is positively related to team decision-making performance. Another key finding is the mediating role of psychological safety on the relationship between team EI and team decision-making performance. This finding confirms the importance of studying temporary conditions that emerge on teams because of the interactions among members, or team emergent states (Zhou and Vredenburg, 2017), such as psychological safety in opening the "black box" of team decision-making. When teams assemble for decision-making in workplaces much is at stake for members. Individuals' status, performance reputation and relationship networks can be affected. The saliency of group norms, possible conformity pressures and potential effects on group cohesiveness carry additional relevance for individual behavior on teams. These stakes suggest the importance of a team culture supporting psychological safety as a condition for information processing and thus quality team decision-making.

### *5.3 Conceptualization of team emotional intelligence*

Although the current study reflects the thinking that team EI constitutes a resource that team members bring to their team to accomplish tasks (Chang *et al.*, 2012; Jordan and Troth, 2004; Quoidbach and Hansenne, 2009; Troth *et al.*, 2012), team EI has been conceptualized by prior research as an emergent state influencing team members' interpretations of and responses to emotional issues (Ayoko *et al.*, 2008; Elfenbein, 2006; Ghuman, 2011, 2016;

Koman and Wolff, 2008). Although it makes sense to aggregate individual EI scores to team-level composites for some group tasks (Barrick *et al.*, 1998; Steiner, 1972), the functioning of team EI for other tasks might better be understood as a temporary network condition or emergent state. A team consisting of members with high individual EI scores does not necessarily make for an emotionally intelligent team; team EI can function through different network conditions. With the application of emotions to operations research (White, 2016), the study of team EI as an emergent state may prove promising. Researchers have measured team EI as an emergent state (Jordan *et al.*, 2002; Jordan and Lawrence, 2009). Ackermann *et al.* (2016) used a group support system to address conflicts between two organizations. Group support systems (Ackermann *et al.*, 2005; Eden, 1992; George *et al.*, 1992; Burger *et al.*, 2018) help observe specific group dynamics and thus can identify the network condition by which team EI emerges in each team.

This study also has practical implications for group interventions. As teamwork becomes more prevalent in organizational decision-making, the influence of EI on team decision-making process demands more research and managerial attention. The findings of our paper provide insights on the importance of individual/team EI and psychological safety in team decision performance. Existing team-based research has shown that employees can greatly improve their task performance through reflection; therefore, EI assessment and self-reflection sessions can help employees improve their efficacy at participating in team-based activities. However, as powerful as self-assessment may be, it is usually not as salient to employees as attending formal training programs. HRM can learn from the findings of the current study to design training events that foster EI development and awareness, as well as putting in practices that are more conducive to a climate of inclusion and safety.

#### *5.4 Limitations and directions for future research*

Our study is not without limitations. The sample size is relatively small, and because we use correlational data, causal inferences are not warranted. In addition, participants were college students, so readers should be cautious when making generalizations and interpretations with the results. It is crucial to remember that although our results present insights about team decision-making performance in regard to EI and psychological safety, a larger, more diverse sample and an experimental design would be fruitful for future research. More specifically, the timing of our single data collection effort, during the middle of a semester, may have affected our results. In addition, characteristics of the teams may carry significance, in that *ad hoc*, temporary teams acting without much team development opportunity could alter the nature of EI and psychological safety expression. Future studies could further examine the effect of team size. Replication of these results should be undertaken with a different measure of EI, such as MSCEIT (Mayer *et al.*, 2002). Theoretically speaking, a more complete EI nomological network for empirical testing might have included examining the relationship between individual EI and individual decision-making performance and the relationship between individual influence and team decision-making performance.

To expand on the findings of this study, future research should explore the impact of team EI on other team emergent states that act as intervening conditions for team decision-making. For instance, building on the conceptualization of groups as information processors (Hinsz *et al.*, 1997), van Knippenberg *et al.* (2004) defined a process of information elaboration that emphasized exchange, feedback and integration of information. High-quality group decisions require that group members both solicit and disclose information to realize the advantages of more and diverse information for team decisions, and thus research on how the nature of specific information, e.g. financial figures, or the particular

type of decision-making task, budgeting, defines unique team emergent states would be valuable. In an experimental study by van Ginkel and van Knippenberg (2003), the results showed that groups emphasizing a particular information elaboration process made higher-quality decisions than groups that did not, and team EI may facilitate this desirable elaboration of information.

In addition, building on the existing literature on group synergy (Larson, 2010), the findings of this study can help pave the way for future research that explores both individual- and group-level EI and psychological safety, and their effect on promoting or hindering team effectiveness, in particular, the formation of weak and strong synergy. Future studies are also encouraged to incorporate the research on cognitive synergy (Curşeu *et al.*, 2013; Meslec and Curşeu, 2013; Melec *et al.*, 2014) and examine the nuanced interactions between EI, psychological safety and the development of collective cognitive competencies such as group rationality and collective intelligence.

Although this study adds to the growing body of literature focusing on more comprehensive models of EI (Ybarra *et al.*, 2013), it is important to further explore the dynamic nature of EI on group behaviors. Perhaps when positive team EI leads to better performance, this improved outcome will then in turn foster the improvement of individual- and team-level EI, thus promoting an EI-performance cycle. Overall, our study furthers research showing that emotions are pertinent to social interactions, including group decision-making, and we encourage future studies to explore other social processes affecting group decision-making.

## 6. Conclusion

Our study investigates the effect of EI on team psychological safety and decision-making performance. Our results show the positive effect of EI on decision-making at both individual and team levels and demonstrates a mediating role for psychological safety in the team decision-making process. This study responds to the need to develop a more elaborate model of EI (Ybarra *et al.*, 2013). We find that individual EI is positively related to individual influence on team decisions, and team-level EI improves team decision-making performance through psychological safety.

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Further reading

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Appendix. I lost at sea survival task description [adapted from Warwick (1994)]

Part I: individual decision-making

You are adrift on a private yacht in the South Pacific. As a consequence of a fire of unknown origin, much of the yacht and its contents have been destroyed. The yacht had all navigational equipment destroyed while you and the crew were trying to bring the fire under control. Your best estimate is that you are approximately 1000 miles south/southwest of the nearest land. Below is a list of 15 items that are intact and undamaged after the fire. In addition to these articles, you have a serviceable rubber life raft with oars large enough to carry yourself, the crew and all the items listed below. The total contents of all survivors' pockets are a pack of cigarettes, several books of matches and five one-dollar bills. Your task is to rank the 15 items below in terms of their importance to your survival, with 1 as most important and 15 as least important.

Importance	Item
_____	Sextant
_____	Small transistor radio
_____	Shaving mirror
_____	Shark repellent
_____	5 gallon can of water
_____	20 sq.ft. of opaque plastic
_____	Mosquito netting
_____	1 case of rations
_____	Maps of the area
_____	Seat cushion (flotation device)
_____	2 gallon can of oil/gas mixture
_____	1 quart of 160 proof rum
_____	15 ft. of nylon rope
_____	2 boxes of chocolate bars
_____	Fishing kit

*Part II: team decision-making*

- Avoid arguing for your own individual judgments. Approach the task on the basis of logic.
- Avoid changing your mind if it is only to reach agreement and avoid conflict. Support only solutions with which you are able to agree at least somewhat.
- Avoid “conflict-reducing” techniques such as majority vote, averaging or trading-in reaching your decision.
- View differences of opinion as a help rather than a hindrance in decision-making.

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