

Transformational leadership as a moderator of the relationship between psychological safety and learning behaviour in work teams in Ghana

Authors:

Stephen K. Kumako¹
Maxwell A. Asumeng¹

Affiliations:

¹Psychology Department,
University of Ghana, Legon,
Accra, Ghana

Correspondence to:

Maxwell Asumeng

Email:

maxasumeng@yahoo.com

Postal address:

PO Box LG 84, Legon, Accra,
Ghana

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Orientation: Transformational team leadership is an important variable that influences team members' perception of the team as psychologically safe enough to engage in learning behaviours.

Research purpose: The study was aimed at investigating the relationship between psychological safety and learning behaviour in teams, as well as the moderating role of transformational team leadership in this relationship.

Motivation for the study: For a team to be effective, adaptive and innovative and engage in learning behaviours, the transformational team leader must set the right climate in the team, where he or she welcomes the team members' opinions, questions and feedback at no risk to their image. An understanding of this will be important in team leader selection and training.

Research design, approach and method: Using a cross-sectional survey design, 57 work teams comprising 456 respondents in teams of 7–9 members were purposively sampled from five financial institutions in Accra, Ghana. Hierarchical regression and moderation analyses were run on the data at the team level.

Main findings: Results indicated a positive relationship between team psychological safety and team learning behaviour, with transformational team leadership moderating this relationship.

Practical/managerial implication: Transformational team leadership is important in creating a climate of psychological safety that will enable team members to engage in learning behaviours.

Contribution/value-add: The study provided theoretical and empirical evidence that, in organisational contexts, transformational team leadership is an important variable that can facilitate psychological safety and learning behaviour in teams.

Introduction

There has been a significant increase in the use of teamwork in organisations over approximately the past three decades, as a means to simultaneously improve productivity and employee quality of work life (Bosch-Sijtsema, Fruchter, Vartiainen & Ruohomaki, 2011). A team, in a work organisational context, is a task-related group which comprises employees who work together to complete a particular task or project (Parker, 2003). Amongst the advantages that may be realised from teamwork are improved production quality, lower absenteeism, lower employee turnover, improved work attitudes and satisfaction of employee higher-order needs and development (Chalk, Donald & Young, 1997; West, 2004). According to Garland and Elton (1995), about 70% of employees prefer teamwork to working autonomously under a supervisor. Therefore, organisations are increasingly moving from traditionally, vertical and functionalised structures to team-based structures to contend with the growing complexity of the environment in which their employees operate (Edmondson & Nembhard, 2009; Parker, 2003; Salas, Burke & Sims, 2005). However, there are problems and challenges associated with teamwork in organisations which tend to affect its effectiveness. For example, the team leader's personality and leadership style are potential antecedents of team members' interpersonal communications and coordination and team justice climate, which might affect teamwork attitudes and performance (Mayer, Nishii, Schneider & Goldstein, 2007). Also, the personality of team members, social loafing and groupthink are likely to lead to conformity and isolation of members with conflicting views, which, in turn, are likely to inhibit team performance and effectiveness (Dwivedi, 2001). Furthermore, when team members are unable to freely express their views and ideas, then creativity, innovativeness and learning, which are essential for team performance and effectiveness, are likely to be stifled (Edmondson, 2002). The creation of an environment that is conducive to enabling team members to feel psychologically safe and express their ideas will not only depend on team

interpersonal communication and coordination, but largely on the team leader's leadership style (Edmondson, 2002; Li & Cropanzano, 2009). These situations make team learning, team psychological safety and team leadership important variables that might influence teamwork effectiveness.

Current research on teamwork has focused on identifying and investigating potential factors and variables that can enhance team performance and effectiveness. These factors include team adaptation (Burke, Stagl, Salas & Pierce, 2006), team coordination (Shah & Breazeal, 2010), team learning (Edmondson, 1999; Edmondson, Bohmer & Pisano, 2001), team justice perception (Roberson, 2006), team psychological safety (Edmondson, 1999, 2002), team leadership capacity and team leadership style (Day, Gronn & Salas, 2004; Kozlowski & Ilgen, 2006; Levine & Moreland, 1990; Simpson & Wood, 1992; Somech, 2006; Steiner, 1986; Stewart, Fulmer & Barrick, 2005). The main objective of this study is to unravel conceptual models and theoretical frameworks that have high predictive and explanatory ability of team variables that lead to team success (Kozlowski & Ilgen, 2006; Rowald, 2011).

Studies suggest that team coordination, which includes effective communication of ideas amongst team members may enhance creativity, innovativeness, learning and effective team working (Dwivedi, 2001; Shah & Breazeal, 2010). Furthermore, highly effective teams adapt to new situations, such as stressful work overload, and implement new procedures by using effective coordination strategies, which, in turn, improve performance (Entin & Serfaty, 1999; Guastello, 2010; Wiedow & Konradt, 2010). Team justice, conceptualised as intra-unit or intragroup fairness which pertains to the manner in which teammates treat one another, is a useful predictor of teamwork attitudes and performance (Li & Cropanzano, 2009; Roberson, 2006). Team justice does not only depend on harmonious interpersonal relations amongst team members (Li & Cropanzano, 2009), but also on the actions and attitudes of the team leader (Edmondson, 2002). These studies provide some insight into team processes and effective teamwork. However, notable amongst the potential influential factors of team processes and effective performance, which have not been coherently investigated in a study in Ghanaian organisations, are team learning behaviour, psychological safety and team leadership (Edmondson, 2004; Ilgen, Hollenbeck, Johnson & Jundt, 2005; Marks, Mathieu & Zaccaro, 2001). This study addresses these gaps in the understanding of team effectiveness by examining transformational team leadership, psychological safety and learning behaviours in teams to enable a better understanding of team processes.

Learning behaviours and psychological safety in teams

Team learning is the process by which relatively permanent changes occur in the behavioural competence of the group, as a result of group interaction activities through which members acquire, share and combine knowledge. It is an ongoing process of reflection and action, characterised by

asking questions, seeking feedback, experimenting, reflecting on results and discussing errors or unexpected outcomes of actions. Team knowledge develops by evaluating different opinions, openly discussing these opinions, forming new routines, adjusting performance strategies in response to negative feedback and reflecting on the team's processes and behaviours. Team learning behaviours are characterised by help seeking, feedback seeking, speaking up about concerns and errors, innovative behaviour and innovation and boundary spanning (Choo, Linderman, & Schroeder, 2007; Edmondson, 1999; Edmondson, 2004; Edmondson, Bohmer & Pisano, 2001; West, 2004). These behaviours enable team members to improve their collective understanding of a given situation and discover the consequences of previous actions, thereby helping them to detect and respond to changes in their operational environment (Edmondson, 1999; Schippers, Den Hartog, Koopman & Wienk, 2003).

Team learning has been differentiated from other related constructs including adaptation and innovation. Burke *et al.* (2006) assert that team learning translates to an increased behavioural repertoire to learn which may remain latent and never manifest. Adaptive teams are teams that actually use this behavioural capacity manifested in knowledge gained through team learning to adjust or respond to situational requirements. Team innovation has also been conceptualised as a process variable which, like team learning, is a precursor to team adaptation. However, whilst team learning contributes to team performance (Edmondson, 1999), team innovation may or may not lead to functional outcomes (Burke *et al.*, 2006).

Studies suggest that an important factor that influences learning behaviour in teams is team psychological safety (Baer & Frese, 2003; Carmeli, 2007; Edmondson, 1999, 2002; Edmondson *et al.*, 2001; West, 2004). Team psychological safety is defined as a shared belief that the team is safe for interpersonal risk taking (Edmondson, 1999). This shared team characteristic develops over time as a result of interactions and collective on-the-job experiences in intact teams. Team members cognitively calculate the perceived consequences of their actions or inactions and the perceived interpersonal threat to them. Psychological safety may influence team learning activities because team members tend to choose their actions on the basis of the level of risk they attach to them (Edmondson, 2003; Kark & Carmeli, 2009; Yagil & Luria, 2010). People would avoid engaging in behaviours that are likely to present them as ignorant, incompetent, negative or disruptive in their teams unless there is a climate of psychological safety shared in the team (Edmondson, 2002). This could have a negative effect on the teams' ability to learn from their collective experiences.

Employees working in an organisation that provides a non-threatening and supportive climate to the team members should be more likely to risk proposing a new idea than in an environment where proposing a new idea will lead to an attack, to him or her being censored, ridiculed or penalised. As such, a team with a psychological safety climate is likely

to enhance learning behaviour, as well as the use of team members' creative potential. This is because team members in a psychologically safe team environment are more likely to work with ease and the associated reduced risk allows for new ideas to be presented in a safe climate. As such, team members will have higher level of job involvement, exert greater effort, collaborate in solving problems and learn better in their teams (Brown & Leigh, 1996; Edmondson, 1999; West, 1990). Indeed, some studies have found a positive relationship between team psychological safety and learning behaviour in teams (Baer & Frese, 2003; Carmeli, 2007; Carmeli & Gittell, 2009; Edmondson, 2002; Edmondson *et al.*, 2001; West, 2004). The main explanation on offer is that when people feel psychologically safe, learning is enabled. However, these findings and explanations do not allow for better understanding of the mechanism through which team psychological safety influences team learning behaviour. Furthermore, these studies were conducted in Western individualistic cultures and the findings might not be applicable in the Ghanaian collectivist culture. This situation raises the research question: 'Does team psychological safety promote team learning behaviour in the Ghanaian organisational context?' Based on the theoretical and empirical evidence from the literature reviewed, the following is hypothesised.

Hypothesis 1: Team psychological safety will be positively related to team learning behaviour.

Transformational leadership as a moderator between psychological safety and learning behaviour in teams

A transformational leader is one who focuses on improving the performance of followers and developing them to their fullest potential because they provide idealised influence or charisma, intellectual stimulation, inspirational motivation and individualised consideration for followers (Avolio, 1999). Sarin and McDermott (2003) found that team leaders who exhibited transformational leadership behaviours, involved members in decision making, clarified team goals and provided bridges to outside parties via the leader's status in the organisation, facilitated team learning. Arguably, the actions and attitudes of the team leader are critical determinants of team learning because they are not only a critical influence on psychological safety but also they can deliberately work to structure a learning process (Edmondson, 2002). As such, team transformational leader behaviours go beyond team leader coaching and team leader inclusiveness but include behaviours that influence the motivation of team members and leads to increased learning and performance to develop their potential. This provides a new dimension of seeing team leader behaviour not only as an antecedent or input to psychological safety but also as an integral part of an ongoing team learning process (Edmondson, 2003; Nembhard & Edmondson, 2006). Other studies suggest a link between transformational leadership, organisational innovation and change processes such as employees' creativity and innovation implementation behaviours, which are concepts related to learning behaviours (Michaelis, Stegmaier & Sonntag, 2010; Shin & Zhou, 2003).

In order to unravel more powerful conceptual models and theoretical frameworks that have high predictive and explanatory ability (Kozlowski & Ilgen, 2006) to offer better mechanistic and functional explanations; that is, why and how the relationship between psychological safety and team learning behaviours exist, we need to explore variables that can account for the relationship by testing for moderation hypothesis (Baron & Kenny, 1986). Moderating analysis enables us to identify moderators which are variables that can account for relationships between variables. This implies that the presence of a moderator can strengthen or weaken the relationship between two variables. In this instance, we need to identify variables that will enhance the relationship between psychological, safety and team learning behaviours in organisations. As indicated earlier, an important variable that can potentially influence this relationship is team leadership style, specifically, transformational team leadership. Thus, transformational team leadership is hypothesised to moderate the relationship between psychological safety and learning behaviour in teams. This is because functional leader behaviours of a team leader, which include providing clear and motivating direction, work design that is empowering and motivating, directing and facilitating the achievement of goals, creating and maintaining a supportive context, coaching and facilitating performance (Zaccarro, Rittman & Marks, 2001), are very similar to the characteristics of transformational leaders (Bass, 1998; Burns, 1978).

Despite the already reported theoretical and empirical significance of this type of leadership (Edmondson, 2002; Sarin & MacDermott, 2003) and its potential enhancement of team learning behaviour (Michaelis *et al.*, 2010; Shin & Zhou, 2003), to date, no study has been conducted to contribute to the understanding of how transformational team leadership moderates the relationship between team psychological safety and team learning behaviour. This situation raises the research question: 'Does transformational team leadership moderate the relationship between psychological safety and learning behaviour in teams?' In this study, we seek to answer this question in the Ghanaian organisational context, the conceptual framework for which is provided in Figure 1. Therefore, the following is predicted.

Hypothesis 2: Transformational team leadership will moderate the relationship between team psychological safety and team learning behaviour.

Research design

Research approach

A cross-sectional survey and predictive correlational design was employed for the study. A cross-sectional survey method was chosen because respondents from the various organisations sampled were not only from different organisations but also comprised professionals with varying

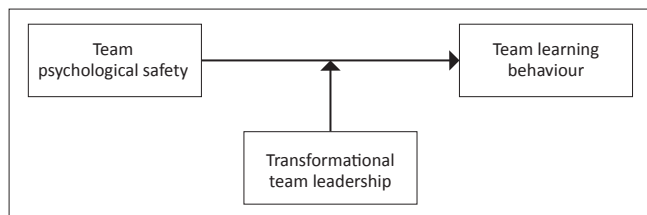


FIGURE 1: A summary of hypothesised relationships amongst the independent, moderating and dependent variables.

academic backgrounds, job grades, departments, experience, age, tenure and sex. The study was predictive correlational in nature as it sought to investigate the predictive relationship between team psychological safety and team learning behaviours. Multiple regression analysis was used to test the extent of this predicted relationship and the moderating role of transformational team leadership on the relationship between team psychological safety and team learning behaviour.

Research method

Participants and criteria for selection

Teams were selected from the head offices and branches of five Ghana Club 100 (GC100) banking institutions in Accra, the capital city of Ghana. The GC100 is the top 100 corporate excellent companies in Ghana. The selection criteria for teams to be included into the study were that the organisations had to have functional teams (teams that are grouped by function) with an identified team leader. Also, the team members and their team leader should have worked together for a period not less than six months prior to the study. This was to ensure that the team processes being investigated had been adequately developed within the team and that team members and their leader had interacted enough within the six months or more to enable members to assess their team leaders' transformational behaviour. Also, a 60% response rate for each team was set as an additional criterion for inclusion of team data in the analysis because individual responses were aggregated to the team level (Somech, 2006).

Demographic data indicated that the mean age of team members was 29.1 years, with team members' ages ranging from 22 years to 55 years. Team members had worked with the organisation for a period of 1 year to 33 years, with 35.7% of team members having worked with the organisation for only 1 year. Tenure with the team for team members ranged from 1 year to 9 years, with 59.6% of team members being with the team for just 1 year. Of the team members, 96.7% had worked as professionals for 10 years or less, with a range of 1 year to 33 years.

For the team leaders, demographic data revealed that the mean age of team leaders' was 36.3 years, with team leaders' ages ranging from 27 years to 59 years. Team leaders had worked with the organisation for between 1 year and 37 years, with 57.9% of team leaders having worked with the organisation for 5 years or less. Tenure with the team for team leaders ranged from 1 year to 5 years, with 63.2% of

team leaders being with the team for 3 years or less. For team leaders, 73.7% had worked as professionals for 10 years or less, with a range of 2 years to 37 years.

Measuring instruments

Two sources of measures were used in the study: the team leaders' instrument, which was completed by the team leaders, and the team members' instrument, which was completed by each team leader's corresponding team members. Each team leader evaluated the team's learning behaviour (dependent variable), whilst the corresponding team members were expected to assess the psychological safety in the team as well as the leaders' transformational leadership (independent variables). The dependent and independent variable measures were obtained from different sources in order to control common method variance, which is usually caused by common rater effect, that is, when all the data are obtained from the same source (Podsakoff, MacKenzie, Lee & Podsakoff, 2003).

Team leaders' instrument: Team learning behaviour was measured with a seven-item scale adapted from Edmondson (1999) ($\alpha = 0.78$). A sample item is: 'We regularly take time to figure out ways to improve our team's work processes'. Responses were scored on a five-point scale from 'never' = 1 to 'always' = 5. High scores indicated a team that displays effective learning behaviour ($\alpha = 0.69$).

Team members' instrument: Team psychological safety was measured using a seven-item scale from Edmondson (1999) ($\alpha = 0.82$). A sample item is: 'Members of this team are able to bring up problems and tough issues for discussion'. Responses were scored on a five-point scale, indicating their level of agreement with the statements varying from 1 (very inaccurate) to 5 (very accurate) and with high scores indicating high perceived psychological safety ($\alpha = 0.75$). Transformational team leadership was measured using the seven-item global transformational leadership scale (Carless, Wearing & Mann, 2000) ($\alpha = 0.94$). A sample item is: 'My team leader encourages thinking about problems in new ways'. Responses ranged from 1 (to a very small extent) to 5 (to a very large extent) ($\alpha = 0.97$).

Research procedure

Permission was sought from the Human Resource Departments of the various organisations of interest. Once permission was granted, the researcher sought specific demographical information about the teams from the Human Resources Departments. This was to purposively select only those teams that met the criteria for inclusion of teams in the study. Team leaders of these teams were then contacted and their assistance sought for the study. The questionnaires and envelopes were distributed to team members through the respective team leaders. The team leaders collected the completed questionnaires in sealed envelopes and handed them to the researcher. Data collection lasted for 7 weeks. All 64 teams returned their questionnaires. However, only data from 57 teams, comprising 456 team members and their 57

team leaders, respectively, were used in the analysis. Thus, seven teams were excluded from the analysis as either the team leaders did not complete the questionnaires or the response rate in the team was less than 60%.

Statistical analysis

Team level analysis, overall score and within-team agreement index: Following Klein and Kozlowski (2000), the unit of theory in the present study was the team; that is, all the hypotheses were formulated at the team level and the study variables were conceptualised, measured and analysed at the team level. In order to get complete data for each team, the team members' responses were appropriately matched to their corresponding team leaders' data using a coding procedure. Accordingly, team members' ratings on psychological safety and transformational leadership were averaged to create a single score for each item. The overall score for each variable was computed as the mean for these item scores. To assess the appropriateness of averaging the scores, and justify using the team average as an indicator of a team-level variable for the predictor variables, within-team rater agreement (r_{wg}) (James, Demaree & Wolf, 1993) was computed. The r_{wg} statistic is a coefficient which indicates the degree of homogeneity of individual ratings within a work group or team. The index ranges from 0 to 1, although negative values are possible. According to LeBreton and Senter (2008), r_{wg} estimates of 0.51 to 0.70 indicate 'moderate agreement', 0.71 to 0.90 reflects 'strong agreement' and 0.91 to 1.00 shows 'very strong agreement'. The within-team rater agreement values for the predictors were: team psychological safety ($r_{wg} = 0.75$) and team transformational leadership ($r_{wg} = 0.96$) (see Table 1), thus justifying averaging the scores, and using the team average as an indicator of a team-level variable for the predictor variables. The reliability coefficient alphas for all the scales are reported in Table 1.

Results

Table 1 presents the bivariate correlations amongst the variables, as well as the means, standard deviations and reliability coefficients for each variable and within-team rater agreements.

Hypotheses testing

Hypothesis 1, which stated that team psychological safety will be positively related to team learning behaviour, was supported ($r = 0.679, p < 0.01$) (refer to Table 1).

Hypothesis 2 stated that transformational team leadership will moderate the relationship between team psychological

safety and team learning behaviour. This hypothesis was tested using the procedures proposed by Baron and Kenny (1986). Firstly, team psychological safety (TPS), the independent variable, and transformational team leadership (TTL), the moderator, were centred or standardised using the standardisation procedures by Aiken and West (1991). Standardisation is a linear transformation method which eliminates problems associated with multi-collinearity. It is achieved by subtracting the mean value for a variable from each score for that variable. Next, the interaction terms were created. This was performed by multiplying the centred TPS scores by the centred TTL scores (TPS×TTL). Following this, team learning behaviour (TLB) the dependent variable, was regressed on centred TPS, centred TTL and then on the interaction terms. Specifically, centred TPS (the independent variable) was entered in the first block, centred TTL (the moderator) in the second block and TPS×TTL (the interaction terms) in the third block using hierarchical regression analysis. The results are presented in Table 2. These show that TTL moderated the relationship between TPS and TLB, as the interaction between TPS and TTL (TPS×TTL) was statistically significant ($\beta = 0.203, p < 0.05, \Delta R^2 = 0.040$), supporting Hypothesis 2. This interaction effect is graphically presented in Figure 2.

The pattern of interaction in Figure 2 supports the moderating hypothesis that transformational team leadership will moderate the relationship between team psychological safety and team learning behaviour. That is, at a high level of transformational team leadership (compared with a low level), high team psychological safety had a stronger effect on team learning behaviour. This supports the nature of the interaction as hypothesised that the positive effect of team psychological safety on learning behaviour will be stronger for teams with a transformational team leader than for those teams whose leader is not transformational.

Ethical considerations

Ethical considerations observed included the researcher seeking informed consent from all participants, and providing a guarantee regarding the confidentiality of responses. In the conduct of this study, the researcher took particular steps to adhere to the American Psychological Association (APA) ethics code. In every organisation used for this research, permission was sought from the human resource department and their assistance sought in administering the questionnaire.

Each participant was given an information sheet outlining the research purpose, procedure, risks, extent of anonymity

TABLE 1: Descriptive statistics, within-team rater agreement, Cronbach alpha and inter-correlations between the study variables.

Steps	Variable	Mean	SD	r_{wg}	Step 1	Step 2	Step 3
1	Team psychological safety	24.86	1.80	0.75	(0.75)	–	–
2	Transformational team leadership	18.08	3.97	0.96	0.270*	(0.97)	–
3	Team learning behaviour	18.46	3.48	–	0.679**	0.025	(0.69)

SD, standard deviation.

The statistics r_{wg} represents agreement within-groups averaged across all teams for each variable team members responded to.

Cronbach alpha^a in parenthesis.

*Correlation is significant at the 0.05 level.

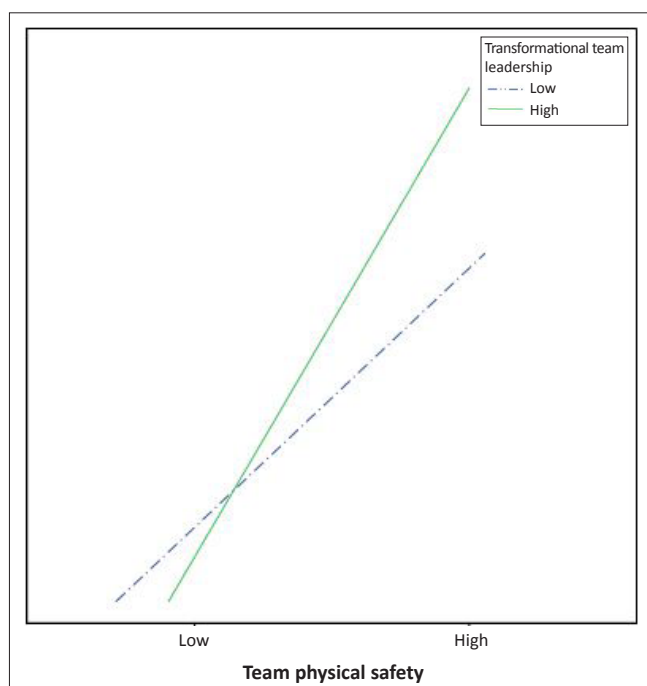
**Correlation is significant at the 0.10 level.

TABLE 2: Results from hierarchical regression analyses showing the moderation effect of transformational team leadership on the relationship between psychological safety and team learning behaviour.

Steps	Measurement	Unstandardised coefficient		Standardised coefficient	<i>p</i>	<i>F</i>	<i>R</i> ²	ΔR^2
		B	SE	β				
1	–	–	–	–	–	47.100***	0.461	–
	Constant	-30.213	7.120	–	0.000	–	–	–
	TPS	1.963	0.286	0.679	0.000	–	–	–
2	–	–	–	–	–	25.780***	0.488	0.027
	Constant	-36.192	7.843	–	0.000	–	–	–
	TPS	2.097	2.92	0.725	0.000	–	–	–
	TTL	0.147	0.087	0.171	0.096	–	–	–
3	–	–	–	–	–	19.791***	0.528	0.040
	Constant	-36.192	7.843	–	0.000	–	–	–
	TPS	2.069	0.284	0.716	0.000	–	–	–
	TTL	0.112	0.086	0.131	0.195	–	–	–
	TPS × TTL	0.087	0.041	0.203	0.039	–	–	–

B, unstandardised beta; SE, standard error; β , standardised beta; *p*, significance level; *F*, *F* statistic; *R*², variance; ΔR^2 , change in variance; TPS, team psychological safety; TTL, transformational team leadership.

****p* < 0.001

**FIGURE 2:** Interaction between team psychological safety and transformational team leadership on team learning behaviour.

and confidentiality, institutional approval and seeking their signed informed consent. The information sheet outlined the purpose of study and assured participants that there were no risks to them for participating in this study. The extent of anonymity and confidentiality was also explained to participants. In this regard, participants were informed that the results of this study will remain strictly confidential and that at no point will their name be required. The researcher explained that the only identification will be the researcher's code which will identify respondents by their teams. This researcher's code provided a reference for the researcher. The participants in the study were assured that at no time will the researcher release the data collected in the study to anyone, other than those individuals working on the research project. To assure participants of the confidentiality that would be attached to the data that they would provide,

each of them was given an envelope into which he or she was to place and seal the completed questionnaire before returning it. Participants were also informed of the freedom to withdraw from this study at any time without penalty and also the freedom not to answer any questions that they choose without penalty.

Discussion

The results of this study provide empirical evidence to support the main hypothesis that team psychological safety will be positively related to team learning behaviour (Hypothesis 1). Hypothesis 2, which stated that transformational team leadership will moderate the relationship between team psychological safety and team learning behaviour, was also supported.

The results from the analysis of Hypothesis 1 are supported by findings from previous studies which have a found positive relationship between team psychological safety and learning behaviour in teams (Baer & Frese, 2003; Carmeli, 2007; Edmondson, 1999; 2002; Edmondson *et al.*, 2001; West, 2004). This suggests that team psychological safety is likely to increase the tendencies of team members exerting extra effort and engaging in learning behaviours, such as seeking help, experimentation and discussion of mistakes and the willingness to take interpersonal risk in the team, which, in turn, is likely to facilitate team performance. By contrast, a psychologically unsafe climate may prevent team learning which could adversely affect team performance in organisations (Edmondson, 1999, 2002).

Consistent with previous studies that found a positive relationship between team psychological safety and learning behaviours (Carmeli, 2007; Edmondson, 1999), results from the present study indicate that in a team climate with high psychological safety, team members are more likely to engage in behaviours such as seeking feedback from the team, asking questions about team tasks and speaking up about their own mistakes in the team. Team members engaging in these learning behaviours will, in turn, provide an opportunity

for team members to learn by reflecting on particular task related behaviours and making the necessary behavioural changes. These behavioural changes are indicative of learning in the team and this could ultimately have an impact on team and organisational productivity. A team climate with high psychological safety will thus engender a learning orientation in the team, where mistakes and performance errors are considered as an opportunity to learn and prevent a recurrence of these particular errors. This suggests that peoples' beliefs about how others will respond if they engage in behaviour for which the outcome is uncertain affect their learning behaviour in teams. Carmeli (2007), in a study on failure-based learning behaviours in organisations, likewise found that when there is social capital, that is when team members have high quality social interactions, members feel psychologically safe and learning from failures is enabled.

Noteworthy is the finding that team transformational leadership behaviour moderates the relationship between team psychological safety and learning behaviour in teams. This moderating effect provides a more powerful conceptual model and theoretical framework that have high predictive and explanatory ability that enables us to better understand why and how psychological safety enhances team learning behaviours. In this context, according to the moderating hypothesis (Baron & Kenny, 1986), when team members feel psychologically safe, they are more likely to engage in learning behaviours in the presence of a transformational team leader. By contrast, even when they feel psychologically safe, they are less likely to engage in learning behaviours when their team leader is less or not transformational. This provides support for Edmondson's (2002) assertion that the actions and attitudes of the team leader are critical determinants of the team learning process because they are not only a critical influence on psychological safety but also they can deliberately work to structure a learning process. Thus, transformational team leadership is an important factor that is likely to enhance team learning behaviours, when team members feel psychologically safe. How and why then does team transformational leadership moderate the relationship between team psychological safety and learning behaviours?

Transformational team leaders are more likely to create a climate of psychological safety by providing idealised influence intellectual stimulation, inspirational motivation and individualised consideration for its followers (Bass, 1985, 1998; Burns, 1978). As a result, the team leader is more likely to create a climate of psychological safety by playing down the power differential characteristic of teams and facilitating the willingness to speak up (Edmondson, 2003). Somech (2006) argued that the extent to which team members may be expected to share perceptions concerning their work processes, such as the prevailing level of psychological safety, depends largely on their perceptions of their team leader's transformational behaviour. When team members feel psychologically safe under a transformational leader, they are more likely to interact frequently and share tasks and the clear delineation of team boundaries, as well as the

long standing of most of the teams, should allow members to adopt the views of the collective, thereby creating shared norms and perceptions, a situation likely to enhance learning. Sarin and McDermott (2003) likewise argued that transformational leaders are more likely to involve members in decision making, clarify team goals and provide bridges to outside parties via the leader's status in the organisation, which might enhance their psychological safety and facilitate team learning.

Team members working with a transformational team leader are more likely to engage in learning behaviours because the leader is likely to facilitate the quality of interpersonal relationship and climate in the team (Schriesheim, Castro & Cogliser, 1999), a climate that is enabling and devoid of tension and that allows for team members to 'be themselves' and work hard to meet their set goals. As such, the unique expertise and viewpoints of each team member can be harnessed as the team learns from its collective experiences and collaborate effectively. A transformational team leader is more likely to play a boundary spanning role, linking the teams to their environments (Katz & Kahn, 1978), and exercise discretion and choice as to the best solution amongst alternatives to achieve team effectiveness (Zacarro *et al.*, 2001).

Practical implications

The findings have a theoretical value insofar as transformational leadership is identified as a moderator in the relationship between team psychological safety and team learning behaviour. The moderating hypothesis and explanation enables us to better understand why and how psychological safety enhances team learning behaviours, by considering and highlighting the facilitating role of a transformational team leader. Practically, this study has provided a compelling basis for organisations to raise, train and encourage functional transformational team leaders who, by their characteristics, would create a favourable team environment that will enable team members to learn in their teams because they feel psychologically safe. The important role of the transformational team leader in ensuring collaboration amongst team members and coordinating these efforts to achieve team goals, improved performance and productivity, employee satisfaction and development is crucial to team and organisational effectiveness.

Limitations of the study

Two aspects of this study might be considered as limitations. The small sample size might affect the empirical generalisability of the findings. However, in a teamwork study, a sample size of 57 work teams is considered adequate and acceptable for theoretical conclusions to be drawn (Somech, 2006). Furthermore, the uniqueness of the functional teams in banking and financial institutions targeted in this study, render the results quite specific and unique to the banking and financial world. Although theory cuts across team types, the question arises as to whether the

functional teams studied are sufficiently similar to other teams in different organisational contexts and in different cultures. It is recommended that future research tests the transformational leadership moderating hypothesis and conceptual model on psychological safety and team learning behaviour, using different or cross-functional teams, in different organisational, as well as different local or cultural, contexts.

Conclusion

In summary, a transformational team leader is more likely to contribute to a climate of psychological safety within the teams where team members would be more willing to 'speak up' and support team learning. This is compatible with collectivist cultures such as Ghana, where the social orientation places a lot of respect and recognition on leadership. In this context, team members will be inclined to seek direction and inspiration from their leader and transformational leaders who bridge the power and status differentials are more likely to have a team that feels psychologically safe and work to meet team and organisational goals. The team leaders' transformational behaviours, idealised influence, intellectual stimulation, individualised consideration and inspirational motivation are likely to provide the structure in the team for learning to take place. For a team to be effective and be seen to be adaptive, innovative or engaging in learning behaviours, the team leader must set the tone or create a conducive climate in the team where he or she welcomes the team members' opinions, questions and help at no interpersonal risk to them. This would lead to psychological safety in the team and to desired organisational outcomes such as team learning behaviours, innovation and increased performance. On the other hand, when a team leader fails to create the conducive psychologically safe climate in the team, members' learning behaviour is likely to suffer and this might adversely affect team performance and organisational effectiveness.

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Competing interests

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Author contributions

S.K.K. (University of Ghana) was the project leader and was responsible for conceptualisation, research design, data collection, analysis and manuscript write-up. M.A.A. (University of Ghana) made conceptual contributions and wrote the final manuscript.

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