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How To Lead Teams Through Challenging Times?

Participative Leadership and Team Performance: A serial mediation model of Team
Resilience and Psychological Safety Climate

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Abstract

During the COVID-19 pandemic, teams are experiencing more pressure, setbacks, and change than ever before (Brammer, 2020). How to help team flourish in such adverse times? This study tried to answer this question by examining whether participative leadership may help teams to develop resilience ability at work by creating a safe atmosphere, which eventually leads to improved team performance. Considering team resilience has its profound influence on work-related outcomes, this study used a serial mediation model to explore how team resilience be enhanced and whether it has a mediating effect on team performance. This research has surveyed 143 employees nested in 43 teams from European countries. With the control variables of team size and team tenure, support was found for the prediction of participative leadership leading to enhanced psychological safe climate and increased team performance. However, the mediating effect of team resilience or psychological safety was not been found. The implications for managers and leaders lie in applying the framework developed in this paper as a guideline to cultivate participative leadership in their practices. This study's aspiration is to provide a stimulus for future studies to pay more attention of the boundary conditions of each variable, and employ different types of research methods to study the cross-level dynamics between teams and individuals.

Keywords: team resilience, team performance, team psychological safety, participative lead

Good teamwork provides organizations with diverse thoughts, creativity, perspectives, opportunities, and problem-solving approaches. However, in a fast-paced business world, teams are frequently exposed to more uncertain, complex, and risky situations. This poses threats to the success of a team. Especially during the COVID-19 outbreak, teams are experiencing more pressure, setbacks, and changes than ever before (Brammer, 2020). What can help save those business corporations from this unexpected situation? Resilience as the “capacity of a dynamic system to adapt successfully to disturbances that threaten its function, viability, or development” (Masten, 2014) has been proposed as a potential key asset to maintain performance and well-being in the face of adversity. From empirical evidence, resilience has been shown to buffer psychological stress (Chen et al., 2017; Shatte et al., 2017) and exert positive impacts on well-being (Pangallo et al., 2016), task performance (Ceschi et al., 2017), and work engagement (Malik & Garg, 2017).

However, research on this topic mainly focuses on individual-level analysis rather than team-level resilience (Alliger et al., 2015). A team of resilient members may still fail to display the best performance when facing adversity as suffering from miscommunication or poor management of disruptions (Hartwig et al., 2020). When experiencing conflicts, a resilient team would manage to forge ahead by restoring relationships among members and developing joint communication resolutions. By contrast, a brittle team may be ill-equipped and easily drained of their resources, which leads them to be susceptible to process breakdown and performance decline (Stoverink et al., 2020). Recent review from Hartmann and other researchers (2020) summarized three groups of antecedents which can lead to team resilience: 1) positive collective emotions, such as optimism, comfort 2) interpersonal process, and 3) structural aspects. However, they call for more elaborated theoretical foundations of research on resilience in the workplace. Thus, this study tried to focus on relational aspect, considering the interaction of team climate and leadership behaviors as antecedents leading to team resilience, which in turn results in higher performance.

Leaders may offer guidance and support for team members to manage any disruptions successfully (Harms et al., 2017; Yukelson & Weinberg, 2016). For instance, transformational leaders may impact on team members' belief of overcoming challenges and cooperation behaviour from social identity perspective (Steffens et al., 2014; Wang & Howell, 2012; Hartwig et al., 2020). This study attempts to exam

participative leadership based on Conservation of resources (COR) theory (Hobfoll, 1988) and the crossover model (Stoverink et al., 2020). It can be argued that a high-quality reciprocal exchange emerges not only between participative leaders and members but also among team members, which leads to a perceived safe environment promoting positive psychological states. Previous researchers (Chen et al., 2020) used social information processing theory (Salancik & Pfeffer, 1978) to provide more theoretical support for the above idea. They assume participative leaders encourage subordinates to exchange information, seek help from others, identify problems without fearing criticisms by creating a perceived safe workplace climate. This leadership may create a shared belief that it is safe to discuss their worries and ideas, team members reflect honestly on challenging situations in the past and how the team dealt with them, without fear of rejection or blame (Schippers et al., 2017).

Participative leadership is associated with several positive work outcomes, such as teams' performance and innovation (Bouwman et al. 2017; Fatima et al. 2017; Somech, 2006). As Somech (2006) showed, participative leaders allow team members to process more autonomy and develop their capacity to achieve broad organization goals. This study argued that teams with a participative leader would also react more quickly and effectively to adversities, which influence team performance.

In sum, the purpose of this study is to examine whether participative leadership may help teams to develop resilience at work by creating a safe atmosphere, which eventually leads to improved team performance (see Figure 1).

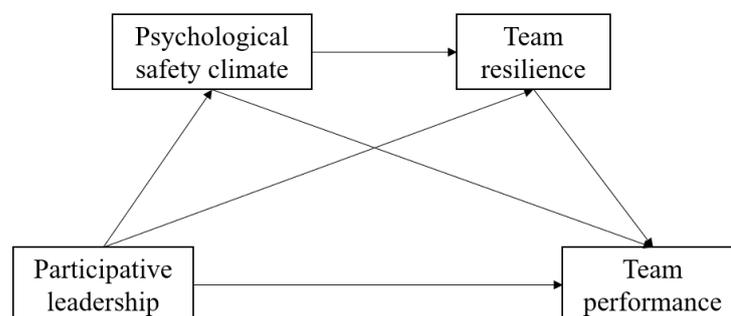


Figure 1. Proposed model of the relationships between participative leadership, psychological safety climate, team resilience, team performance.

Literature review

Team resilience

Resilience has been regarded as a valuable asset when individuals face adverse life events (Luthar, Cicchetti, & Becker, 2000). Resilient people will be more likely to show high flexibility that quickly adapts to changeable circumstances and environments, and can deal with unexpected events effectively (Alliger et al., 2015; Fletcher & Sarkar, 2013). However, resilience is not only an individual level capacity but also a team level construct that motivates teams to function more effectively when dealing with uncertainty and changes (Flint-Taylor & Cooper, 2017).

There is no generally accepted definition of team resilience, and scholars conceptualized it as a process (Bennett et al., 2010), capacity (Alliger et al., 2015; Gomes, Borges, Huber, & Carvalho, 2014; Rodriguez-Sanchez & Perea, 2015; West et al., 2009), outcome (Bennett et al., 2010). However, what is commonly acknowledged is its functional outcome: bouncing back from a setback (Stoverink et al., 2020). This study adopted the definition put forward by Stoverink (2020), which described it as “a team’s capacity to bounce back from adversity-induced process loss.” Their review examined team resilience through the COR lens and team effectiveness research, unfolding a theoretical model showing how team resilience develops over time via a series of resource investments. Their work is a successful extension of Weick’s (1993) taxonomy for organization resilience, by regrading team potency, mental models of teamwork, capacity to improvise, and psychological safety as antecedent resources. Resilient teams are able to spend these specific types of resources to activities which may reduce resource loss and boost resource gain, bouncing back from adversities. For example, psychological safety enables members of resilient teams to promote each other’s confidence and motivation by providing encouragement and emotional support (Edmondson, 1999). Other scholars also proposed that team-level resources (i.e., team member relationship and team supportive culture) are positively related to resilient team processes (Hartwig et al., 2020). However, these cutting-edge findings still need more empirical support to show how to foster team resilience through aggregating team and organizational resources. One aim of this study is to respond to Hartwig's (2020) call for inspecting leadership and team contextual characteristics as antecedents to team-level resilient resources.

Team resilience and Participative leadership

Leadership is an important contextual factor that can influence team resilience (e.g., Alliger et al., 2015; Gomes et al., 2014; Morgan et al., 2013). They form norms and regulations, which in turn bolster cooperation efforts among team members (Gucciardi, 2018). Past studies reveal that transformational leadership can facilitate team resilience processes from a social identity perspective (Nielsen & Daniels, 2012; Schaubroeck et al., 2007; Steffens & Haslam, 2017). A transformational leader may enhance group identity by articulating a group vision or by encouraging cooperation among team members to strengthen their belief in their ability to overcome difficulties. However, this leadership recently has been heavily criticized for a range of conceptual and methodological problems that are insurmountable (van Knippenberg & Sitkin, 2013), and this study shifts attention to another constructive leadership style—participative leadership.

Defined as a process of shared decision-making made by supervisors and team members (Koopman & Wierdsma, 1998), participative leaders share power and allow employees with high autonomy. Prior research showed that under this leadership, subordinates will achieve high-level team outputs by creating an environment that everything can be openly discussed, analyzed, and criticized (Huang et al., 2010; Mantere and Vaara, 2008; Moeller, 2007). A team leader is an authorized social architect who not only exerts influence on individual members vertically but also indirectly affects them by facilitating horizontal peer relations (Kozlowski & Bell, 2013; Zaccaro et al., 2009). Participative leaders who produces mutual trust, loyalty, respect, and positive affect may model and encourage supportive behaviors among coworkers (Major et al., 2008). Following this logic, participative leaders are able to increase team members` relationship quality.

In line with COR theory and crossover model advised by Stoverink (2020), resilience has access to provide resources that can be used to bounce back from adversity. Crossover effects happen at such moments among team members that interpersonal exchange brings extra resources to pass from one person to another. And a more resilient team, in which individuals frequently interact with each other, will be influenced by the observed behaviors, cognitions, and affect as shared resilient team resources.

Thus, when facing an adverse event, teams with high-quality relationships may receive better emotional support to help them withstand the strain of adverse events

(Meneghel, Martínez, et al., 2016a). Meanwhile, good social ties and supportive actions among team members would be beneficial since individuals can rely on each other for informational and emotional support when managing negative feelings such as annoyance, frustration, and anxiety, or poor work performance. (Sharma & Sharma, 2016). Team members also benefit from frequent communications led by close bonds, making adequate preparations for challenges, coordinating their actions to respond to adversity, and effectively conduct debriefs after the events (Crowe et al., 2014; Maynard & Kennedy, 2016).

On the other hand, the open atmosphere promotes information sharing and idea generation inside teams, which is beneficial for the development of team members' cognitive competencies (Somech 2010; Buengeler et al., 2016). Participative leadership motivates employees to rethink and reflect on their ideas based on previous failure experiences, promoting knowledge exchange and innovation behavior (Fatima et al. 2017). As can be seen, participative leadership helps teams accumulate experiences and develop mutual learning gradually, building the competencies to handle problems and stress. It can be told that interpersonal interaction and knowledge sharing expand the current team resources cognitively and relationally.

Thus, this leadership style enables teams to exploit potential resources to increase a capacity for resilience, especially the cognitive and relational resources (Richtnér & Södergren, 2008). The hypothesis is proposed as follows:

H1: Participative leadership is positively related to team resilience.

Psychological safety climate and team performance

Employees are empowered to make an important joint decision under participative leadership. They feel safe to engage in open communication, voice their concerns, and seek more detailed feedback (Pearsall & Ellis, 2011). Such leaders help create a secure interpersonal environment where promotes mutual support and trust among employees. Thus, this study introduces another team-level climate factor — psychological safety, defined as the “shared belief held by members of a team that the team is safe for interpersonal risk-taking” (Edmondson, 1999), which can be seen as a result of participative leadership. In line with social information-processing theory (Salancik & Pfeffer, 1978), people would read social cues from their daily environment to establish perceptions about values, norms, and acceptable behaviors. Under this leadership,

employees will believe that their colleagues will provide support and help when needed leading to a high level of psychological safety.

An increasing amount of research has examined the effects of supportive leadership behaviors on work outcomes through psychological safety both from individual and team level. For example, transformational leadership (Nemanich & Vera, 2009), ethical leadership (Walumbwa & Schaubroeck, 2009), change-oriented leadership (Ortega, Van den Bossche, Sanchez-Manzanares, Rico, & Gil, 2014) and shared leadership (Liu et al., 2014) are positively and strongly related to such outcomes as employee voice behavior, team learning, and individual learning through the mediating mechanism of psychological safety. However, few studies reveal how participative leadership interacts with psychological safety. Chen et al. (2020) indicated that psychological safety significantly mediates the relationship between participative leadership and creative process engagement. However, the relationship between participative leadership and psychological safety, and how their interplay help teams . This study tries to fill in this research gap.

The psychological safety climate provides team resilient resources according to Stoverink`s (2020) model mentioned before. Psychologically safe teams are the ones where members are comfortable speaking up and don't fear being rejected, embarrassed, or punished by teammates. (Carmeli et al., 2013). It thus creates an accurate and shared understanding of a situation by allowing members to socially construct reality through sharing meanings and perspectives, so they cross over and converge at the team level. In contrast, members who experienced low psychological safety would be discouraged to express their opinions because of the negative social consequences of opposing views. Furthermore, in psychologically safe teams, employees may reflect honestly on challenging situations in the past and how the team has dealt with them. As a result of increased team learning behavior and interpersonal communication, teams develop effective strategies to deal with problems (Edmondson, 1999). The hypotheses are proposed as follows:

H2: Participative leadership is positively related to the psychological safety climate.

H3: Psychological safety climate mediates the relationship between participative leadership and team resilience.

Team performance and serial mediation model

Furthermore, this study propose increasing team resilience can help organizations survive and thrive through adversities. Wildman and his colleagues (2021) found collaborative teamwork is particularly susceptible to pandemic disruptions, as working remotely under these circumstances means more challenges to impact the team's ability to coordinate, communicate, and collectively achieve shared goals. For example, increased procrastination within the team and exacerbated issues surrounding social loafing which are harmful to the team performance. Consequently, it may lead to the stagnation of the company's development and hence causing severe economic damage. Thus, to avoid such loss teams need to reach high resilience. The "team resilience outcome theme" literature already proved high-level resilience is positively associated with team performance (Salanova et al., 2012), as well as team cohesion, cooperation, and coordination (West et al., 2009). Teams with high resilience can react more quickly and flexibly when facing difficulties and treat every challenge as a learning opportunity (Carmeli et al., 2013). Previous evidence also shows that team resilience can promote team performance by providing positive affective resources (Vera et al., 2017). The hypothesis is proposed as follows:

H4: Team resilience is positively related to team performance.

Considering our reasoning and hypotheses above, this study assumed a serial mediation model linking participative leadership and team performance. Empirical studies have examined the positive impacts of participative leadership on work performance (Newman et al., 2016; Miao et al., 2014; Tsui et al., 2004). However, the intermediary mechanisms underlying this relationship remain unclear.

This study that it is the psychological safety climate boosting team resilience and, ultimately, promotes team performance. The hypothesis is as follows:

H5: Participative leadership is positively related to team performance through the mediating influence of psychological safety climate and team resilience.

Method

Sample and Procedure

The current study surveyed employees nested in teams from Netherlands, Germany, Spain, Italy and UK. Most teams are from Netherlands and Germany (as table 1 demonstrated). In total, 149 team members nested in 46 teams filled out the survey. Eleven subordinates` data was eliminated from the dataset due to substantial missing data (i.e., missing data on one or more entire model variables). As this study focus on team-level properties, only teams with two or more respondents (see also Oertel & Antoni, 2015; Zellmer-Bruhn et al., 2008) are included, three teams were excluded. Thus, the final sample was composed of 43 teams with 143 employees. The number of remaining participants per team varied between three and eleven members. 80 (55.9%) were females and 60 (42%) were males (3 prefer not to say) with $M_{age} = 36.74$ ($SD = 11.12$). The participants' total working experience in years was $M_{years} = 13.68$, $SD = 11$ and their tenure current organization was $M_{months} = 42.58$, $SD = 50.52$. 33.6% had graduated from high school and 66.4% held a bachelor's degree or higher academic qualification. Most of the teams worked in educational and scientific industry (18.6%) and health care industry (18.6%), followed by information and communication. More details of the sample's characteristics were shown in Table 1.

Table 1. *Sample characteristics at team level (n=43)*

Variable	Frequency(n)	%
Industry		
Information and communication	6	13.95
Financial and/or insurance	3	6.98
Educational, scientific and/or technical	8	18.60
Manufacturing and production	4	9.30
Health care and/or social	8	18.60
Other	14	32.56
Country		
Germany	21	48.84
Italy (English speaking)	1	2.33
Netherlands	17	39.53
UK	4	9.30

The data collection was a collective work containing the contributions 5 students who work on the team resilience relevant studies. We mobilized our social network and other resources to recruit the participants. Several criteria were used to select the teams

as this study aimed to conduct a team-level analysis. The teams should be led by a leader rather than self-managing. Therefore, teams should consist at least 3 members, including the team leader. Companies and organizations only in Europe were contacted. Each contact person received a leaflet explaining the study. All data were collected via an online survey link, by means of social networks, to the employees of several companies. All participants encountered an information page prior to their participation, containing a brief summary of the purpose of the study and with a reminder of their consent to participate, which they all provided. Emphasis was given to the voluntary and anonymous character of the study, as well as the protection of their data. Participants were informed that they were allowed to opt-out at any time, as well that there were no right or wrong answers. Both of them were translated into English, Dutch and German. The duration was 5-6 minutes for employees and 1-2 minutes for leaders on average.

Measures

All the measurements were originally published in English. Following the backtranslation procedure (Brislin, 1980), bilingual psychology students translated the scale from English to Dutch and German. Then, the translated Dutch and German questionnaire was then given to another bilingual speaker to back-translate into English. The backtranslation was crosschecked by comparing the new translation with the original text. To confirm the translation is accurate, this study reconciled some meaningful differences between the two.

Participative leadership

This study used a six-item scale developed by Arnold et al., (2000) to measure participative leadership (1=strongly disagree; 5=strongly agree). Sample items are, “my immediate supervisor encourages us to express ideas/suggestions.”(see Appendix). Cronbach’s α was .825

Psychological safety

The psychology safety climate was measured a four-item scale of Edmondson (1999) modified by Harvey (2019), to assess the extent to which respondents felt safe to speak up about issues or ideas (1=strongly disagree to 5=strongly agree). Sample items include “Employees of this work group are able to bring up problems and tough issues”. (see Appendix). Cronbach’s α was .75.

Team resilience

This study measures team resilience with a scale composed of five items from (Meneghel et al., 2016), this scale was developed specifically referring to teams in an organizational context. Items were scored on a 7-point Likert scale ranging from 0 (never) to 6 (always). A sample item could be: “In difficult situations, my team tries to look on the positive side”. (see Appendix). Cronbach’s α was .79.

Team performance

This study utilized Black and Porter’s (1991) 5-item measurement. All of our respondents were asked to recall their most recent actual performance during the past 10 months and indicate their performance general level, their ability to get along with others, their punctual task completion, their level of performance quality, and their achievement of organizational objectives. (see Appendix). This study excluded one item “their ability to get along with others” as this study only focus on the task performance. Cronbach’s α was .78

Control variable

This study includes team size and team tenure as control variables because prior scholars has indicated they had significant influence on team process and outcomes (e.g., Ancona & Caldwell, 1992; Keller, 2001; Simons et al., 1999). Results showed that larger teams have poor team processes particularly under high innovation requirements (Cural, Forrester, Dawson, & West, 2001) Additionally, it is found longer team tenure has been linked to increased performance in diverse teams (Watson, Kumar, & Michaelsen, 1993). To measure tenure, participants were asked to calculate the length of time in months that the team had been working together.

Statistical analysis

All the data was collected via Qualtrics and were analyzed by IBM SPSS Statistics 22 and SPSS PROCESS macro (Hayes & Rockwood, 2020). This study inspected missing values by running a basic descriptive table and outliers via Mahalanobis distance. No multivariate outliers have been detected and excluded based on the team-level analysis. The study also checked the assumptions of normality, linearity, homoscedasticity, and absence of multicollinearity. A power analysis using G*Power was conducted, in order to check the suggested sample size. Effect size was entered as 0.1, while power was set to 0.8 and the number of predictors was set to 3. The estimated

sample size for the serial mediation tests was found to be 114, which suggest the sample of this study might not be large enough to find the proposed effects.

As for the hypothesis testing, the serial mediation model linking participative leadership with team performance was tested using Model 6 of SPSS process macro proposed by Hayes (2013). This method uses ordinary least square procedure to estimate direct and indirect effects. Effect size estimates of indirect associations were drawn using bootstrap confidence intervals. All control variables were entered as covariates in the process model.

Data Aggregation

Since this study investigated employee behavior at the team level of analysis, we need to aggregate those individual survey responses to the group level. To justify aggregating the individual level data to the team level, it is necessary to demonstrate sufficient within-group and between-group heterogeneity. The calculations of the Rwg, ICC1 and ICC2 values were done to test the within and between group agreements, following the formula developed by James, Demaree & Wolf (1984). The mean values were Rwg = .93, ICC1 of .21 and ICC2 of .45 for participative leadership, Rwg = .94, ICC1 of .4 and ICC2 of .67 for psychological safety climate, Rwg = .92, ICC1 of .26 and ICC2 of .51 for team resilience and Rwg = .93, ICC1 of .09 and ICC2 of .24 for team performance, as can be found in table 1. The ICC1 values were beyond the cutoff scores of 0.12 for ICC1 (James et al., 1984), except for team performance, which has a relatively lower score. Additionally, except psychological safety's ICC2 value is below 0.50 (LeBreton & Senter, 2008), other variables have reached a reasonable level. The low ICC scores have been found quite normal in many studies, noted by Bal, De Jong, Janssen & Bakker (2012). A lower ICC value can be caused by small team sizes or because of the higher between-group variance compared with within-group variance. In this case it can be wise to look at the within-group agreement indices with Rwg values (LeBreton, Burgess, Kaiser, Atchley & James, 2003; James, et al., 1984). Since all Rwg values were above the cutoff value of .70 (James et al., 1984), aggregation of the individual team member response to the team level was justified.

Results

Pearson Correlation Coefficient was used in order to define the relationships between research variables. Obtained findings and descriptive statistics were presented

in Table 1. There were positive significant relationships among participative leadership, psychological safety climate, team performance and team resilience, except for team resilience and team performance. The result only showed a positive but not significant association between them.

Table 2 Means, standard deviations, and intercorrelations between study variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1 team resilience	5.56	0.62	1				
2 participative leadership	4.27	0.41	.38*	1			
3 psychological safety climate	5.63	0.69	.36*	.44**	1		
4 team performance	3.68	0.39	0.23	.49**	.33*	1	
5 team size	7.37	3.76	-0.12	0.23	-0.10	0.24	1
6 team tenure	42.58	50.52	0.08	-0.21	-0.01	-0.05	0.06

N = 43 teams

p* < .05, *p* < .01, ****p* < .001

^aMonths

Figure 1 demonstrated the findings of the tested model of the mediation role of psychological safety climate and team resilience in the relationship between participative leadership and team performance.

Analysis of H1 proposed the positive relationship between participative leadership and team resilience. However, no statistical evidence indicated that participative leadership could promote team resilience (*B* = .58, *SE* = .26, *t* = 2.25, *p* < .05), which accepted H1. H2 predicted that participative leadership psychological safety climate. This hypothesis was supported a (*B* = .85, *SE* = .25, *t* = 3.48, *p* < .05).

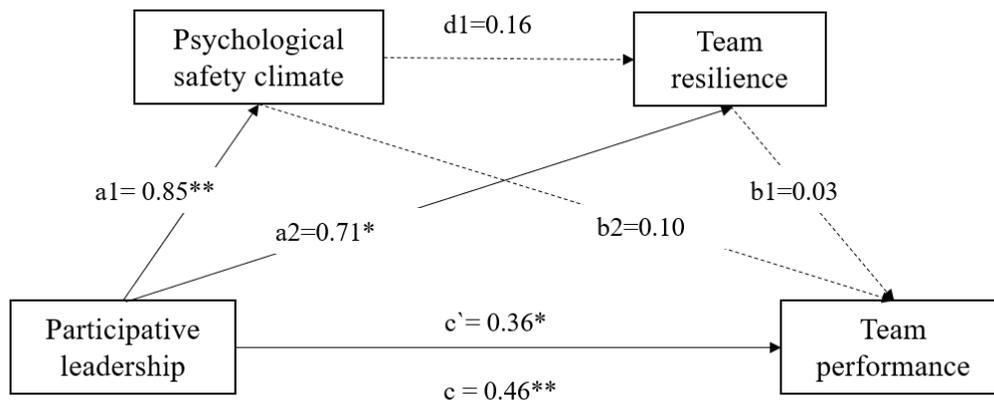
H3 expected that psychological safety mediates the relationship between participative leadership and team resilience. However, results showed that there was no significant relationship between psychological safety and team resilience (*B* = .16, *SE* = .15, *t* = 1.09, *p* > .05). Moreover, path analysis also showed no statistically significant evidence of mediating effect, *B* = .14, *SE* = .15, 95 % *CI* = [-.12, .49]. Thus, H3 was rejected.

H4 proposed that team resilience team performance, while the results also showed no significant effect of team resilience (*B* = .03, *SE* = .10, *t* = .30, *p* > .05) on team performance. H4 was not supported.

Finally, total effect of participative leadership on team performance was found to

be significant ($B = .46$, $SE = .14$, $t = 3.23$, $p < .05$). When the mediators were included in the analysis, this coefficient was reduced but remained to be significant (direct effect, $B = .36$, $SE = .18$, $t = 2.03$, $p < .05$).

Figure 1. The result of serial multiple mediational model, * $p < .05$, ** $p < .001$. Values shown are unstandardized coefficients



H5 proposed the mediating role of psychological safety and team resilience on the relationship between participative leadership and team performance. Table 3 revealed more details about indirect effects of these two variables. that both psychological safety and team resilience failed to mediate the association between participative leadership and team performance, $B = .08$, $SE = .08$, 95 % CI = $[-.04, .27]$ for psychological safety; $B = .02$, $SE = .07$, 95 % CI = $[-.12, .17]$ for team resilience. Additionally, this study found no support for the serial mediating effect that participative leadership facilitating team performances through psychological safety and team resilience, $B = .00$, $SE = .02$, 95 % CI = $[-.03, .06]$. Thus, hypothesis 5 was not supported.

Table 3 Path analysis of the serial mediation model

Path	Point estimate	SE	95% CI	
			Lower	Upper
PL → PS → TR	.14	.15	-.12	.49
PL → PS → TP	.08	.08	-.04	.27
PL → TR → TP	.02	.07	-.12	.17
PL → PS → TR → TP	.00	.02	-.03	.06
Total effect	.46**	.14	.17	.75

Direct effect	.36*	.18	.00	.71
Total indirect effect	.11	.11	-.10	.36

N = 43 teams

Note. *PL* = participative leadership, *PS* = psychological safety, *TR* = team resilience, *TP* = team performance

Discussion

This study aimed to examine whether participative leadership would help teams to develop resilient ability at work by creating a safe atmosphere, which eventually leads to improved team performance. Our findings provided partial support for the proposed hypothesis. Specifically, the results supported the hypothesis that there is a significant positive relationship between participative leadership and team performance, even when controlling the team size, team tenure. Moreover, when two mediators were included, the association still remained to be strong. The results also showed that participative leadership was a strong predictor for creating a psychological safety climate and team resilience. However, this study failed to prove the mediating effects of psychological safety climate, as well as team resilience. A statistically significant result that supported the overall serial mediation model.

Theoretical contributions

This study made contributions to the leadership and team outcome literature by proposing a novel model in which participative leadership influences team performance through a serial mediation of psychological safety and team resilience, based on the resources crossover model and information process perspective. In doing so, this study answered researchers' calls to explain how team resources positively influence work outcomes in light of COR theory (Newman et al., 2017). Also, our findings responded to Stoverink and other scholars (2020)' call for providing partial support to examine their team resilient resource model and address the role of contextual factors (e.g., leadership, team climate) in explaining team resilience. Current LMX research (Boies & Howell, 2006; Graen & Uhl-Bien, 1995; Sherony & Green, 2002) promotes developing high quality relations with each follower, and suggests this leads to better dynamics among the team. This research may shed light on that notion, in that better dynamics among the team may need to come in the form of dyadic relations between

each and every team member.

Another contribution is this study significantly extending empirical evidences to disclose the significant positive relationship between participative leadership and other team-level factors, which is partially consistent with prior studies. As for the promoting effect of leadership on subordinates' performance found in this research, research from Huang and his colleagues (2010) also discovered participative supervisors have the potential to improve employees' task performance and organization citizen behavior with mediating effect of psychological empowerment, especially for those managerial subordinates who have both superiors and subordinates. As for the link between leadership style and psychological safety, results from Chen et al., (2020) came to the similar conclusion that participative managers can cultivate employee psychological safety to take risk and generate innovative product.

However, most of the current empirical studies focus more on the individual level factors, little is known about how this kind of leadership style benefits team outcomes (Lythreatis et al., 2017). Unlike their research, this study conducted the investigation unraveling the new function of team-level (participative) leadership. In addition, to the best of our knowledge, this is the first attempt to empirically examine the serial mediating role of team resilience and psychological safety in promoting team performance. However, no significant results was found for the mediating role of team resilience and psychological safety.

One possible reason could be not considering the effect of team composition (Hartwig et al., 2020). According to the Categorization Elaboration Model (CEM; van Knippenberg, De Dreu, & Homan, 2004), the compositional impact of team diversity can result in categorization processes and intergroup bias. For example, dissimilarity in tenure, attitude, and experience, may decrease interactions among members, which in turn negatively affect problem-solving processes (Tusi & O'Reilly, 1989). This may complicate team functioning and pose potential hinderance when teams manage to overcome difficulties. Other explanations can be the low power led by small sample.

The reason why psychological safety did not show a significant effect on team performance and resilience may be that it evolves with time (Frazier et al., 2017). Liang et al. (2012) reported psychological safety may fluctuate over time within individuals thus it is wise to use experience sample method to explore the consequences of psychological safety dynamics. Then, the reason why resilience did not predict team performance as we expected may result from the lack consideration of the boundary

condition. Previously this study mentioned the crossover effects among team members may apply especially if the team operates in a highly interdependent way (Hartwig et al., 2020). Team performance requires mutual interactions and coordination among team members, and the final output cannot be obtained unless all team members interactively collaborate on task completion (Wageman, 1995). Therefore, the low task interdependence may discourage employees to conduct collaboration and coordination. Thus, the nature of task should be evaluated when analyzing how team resilience affects employees' performance. Findings from Langfred et al., (2005) also observed that teams characterized by high task interdependence performed better, but worse with high levels of individual autonomy. It can be noted that the interplay of team characteristics and personal trait may affect team function. Future research needs to take a multilevel perspective to understand this team phenomena (Kozlowski & Bell, 2013).

Practical implications for managers

Considering the positive outcomes of participative leadership in this study, it should be possible to design interventions to enhance team resilience and improve performance at work. It showed that participative leader could shape a shared perception in which workplace is a safe environment to give voice and exchange idea. This in turn help teams gain the benefits brought by the collective safe climate. When employees believe they can speak openly about their ideas, mistakes, requests for help, and feedback, they will be more inclined to do so (Edmondson & Lei. 2014). Additionally, leaders who behave more participative behavior during a real crisis or adverse circumstances will benefit their subordinates. For example, team leaders who ask team members for their ideas about how to handle crisis situations may help them constructively interpret current events and respond in a positive way (Van Kleef, 2009). It is advised that leaders who want to enhance their team management skills should adopt more participative leadership styles in order to achieve a better team performance, such as providing subordinates with greater opportunities to get involved in decision-making and to put forward their ideas. Other scholars proposed that participative leadership predicted employees' thriving and helping behaviors, even during the COVID-19 pandemic (Usman et al., 2021).

Leaders have a vital role in shaping these practices and facilitating workplace dynamics between members in the organization. Combined with the result of this study, it is wise to for organizations to develop advanced leadership training programme

which help managers stimulate participative leader behavior. For example, organizations could initiate various forms of training (i.e. coaching, mentoring, and structured workshops) teach leaders how to extend opportunities and support for participation, take their employees' recommendations into account, consider a varied range of decision choices, and ensure that subordinates have sufficient information and resources to complete tasks effectively.

Limitations and future directions

Apart from these contributions, this study still has some limitations. Firstly, this study failed to confirm mediating roles of team resilience and psychological safety. However, the significant direct effect of participative leadership on team performance suggests there must be other mediators playing roles in this relationship. Lee and his colleagues (2010) proved leaders, as the knowledge builder, enhance team members' willingness to rely on and disclose information in the team, which in turn increases team knowledge sharing. By doing so, members are forced to rethink and reflect on their points of view and consider factors they had not previously considered (Drach-Zahavy & Somech, 2001). This in turn can promote team reflection and enable teams to foresee all possible costs, benefits, and side effects, and this leads to improvement in productivity (e.g., Jehn & Mannix, 2001; Pelled et al., 1999). Thus, future research could regard team reflection as the potential mediator influencing the association between participative leadership and team performance.

Besides, since this study designed as cross-sectional research, no causal relationships can be drawn from the conclusions (Podsakoff et al., 2012). Therefore, longitudinal studies are needed to provide evidence of whether participative leadership would positively affect team performance over time during tough times. This study also acknowledged the possibility of social desirability bias (a tendency to present reality to align with what is perceived to be socially acceptable) as a limitation that creates complexities in interpreting findings. Since participants mainly nested in teams, it is a natural reaction to project a favourable image of their teams and to avoid receiving negative evaluations.

Moreover, the development and validation of team resilience scale have not yet been extensively researched. By far, only two such scales that currently exist in the literature (McEwen & Boyd, 2018; Sharma & Sharma, 2016). It appears as though these scales might actually measure various antecedents of team resilience (e.g.,

resourcefulness, robustness, self-care) that reflect factors contributing to the capacity to bounce-back, rather than directly capturing the capacity itself. In light of this limitation, we call on future scholars to develop and validate a scale that captures work team resilience.

Additionally, because this research represents a preliminary step in identifying leadership's relevance in team stress management, only one specific leader styles was selected. However, future research could examine other leadership models (i.e., directional/charismatic, transactional, individualized leadership) and assess the impact on team climate and team problem-solving behavior. In particular, since directive leadership and participative represent the long-standing two-dimensional (i.e., task-oriented vs. people-oriented) leadership model (Blake & Mouton, 1964), future scholars could compare the different impacts of these two leadership styles in terms of team outcomes. In such case, this line of investigation should be pursued since other leadership styles may be better suited to team development and performance.

Conclusion

The coronavirus outbreak has fundamentally challenged the traditional way of working, especially for globally distributed teams. This study provided insights into how to improve team function by exploring the relatively neglected area of team-level resilient behaviour. We advanced our understanding of how participatory leadership influences psychology safety and team performance, even if the overall serial mediation model was not supported. Future research should pay more attention to the boundary conditions of each variable, and employ different types of research methods to study the cross-level dynamics between teams and individuals.

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AppendixA.1. Team performance scale (Black & Porter, 1991)

How do you evaluate the following performance related statements:

1 Team members' general performance.	1 2 3 4 5
2 Team members punctual task completion.	1 2 3 4 5
3 Team members ability to achieve organizational objectives.	1 2 3 4 5
4 Team members' level of performance quality.	1 2 3 4 5

1=poor, 2=fair, 3=good, 4=very good, 5=excellent

AppendixA.2. Team resilience scale (Meneghel & Martínez, 2016)

In difficult situations, my team....

1 tries to look on the positive side	0 1 2 3 4 5 6
2 adapts to changes in a positive way, and become stronger when overcome them	0 1 2 3 4 5 6
3 gives support to each other	0 1 2 3 4 5 6
4 has no fear of uncertainty, we can deal with it well and become strengthened	0 1 2 3 4 5 6
5 can work well even in absence of any group member	0 1 2 3 4 5 6

0=never, 1=rarely, 2=occasionally, 3=sometimes, 4=frequently, 5=usually, 6=always

AppendixA.3. Psychology safety climate scale (Harvey et al, 2019)

Please indicate to what extent the following statements regarding your team are true according to you:

1 In this team, it is easy to speak up about what is on your mind.	1 2 3 4 5 6 7
2 If you make a mistake in this team, it is often held against you (reverse coded).	1 2 3 4 5 6 7
3 People in this team are usually comfortable talking about problems and disagreements.	1 2 3 4 5 6 7
4 People in this team are eager to share information about what does and doesn't work.	1 2 3 4 5 6 7

1=strongly disagree, 2=disagree, 3=More or less disagree, 4=Neither disagree nor agree, 5=More or less agree, 6=agree, 7=strongly agree

AppendixA.4. Participative leadership scale (Arnold, et al., 2000)

Please indicate to what degree you agree or disagree:

1 My manager encourages work group members to express ideas/suggestions.	1 2 3 4 5
2 My manager listens to my work group's ideas and suggestions.	1 2 3 4 5
3 My manager uses my work group's suggestions to make decisions that affect us.	1 2 3 4 5
4 My manager considers my work group's ideas even when he/she disagrees with them.	1 2 3 4 5
5 My manager makes decisions based only on his/her own ideas (reverse coded) .	1 2 3 4 5
6 My manager gives all work group members a chance to voice their opinions.	1 2 3 4 5

1=strongly disagree, 2=disagree, 3=neither, 4=agree, 5=strongly agree