RELATIONSHIP BETWEEN EXPECTED LEADER BEHAVIOR AND PSYCHOLOGICAL SAFETY IN VIRTUAL TEAMWORK DURING PANDEMIC PERIOD

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INTRODUCTION

Relevance. The unprecedented COVID-19 pandemic led to challenges that leaders not only had to struggle to meet the basic requirements of their tasks but also rely on their instincts and insights, ensuring the well-being and support for the team members, while working remotely. In this time of crisis, team members faced a variety of stressful experiences, difficult work and leisure conditions, and psychological insecurity. Depending on the conditions caused by the pandemic, the nature of the work, the team member's degree of psychological safety, and their individual characteristics, it is likely that they had their own expectations, what kind of behavior they would prefer from their leader in virtual teamwork.

Research problem. What is the interrelationship between the team member's degree of psychological safety and expected leader behaviors in virtual teamwork during a pandemic?

Research aim. To assess the relationship between the team member's degree of psychological safety and expected leader behaviors in virtual teamwork during a pandemic, and to propose implications with recommendations for leaders in organizations.

Objectives. 1) To empirically assess the interrelationship between the team member's degree of psychological safety and expected leader behaviors in virtual teamwork during pandemic period. 2) Based on a discussion of the results of the empirical study and the existing findings in the field, to propose implications regarding the implementation of the team member's degree of psychological safety and expected leader behaviors in virtual teamwork during pandemic period.

Research methodology. A quantitative research method - an online survey - was conducted. In the study, the survey was conducted with a sample size of 327 respondents from two companies: information technology and biotechnology industries. Instruments used in the study: Leader Behavior Development Questionnaire (LBDQ50) (Warner-Soderholm et al., 2019) and 7 item questionnaire by Amy C. Edmondson (1999). In order to test the research question, the data were analyzed using Statistical Package for the Social Sciences (SPSS) version 26.0. For Independent samples, it was used Student's t-test when two independent groups were compared. Also, Pearson and Spearman Correlations were used to find a linear relationship between two variables. Finally, linear regression was used as a predictive analysis which explained the relationship between the dependent variable and independent variables. The ethical aspects of the research were considered.

Theoretical background

Psychological safety

Amy Edmondson defined psychological safety as a shared belief that team members will not be punished or humiliated for speaking up with ideas, questions, or concerns. When individuals feel safe in a work setting, they do not worry about the negative influences caused by self-expression or interpersonal conflict (Zeng et al., 2020). In contrast, when teams have low levels of psychological safety, members will feel less confident expressing their ideas, opinions, perceptions and feel more concern for negative interpersonal consequences (Bradley et al., 2012), and remain quiet based on distinct fears (Edmondson, 1999; Alkan et al., 2020). Literature review showed that leader behavior can promote outcomes of psychological safety (see **Table 1**).

Psychological safety as a construct was adjusted to the context of the COVID-19 outbreak when most of the people were exposed by the fear of the disease in comparison to somewhat regular conditions, and that individuals had an incredible agency to shape their development to a degree, and the extent to which they felt psychologically safe in a certain moment (Wanless, 2016).

Depending on how psychologically safe a team member felt, he or she was likely to prefer different behavior from their leaders in virtual teamwork.

Outcomes	Key findings	Authors
Trust	Builds and supports long-term relationships, develops support, leads to positive psychological welfare, boosts team productivity, facilitates team learning, one of the crucial component for team effectiveness	Haesevoets et al., 2019; Triplett et al., 2018; Faisshmidt et al., 2017; Turner et al., 2018; Harvey et al., 2019; Kostopoulos et al., 2011; Harms, 2015; Nemiro, 2016; Dixon, 2017
Communication	One of the key factors for organizations and teamwork, contributes to the confidence for team members speaking openly, sharing information and their opinion	Mutlu et al., 2015; Glikson et al., 2019; Oliver, 2019; Eisenberg et al., 2019; McLarnon et al., 2019; Shen et al., 2015
Learning behavior	Psychological safety has a meaningful positive effect on it, contributes to better team performance, creates value-added benefits	Lee, 2020; Tiwari et al., 2016; Savelsbergh et al., 2015; Jamshed et al., 2019; Jha et al., 2020

Table 1. *Outcomes of psychological safety*
Source: developed by the author

Virtual teamwork

The COVID-19 pandemic forced most of the organizations moved from having an average percentage of team members working virtually, to the entire personnel working from home (Newman, 2020). Moreover, virtual teams enable organizations to become more flexible, to adapt, and react fastly to complex and dynamic environments (Maley, 2020). Some scholars identified key challenges that team members face while working remotely (see **Figure 1**).

Therefore, to reduce these challenges, the leaders should foster engagement and involve everyone with shared goals and vision in the team, facilitate connections, encourage exchanging the ideas, ensure clear and consistent communication, develop empathy to understand others' constrains, set some time dedicated to each member, provide feedback to the team members.

Accordingly, such behavioral characteristics of the leader may contribute to the reinforcement of team members' psychological safety, awareness of individual needs, which leads to inclusion, better team performance, and achieving effective results.

Figure 1. *Challenges while working remotely*
Source: Feitosa & Salas, 2020

The role of leader behavior

One of the important roles of leader behavior and organizational support is to satisfy the psychological needs of the group members, increase the level of psychological well-being and satisfaction in the team (Marashdah et al., 2020). Correspondingly, scholars explored that various leader behaviors associated with health, coping, productivity, and performance, and support with empowerment may help team members to take an active role and promote estimations of change and uncertainty as an opportunity (Fløvik et al., 2020). Eventually, scholars (Kaluza et al., 2020; Demircioglu et al., 2020; Behrendt et al., 2017) have identified three types of leadership behavior that focus on the specific approaches (see **Figure 2**).

Depending on the degree of psychological safety of the team members, the nature of the work and the working conditions caused by the pandemic, it is likely that the team members will prefer different behaviors from their leaders. Therefore, the results of the study will show that the degree of psychological safety of a team member had a positive effect and a positive correlation on some of the predicted determinants of leader behavior. Finally, the differences between low and high levels of team member psychological safety were also significant for certain leader behavioral preferences.
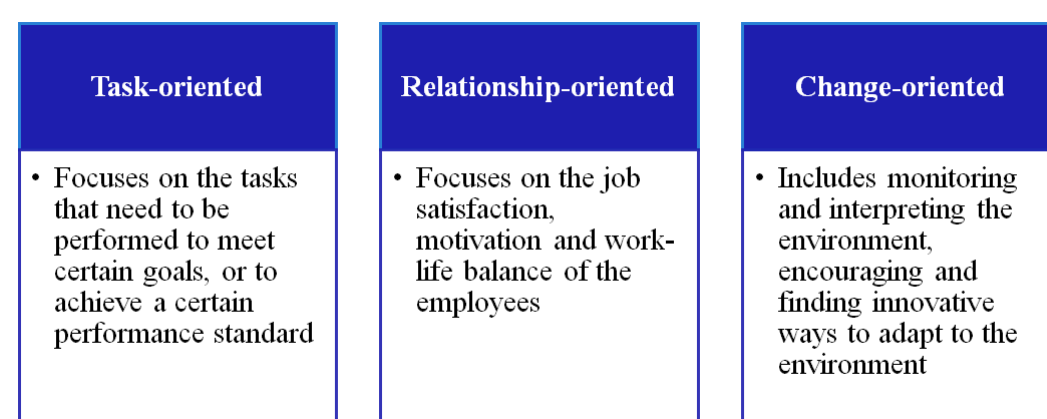
Task-oriented	Relationship-oriented	Change-oriented
• Focuses on the tasks that need to be performed to meet certain goals, or to achieve a certain performance standard	• Focuses on the job satisfaction, motivation and work-life balance of the employees	• Includes monitoring and interpreting the environment, encouraging and finding innovative ways to adapt to the environment

Figure 2. *Leadership behavior theories*
Source: Behrendt et al., 2017; Rüzgar, 2018; Mikkelsen & Olsen, 2019

Research results

1. After analyzing the results of the study, findings disclosed that the team member's degree of psychological safety had a positive effect on these expected underlying leader behavior factors:

	R²	F	df	p	Unstd. Coeff. β	Std. Error	Std. Coeff. β	t	p
Constant	0.120	44.28	1; 325	<0.001	6.499	1.152		5.64	<0.001
Psychological safety					1.203	0.181	0.35	6.65	<0.001

Dependent variable: Demand Reconciliation

Table 2. *The effect on the team member's degree of psychological safety and expected leader behavior underlying factor Demand Reconciliation*
Source: developed by the author

	R²	F	df	p	Unstd. Coeff. β	Std. Error	Std. Coeff. β	t	p
Constant	0.020	6.60	1; 325	0.011	15.791	1.207		13.09	<0.001
Psychological safety					0.486	0.189	0.14	2.57	0.011

Dependent variable: Tolerance and Freedom

Table 3. *The effect on the team member's degree of psychological safety and expected leader behavior underlying factor Tolerance and Freedom*
Source: developed by the author

	R²	F	df	p	Unstd. Coeff. β	Std. Error	Std. Coeff. β	t	p
Constant	0.023	7.74	1; 325	0.006	12.149	1.312		9.26	<0.001
Psychological safety					0.573	0.206	0.15	2.78	0.006

Dependent variable: Role Assumption

Table 4. *The effect on the team member's degree of psychological safety and expected leader behavior underlying factor Role Assumption*
Source: developed by the author

	R²	F	df	p	Unstd. Coeff. β	Std. Error	Std. Coeff. β	t	p
Constant	0.060	20.81	1; 325	<0.001	10.367	0.872		11.89	<0.001
Psychological safety					0.624	0.137	0.25	4.56	<0.001

Dependent variable: Integration

Table 5. *The effect on the team member's degree of psychological safety and expected leader behavior underlying factor Integration*
Source: developed by the author

2. Furthermore, the results revealed that there was a significant relationship between the team member's degree of psychological safety and the expected leader behavior underlying factors in virtual teamwork during pandemic period. A positive relationship was confirmed between the team member's degree of psychological safety and these leader behavior preferences:

Leader behavior underlying factors		Psychological safety
Demand Reconciliation	r (Pearson)	0.35**
	p	<0.001
	N	327
Tolerance and Freedom	r (Pearson)	0.14*
	p	0.011
	N	327
Role Assumption	r (Pearson)	0.15**
	p	0.006
	N	327
Integration	r (Pearson)	0.245**
	p	<0.001
	N	327

Table 6. *Positive correlation between the team member's psychological safety and expected leader behavior underlying factors*
Source: developed by the author

2.2 Finally, respondents with the lower (less than average 6.37) degree of psychological safety had leader behavior preferences for **Tolerance of Uncertainty** and **Initiation of Structure**. Meanwhile, respondents with the higher (average 6.37 or more) degree of psychological safety expected these: **Demand Reconciliation**, **Role Assumption**, and **Integration**.

Leader behavior und. factors	Psychological safety	N	Mean (M)	Std. deviation	t	df	p
Tolerance of Uncertainty	Low	169	20.19	0.76	2.36*	293.50	0.019
	High	158	19.96	1.00			
Initiation of Structure	Low	169	16.78	2.33	6.42**	325.00	<0.001
	High	158	15.10	2.39			
Demand Reconciliation	Low	169	13.93	0.99	-4.58**	325.00	<0.001
	High	158	14.40	0.86			
Role Assumption	Low	169	15.69	0.99	-1.98*	325.00	0.049
	High	158	15.91	1.07			
Integration	Low	169	14.21	0.71	-3.44**	325.00	0.001
	High	158	14.47	0.66			

Table 7. *Significant mean differences between low and high team member's degree of psychological safety and expected leader behavior underlying factors*
Source: developed by the author

CONCLUSIONS AND RECOMMENDATIONS

Research results disclosed a positive effect on the team member's degree of psychological safety and leader behavior preferences: Demand Reconciliation, Tolerance and Freedom, Role Assumption, and Integration. Further, the results revealed that there was a significant relationship between the team member's degree of psychological safety and expected leader behavior underlying factors in virtual teamwork. A positive relationship was confirmed between the team member's degree of psychological safety and Demand Reconciliation, Tolerance and Freedom, Role Assumption and Integration. Finally, respondents who reported the lower degree of psychological safety had leader behavior preferences for Tolerance of Uncertainty, Initiation of Structure. While, respondents who reported the higher degree of psychological safety expected these: Demand Reconciliation, Role Assumption, and Integration.

RECOMMENDATIONS

1. Managers who lead teams with higher degree of psychological safety, should prioritize responsible conflict resolution, adept assessment of situations, active support for maintaining boundaries, and a genuine respect for individual differences and skills. Additionally, they should proactively plan for the team, embrace new and diverse ideas, effectively communicate and clarify goals, foster the team morale, inspire the team to overcome challenges, and demonstrate creativity. In teams with these characteristics, leaders should also be skillful at understanding and openly discussing the challenges and aspirations of their team members.

2. Managers who lead teams with lower degree of psychological safety, should demonstrate the ability to navigate uncertainty without conceding to anxiety or frustration. They should approach challenges with objectivity, displaying respect for team members and acting in alignment with their core values. Further, leaders should focus their energy on the future rather than dwelling on past mistakes, avoid excessive reliance on rigid plans, and foster an environment that encourages deliberated risk-taking and the exploration of alternative scenarios. Additionally, they should take a proactive role in clearly defining their own responsibilities and communicating expectations to their followers.

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