

A Critical Examination of Literatures on Psychological Safety

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Abstract

Psychological safety [PS] was introduced in the 90s, and is a term popularized by Harvard Business School professor Amy Edmonson in a study conducted among medical teams in hospitals. PS is an environment of being able to express one's self without fear of negative consequences such as embarrassment, and ridicule on self image, status or even career (Kahn 1990 as cited in Edmonson 2003). PS enhances sense of self-worth because it overpowers feelings of rejection and negative impacts on self-image whenever self-expression is exercised in the workplace. PS increases morale and self-confidence of members of a team, without having to be personally close to one another. Subsequent researches concluded that greater trust and respect were developed among teams in workplaces of varied settings. This paper is a literature review on various studies and applications of psychological safety. Using literatures published in scholarly journals from 2009 to 2010, the review revealed that many industries (e.g. construction, maritime, healthcare and nursing, textile) have already acknowledged PS to be important. Moreover, there are variables that impact PS and could help managers enhance PS of their subordinates. Researchers may use statistical techniques to examine the significance of these variables on PS, which in turn may enhance organizational effectiveness of employees.

Keywords: *psychological safety, psychological safety variables, organizational effectiveness, Self-expression*

Introduction

Human capital, which represents the amount of knowledge, technical skills, experience, and creativity of an organization, is of great importance, making this resource be recognized as assets

that are productive and not merely cost consuming units (Hendricks 2002 as cited in Pasban and Nojedeh, 2016). Further, emphasis on human capital is grounded on the perspective that firms' market value is based mostly on intangibles than tangibles (Pasban and Nojedeh, 2016). Hence, organizations thrive, expand and grow, and perpetually exist because of human capital. However, as humans, employees are not infallible to committing errors, either consciously or unconsciously. Employees who commit mistakes feel sense of inadequacy and uncertainty that result to feelings of worthlessness and incapability of performing responsibilities at full extent because of fear of committing mistakes.

In a study made among medical teams in hospitals to determine what made the best performing groups stand out, Harvard Business School professor Amy Edmonson discovered that the best and high performing teams are those who commit more medication errors than other groups that commit fewer. In other words, teams that have lesser amounts of medication errors are actually the worst group performers. Professor Edmonson realized that psychological safety [PS], which facilitates a "climate of openness," is what distinguished the best from the worst performing teams (Lebowitz, 2015). The concept of PS is not entirely new since several schools of thought recognize the value of having a team that has a shared belief it is ready to take interpersonal risk.

This paper explores various literatures on psychological safety with the intent of understanding how the concept improves organizational effectiveness of employees.

Method

This paper is a literature review of published studies on psychological safety. Literature review is one of the most important components of any research undertaking because it allows researchers to investigate what has been discovered in previous researches. This process is crucial in identifying gaps or areas that has not been tapped that will be used in justifying significance of the study of interest.

Inclusion and Exclusion Criteria

Literatures from scholarly journals that are published from 2009 to 2018 are used in the review. Those that contain the keywords psychological safety in the title, abstract, and keywords were chosen. Literatures from predatory journals are not considered in this review.

Mediating roles of PS

PS is viewed to be more evident in teams rather than in an individual, and in a longitudinal study on perceptions about PS and social network ties in 69 work teams of federal funded service programs in the United States using Simulation Investigation for Empirical Analysis [SIENA] software conducted by Schulte, Cohen, and Klein (2010), individuals exhibit levels of PS in groups, depending on their network ties. These individual network ties disperse different levels of intensity of PS, and the combined levels form the team's own workgroup PS (Schulte et al., 2010). An extension of how the formed workgroup PS impacts overall decision was exemplified in a statewide study of 1,040 public child welfare employees in Washington State that were organized in 239 work groups conducted by Kruzich, Mienko, and Courtney (2014). Using confirmatory factor analysis CFA combined with structural equation model SEM, the study revealed that group PS was positively significant in public child welfare employees' decision to remain in the organization Kruzich et al. (2014). Further, the study pointed out that supportive and empowered leadership and predominance of human resource directly affects PS (Kruzich et al., 2014).

The study of Liu, Liao, and Wei (2013) used a form of ordinary least square regression-based technique called hierarchical linear modeling or HLM for hypotheses testing, and confirmatory factor analysis for constructs validity tests of 725 survey respondents of a large telecommunication company in South China. The study found significant mediating role of PS between authentic leadership and internal whistle blowing (Liu et al., 2013). Being a whistleblower is a sensitive task because it has to be calculated, and faces risks such as retaliation from the wrongdoer. In an environment of high PS, whistleblowers perceive fewer risks, and authentic leaders create this kind of work environment (Liu et al., 2013).

Taştan and Türker (2014) studied the mediating role of PS on the correlation between perceived organizational culture and job involvement. The 264

full time employees from the banking, insurance, and finance companies in Istanbul Turkey were asked to be survey respondents, and the data gathered were analyzed using confirmatory factor analysis, correlation, and hierarchical regression analysis. The study found significant and positive relationships among perceived organizational culture, job involvement, and psychological circumstances of safety and meaningfulness (Taştan & Türker, 2014). PS is next to psychological meaningfulness to have high correlation with job involvement (Taştan & Türker, 2014). On the other hand, PS was found to have no mediating role on the relationship of organizational culture to job involvement (Taştan & Türker, 2014).

Guchait, Paşamehmetoğlu, and Dawson (2014) examined the mediating role of perceived PS between perceived support for management of error and employee engagement in service recovery performance, using survey data gathered from 236 employees of 22 different restaurants in Turkey. Confirmatory factor analysis was used to validate constructs, and principal components analysis was performed to determine significant factor loadings. The study showed that a positive and significant relationship exist between PS and service recovery performance; the mediating effect of perceived PS on perceived supervisor support for error management is marginally significant; and the mediating effect of perceived PS on perceived co-worker support for error management is significant (Guchait et al., 2014). Co-worker support assists in successful completion of work tasks, and helps reduce job stress (Gouldner, 1960 as cited in Yang et al., 2015).

The mediating effect of PS was analyzed in the seminal work of Chen, Zhang, Zhang, and Xu (2016) on 200 research-based teams of Chinese universities. Using confirmatory factor analysis and structural equation modeling, PS is one of the two variables that significantly mediate collectivism-oriented human resource management CHRM and innovation performance (Chen et al., 2016).

Javed et al. (2016) examined how PS mediates effect of inclusive leadership on innovative work behavior using survey data from 180 respondents who are employees of various textile companies in Pakistan. Using structural equation modeling with inclusive leadership, PS, and innovative work behavior as latent variables, the study found an indirect effect of inclusive

leadership on creativity through PS, elucidating another path level between inclusive leadership and innovative work behavior using the mediating role of PS (Javed et al., 2016).

The study of Safdar, Badir, and Afsar (2017) examined the impact of PS on knowledge seeking practices of members involved in new product development. The research investigated 85 software development teams in Pakistan that were comprised of 1345 members, and determined how different PS levels impacted knowledge sourcing from three groups namely within the team, within the organization and outside the organization (Safdar et al., 2017). Using confirmatory factor analysis and structural equation modeling for hypothesis testing, the study found that individuals with high levels of PS tend to perceive low interpersonal risk such that the source of knowledge sought is based on the least effort principle (Safdar et al., 2017). Least effort principle takes the assumption of individual group members' preference from sources within the team because it is more economical from the time of sourcing up to implementation (Zipf, 1949 & Anderson et al., 2001 as cited in Safdar et al., 2017). Individuals with high levels of PS tend to ignore sources externally, while the opposite is true for those with low levels of PS – these persons tend to consult external sources rather than internal ones (Safdar et al., 2017).

The study of Silla and Gamero (2017) focused on the mediating role of time pressure in promoting PS climate among professional transport drivers and personal well-being. Using bivariate correlation analysis and structural equation modeling for hypothesis testing, 34 road transport firms in Spain represented by 367 professional drivers were analyzed and were who were administered with survey questionnaires. The study resulted to a negative association of PS environment with time pressure and burnout, and a positive association between PS environments with general health of the drivers (Silla & Gamero, 2017). The implication of the study's results is towards the suggestion of intervention programs that promote PS to reduce time pressure and burnout, and stress, and result to positive well being of professional drivers (Silla & Gamero, 2017).

The study of Roussin, Larraz, Jamieson, and Maestre (2018) examined how perceptions on occupational self-efficacy and PS influence active

participation in learning that is simulation-based. The study investigated nurses and medical doctors that possess simulation-based learning experiences in a hospital and health care simulation center in Santander, Cantabria, Spain. Using ordinary least squares regression of the 129 survey responses combined with content analysis on the qualitative side, the study confirmed that those with perceived higher PS, and greater levels of occupational efficacy around other members are more likely to comfortably speak out (Roussin et al., 2018). The implication is, the study pointed out the relevance of addressing individual and environmental concerns, and at the same time creating effective learning experiences through psychologically safe and emphatic work environments (Roussin et al., 2018).

Indicators of PS

Roussin and Webber (2011) studied the impact of organizational identification and Psychological on perceptions about co-worker trustworthiness. Confirmatory factor analysis and ordinary least squares regression were used to analyze the survey responses of 155 high potential managers representing 30 global work locations of a large global technology and manufacturing company (Roussin & Webber, 2011). The study confirmed the positive impact of a psychologically safe work environment, and that employees tend to mimic the (un)trusting behaviors and perception of their leaders (Roussin & Webber, 2011). Moreover, employees with high PS have greater levels of trustworthiness in co-employees, both old and new (Roussin & Webber, 2011).

Hirak, Peng, Carmeli, and Schaubroek (2011) examined how leader behavior and leader inclusiveness associate with perceptions of PS. A total of 281 medical doctors and nurses from clinical units of a large hospital in Israel were respondents of a survey whose data were subjected to hierarchical linear modeling to test the effect of leader inclusiveness on PS (Hirak et al., 2011). The study included age, gender, tenure, and work unit size as moderating variables because tenure impacts expertise in the work domain (Oldham & Cummings, 1996 as cited in Hirak et al., 2011); and, age and gender accounts for variation in perception about PS (Edmonson, 2004 as cited in Hirak et al., 2011). Large size of work units' fostering of PS may be more complex compared to smaller ones (Hirak et al., 2011). The study showed that leadership that can create positive relational dynamics has a significant

role in shaping team members of low performing units perception about PS (Hirak et al., 2011).

The study of Sheketera, Vityaveza, and Bogomaz (2014) analyzed the relationship between PS and criterion of abstract-logical and social intelligence of graduates of the 11th class. The study found that students who are about to graduate and leave schools develop in them a sense of psychological security whose indicator is a superior level of cognitive abstract intelligence (Sheketera et al., 2014).

Hernandez, Luthanen, Ramsel, and Osatuke (2015) explored if managerial awareness mediates between burnout of supervisor and climate of supervised workgroups. A total of 681 survey participants were administered with organization-wide survey by the Veteran's Health Administration National Center for Organizational Development. Using hierarchical linear modeling techniques, the study revealed that groups with supervisors who over-rated their own performance behavior have low PS compared to those groups with supervisors who either under-rated or accurately rated their own performance behavior (Hernandez et al., 2015). The implication is, the level of managerial self-awareness influences the creation of psychologically safe work climates (Hernandez et al., 2015).

The study of Chen, Gao, Zheng, and Ran (2015) explored salient indicators of PS, and divided it into four [4]: individual factors, interpersonal factors, leadership factors, and organizational contexts. Individual factors focus on the characteristics of a person in an individual state or self-consciousness (May et al., 2002 as cited in Chen et al., 2015); interpersonal factors refer to interpersonal interaction; leadership factors refer to leadership behavior that are considered to be the most significant predictor variable of PS, and concurred that management style is positively correlated with PS (Tynan 2005; Kahn 1990; May et al., 2004 as cited in Chen et al., 2015). Ning et al. (as cited in Chen et al., 2015) on the other hand, focused on negative leadership's effect on PS, whereby negative leadership is associated with abusive leadership.

The systematic literature review on PS conducted by Newman, Donahue, and Eva (2016) suggested Edmonson's 7-item measure as having the most valid and reliable constructs that are isomorphic and has strong psychometric

properties. Newman et al. (2016) recommended this construct and measure to assess PS within an organization.

Turner and Harder (2018) examined the attributes of psychologically safe learning environments during simulation experiences nursing students undergo. The study used the Walker and Avant concept analysis method by which the structure of a concept is disaggregated into simpler fragments (Turner & Harder, 2018). This was done by deduction method – from a broader perspective such as reviewing literatures involving different disciplines, then lumping together characteristics that are perceived to be common, and from it, design the attributes of the concept (Turner & Harder, 2018). Using this method, the following attributes were identified: ability to make mistakes without worrying about the consequences, the qualities of the facilitator, and related foundational activities (Turner & Harder, 2018). Antecedents that influence these attributes are: a controlled environment that promotes formative feedback rather than just simple summative assessments, and establishing a facilitator – learning relationships grounded on trust and confidentiality (Turner & Harder, 2018).

The study of Lee, Choi, and Kim (2018) concurred that PS diminishes effort required to regulate interpersonal relations, or deal with disturbing social issues; enabling the members to allocate strength towards constructive problem solving without fear of social cost or humiliation concerns. A total of 70 leaders and 551 members coming from participants of an executive training and MBA program of a known Korean university became respondents of the survey. Data collected was subjected to multilevel confirmatory factor analysis for assessment of empirical distinctiveness of variables, while path analysis utilizing Mplus was made for hypotheses testing (Lee et al., 2018). In particular, the mediating role of gender diversity between team PS and status conflict was examined. The study found that status conflict indirectly affects team creativity through its direct impact on PS, and that gender diversity has a moderating role between PS and status conflict such that a weak, negative relationship exist in gender-diverse groups than gender-homogenous groups (Lee et al., 2018). Overall, the study concluded that status conflict damage creativity of the group due to the creation of a psychologically weak environment where members are afraid to freely discuss their ideas and opinions (Lee et al., 2018). In these scenarios, leaders may need to identify attributes that are valued and appreciated in the group, and clarify and

stabilize social hierarchy so that members accept and acknowledge status differences (Lee et al., 2018).

The paper of Roh, Ahn, Kim, and Kim (2018) looked on how prebriefing strategy impacts learner's PS and learning outcomes. Utilizing 281 fourth year students of nursing enrolled in a simulation course, independent sample t-test (at 0.05 significant) was conducted to determine if significant differences exist between an experimental group and control group. The study revealed that nursing students with prebriefing methods exhibited higher team PS compared to the control group (Roh et al., 2018). This implies that additional prebriefing activities such as concept mapping, fiction contract, instructor's explanations, feedback and support impacts PS (Roh et al., 2018).

The study of Huyghebaert, Gillet, Fernet, Lahiani, and Fouquereau (2018) investigated PS climate in relation to employees' burnout, conflict between work and family, and turnover. Using responses of 269 employees of 18 French healthcare centers which were subjected to correlation analyses and structural equation modeling with four latent variables and 20 indicators, the study found PS to negatively associate with employee burnout and turnover; the implication of which is, PS climate is a significant lever in reducing workers' needs inhibiting and burnout that eventually reduce work-family conflict, and intentions to separate from the organization (Huyghebaert et al., 2018).

Results and Discussion

Synthesis of Literature Review

The literature review proved widespread interest on the tenets of PS. Suffice to say, PS is getting a popular norm in human resource management of various disciplines around the world, predominantly in healthcare (Hernandez et al., 2015; Hirak et al., 2011; Huyghebaert et al., 2018; Roh et al., 2018; Schulte et al., 2010; Turner & Harder, 2018). This is not surprising since the term psychology is associated with the discipline of health and medicine. The growing interest in PS was also seen in telecommunication (Liu et al., 2013); banking and finance (Taştan & Türker, 2014); transport (Silla & Gamero, 2017); and others. Impact of leadership on PS was recognized (Chen et al., 2015; Hernandez et al., 2015; Hirak et al., 2011; Jayed et al., 2016; Kruzich

et al., 2014; Lee et al., 2013; Roh et al., 2018; Rousin et al., 2018); and the use of SEM (Javed et al., 2016; Kruzich et al., 2014; Safdar et al., 2017; Silla & Gamero, 2017) and confirmatory factor analysis (Guchait et al., 2014; Kruzich et al., 2014; Roussin & Webber, 2011; Taştan & Türker, 2014) prevailed. Notably, only two studies had an academic setting (Sheketera et al., 2014; Turner & Harder, 2018). Overall, studies about PS have recognized its importance in increasing employee engagement, promote motivation, enhance job performance, and longer retention in the organization.

Variables that may be considered to impact PS were likewise synthesized from this literature review from the indicators of PS, which future researchers can explore using specific groups, organizations, and industries. The variables can be significantly validated using appropriate statistical tools. A model is illustrated in Fig. 1, which can be a good starting point for succeeding researches, and follows the input-process-output conceptual framework.

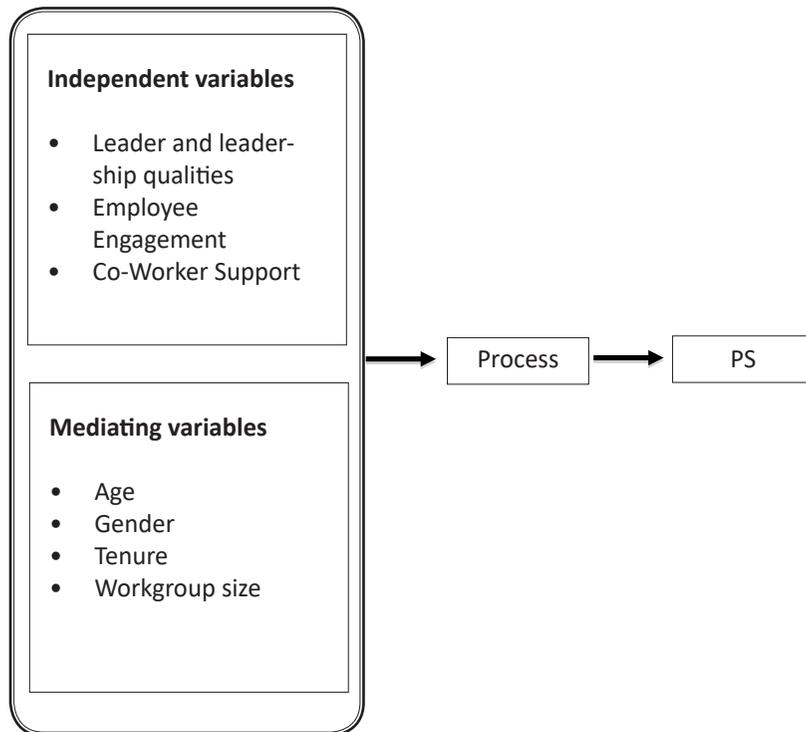


Figure 1: Proposed Conceptual Framework PS Determinants

Conclusions and Recommendation

PS is a highly interesting concept to explore using different types of groups because its application is mainly on a team setting, and not really on each member. Because of the complex nature of human behavior, drivers of psychological safety can vary and creating an environment where every one feels safe to express own opinion without fear of ridicule and embarrassment is a challenging managerial task. Nevertheless literatures have already affirmed the benefits of a psychologically safe environment, and in no time, as many applications of PS are studied and added in the literature, this concept can become a significant management theory.

It is recommended that the proposed conceptual framework on PS determinants be further explored and modified to consider applicability in specific work groups. Mixed research is the recommended method to use since the topic is highly subjective, and the constructs may be difficult to quantify.

References

- Carmeli, A., & Gittell, J.H. (2009). High-quality relationships, PS, and learning from failures in work organizations. *Journal of Organizational Behavior*, 30, 709-729. doi:10.1002/job.565.
- Chen, M., Gao, X., Zheng, H., and Ran, B. (2015). A review on PS: concepts, measurements, antecedents, and consequences variables. *International Conference on Social Science and Technology Education*, 433-439, doi:10.2991/icsste-15.2015.118.
- Chen, S., Zhang, G., Zhang, A., & Xu, J. (2015). Collectivism-oriented human resource management and innovation performance: an examination of team reflexivity and team PS. *Journal of Management and Organization*, 22(4), 535-548.
- Clark, D. (2015). Authentic leadership and social influence. *Big Dog & Little Dog's Performance Juxtaposition*. Retrieved May 27, 2019 from Big Dog & Little Dog's Performance Juxtaposition website, <http://www.nwlink.com/~donclark/index.html>.

- Dillon, B., & Burke, J. (2016). 6 characteristics of inclusive leaders. The Wall Street Journal. Retrieved May 29, 2010 from The Wall Street website, <https://deloitte.wsj.com/cio/2016/05/04/6-characteristics-of-inclusive-leaders/>
- Fong, K.H., & Snape. (2015). Empowering leadership, psychological empowerment and employee outcomes: testing a multi-level mediating model. *British Journal of Management*, 26, 126-138, doi:10.1111/1467-8551.12048.
- Goffee, R., and Jones, G. (2013). Creating the best workplace on earth. *Harvard Business Review*. Retrieved from: <<https://hbr.org/2013/05/creating-the-best-workplace-on-earth>>
- Graen, G., Canedo, J.C., & Grace, M. (2019). Team coaching can enhance PS and drive organizational effectiveness. *Operational Dynamics*, 1-6.
- Guchait, P., Paşamehmetoğlu, A., & Dawson, M. (2014). Perceived supervisor and co-worker support for error management: impact on perceived psychological safety and service recovery. *International Journal of Hospitality Management*, 41, 28-37.
- Hernandez, W., Luthanen, A., Ramsel, D., & Osatuke, K. (2015). The mediating relationship of self-awareness on supervisor burnout and workgroup civility & Psychological Safety: a multilevel path analysis. *Burnout Research*, 2, 36-49.
- Hirak, R., Peng, A.C., Carmeli., & Schaubroeck, J.M. (2011). Linking leader inclusiveness to work unit performance: the importance of psychological safety and learning from failures. *The Leadership Quarterly*, 23, 107-117.
- Huyghebaert, T., Gillet, N., Fernet, C., Lahiani, F.J., & Fouquereau, E. (2018). Leveraging psychological safety climate to prevent ill-being: the mediating role of psychological need thwarting. *Journal of Vocational Behavior*, 107, 111-125.
- Javed, B., Muhammad, S., Naqvi, M.R., Khan, A.K., Arjoon,S., & Tayyeb, H.H. (2016). Impact of inclusive leadership on innovative work behavior: the role of psychological safety. *Journal of Management & Organization*, 25(1), 117-136, doi: 10.1017/jmo.2017.3.
- Jung, D., Yammarino, F.J., & Lee, J.K. (2009). Modeling role of subordinates' attitudes on transformational leadership and effectiveness: a multi-cultural and multi-level perspective. *The Leadership Quarterly*, 20, 586-603, doi:10.1016/j.leaqua.2009.04.011.

- Kruzich, J.M., Mienko, J.A., & Courtney, M.E. (2014). Individual and work group influences on turnover retention among public child welfare workers: the effects of group psychological safety. *Children and Youth Services Review*, 42, 20-27.
- Lebowitz, S. (2015). Google considers this to be the most critical trait of successful teams. *Business Insider*. Retrieved May 24, 2019 from Business Insider website, <https://www.businessinsider.com/amy-edmondson-on-psychological-safety-2015-11>.
- Lee, H.W., Choi, J.N., & Kim, S. (2018). Does gender diversity help teams constructively manage status conflict? An evolutionary perspective of status conflict, team psychological safety, and team creativity. *Organizational Behavior and Human Decision Processes*, 144, 187-199.
- Liu, S.M., Liao, T.Q., & Wei, H. (2013). Authentic leadership and whistleblowing; mediating roles of psychological safety and personal identification. *Journal of Business Ethics*, 131(1), 107-119.
- Newman, A., Donohue, R., & Eva, N. (2016). Psychological Safety: a systematic review of the literature. *Human Resource Management Review*, 27, 521-535.
- Pasban, M., and Nojedeh, S.H. (2016). A review of the role of human capital in the organization. *Procedia – Social and Behavioral Sciences*, 230, 249-253.
- Roh, Y.S., Ahn, J.W., Kim, E.Y., & Kim, J. (2018). Effects of prebriefing on psychological safety and learning outcomes. *Clinical Simulation in Nursing*, 25, 12-19.
- Roussin, C.J., Larraz, E., Jamieson, K., & Maestre, J. (2018). PS self-efficacy and speaking up in interprofessional health care simulation. *Clinical Simulation in Learning*, 17, 38-46.
- Roussin, C.J., & Webber, S.S. (2012). Impact of organizational identification and psychological safety on initial perceptions of coworker trustworthiness. *Journal of Business and Psychology*, 27(3), 317-329.
- Saftar, U., Badir, Y.F., & Afsar, B. (2017). Who can I ask? How psychological safety affects knowledge sourcing among new product development team members. *Journal of High Technology Management Research*, 28, 79-92.

- Schulte, M., Cohen, N.A., & Klein, K.J. (2012). The coevolution of network ties and perceptions of team psychological safety. *Organization Science*, 20(2), 564-581.
- Sheketera, A., Vityaveza, Y., & Bogomaz, S. (2014). Psychological Safety as a factor in the intellectual development of school leavers. *Procedia – Social and Behavioral Sciences*, 154, 225-228.
- Silla, I., & Gamero, N. (2017). Psychological safety climate and professional drivers' well-being: the mediating role of time pressure. *Transportation Research Part F*, 53, 84-92.
- Taştan, S.B., & Türker, M.V. (2014). A study of the relationship between organizational culture and job involvement: the moderating role of psychological conditions of meaningfulness and safety. *Procedia – Social and Behavioral Sciences*, 149, 743 – 947.
- Turner, S., & Harder, N. (2018). Psychological safe environment: a concept analysis. *Clinical Simulation in Nursing*, 18, 47 – 55.
- Wong, C.A., & Laschinger, H.K.S. (2012). Authentic leadership, performance and job satisfaction: the mediating role of empowerment. *Journal of Advanced Nursing*, 947-959.
- Yang, T., Chen, Y.M., Zhu, M., Liu, Y., Den, J., Chen, Q., and See, L.C. (2015). Effects of co-worker and supervisor support on job stress and presenteeism in an aging workforce: a structural equation modeling approach. *International Journal of Environmental Research and Public Health*, 13(72), 1-15, doi:10.3390/ijerph13010072