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MASTER OF SCIENCE IN
HUMAN RESOURCES MANAGEMENT

THE CHARACTERISTIC OF TEAM INNOVATION
IN MODERN WORKING ENVIRONMENTS:
MODEL OF DEVELOPMENT AND
IMPLEMENTATION

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Declaration of Originality

I, Marios Kourousias, do hereby declare the originality of the dissertation. All the material contained in my dissertation entitled “The Impact of Team Inclusion on Team Innovation” is exclusively and only performed by me under the guidance of my faculty advisor Mrs. Irene Nikandrou for the acquisition of the Postgraduate Diploma in Human Resource Management of the Athens University of Economics and Business.

I have read and do understand Athens University of Economics and Business Misconduct definitions and information enclosed in the Preparation Guide. By signing this statement, I unequivocally assert that the aforementioned dissertation conforms to all the faculty rules.

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~Marios Kourousias



Abstract

The purpose of the present dissertation is to provide unique and interesting insights regarding the characteristic of innovation within the teams and the different ways companies may develop it. A series of variables, such as team knowledge sharing, team psychological safety, team inclusion and perceived supervisor support are being taken into consideration in order to construct our team-based, innovation-driven model with two (2) patterns of mediation effect. For the results analysis and extraction, we have conducted a quantitative research, using two hundred and eight (208) questionnaires that have been developed and distributed digitally to employees that work within a team and in which the role of the supervisor is distinct. As far as the results of the research are concerned, we have found out that team innovation is positively related with team knowledge sharing, team knowledge sharing is positively related with team psychological support, team psychological support is positively related both with team inclusion and perceived supervisor support, and finally team knowledge sharing is positively related both with team inclusion and perceived supervisor support. In addition, we focus on two (2) mediation models, in which team psychological safety is the mediator. In both cases the mediation effect is highly supported with a series of high-skilled statistics. Moreover, we provide concrete, theoretical, and practical implications that HR units may adopt in modern working environments in order to increase the levels of innovation within the teams, provide long-term, sustainable, competitive advantages and increase their market shares. Limitations of the present research are being shown. Concluding, the aforementioned results evidently are set to create new pathways for the future research regarding teams and team processes and enlightening the complex nature of mediating effects within the structure of the team.

Keywords

Team Innovation, Team Knowledge Sharing, Team Psychological Safety, Team Inclusion, Perceived Supervisor Support

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Περίληψη

Ο σκοπός της παρούσας διπλωματικής εργασίας είναι να αναδείξει μοναδικές και ενδιαφέρουσες γνώσεις σχετικά με το χαρακτηριστικό της καινοτομίας μέσα στις ομάδες και τους διαφορετικούς τρόπους με τους οποίους οι εταιρείες μπορούν να την αναπτύξουν. Μια σειρά μεταβλητών, όπως η ανταλλαγή γνώσεων μέσα στην ομάδα, η ψυχολογική ασφάλεια της ομάδας, η συμπερίληψη στην ομάδα και η αντιληπτή υποστήριξη του supervisor λαμβάνονται υπόψη προκειμένου να δομηθεί το ερευνητικό μοντέλο μας, που είναι βασισμένο στην ομάδα, με γνώμονα την καινοτομία και με δύο (2) μηχανισμούς διαμεσολάβησης. Για την ανάλυση και την εξαγωγή των αποτελεσμάτων, πραγματοποιούμε μια ποσοτική έρευνα, χρησιμοποιώντας διακόσια οκτώ (208) ερωτηματολόγια που έχουν αναπτυχθεί και διανεμηθεί ψηφιακά σε υπαλλήλους που εργάζονται μέσα σε μια ομάδα και όπου ο ρόλος του supervisor είναι διακριτός. Όσον αφορά τα αποτελέσματα της έρευνας, ανακαλύψαμε ότι η ομαδική καινοτομία σχετίζεται θετικά με την ανταλλαγή γνώσεων μέσα στην ομάδα, αντίστοιχα η ανταλλαγή γνώσεων μέσα στην ομάδα σχετίζεται θετικά με την ψυχολογική υποστήριξη της ομάδας, αντίστοιχα η ψυχολογική υποστήριξη της ομάδας σχετίζεται θετικά τόσο με την ένταξη στην ομάδα όσο και με την αντιληπτή υποστήριξη από τον supervisor και, τέλος, η ανταλλαγή γνώσεων μέσα στην ομάδα σχετίζεται θετικά τόσο με την ένταξη στην ομάδα όσο και με την αντιληπτή υποστήριξη από τον supervisor. Επιπλέον, εστιάζουμε σε δύο (2) μηχανισμούς διαμεσολάβησης με την ομαδική ψυχολογική ασφάλεια ως διαμεσολαβητή. Και στις δύο περιπτώσεις, το αποτέλεσμα της διαμεσολάβησης υποστηρίζεται σημαντικά από μια σειρά στατιστικών υψηλής ειδικευσης. Επιπλέον, παρέχουμε συγκεκριμένες, θεωρητικές και πρακτικές εφαρμογές που μπορούν να υιοθετήσουν τα σύγχρονα εργασιακά περιβάλλοντα προκειμένου να αυξήσουν τα επίπεδα καινοτομίας εντός των ομάδων, να δημιουργήσουν μακροπρόθεσμα, βιώσιμα, ανταγωνιστικά πλεονεκτήματα και να αυξήσουν τα μερίδια αγοράς τους. Εξίσου παρουσιάζονται και οι περιορισμοί της παρούσας έρευνας. Συμπερασματικά, τα προαναφερθέντα αποτελέσματα πρόκειται να δημιουργήσουν νέους δρόμους για τη μελλοντική έρευνα σχετικά με τις ομάδες και τις διαδικασίες που διαμορφώνονται μέσα σε αυτές και να διαφωτίσουν την περίπλοκη φύση των διαμεσολαβητικών μηχανισμών στη δομή της ομάδας.

Λέξεις-κλειδιά

Καινοτομία στην ομάδα, Ανταλλαγή γνώσεων στην ομάδα, Ψυχολογική ασφάλεια της ομάδας, Συμπερίληψη στην ομάδα, Αντιληπτή υποστήριξη από Supervisor

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1. Introduction

In the business world, the exploration for research and development for new ideas and procedures has made highly essential the need for formulation of high quality, goal-oriented, innovation-driven teams. Noted as the contemporary flagship for the business survival ([Tushman & O'Reily, 2002](#)), a great number of research projects ([West & Farr, 1990](#); [King, 1993](#); [Amabile, 2018](#); [Tsai & Ghoshal, 1998](#); [De Dreu & West, 2001](#); [Hülshager, Anderson & Salgado, 2009](#)) are exploring team innovation as the essential characteristic in teams that leads to long-term, sustainable, competitive advantage and the specific ways companies may engender the seed for innovative way of thinking.

In the continuum of time, researchers have provided their own definitions regarding *team innovation*, each one depicting the social and economic state of the corresponding era. Specifically, team innovation is defined by West and Farr ([1990](#)) as the deliberate introduction and implementation of new and modern beliefs, ideas, procedures, processes, products among the team, designed to deliver more efficient and high-quality outcomes for the team, the organization, as well the society itself. In addition, Pirola-Merlo, and Mann ([2004](#)) suggest that team innovation can be operationalized as the combination of the quantity and quality of ideas that are developed and implemented. In this research, we are providing the extra definition of team innovation as the perpetual mental procedure of dismantling and regenerating ideas since procedures are being deconstructed and reformed or replaced by new ones more efficient, more effective ([Abernathy & Clark, 1985](#)). In this way, teams create and adopt new models of acting deforming the cultural motto “this is how it is done here”.

Deploying the creation of this particular research, we take the chance to discern the different meanings between team creativity and team innovation, binding the former in the whole process of the latter. Whereas team creativity reflects the exploration process in which one considers alternatives, innovation is more of an exploitation process in which one tries to effectively implement an idea ([Paulus, Dzindolet & Kohn, 2012](#)). Generally, team creativity may increase the cognitive capital, however, research has not yet shown that induces long-term, sustainable, and competitive advantage ([Roberson, 2006](#)). This explains why in business markets team creativity consists only one pillar of the team innovation. In this way, team innovation does not only describe the generation of new ideas but signals the modernization of previous processes and politics and suggests the catalysis of outdated and anachronistic procedures and the formation of new ones, more efficient, more effective, saviors of time and cost. Thus, we understand there is a great need to expand the solely need of team creativity in modern working environments into team innovation, describe the differences, and explain the intercorrelation that exists between these two (2) elements.

As we illuminate team innovation as an important characteristic in the context of a team, insights will be revealed on the specific ways an entity of a team functions, communicates, interacts uplifting its

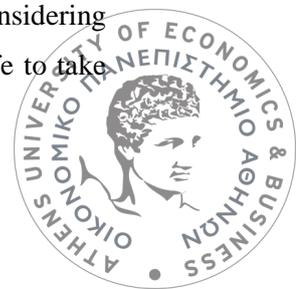


innovative way of thinking. In this research team consists of the team members and the supervisor. Below we develop the whole procedure that appears within teams and the various linear patterns team members adopt, such as team knowledge sharing ([De Dreu, 2007](#)), team psychological safety ([Edmondson, 1999](#)), team inclusion ([Nishii, 2013](#)), and perceived supervisor support ([Kottke & Sharafinski, 1988](#)). We will try to understand how all the above elements are being connected with each other and how they are adding value to the innovation of the team ([Anderson & West, 1998](#)).

The first clog of our model that knits the bond with team innovation as our exploring element is *team knowledge sharing*. Haas and Hansen ([2007](#)) have described team knowledge sharing as the provision or receipt of technical information, know-how and skills. Team knowledge sharing involves interaction and communication between team members ([Cohen & Bailey, 1997](#)) and includes the implicit coordination of expertise or information regarding who knows what in the group ([Faraj & Sproull, 2000](#)). Additionally, Helmstadter ([2003](#)) defines knowledge sharing in terms of voluntary communication and reciprocal influence between team members within a framework of shared beliefs, customs, institutions, ethical norms, and behavioral regularities. Knowledge is being defined as the subject matter of the interactions between the team members, being called “participating actors”, whereas the interaction itself may be called “sharing of knowledge”. All in all, we are adding that when we are referring to the term of team knowledge sharing, we are not just addressing the discussions and chats between the members of the group, but the exchange of critical information, capable of leading to superior team performance ([Srivastava, Bartol & Locke, 2006](#)).

Team knowledge sharing has been analyzed and examined by various scientists ([Lee, Gillespie, Mann & Wearing, 2010](#); [Lin, 2007](#); [Hu & Randel, 2014](#); [Akhavan and Hosseini, 2016](#); [Liao, Fei & Chen, 2007](#)). We will provide, combine, and connect the information that previous research suggests and expand its use for the needs of our model. Similarly, significant efforts have been made to combine and intertwine team knowledge sharing with team innovation. Thoroughly, a substantial number of researchers have studied *explicit and tacit knowledge sharing* ([Nonaka, 1994](#); [Polanyi, 1962](#); [Boud & Middleton, 2003](#); [van Ginkel & van Knippenberg, 2008](#); [Ganguly, Talukdar & Chatterjee, 2019](#)) *social capital* ([Hanifan, 1926](#); [Oh, Chung & Labianca, 2004](#); [Nahapiet & Ghosal, 1998](#); [Inkepen & Tsang, 2005](#); [Blau, 1964](#); [Tjosvold, Hui & Sun, 2000](#); [Wah, Menkhoff, Loh & Evers, 2007](#)), *extrinsic incentives* ([Fong & Chu, 2006](#); [Hu & Randel, 2014](#); [Davenport, Harris & Kohli, 2001](#); [O’Reilly & Pondy, 1980](#)) and *knowledge donating and knowledge collecting* ([Van der Rijt, 2002](#); [Van den Hooff & de Leeuw van Weenen, 2004](#); Oldenkamp, 2001) as linkages between team knowledge sharing and team innovation.

Delving into the concept of teams, we are examining the effect of *team psychological safety* on team knowledge sharing in the basis of emotional states and emotional reactions of the employees. Team psychological safety is defined by Schein and Bennis ([1965](#)) as the internal desire of team members to feel secure and capable of changing through time. Edmondson ([1999](#)) adds a symbolic value considering team psychological safety as the shared belief among members of a team in which it is safe to take



interpersonal risks. We believe that team psychological safety benefits the information exchange between the team members, letting them voice their opinions and ask questions, defy outdated procedures and discover new ones, and count on themselves in times of unawareness and lack of perception.

Thus, the third element that we are going to examine in our linear, team-focused model is team psychological safety, how it can be increased within the context of the team and what are the ramifications of low or high levels of secure feelings, respectively. A great number of researchers ([Gu, Wang & Wang, 2013](#); [Edmondson, 1999](#); [Tjosvold, Yu & Hui, 2004](#); [Hirak, Peng, Carmeli & Schaubroeck, 2012](#); [Argyris & Schön, 1978](#); [Stasser & Titus, 1987](#); [Edmondson, 2004](#); [Edmondson, 2002](#)) have shed light to uncover all the different aspects of team psychological safety and the individual aspects of its analysis such as *psychological safety climate* ([Campbell, Dunnette, Lawler & Weick, 1970](#); [Rentsch, 1990](#); [Schneider, 1990](#); [Anderson & West, 1998](#)), *learning from mistakes* ([Baumard & Starbuck, 2005](#); [Cannon & Edmondson, 2005](#); [Sitkin, 1992](#); [Carter & West, 1998](#)), *change* ([Bradley, Postlethwaite, Klotz, Hamdani & Brown, 2012](#); [Baer & Frese, 2003](#)) *trust* ([Mayer, Davis & Schoorman, 1995](#); [Klimoski & Mohammed, 1994](#)) and *leadership* ([Gu et al., 2013](#); [Owens & Hekman, 2012](#))

The second to last independent variable that the linear, exploring model will administer is *team inclusion*, namely the characteristic of inclusiveness within the members of a team. To begin with, Mor Barak and Cherin ([1998](#)) define team inclusion as the extent to which individuals can access information and resources, are involved in work groups, and have the ability to influence decision-making processes, whereas Miller ([1998](#)) supports that team inclusion represents a person's ability to contribute fully and effectively within a group, business unit or organization. Additionally, we are adding the following definition that arises from Nishii's ([2013](#)) insights; For example, some of them are equal opportunities, the ability to influence decision-making processes, and opportunities to establish personal connections with others. Each from the above definitions tries to enlighten a different aspect of team inclusion, as its meaning changes and expands year by year following new needs.

Taking into consideration that team inclusion has multiple definitions, meanings, interpretations, and implementations in the working environment, many researchers have chosen to understand this specific element ([Cox, 1994](#); [Ely / Thomas, 2001](#); [Green and Kalev 2008](#); [Ferdman & Davidson, 2004](#); [DeWall & Bushman, 2011](#); [Hitlan & Noel, 2009](#); [Bernstein & Crosby, 1980](#)). For instance, team inclusion has related to crucial *information exchange and decision-making processes* ([Mor Barak, 2016](#)), *team creativity* ([Acquavita, Pittman, Gibbons & Castellanos-Brown, 2009](#)), *improved reputation* ([Gonzalez & DeNisi, 2009](#); [Groeneveld, 2011](#)), *higher levels of job satisfaction and limited percentages of turnover* ([Brimhall, Lizano & Mor Barak, 2014](#)), *conflicts* ([Mamman, Kamoche & Bakuwa, 2012](#); [Larkey, 1996](#)), *social identity theory* ([Tajfel, 1982](#)), *social categorization theory* ([Bargh & Chartrand, 1999](#)) and *organizational outcomes* ([Holvino, Ferdman, & Merrill-Sands,](#)



[2004](#)). Through this research, endeavors will be actualized in order to give our contributions to the world of inclusion and help organizations shape a welcoming and non-threatening environment.

Furthermore, we are distinguishing the two crucial, often overlapping meanings, team diversity and team inclusion, focusing on the latter. Common perspective on managing diversity has been found in recruitment processes, training and development workshops, career maps, mentoring programs in order to increase and retain valuable workforce and increase heterogeneity across team members ([Cox, 1994](#); [Morrison, 1992](#)). However, there is limited practitioner literature of whether it represents a material change in the organization affecting strategies, actions, and outcomes, or simply describes an alternative way to reduce backlash against some initiatives ([Linnehan & Konrad, 1999](#)).

In past literature, team diversity is just commonly viewed as the mere distribution of differences between the team members of a unit regarding a vital characteristic such as gender and ethnicity ([Harrison Klein, 2007](#)). Yet still, in inclusive environments, individuals of all backgrounds—not just members of historically demographic groups—are fairly treated, valued for who they are, and included in core decision-making processes ([Nishii, 2013](#)). Thus, we expand the solely need for team diversity into a more solid, more powerful meaning, team inclusion, combining the two terms, blending them together, ingraining team creativity as one of the steps of innovative thinking. We quote “*Diversity is just the invitation to the party; Inclusion is stepping up and dancing*”.

In our team-focused, innovation-driven model we connect team inclusion both with team psychological safety and team knowledge sharing, since we believe that the more inclusive team members feel, the more efficient are the inner team procedures and processes leading to optimize performance and better outcomes. Apart from the direct relationships that we will examine, we will also focus on mediation structures. Even if there is a direct relationship between team inclusion and team psychological safety or team inclusion and team knowledge sharing, we will provide evidence that there is also an indirect effect of team inclusion on team knowledge sharing through team psychological safety.

The last independent variable, that the linear, exploring model will administer, is the *perceived supervisor support*, the reasons why it plays one of the biggest roles in team’s performance, the exact ways it influences the cumulative efforts of the team members and how we can combine it with our innovation-driven research. Nowadays that work is being delivered by teams, the existence of a supervisor is essential to delegate tasks, coordinate work, supervise outcomes, and mentor team members. Cole, Bruch, and Vogel ([2006](#)) define perceived supervisor support as the extent to which individuals believe the contributions will be valued by their supervisors, help and support will be offered, and team members’ well-being will be top priority. The definition of perceived supervisor support is clearly being enlarged by individuals’ perceptions of the amount of care and trust supervisors show and provide to their employees, how much they make team members feel appreciated and valued, and the perceived concern they have in regard to their team’s welfare ([Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002](#); [Kottke & Sharafinski, 1988](#)).



During the last decades, the element of perceived supervisor support has been examined by a series of important researchers ([Hu, Erdogan, Jiang, Bauer, 2018](#); [Exline & Geyer, 2004](#); [Owens & Hekman, 2012](#); [Humphrey, 2002](#); [Pescosolido, 2002](#)) providing deep insights on how supervisors affect and influence the team's performance. Perceived supervisor support is being highly connected with *turnover* ([Griffeth & Hom, 2001](#); [Pfeffer, 2005](#); [Maertz, Griffeth, Campbell & Allen, 2007](#)), *perceived organizational support* ([Eisenberger, Huntington, Hutchison & Sowa, 1986](#); [Shore & Shore, 1995](#); [Eisenberger, Fasolo & Davis-LaMastro, 1990](#); [Shore & Tetrick, 1991](#); [Shore & Wayne, 1993](#)), and *leader-member exchange* ([Nishii & Mayer, 2009](#); [Graen & Uhl-Bien, 1995](#); [Murphy & Ensher, 1999](#)). These aforementioned units have a great impact both on team psychological safety and on team knowledge sharing.

In our research we connect perceived supervisor support directly with team psychological safety and team knowledge sharing, since we believe that the more supportive and acceptive a supervisor is, the more efficient dynamics of a team members are being handled leading to better teamwork processes. Apart from the direct relationships that we will give important information, we will also focus on our second mediation structure. Even if there is a direct relationship between perceived supervisor support and team psychological safety or perceived supervisor support and team knowledge sharing, we will provide evidence that there is also an indirect effect of perceived supervisor on team knowledge sharing through team psychological safety.

To summarize, taking into consideration all the previous, five (5) elements we are trying to create a model that tries to explore, highlight, and unify the procedures that stem from the structure of the team. The crucial role of team knowledge sharing, team psychological safety, team inclusion, and the important impact of perceived supervisor support explaining how all these recycling behaviors lead to the development of team innovation as a team characteristic. There are numerous, latent, and underlying linkages between the aforementioned variables that the present research will try to examine, analyze, understand, and bring in the front line, uncovering the domino effect of each variable to the others. So, in this research we will examine every link, every bonding, every connection that occur within the teams and affects procedures, processes and results of the team.

Even though previous research has achieved considering the advancements on analyzing a specific spectrum of team structures which lead to different team performances, such as engagement in quality of work ([Nembhard & Edmondson, 2006](#)), job satisfaction and intention to leave ([Brimhall et al., 2014](#)), this study focuses on the ways that team may enhance its organizational outcomes by developing innovation behaviors and by creating long-term, sustainable, competitive advantages through it. The model, which we will thoroughly describe, adds significant value to the academic literature, because takes into consideration many aspects of the universe of the team at the same time. Thus, we do not isolate the effects of each variable, nevertheless we are adding a number of them assessing the cumulative dynamics to the production of the innovative team characteristic. How team



knowledge sharing allows the combinations of crucial information between members from different background leading to constructive conversations. How the safe environment leads to open discussions, information sharing, combining the knowledge of individual members for a better performance; How team inclusion as a team characteristic and perceived supervisor support together benefit the creation of the feeling of safety inside the team and increase the level of knowledge sharing by resigning defenses, coming out of the comfort zone, by feeling safe to express shelves and by making changes that benefit the team;

Living in a world that now faces one of the biggest shortages of interesting thoughts, new ideas, enthusiastic initiatives, pioneering breakthroughs, it becomes completely important to highlight the specific ways that working environments may benefit from curving the innovation thinking among their employees and harvest the amazing results. We propose that present and future business plans should focus more on shaping teams that have high levels of innovation in order the company to gain long lasting advantages among the competition and lead in the market. In this way, the company's solidification and the increase of the cash inflows will be established through time donating the gift of survival.

In the end, by interpreting the cumulative influence of all elements on team performance, we will try to propose a completed, entrepreneurial, team-based model that will be useful and beneficial for every working environment. Especially, nowadays that most of the corporate world functions creating cross-functional, complex teams, it is more than essential high-level executives understand the power of the cooperation, the need of appropriate resources for the welfare of the team members and focus on both the individual actions and the compound force. Success is difficult, but only if we show attention to the small details that previously were to be ignored, we will be able to overcome obstacles, worship strong relationships, taste the fruits of cooperative efforts, and adore the goal achievements.



2. Literature Review

2.1 Team Innovation

2.1.1 Introduction

The first element that our linear, team-focused research model will analyze is innovation within the teams. De Dreu and West (2001) mention that the innovation as a team characteristic is being developed when new ideas, processes or procedures are being introduced and implemented. Even back in 1996, Amabile et al. are taking the opportunity to upgrade the meaning of team innovation, distinguish it from the mere existence of creative ideas and extend its value adding the necessity of ideas implementation. Given that attention must be shown to separate the fruitless ideas from the promising ones, there is a great need for creating critical thinking teams which can process innovative ideas (Hülshager et al., 2009). Thus, shaping connections between the team members, information exchanging flows are being developed, providing strong advantages to the team, unit, and organization (Tsai & Ghoshal, 1998).

It becomes clear that the survival of one's company and the creation of competitive advantages depend on its ability to increasingly innovate (Tushman & O'Reilly, 2002). In the beginning, team innovation has been used to demolish strict, bureaucratic forms of structure and Taylorian job specialization toward more flexible, lean, flat structures (Howard, 1995). So, organizations are trying to optimize their innovative skills more and more by developing cross boundary innovation teams rather than on lone creative types. Acknowledging the importance of team-based innovation, an important goal for innovative managers is to compose diverse teams and control the optimal performance (Lovelace, Shapiro, & Weingart, 2001).

A distinct aspect of this study is the focus not only on innovative performance but also on innovative behaviors (Calantone, Cavusgil & Zhao, 2002). For innovation to occur, it is not only necessary to generate brilliant ideas, but also to find creative ways to promote and implement them inside the team processes. The introduction of KSAOs - knowledge, skills, abilities, and other factors - have helped high-level executives to promote and maintain high innovative behaviors. Therefore, we understand that there is a great need of future research to understand the composition of a diverse team and manage the team outcomes (Bell, Villado, Lukasik, Belau, & Briggs, 2011) and that it the reason why our research will be based on those needs.



2.1.2 Team Innovation and Creativity

In the past research the terms of team innovation and team creativity have been connected, correlated, misunderstood, and even thought to be identical in the end. However, recent and more modern organizational scientists and innovation researchers have made a clear distinction between these two (2) characteristics. West and Farr (1990) have defined innovation as the intentional insertion and application of new, pioneering, revolutionary ideas, procedures, and actions within the team developed to bring better outcomes to the team, to the unit, and, consequently, to the organization, whereas team creativity is being limited only to the presentation of new ideas that have not introduced before.

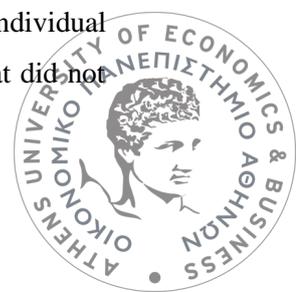
Team innovation can be distinguished in two (2) phases; generation of ideas and implementation of them. Generation of ideas is described as the process of creating, developing, and communicating abstract, concrete, or visual ideas, while implementation of ideas means the integration of these generated ideas in the team's culture and processes, such as decision-making procedures, deformation and abandonment of outmoded ways and adoption on new ones that depict more the spirituality and mentality of the team members (King, 1992). According to King (1993) the first phase, namely the generation of ideas, is exactly what we will referring as team creativity in this research. So, we understand that even though team innovation and team creativity are being differentiated, we conclude that the former encapsulates the latter bounding team creativity to be only a part of team innovation.

So, we understand that modern business tries to shape cross boundary innovative teams than mere creative ones in order to increase the level of innovational thinking and develop innovative capabilities (Post, 2012). Optimal performance has been sought out of these team combinations that boosts innovation and establishes an environment that innovational change is welcome (Joshi & Roh, 2009). For the above reason, in the next chapters we will describe the specific ways innovative thinking is being emerged in teams, how it can be further developed, and which are the extensions for better team's outcomes.

2.1.3. Team Innovation and Cognitive Styles

In this section we are going to describe the cognitive styles in a team and describe the specific way they get to have a great influence in shaping innovation thinking among teams (Kurtzberg, 2005). Cognitive styles are being defined as the way that individuals think or process information (Witkin & Goodenough, 1981). According to Post (2012) there are two (2) cognitive styles that are highly connected with the characteristic of team innovation; connective thinking and sequential thinking. While connective thinking is being described as the wholistic form and is positively connected to team innovation, sequential thinking is described as an analytical process that hinders it.

As far as the connective thinking is concerned, Jabri (1991) shows that a connective individual prefers to connect all the factors at the same time and link previously unconnected ideas that did not



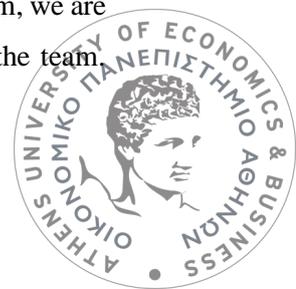
have a concrete linkage before. Connective thinking consists of dependent thoughts that each of them try to clarify a concept or a framework ([Mezoff, 1982](#)), focuses on the larger picture and takes into consideration various aspects that may encourage the generation of innovative ideas. As we are focusing on team level procedures, connective thinking requires the understanding of others' perspectives, the explanation of diverse ideas between the team members and the significant connections between them ([Post, 2012](#)). In the center lies the need of connectivity of ideas, which promotes the curiosity and exploration of different ways of thinking ([Weick & Robers, 1993](#)). Thus, connective thinking activates the abilities of transactional memory, increases the levels of cooperative learning by helping team members understand their innovation potential ([Post, De Lia, DiTomaso, Tirpak, & Borwankar, 2009](#)). Even though innovational thinking is being supported, past research ([Miron, Erez & Naveh, 2004](#)) has shown that team members that show high levels of connective cognitive style may or may not pay attention to little details and organizational rules when they are trying to deal with a specific issue.

On the other hand, sequential thinking describes a series of process, a number of steps that an individual takes to find the final solution of an issue ([Jabri, 1991](#)). Mezoff ([1982](#)) has described it as the connection of independent thoughts to find the root of the problem. There is a lot of emphasis on the order of steps that are being followed, the rationalization of the certain tasks that will be actualized, focusing on the optimalization of problem-solving procedures. The information that is being processed is the less possible ([Kozhevnikov, 2007](#)) in order team members be able to handle problematic situation in an easier way, however, disconnecting them from the cooperative learning and creating an impersonal orientation ([Witkin & Goodenough, 1981](#)). Sequential thinkers tend to work by themselves, do not prioritize group work and they develop a more self-centric approach on dealing issues. Since sequential thinking is more rational and logical, we understand that the impact on team innovation will be negative in comparison with the respective effect of connective thinking.

In conclusion, the above deep-level team composition and analysis help us understand that the specific way a team is being shaped and created and how each individual's attributes are being connected with each other, define the innovative performance of the team ([Bell, 2007](#)). Connective thinkers tend to combine knowledge ([Leonard, Beauvais & Scholl, 2005](#)) and are fond of creating novelty in their team. Thus, team innovation is being enhanced. On the other hand, sequential thinkers rely on already existing procedures and routines helping them address and solve the problems than generate innovative ideas. Some individuals may adopt the connective style, other the sequential, however there is a high possibility team member show a combination of them, describing them as cognitively mobile ([Entwistle, McCune & Walker, 2001](#)).

2.1.4. Team Innovation and the Four-Factor Theory

In order to better understand the ways that innovation may be developed inside the team, we are highlighting the four-factor analysis of climate with the development of innovation within the team.

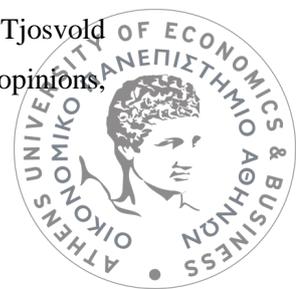


Previous researchers ([West & Farr, 1990](#); King, 1993) have examined the combinatorial dynamics of climate and innovation, identifying the specific factors that innovation may be increased through time. Especially, West (1990) hypothesized the four (4) major predictive factors of team innovation, being *vision, participate safety, task orientation, and support for innovation*.

The first factor we are going to describe is **vision**. West (1990) has defined vision as “the idea of a valued outcome which represents a higher value and a motivating force at work”. Vision consists of rational and emotional goals, which are often distant but inspire and engage team members, providing a clear view of the objectives and the future state of the team, unit, or organization ([Collins & Porras, 1996](#)). Teams with high-detailed objectives tend to shape more goal-oriented approaches of working, since they get more focused and they do not lose track with unnecessary information. According to West (1990) there four (4) components that bear vision. (a) *Clarity*, the extend that the vision is being mutually understood across the members. (b) *Visionary* nature meaning that the vision has a value to the individuals engaging team members to team’s goals. (c) *Sharedness* depicts the mutual acceptance and adoption of the vision by every team member. (d) *Attainability*, the degree in which goals may be reached by the individuals. The last one is highly connected with team innovation, because, either goals cannot be reached and, thus, become demotivating for the team members, or goals can be achieved creating practical steps to developing innovative achievements.

The second factor that West (1990) has mentioned is **participative safety**. Particularly, participativeness and safety define the psychological climate of the team, in which their contribution in decision-making processes is desirable and motivated and they usually occur when the environment is perceived as welcoming, acceptive and non-threatening. Increasing the number of team members that participate in interaction, knowledge sharing, and influence processes, it becomes more likely to invest in the results of the mutual decisions and bring out new, innovative ideas to support and enhance the existing working methods ([Anderson & West, 1998](#)). Trust and support are mentioned as the two (2) essential substances that allow team members to express themselves freely and involve them in group interactions, shaping in the end an environment of participative safety. Rogers (2003) comes to intensify the research findings mentioning that the key to a participative climate is the non-judgmental characteristic within the team, letting team members propose ideas, identify mistakes, and participate in the solution-making processes.

The third factor that West (1990) describes in his four-factor model is **task orientation**, namely the shared concern for excellence in task performance in relation with the vision, efforts and results the team members are sharing characterized by assessments, moderations, control systems and 360-feedback. The task orientation factor facilitates both the individual and the team effort. Specifically control systems are being used for evaluation and altering performance, 360-feedback for reflecting upon performance and solve errors, intra-team advice, performance appraisal, and exploration of contradicting opinions for achieving better task performance. Great focus must be given to Tjosvold (1982) who described constructive controversy, since by bringing together different views and opinions,



merging them together, combining the good parts of every participant and dealing with the negative aspects respectively drives team to higher levels of task performance.

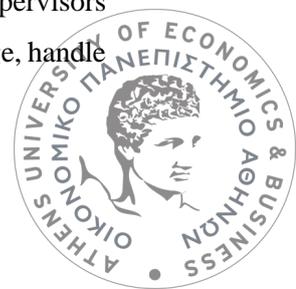
Lastly, West (1990) mentions innovation in working environments as (a) the **acceptance**, (b) **adoption** and (c) **practical support** of new ideas and replacement of outdated procedures. Many teams have tried to increase their innovatory inventory focusing only on one procedure, while all of three of them are needed in order to reach high levels of innovative thinking. That is why Anderson and West (1998) consider that support for innovation should be articulated and enacted. Articulated it by writing policy statements, distributing personal documents, or spreading it mouth by mouth and enacted it by showing the support for new ideas, changes and actually put in practice the more theoretical articulated support. Daft (1978) mentions that the offer of resources should be available to all team members to develop innovations as an example of enacted support.

Taking all the four factors of our model into consideration, West (1990) has meticulously supported the development of innovative work groups and environments that let innovative thinking thrive. We deploy the four-factor theory to emphasize the internal team mechanisms we are going to explore and understand the conditions and the specific ways the inventory of innovative thinking can be increased. Below we describe our innovation-driven model by inner, team-based mechanisms, such as team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. Each of the above elements bring its own value to the increase of the levels of the innovation within the teams bringing better outcomes to the team, unit and, consequently, to the whole organization.

2.1.5. Team Innovation and Destruction Theory

Usually, when we are referring to innovation as an instrument of refinement and improvement. However, innovation has also a competitive side designed to destroy and disrupt firm, obsolete structures, and established procedures (Abernathy & Clark, 1985). Especially as pioneering technology and new features are being introduced to the world of business, there is a greater need of catalysis of the old, outdated processes and methods. New requirements for the survival of the companies are being expected and existing resources, skills, and knowledge are poorly satisfying the goals that the team is addressing.

Schumpeter (1934) with his theory regarding innovation and economic development has named this phenomenon as “Creative Destruction”, namely the vehicle of growth and development among the teams. Team consists of individuals with different educational and socio-economic background, beliefs, ideas, skills, and knowledge leading to an inner competition regarding the prevailing methods that will be adopted inside the team (Kivimaa & Kern, 2016). Dynamics are constantly changing, egos are being exposed, and there is a great possibility of conflicts. For these reasons, it becomes clear that supervisors with high level of innovation thinking are necessary in order to instrument the whole knowledge, handle



the combination of the ideas provided by team members, and maintain calmness within the team ([Storey & Salaman, 2009](#)).

Even though the destructive nature of innovation thinking may take individuals out of their comfort zone, according to Abernathy & Clark ([1985](#)) this kind of disruption creates blue oceans, namely markets and industries that were not previously existed designed to provide competitive advantages only to the pioneers and innovators. This is the reason why modern organizations create cross-functional teams that have high levels of innovative thinking and critical analyses. An innovator does not dwell on the past, focusses on the future, developing the necessary confidence to take risks and not to be afraid of changes. Especially now that the business environment is changing faster is faster, it becomes necessary to create a culture of internal innovation, where new ideas are being addressed, unique knowledge is being shared and groundbreaking methods are being adapted ([Hart & Milstein, 1999](#)).

2.1.6. Team Innovation and its Rivals

As we previously explained, the definition of team innovation comes with destruction, aphorism, and displacement of old, outdated, anachronistic, backward-looking methods and procedures by new, groundbreaking ones. This is the exact reason why the characteristic of innovation thinking develops significant rivals. Individuals tend to favor stability, create routines, and manage same procedures. Innovation does not play in this field. According to Amabile ([2018](#)) one possible barrier to innovative thinking is the fear of going out of the comfort zone, taking risks, adopting changes, and welcoming the new.

That is the reason Anderson, De Dreu and Nijstad ([2004](#)) suggest that innovation sometimes can be described by employees as disrespectful, discourteous, presumptuous, and inappropriate for a team's culture. Managers and high-level executives have already established a specific way of thinking and implemented the methods that are reluctant to change. This battle between the old and the new brings gaps in the communication and there is a great danger of lessening the importance of the final outcomes. Therefore, we understand that below innovation lays a need for psychological safety and protection against the unknown ([Gu et al., 2013](#)).

However, rivals of innovation are getting less and less, since there is a bigger number of supervisors that understand the importance of innovation within teams and chase it as the effective weapon against the fast-moving, changeable, and globalizes business environment ([Anderson et al., 2004](#)). Combining it with the fact that younger generations tend to be more adaptive, not afraid of the new or the unknown and welcome changes in an easier way, working environments take initiatives to welcome more the innovation practices of team members and their pioneering way of thinking ([Canedo, Graen & Johnson, 2017](#)).



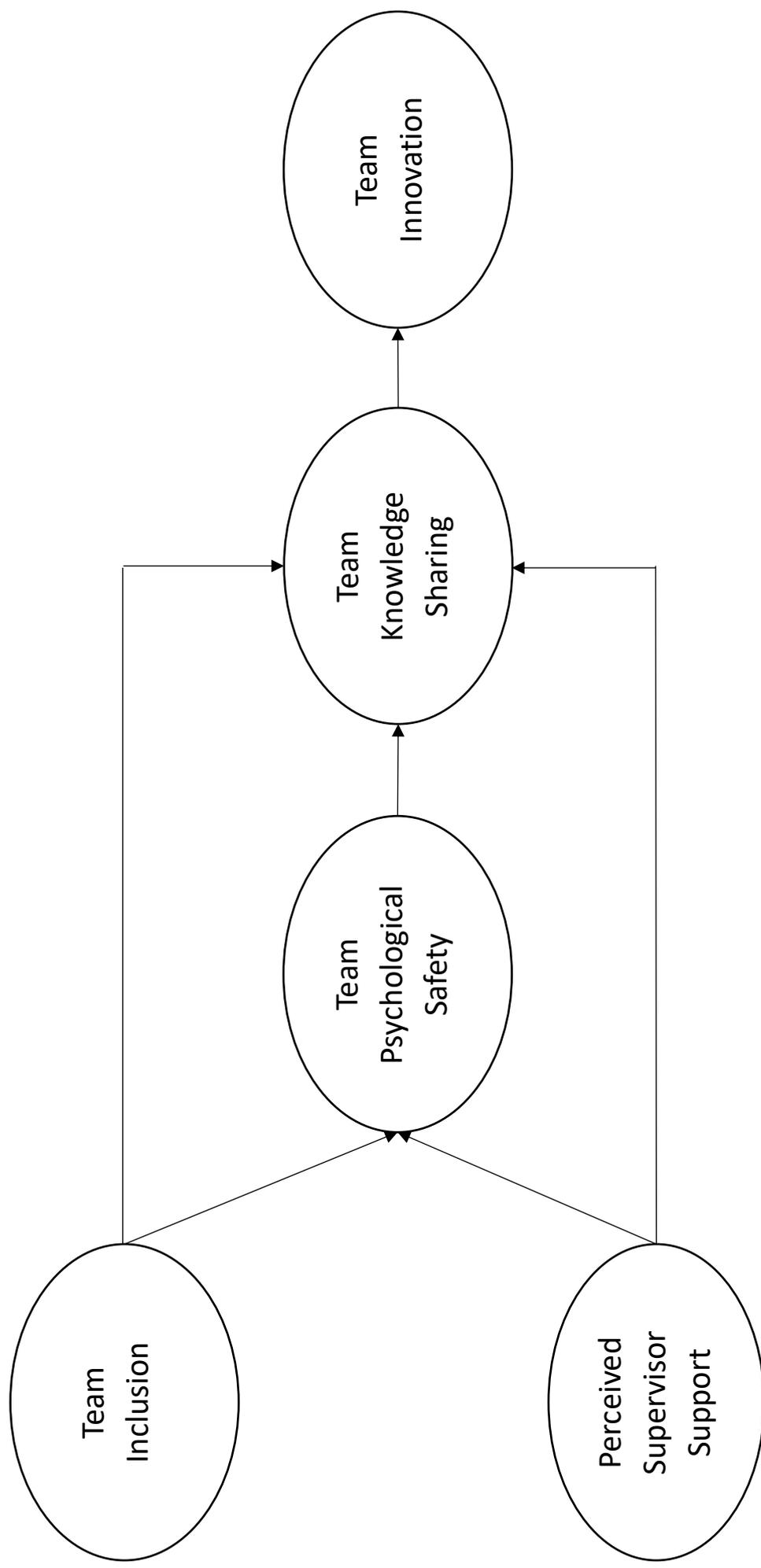
So far, we have examined our most important variable that our whole model will be based on, team innovation. The following literature review will be assigned to give more insights on how we can develop this dimension by analyzing a series of important dimensions, such as team knowledge sharing, team psychological safety, team inclusion and perceived supervisor support. Practically, the aforementioned dimensions create the basis on which team innovation may grow and reach high levels. For this reason, the next chapters will be focused on these dimensions and their influences upon our model.

The first variable that the following literature review will analyze is team knowledge sharing. We believe that in order to achieve high levels of innovation, then unique knowledge should be shared, and crucial information should be spread among the team members. In our model, team knowledge sharing is directly connected with team innovation being our second dimension in our chain, since we want to understand whether it plays a significant role in the increase of the innovation thinking in teams.

For better illustration of the model that we are going to explore focusing on the team innovation is being visually described below (Figure 1):



Figure 1. Theoretical team-focused linear research model.



2.2 Team Knowledge Sharing

2.2.1 Introduction

The second liaison in our linear, team-oriented model that we will examine is knowledge sharing between the members of the teams and we will check its contribution to the increase of the characteristic of innovation. Having explained the importance of team innovation and the need for expanding its appearance among teams, we suggest that one way to increase the levels of innovation is to bring individuals exchange crucial information, express their own unique experiences, interchange the critical and diverse features of the different backgrounds, bring forth new ideas, find the courage to defy old-fashioned ways, challenge the existing solutions, discover new implementation ways and, finally, break the tradition ([Moffett, McAdam and Parkinson, 2003](#)).

Team knowledge sharing may be perceived as one of the most important processes that happens within teams and organizations and is being described as an essential part for generation of ideas, creation of opportunities and better outcomes through communication, interaction, socialization, and information exchange ([Lin, 2007](#)). To successfully promote team knowledge sharing in organizational culture is not only efficient to combine information with the strategy, but also develop attitudes and behaviors to the employees in order to provide and exchange with each other information willingly and constantly ([Lee & Choi, 2003](#)).

By establishing knowledge builder behaviors, supervisors and team members are fostering the value of sharing within the team and they are signaling the importance of the adding value of each and everyone's perspective in the aggregating try ([Lee et al., 2010](#)). The positive aspects are double on team innovation; we expect team members will respond positively to the invitation to share their knowledge and consequential information across the team, as well as limit the reluctance of those individuals who deny sharing knowledge with each other due to personal competitive advantage or because of the high, personal value of the information ([Lin, 2007](#)). One example of the above important procedure may be when corporate decision makers spend quality time to explain difficult procedures to new employees ([Hu & Randel, 2014](#)).

We are adding team knowledge sharing in our model, because the creation and share of important information have been observed to develop competitive advantages in organizations providing opportunities and solutions which in turn can be translated into innovative capabilities ([Akhavan & Hosseini, 2016](#)). Only when team members are willing to share their knowledge with their co-workers, can organizations manage the resources that they have and direct them towards innovative purposes ([Lin, 2007](#)). For Liao et al. ([2007](#)), knowledge sharing is one of the utmost important antecedents contributing to a successful innovation capability at various organizational levels.



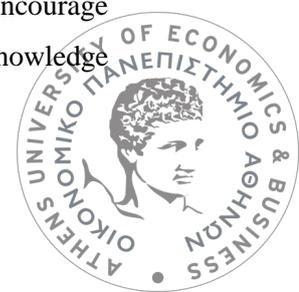
2.2.2. Explicit and Tacit Knowledge Sharing

In this unit we are going to describe the different forms that knowledge sharing is being detected among team members. Within a team there are two (2) forms of knowledge that can be shared across team members: explicit and tacit knowledge. Whereas explicit knowledge refers to easily transferable, intellectual capital through communication and interaction ([Polanyi, 1962](#)), tacit knowledge is being transferred only through experience and it is more difficult to be acquired, providing to the owners a great number of competitive advantages ([Nonaka, 1994](#)). According to Polanyi ([1962](#)) not only these two kinds of knowledge sharing are distinct, but also mutually exclusive. Either there is knowledge by attending to an entity as a whole, or knowledge by relying on our awareness of it for the purpose of attending to an entity to which it contributes. The mutual exclusiveness of the two forms of knowledge sharing can be described in terms of a logical disjunction.

As far as explicit knowledge sharing is concerned, written language is the most usable way to achieve it. Boud and Middleton ([2003](#)) mention examples, such as reading documents, academic learning, and on-the-job training. Although explicit knowledge is easily transmissible, barriers exist to consolidate the originality of the knowledge and limit its spread. Such barriers are patents, which protect the owners, safeguard copyrights, and lessen the imitation misconduct. We understand that explicit knowledge depicts a more self-centric way of managing information, understanding their meanings, and combining them with the existent knowledge. Thus, we can conclude that even though tacit knowledge can be easily transmitted, it gets difficult to create images and visualize the information that is being given by word.

Then again, tacit knowledge sharing uses no words, no symbols, whereas written documents are not useful in this procedure ([Polanyi, 1962](#)). It represents what one needs to know to function in a daily basis that typically is not taught in detail or even verbalized ([Hedlund, Antonakis & Sternberg, 2002](#)). Often this kind of knowledge is not readily articulated by the individual or widely shared within the performance domain ([Sternberg, Forsythe, Hedlund, Horvath, Wagner, Williams, Snook & Grigorenko, 2000](#)). According to Wagner and Sternberg ([1985](#)) the best transmitted ways of tacit knowledge is via training and through personal experience. Unlike explicit knowledge sharing, people who posse valuable tacit knowledge often find it difficult to express, describe and transfer to their team members ([Hu & Randel, 2014](#)). That is why personal contact and trust are important ingredients for a successful source of innovation and sustainable competitive advantage ([Brockmann & Anthony, 2002](#)).

Past researchers have examined the connection between explicit knowledge sharing and team innovation. According to Kelley, Ali & Zahra ([2013](#)) explicit knowledge has been proved that plays a significant role on knowledge creation as an easier procedure and, thus, linked to team innovation. Innovation is the reason why efforts have been made to lift the barriers within the team and encourage explicit knowledge sharing ([Hu & Randel, 2014](#)). There is a high expectation that explicit knowledge



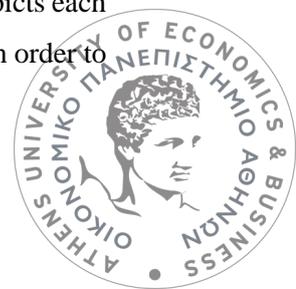
sharing occurs at any point, but the truth is that explicit knowledge will be shared, when information has been firstly elaborated and then given to the performing groups as tasks ([van Ginkel & van Knippenberg, 2008](#)). Understanding the important underlying connection between explicit knowledge sharing and innovation, numerous researchers have tried to find out the ways to transfer the always difficult to extract tacit knowledge to explicit knowledge. While some of them have been puzzled because of the implications, either due to the loss of the value during the converting procedure ([Jasimuddin, Klein & Connell, 2005](#)) or due to the lack of energy and time needed ([Hu & Randel, 2014](#)), others have pointed out the specific ways of this transaction and its value ([Nonaka & Konno, 1998](#)).

On the other hand, Ganguly et al. ([2019](#)) emphasize the importance of tacit knowledge in innovation, since firms with a large tacit knowledge sharing component can be expected to achieve a greater capability for innovation. Rogers ([2003](#)) and his theory of innovation diffusion discusses the phenomenon of an “innovation spreading across the population over time” and suggest that tacit knowledge may also play a huge role in the diffusion of innovation and the innovation capability of an organization. Specifically, innovation uses an effect, named by Arrow ([1971](#)) as “learning by doing effect”, which makes it very difficult for competitors to imitate mentioning that the difficulties are further empowered as larger the tacit component is ([Cavusgil, Calantone & Zhao, 2003](#)).

2.2.3. Team Knowledge Sharing and Social Capital

We provide an additional approach to delve into where team knowledge sharing is based on by defining social capital and understanding the linkage between them. Back in [1926](#), Hanifan first used the concept of social capital focusing on the survival and functioning of rural networks and the importance of dynamic, interchangeable relationships developed through time instilling values, such as trustworthiness, teamwork, and collectivism. According to Bourdieu ([1986](#)) social capital is defined as the sum of the potential or actual resources that are being used to describe the network and show the more or less institutionalized relationships of mutual acquaintance or recognition. Clarifying the definition under the knowledge sharing scope, resources may be named as assets, information, knowledge, expertise that team members are willing to exchange. We are not only describing the personal resources an individual may have, but all the potential, future combinations, compositions, and connections may occur during interaction ([Oh et al., 2004](#)). We focus on the social capital for the needs of innovation, because Nahapiet and Ghoshal ([1998](#)) have mentioned that social capital serves as a great facilitator that leads to innovation and innovative outcomes, while Hu and Randel ([2014](#)) characterize social capital as an important factor and determinant of innovative behaviors.

Adding a mathematical touch using Combinations ([Bannai, Bannai, Ito & Tanaka, 2021](#)), knowledge of a five-member team can be conceptualized in the following statistical form $f(x) = n!/(n - r)!$, where n is the number of the total team members, and r is the number that depicts each time how many members we choose to interact with each other. We do this specific example in order to



understand the different combinations of knowledge that can be created within the subgroups of the main group. If we create subgroups each time of two (2), potentially we can have ten (10) different combinations. Let subgroups made of three (3), also ten (10) different combinations; subgroups made of four (4), additionally five (5) different combinations; and lastly into subgroups of five (5), one (1) combination. Summing up, knowledge from five (5) different people can be combined in twenty-six (26) different ways and create twenty six (26) networks of knowledge sharing. It is outstanding how many different connections five (5) team members have in the course of interaction.

Combining and merging crucial knowledge and important information of team members with different backgrounds activate the procedure of mutual contributions. According to Kapoutsis, Volkema & Nikolopoulos (2014) the combining knowledge of the group is greater than the sum of the individuals' knowledge. Indeed, having already previously mathematically approved it, in a team exist so many connections that transitions of knowledge is bouncing for every team member to another, each of them adding an amount of significant value to the group work.

According to Nahapiet and Ghosal (1998) social capital has been clustered into three (3) dimensions; structural, relational, and cognitive. Even though, each dimension offers a different view on how social capital is captured, all these dimensions are thought to be interrelated (Hu & Randel, 2014). Below, we will describe each and every dimension, its influence in the team's procedures, how it affects final outcomes and the way they are being connected to team innovation.

Enlightening the first dimension, structural social capital focalizes on the networks, how team members are connected and what characteristics are being emitted out of this configuration (Hu & Randel, 2014). Nahapiet and Ghosal (1998) have indicated that the frequency of interactions between team members and the strength of the connections are some of the strong indicators of the structural dimension of social capital. The more connected and trusting team members are, the more they contribute to the knowledge sharing process (Oh et al., 2004).

While structural social capital refers to the overall connections (Nahapiet & Ghoshal, 1998), relational social capital focuses more on the assets created and leveraged through the established relationship between the members of the team (Van den Hooff & Huysman, 2009). Granovetter (1992) has described it as the sum of relationships team members develop through time and it refers to the level of the quality among the individuals' relationships, which includes the degree of liking, trust, and cooperation between them. Hu and Randel (2014) agree that trust plays a significant part on the knowledge sharing procedure as a component of structural social capital, since it allows and fosters the free exchange of information and further develop the individual's good intentions (Inkpen & Tsang, 2005). According to previous research relational dimension is being driven by two (2) factors; *competence* (Blau, 1964) and *open-mindedness* (Tjosvold et al., 2000). While competence shows the exchange of trustworthy information within a team, open-mindedness denotes that new ideas are not discouraged, but taken into consideration (Wah et al., 2007).



Last but not least, cognitive social capital refers to the common language team members use, transmit, and decode by mentioning that a shared code or a shared paradigm establishes a mutual understanding of collective goals and proper ways of acting in networks of people (Hu & Randel, 2014). Having a common understanding and a shared reference system benefits the team's unique information exchange processes (Nonaka, 1994). Specifically, Kogut and Zander (1996) agree that deciding what knowledge is to be collected and evaluated is determined by the shared goals and understanding influence. Nahapiet and Ghoshal (1998) mention that a shared language and shared narratives are considered indicators of cognitive social capital.

Hau, Kim, Lee, and Kim (2013) have aggregated the role of social ties, shared goals and social trust as the major constructs respectively representing the dimensions of the structural, cognitive, and relational dimensions of the social capital. Under the same scope, Van den Hooff and Huysman (2009) shows team members may easily interpret other people's knowledge when a climate of mutual trust and appreciation exists establishing a sharing knowledge mentality across the team. In this way, it is very likely to promote innovation activities in organizations, since new ideas are generated, and new business opportunities are developed by the combined knowledge (Darroch & McNaughton, 2002).

Combining the former findings of the explicit and tacit knowledge with the social capital, Pérez-Luño, Medina, Lavado, and Rodríguez (2011) have concluded that tacit knowledge sharing results in high levels of innovative attitudes when accompanied by a high degree of social capital. Their findings propose that the more tacit knowledge sharing is supported, innovation performance is ever-rising. Similar results have been extracted by Cavusgil et al. (2003) noticing high performance of innovation when tacit knowledge is being shared across teams. As far as explicit knowledge is concerned, Kogut and Zander (1992) mention that contributes to the combination of existing ideas, which is essential to be innovative. So, we are coming to the conclusion that the more advanced the social capital is, the more tacit and explicit knowledge is being supported resulting in innovation.

2.2.4. Knowledge Sharing and Extrinsic-Intrinsic Incentives

Past research (Fong & Chu, 2006) has shown that on many occasions team members may be characterized as reluctant to share their knowledge. For instance, they want to keep the information for personal value or keep intact their competitive advantage without spending extra time and energy (Hu & Randel, 2014). In this case there is lack of motivation, a key factor of an individual's behavior (Deci & Ryan, 1987), important ingredient of a modern, working environment (George & Brief, 1996), and a significant determinant of knowledge sharing (Osterloach & Frey, 2000).

In motivation literature there has been two (2) classes of motivation; the extrinsic and the intrinsic. Specifically, extrinsic motivation focuses on goal-driven reasons, such as salary, bonuses, rewards based on the performance of the individual (Deci & Ryan, 1987), while intrinsic motivation describes the inner pleasure and satisfaction delivered from a specific action (Deci, 1975). Combining



extrinsic and intrinsic incentives together, individuals are being influenced to share their personal knowledge. Particularly, insights by Porter and Lawler's model (1968) will be deployed, since they have meticulously explained the effect of extrinsic and intrinsic motivation, analyzing that specific behaviors may be developed by offering incentives to individuals.

As far as extrinsic incentives are concerned, it is expected to activate tacit and explicit knowledge sharing (Hu & Randel, 2014) and, specifically, it has been proven that rewards have a positive correlation with the promoting of knowledge sharing among team members (Yu, Kim & Kim, 2004). There is a double reason explaining why rewards and incentives constitute such a great driving force to knowledge sharing. Firstly, according to Davenport et al. (2001) knowledge is intimately and inextricably connected with the more egoistical façade of an individual and, secondly, a lot of emphasis is being put on the expectations an individual has for the gaining rewards coming from knowledge sharing procedures (O'Reilly & Pondy, 1980).

We come into terms that cost-benefit analysis influences the willingness of knowledge sharing among team members, because individuals will be involved in information exchange easier when the rewards that are being expected exceed the effort or the costs that are being involved in this particular effort (Lin, 2007). Specifically, from socio-economic point of view, when team members' expectations of rewards are equal or exceed the costs that are being involved in this action, the knowledge sharing process will continue, otherwise it will be hindered and eventually stopped (Kelly & Thibaut, 1979). While costs may be described as the necessary time, resources, or mental efforts dedicated for the completion of the activity, rewards can be categorized as organizational goods and obligations for co-workers to reciprocate. We point out extrinsic incentives, because behaviors can be altered in the wanted direction (Kerr, 2001) and, if that direction is promoting team knowledge sharing, then we have better innovative outcomes. Hu and Randel (2014) have thoroughly examined the connection between extrinsic incentives, knowledge sharing procedures and innovative outcomes.

However, nowadays, scientific research has tried more to focus on the intrinsic motivation rather than extrinsic, since new generations give much more importance on values rather than monetary benefits. Intrinsic motivation is being described as the inner want of an individual to engage himself, herself, or itself with an activity for the purposes of pleasure, satisfaction delivered from this experience (Deci, 1975). In detail, through team knowledge sharing team members improve their insights for a specific topic, develop their self-efficacy, and enhance their self-esteem providing better outcomes for the organization (Constant, Kiesler & Sproull, 1994). It is important to mention the mimic reciprocity of knowledge exchange, since when an individual accept one's knowledge, there are higher possibilities the latter to share personal information back, creating an ever-lasting information pipeline (Constant, Sproull & Kiesler, 1996). In this way, employees' actions and reactions are being based on altruism leading to better team bonding (Baumeister, 1982). Intrinsic incentives have also linked with influencing employees' behaviors (Tyler & Blader, 2001) leading to more innovative outcomes.



Taking the above into consideration we do understand that intrinsic and extrinsic incentives play an important role in the initiation of knowledge sharing processes. Whereas in the past extrinsic motivation was top priority for the team members, now the environment is changing. Team members give much more emphasis on the non-monetary, intrinsic incentives, such as inner-pleasure, development, and self-status. However, we point out that both motivations should be important in the working environments in order to produce the optimize results.

2.2.5. Knowledge Donating and Knowledge Collecting

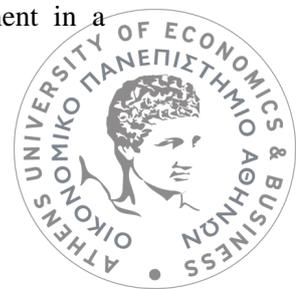
According to Van der Rijt (2002), another crucial distinction needs to be made in knowledge sharing processes that are being developed inside a team. On the one hand, there is knowledge donating, the action of offering knowledge and the individual's perspective for the advancement of the team. On the other hand, there is knowledge collecting, the action of consulting every member of the team to share their knowledge and expertise on a specific topic. Thus, both actions constitute active processes; either one is being asked to share his intellectual capital or consult others to share their intellectual capital (Van den Hooff, & de Leeuw van Weenen, 2004).

As far as the inner procedure of knowledge donating is concerned, previous researchers have distinguished the roles between team members' exchanges. For example, Weggeman (2000) distinguishes "the knowledge source and the knowledge receiver", describing the former as an active donor and the latter as a passive receiver. Oldenkamp (2001), however, distinguishes the "knowledge carrier", the one who carries the knowledge from the one enquiring for that, being the "knowledge requester".

Linking knowledge sharing and innovation in teams, we find utmost important the existence of knowledge donating and collecting. Having diverse and inclusive teams, members of different backgrounds with miscellaneous experiences possess unique information that another member may not have (Akhavan & Hosseini, 2016). Adding up all the individuals' knowledge, new ideas, creative thoughts, pioneering incentives are being combined, potential gaps and deficiencies are being covered by new ideas, and new discoveries are being promoted.

2.2.6. Team Knowledge Sharing in the New Era

In the age of dramatic technological developments and emerging high-tech applications, team knowledge sharing is being affected by the computer-mediated communication, widely known as CMC (Van den Hooff & de Leeuw van Weenen, 2004). O'Dell and Grayson (1998) suggest that the knowledge sharing between team members, as well between departments is being described one of the most important organizational processes. This brings effective knowledge resources management in a challenging goal that modern organizations are more than willing to achieve.



Focusing on the up-to-date technology, computer mediated communication enhances team members' interaction by overcoming barriers such as time and space ([Hammer & Mangurian, 1987](#)). Anonymity ([Postmes, Spears & Lea, 1998](#)), the absence of social cues ([Kiesler, Siegel & McGuire, 1984](#)) and the nonexistence of status hierarchies ([Weisband, Schneider and Connolly, 1995](#)) are some characteristics that let individuals share their knowledge without the fear of consequences. Under the same spectrum, Walther ([1996](#)) suggests that hyperpersonal connections of communication can be reached, since employees through asynchronous communication manage to build stronger identification with the group and to adopt a more collective behavior. As a result, this collective attempt activates the process of knowledge sharing, since all members contribute to the common goal sharing their personal intellectual capital ([Van den Hooff & de Leeuw van Weenen, 2004](#)).

Despite the positive aspects that computer mediated communication may bring, one may think that there will be limited opportunities of truly personal interactions ([Daft & Lengel, 1986](#)). Criticism has been directed to computer mediated communication in order to understand to what extent CMC can outpace traditional ways of social communication. However, recent research has found serious results that oppose the previous believable concept and show that high quality connections can be created also through computer mediated communication ([Walther & Burgoon, 1992](#)).

Taking everything into consideration, we format our first hypothesis. We are concluding that the support and the implementation of knowledge sharing will support cognitive processes of proposing new ideas and methods, contributing to the overall team innovation ([Harvey & Kou, 2013](#)). Specifically, according to Cross and Sproull ([2004](#)) team knowledge sharing cultivates the scope of the team skills, inspires the team members to seek novel solutions and, thus, engrafts fresh and useful innovative thinking.

- **Hypothesis 1:** Team knowledge sharing is positively related to team innovation.

In the following chapter we will focus on our next variable, which is team psychological safety, and we will analyze its different aspects, its influence on the team members and the ways it affects the final team results. As we deepen in the structures of team, it becomes clearer the needs of the team members and the different relationships they form with each other. Team psychological safety is our next key to unlock the mysteries of the teams and understand in an efficient way how teams can emerge as the biggest competitive advantage an organization might have.



2.3 Team Psychological Safety

2.3.1. Introduction

Going one step further to our linear, explanatory team-based model, we are focusing on the theory formed by previous researchers, which propose that levels of team knowledge sharing may be increased by developing a climate of psychological safety among team members ([Yin, Ma, Yu, Jia & Liao, 2019](#)). Previous research has analytically explored the different feelings of safety that are being created within the team, the reasons why enterprises put a lot of effort on them and the different ways they may increase them ([Gu et al., 2013](#); [Edmondson, 1999](#)). Uncovering the shadowy corners of team psychological safety, we are providing concrete methodologies on how to increase team performance based on team knowledge sharing leading to better organizational outcomes ([Tjosvold et al., 2004](#); [Hirak et al., 2012](#); [Argyris and Schön, 1978](#)).

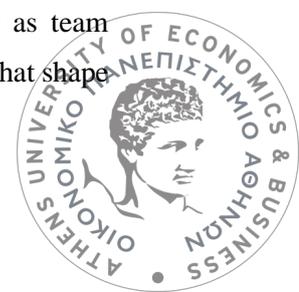
Specifically, this research chooses to enlighten the tangible ways team psychological safety can be developed across teams and detect to what extent and under what conditions team knowledge sharing occurs. Stasser and Titus ([1987](#)) have noticed that team members tend to withhold crucial information and unique knowledge, limiting the discussions around held information. This is the reason why modern working environments try to find out the deeper causes team members would feel afraid of sharing and expressing, deflect non-functional processes that scares human interaction and promote an environment that is friendly for the development and growth of the team.

Feelings of psychological safety have broad scope, covers many spectrums of the working environment, and depends on various variables within the team. For this reason, Edmondson ([2004](#)), while examining team structures, has pointed out that psychological safety consists of four (4) distinct, essential pillars: individuals' mentality of feeling safe, the cognitive capacity to learn, behavioral change, and work engagement. These elements will be described below, entailing their values for the establishing of a welcoming, non-threatening environment, friendly for every team member.

2.3.2. Psychological Safety Climate

For better illustration of the psychological safety within the teams, we lay the foundations by defining and exploring the climate in which the psychological safety is being exposed. Applied psychologists and organizational sociologists ([Campbell et al., 1970](#); [Rentsch, 1990](#); [Schneider, 1990](#)) have brought a great number of findings considering the definition, the properties, and the different levels of a psychological safety climate. According to Anderson and West ([1998](#)) there are two (2) significant, compatible with each other, not mutually exclusive approaches that have gained ground the past years; the *cognitive schema approach* and the *shared perceptions approach*.

As far as the cognitive schema approach is concerned, climate is conceptualized as team members' constructive representations or the summary of cognitive capital of the individuals that shape



a schema of their working conditions and environment, mostly being used to reveal how team identify its proximal work environment ([Schneider & Reichers, 1983](#)). James and Sells ([1981](#)) have expressed and examine climate in terms of psychological safety terms and significance to each and every team member.

Now, addressing climate in individual level, Payne, Fineman, and Wall ([1976](#)) have focused on the shared perceptions approach, noting that climate is being shaped by the shared perceptions of policies, practices, and procedures that team members get engaged to. However, according to Guion ([1973](#)) this approach gets more complicated because it becomes difficult to measure the entity of psychological safety, since it remains blurry which and how many are the criteria of minimum level of agreement that can truly indicate the shared beliefs across the team.

2.3.3. Team Psychological Safety and Trust

The instrumental attribute of trust is one of the most important derivatives that psychological safety brings within teams. Mayer et al. ([1995](#)) define trust in groups as the individual's expectations that others' prospective actions and decisions will be advantageous to one's interests. Within the texture of teams, the definition of trust broadens from the mere interpersonal trust between two (2) people and expands to a whole climate of trust and mutual respect ([Klimoski & Mohammed, 1994](#)). In the same notion, Walsh ([1995](#)) describes that trust should characterize the group-level construct, rather than individual members and a common, shareable perspective of trust should be communicated by the entity of the team.

Trust in psychologically safe environments facilitates team information sharing. Team members are disengaged by the superfluous concern of others' reactions in the case of potential embarrassment, humiliation, or threat. According to Edmondson ([1999](#)) team members may be characterized as unwilling to disclose errors and misconceptions in the fear of being labeled as inadequate for the given responsibilities, which activates the negative outcomes of being silent on team performance. On the other hand, benefits of speaking up are more likely to be harvested once the team members respect and feel respected in a mutual way by their co-workers and feel confident to share their ideas and thoughts without feeling that any errors will be held against them.

Analyzing the conditions under which team members activate their information sharing procedures, Edmondson ([1999](#)) provides two (2) essential conditions that motivate them to speak up and share their thoughts. The first one is the feeling of rejection. Occasionally, crucial information and important knowledge is not being shared for the reason of other individuals may discard their proposals and not give the required value one may think they deserve. The second condition is whether the team is composed for being able to deploy this information and generate useful results. The latter procedure



is defined as “team efficacy”. Team efficacy bonds team psychological safety and the team’s potential to perform, shaping a climate of knowledge sharing.

2.3.4. Team Psychological Safety and Leadership

In this capital we are going to understand and prove how leadership establishes a psychological safe environment for the team members and provide specific ways that may happen in working environments. Each team has its own manager, supervisor, or leader, meaning that an effective leadership creates a psychological safe climate for the team members letting them have their own voice and beliefs and increases the possibilities of optimized performance of the group ([Ortega, Van den Bossche, Sánchez-Manzanares, Rico & Gil, 2014](#)). Indeed, according to Gu et al. ([2013](#)) supervisors and high executives facilitate the formation of psychological safe climates giving the opportunities for further development, clarification, and feedback.

There are many ways psychological safety may be established in a working environment. By observing how leaders accept and show importance to new ideas, team members appreciate methods of displaying respect and support to their teammates and contribute to discussions ([Owens & Hekman, 2012](#)). By giving and getting feedback, by establishing openness in the working teams, by adopting valid and clean procedures and processes for every team member helps the creation of a psychological climate within the team. Pacing nearby Hu et al.’s ([2018](#)) ideas, leadership appraisal creates a safe environment that encourages team members to freely express themselves and propose their own ideas and suggestions. Consequently, a two-way information canal is being shaped for positively exposing radical restitutions, creative ideas, and assorted perspectives ([Amabile, 2018](#)).

According to Cannon and Edmondson ([2005](#)) there are many ways leaders can actuate team units to learn from failures. Consequently, a shared belief will be scattered among the team members, that they will not embarrass or disrespect other teammates for addressing new proposals ([Anderson & West, 1998](#)). Especially leaders with humility may handle errors and mistakes as opportunities to produce new ideas and solution methods divergent from the existing procedures ([Owens, Johnson & Mitchell, 2013](#)). They share the message that facing mistakes and taking risks are not only acceptable, but necessary for the needs of evolution and progress ([Hu et al., 2018](#)). Therefore, team members are not afraid to own their mistakes and address them for the future development of the team ([Edmondson, 1999](#)).

2.3.5. Team Psychological Safety and Learning from Mistakes

A great number of previous studies has examined the connections between psychological safety and learning from mistakes leading to a great unit performance, being in this case high level of information sharing ([Baumard & Starbuck, 2005](#); [Cannon & Edmondson, 2005](#); [Sitkin, 1992](#)). To start with, learning from mistakes occurs when team members share feedback of a failed experience, discuss



the specific reasons why it happened and identify the procedures and processes that can be changed to deal with the root causes of the problem and avoid reappearance ([Hirak et al., 2012](#)). According to learning from mistakes theory, Tjosvold et al. (2004) have proven that teams absorb great amount of information from mistakes when problem solving lies in the heart of individual's interactions and cooperative actions direct to a more tolerant approach for mistakes. However, sources of threats, just like discussing mistakes and problems, may decrease the willingness of the team to engage themselves in problem-solving actions. We examine learning from mistakes as an essential mechanism that connects the feelings of psychological safety of the team with unit performance ([Hirak et al., 2012](#)), focusing on the exchange of information.

In psychological safe environments, team members free themselves from risk-taking fears and tend to commit actions sensing that they will not be punished for a mistake that they may do ([Gu et al., 2013](#)). Edmondson (1999) shares the belief that team psychological safety diminishes the levels of fear of adapting risk-taking behaviors. Thus, confidence is being spread across the team and team members are gaining the freedom to experiment themselves with unprecedented, so far unproven actions ([Edmondson, 2002](#)). A sense of confidence is being dispersed across the team disengaging team members from feelings of embarrassment, rejection, or punishment for speaking up ([Edmondson, 1999](#)). Experimental learning has been characterized by Carter and West (1998) as an effective way of learning via mistakes.

According to Cannon and Edmondson (2001), learning from mistakes may include recognizing unexpected and unpredictable results. However, it becomes clear that there is a great chance of reducing the possibilities of reappearance by reflecting on them. Accepting failures allows team members detect and amend mistakes providing sustainable development, especially in times when a great magnitude of uncertainty is observed ([Weick & Sutcliffe, 2007](#)). In this way, team members abandon their tendency to make accusations and blame each other fostering safety feelings and strengthening their comfort zones ([Tjosvold et al., 2004](#)).

Seeking feedback, asking for help, and experimenting lead to an environment where team members do not feel threatened for their image ([Edmondson, 1999](#)). According to Goffman (1955), team members value their image, avoid behaviors that may pose a threat to their working hypostasis, such as admitting errors and seeking feedback, and protect their impressions on people who decide upon project assignments, salary raises and promotions. As a result, they keep in shadows information that would benefit the team or the organization, impeding learning behaviors and placing the whole unit performance at risk ([Michael, 1973](#)).

We limit the negative aspects of failures by supporting that learning from failures may be very supportive by the team members because feedback from failures initiate change towards more adaptive practices ([Carmeli & Scheaffer, 2008](#)), as well as develop critical thinking for better decision making



([Carmeli, Tishler & Edmondson, 2012](#)). According to Lant and Mezias ([1990](#)) failures and change share an internal connection, given the fact that mistakes open the learning doors for further development and adaptability to the modern, ever-changing environment. In fact, feedback from past failures and mistakes develop a more reliable and crisis-solving organizational culture ([Weick & Sutcliffe, 2007](#)). As a result, mirroring and reflecting ineffective choices or activities consist a vital source of new knowledge needed to improve procedures and processes within the team ([Hirak et al., 2012](#)).

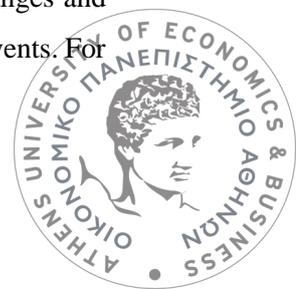
Given the above, it can be concluded that team members of higher levels of psychological safety enables the mechanism of learning-oriented behaviors, since they can speak up and inquire about a failure or mistake ([Hirak et al., 2012](#)). We describe team knowledge sharing as one of the learning-oriented behaviors team members cultivate. By identifying the problem, addressing its root causes, and proposing ways of development and improvement, different skills and knowledge are being combined and used to improve the team performance ([Argyris & Schön, 1978](#)).

2.3.5. Team Psychological Safety and Change

In this research we are referring to change and the outcomes of changes, because change is interchangeably connected with team knowledge sharing and team innovation. We have already analyzed the team innovation as the process of letting the old go, finding the new and construct ideas that have not be issued before and the team knowledge sharing as the combination of crucial information and important knowledge that benefit the team. Both of them could be intercepted if changes, which produce a great amount of psychological unsafety, would not be wisely managed. For this reason, below we are describing the reasons why team members are afraid of changed and how we may bring them closer to the change mentality.

Past research has shown that change is not very welcome in teams and frequently creates fear of the unknown and unwillingness of the unpredictable ([Weeks, Roberts, Chonko & Jones, 2004](#)). Perlman and Takacs ([1990](#)) mention that team members are very negatively biased against change, because it represents more than a mere denial. Change is highly connected with negative feelings such as loss, grief, anger, depression, resignation, even chaos. Since negative attitudes to change have negative consequences for the organization ([Vakola & Nikolaou, 2005](#)), the organization needs to be extra careful when changes are upon implementation. Also, the number of changes does not play any particular role. Nikandrou, Papalexandris & Bourantas ([2000](#)) mention that regardless the number of changes that may happen during a particular period of time, employees will always face the feeling of uncertainty in various volumes.

Taking into consideration that change influences negatively the total feeling of psychological safety within the teams, it becomes necessary to provide various ways of bringing closer changes and team members. Vakola and Nikolaou ([2005](#)) suggest that HR practices are qualified for such events. For

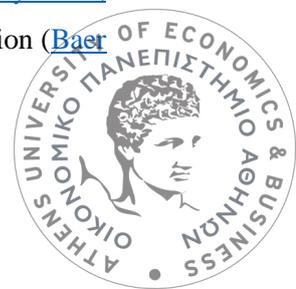


example, training may let team members feel more informed, more adequately reinforced of the coming changes. Effective communication reduces the fear of the unknown, the uncertainty of the potential negative outcomes, lessening the resistance to change. Another HR function that lessens the negative attitudes of the team members is the payment and the benefits. Financial rewards as extrinsic motivation may increase the curiosity of the employees for the future changes and connect them with the higher value that the company shows by connecting the changes with their salaries ([Cartwright and Cooper, 2002](#)). Another HR practice that comes handy is the implementation of change programs that encapsulates the team members and make them key patterns of the change. In this way, the team members themselves feel that they eventually bring the change, without feeling that change has to be mandatory adopted in their absence.

All in all, Schein, and Bennis ([1965](#)) have thoroughly examined the need of a psychological safety by creating the foundations for change. We understand that there are many negative feelings towards change and HR thankfully may play an important role for bringing changes and team members together. For this reason, an establishment of a continuous, uninterrupted change may facilitate a welcoming, friendly, non-threatening environment. Thus, we are providing the change-oriented model as a way to enhance the envision and implementation of changes and at the same time establish a safe environment for the team members to share their personal ideas, beliefs, values and take a clear stand on the decision-making processes.

Below we are providing the change-oriented model in order to understand more how the adoption of a change system may enhance the safety feelings inside team. It has been described by the following steps as prerequisites of stable change-focused processes. a) Monitoring the environment can help team members analyze the information that is being shared, the chances that emerge, the threats that one should avoid, the opportunities one should quickly take advantage and, generally, spot and detect the crucial changes that are being actualized in the external environment of the team. b) Encouraging innovative thinking, meaning letting people create new procedures and processes for their work and substitute old and outdated ones. c) Envisioning change by explaining that promotion and development will optimize performance and get team members one step closer to their personal and team goals. In this way, change becomes desirable and is being largely accepted. d) Taking risks for change, meaning that team members will not be judged upon the risks that may take or feel excluded because they have made some mistakes in the process.

According to Turner and Toft's ([2006](#)) early research, change arises when learning from experience involves detecting patterns of resemblance between the past and current situations. Indeed, the implementation of a psychologically safe environment sets a supportive social context for team members to effectively address diverse and even conflicting innovative perspectives ([Bradley et al., 2012](#)) and effectively integrate alternative suggestions that contribute to the total team innovation ([Baer](#)



[& Frese, 2003](#)). In this way, it is more efficient team members to reduce egoistic attitudes, accept other's perceptions, combine each other knowledge and establish a friendly environment for everyone.

Establishing a psychological safe climate across teams in organizations, team members are more willing to express their concerns and voice their crucial information with each other ([Gu et al., 2013](#)). The increase of social capital among team members is being aided by specific learning behaviors such as asking questions, acceding to feedback sessions, experimenting, reflecting on uncertain results, and assessing the errors aid ([Edmondson, 1999](#)). Thus, Carmeli ([2007](#)) suggests that environments with high level of social capital, let team members feel more comfortable to express themselves and increase their learning capability.

Similarly, team members are more likely to keep up with teammates' diverse perspectives, as well as assess the effectiveness of adoption of these new proposals to their working processes, since they know that their opinions and views will be highly respected ([Hu et al., 2018](#)). Taking all the above into consideration we are stating the below hypothesis blending together team psychological safety with team knowledge sharing and going on step further in enforcing the characteristic of innovation within the teams.

- **Hypothesis 2:** Team psychological safety is positively related to team knowledge sharing.

In the following chapters we will present our independent variables that are connected with team knowledge sharing and team psychological safety. On the one hand, we have team inclusion, namely the volume of how much inclusive team members feel with each other, and, on the other hand, perceived supervisor support, namely the encouragement of the supervisor that the team members conceive. Apart from the penetration in the structure of the team, we will highlight two (2) mediation patterns that take into consideration the dimension of team psychological safety as the mediator. More details are being provided below.



2.4 Team Inclusion

2.4.1. Introduction

One of the substances of the base of our linear, team-focused model is team inclusion. In this research we will focus on what extent do team members adopt inclusive behaviors, describe the specific reasons why team inclusion nowadays is extremely important for the new coming members, as well as for the already existent workforce, enlighten the specific ways team members may develop their characteristic of inclusiveness, how this influences the whole procedures and dynamics within the team and what is its final role regarding the final outcomes of the team's efforts.

Team inclusion is being referred to the extent team members are welcomed to take part in formal procedures, such as decision making and access to information, as well informal procedures, such as lunch gatherings and social events, during which crucial information is being exchanged and important decisions are being born ([Mor Barak, 2016](#)). When organizations actively take an important role in managing differences among the team members by shaping a welcoming environment, commonality across the team members is being increased leading to improvement of quality of work, higher levels of job satisfaction and limited percentages of turnover ([Brimhall et al., 2014](#)).

Cox ([1994](#)) has used the definition of multicultural organizations to describe inclusive working environments mentioning that inclusiveness is being shaped when the employers are committed to integrate the diverse, cultural identities as an important fountain of knowledge and skills. Ely and Thomas ([2001](#)) describe that the most inclusive working environments are those that try to integrate any differences employees may show, adapt learning mechanisms in order one to understand and respect the background of the other creating a silent agreement that in this organization diverse backgrounds are being perceived as an asset for better outcomes and taken into consideration for the organization's strategic tasks. Furthermore, to create an energizing and motivating climate, members not only need to formally belong to a team but also need to feel included by their team members. This distinction is very important for our research model, because team inclusion does not only describe the coexistence of the members, but highlights the importance of strong intercorrelations between them, the comprehension of the different existing dynamics, the significant acceptance of each other, and the caress of everyone's wellbeing.

However, despite the proofs of the significance of team inclusion, there are many reasons why there is a big percentage of failing to foster inclusion in working environments: Firstly, Green and Kalev ([2008](#)) have argued that even though diversity management has decreased bias being directed to minorities, they do not really influence the every-day, relational sources of discrimination that affect how inclusion is being experienced by the team members. According to Allport (1954), he mentions that in order to increase the sentiment of inclusion within a team and make it consistent, there are three



(3) prescriptions: (a) team members to be treated equally and maintain approximately the same status, (b) understand each other in a personal way through interactions, share their stories and be smoothly integrated in the team abandoning any stereotypes to help knowing each other, and (c) participate in the decision-making processes by working together as a team eliminating any possible differences that may be perceived in the first place. Secondly, because practices concerning diversity and inclusion target only people that belong to minority groups, individuals who are not directly benefit from these actions they may feel neglected developing a negative attitude towards the diverse population and increase the competition inside the team (Fiol et al., 2009).

Understanding the issues that are being created with the formation of crossed-unit, diverse teams, we are proposing that inclusion is a personal characteristic that is not limited only to those that they have been minorities for a long time, but it is an aspect that regards all the employees ([Ferdman & Davidson, 2004](#)). This is very important because each year researchers are trying to expand the definition of inclusion and encapsulate more diverse people. However, keeping the boundaries firm, the exclusion of a percentage of the population becomes unavoidable. So, we quote that inclusion is not about expanding boundaries but crushing them completely.

Despite the positive outcomes inclusive working environments bring, still some organizations do not include inclusion as an important characteristic of their style of work and empirical testimonies of the power of inclusion are limited ([Nishii, 2013](#)). For this reason, this research will focus on the ways inclusion may be developed within teams, how it benefits the team processes fostering the team climate of psychological safety and knowledge sharing and the particular reasons why we believe team inclusion advances teams outcomes, and respectively organizational results.

2.4.2. Team Inclusion and Diversity

In the meantime, for the needs of this research we would like to distinguish the meanings between two (2) important elements in the modern, working environments; team diversity and team inclusion. Having meticulously described team inclusion in previous units, now we suggest that diversity within the teams is referred as the spotted differences between individual regarding any personal characteristic that influences the perceived opinion of one another ([Gonzalez & DeNisi, 2009](#)). Especially, taking into consideration the increase of ethnic and racial composition in the present working teams, Brimhall et al. ([2014](#)) has shown that globalization has created a more diverse workforce. For this reason, researchers have made serious efforts to understand the effects of diversity on team members experiences and organizational results. For instance, Acquavita et al. ([2009](#)) have proved that diversity is highly connected with team creativity ([Gonzalez and DeNisi, 2009](#)), with improved reputation ([Groeneveld, 2011](#)), and with increased revenues ([Shore, Chung-Herrera, Dean, Ehrhart, Jung, Randel & Singh, 2009](#)).



A diverse climate is being described when employers maintain fair employment practices, show respect to the unique attributes of every team member, and provide opportunities of education and development equally to everyone ([Groeneveld, 2011](#)). Diversity management is being implemented in organizations through policies, practices, and procedures that highly influence the team members' perceptions of their work environment ([Gonzalez & DeNisi, 2009](#)), which in turn affects individual's state, such as welfare and job satisfaction. In the same tone, Groeneveld ([2011](#)) has suggested that team members who receive positive vibes for diversity lead to better organizational commitment, higher motivation and the ratios of turnover are being decreased. In fact, when diversity is abundant in a workplace, individuals from minority groups feel more committed to the organization and it becomes less likely to abandon their job ([Gonzalez & DeNisi, 2009](#)). For example, women and individuals in Hispanic groups have an increased intention of turnover the climate is not perceived as much supportive as it need to be. Galanaki, Papalexandris and Halikias ([2009](#)) mention that especially women has a long way until they develop their managerial identity and the gap between male and female managers is decreased.

However, diversity sometimes has also its negative effects. Mamman et al., ([2012](#)) have shown that a highly diverse team may lead to conflicts, increased tension, turnover, and thus lost incomes. Inclusiveness is being limited when employees perceive their co-workers through oversimplified and negative stereotypes making the internal communication corrupted by status dynamics ([DiTomaso, Post, & Parks-Yaney, 2007](#)). Jackson, Joshi and Erhardt ([2003](#)) quote that the more heterogeneous is a team, the higher are the levels of conflicts between the team members, connecting demographic diversity with negative outcomes of the team. Bargh and Chartrand ([1999](#)) add the social categorization theory, in which it is assumed that separation in categorization based on demographic characteristics directly lead to creation of biases in favor of the in-group belittling the out-group. All in all, when one's perspectives are being seen through social categorization lens, it is more likely negative feelings to be created and, in result, also conflicts to be generated ([Larkey, 1996](#)).

The negative aspects of diverse groups lead as to provide a stronger, more solid element to manage diversity in the working environment; team inclusion. In order organizations to deal with diversity driven problems such as confrontations and high levels of turnover, employers should create a friendly, non-threatening environment, where team members can truly express themselves and not be judged by exposure savoring better organizational outcomes ([Holvino, Ferdman, & Merrill-Sands, 2004](#)). Inclusive working environments are being shaped when all team members – not only the ones that they belong according to the society in the historical powerful identity groups – are equally treated, valued for who they are, respected regardless the perceived differences they may show and considered valuable asset for the decision-making processes ([Nishii, 2013](#)).



Taking the above into consideration, we conclude that while team diversity focuses on the mere various representation of minorities creating an abundance of micro populations in organizations, team inclusion is trying to transform recessive norms into dominant ones, accepted by the team, by the unit, as well by the whole organization ([Davidson & Ferdman, 2001](#)). Now, having understood how diversity is being addressed in the working environments, it is clear that this research will enculturate the diversity into team inclusion and expand their definition regarding the modern business market.

2.4.3. The Three (3) Dimensions of Inclusion

We understand that team inclusion is a broad element with many different definitions, meanings, perspectives, and implementations. Throughout this research, we will try to provide information regarding every aspect of team inclusion and combine them together in the structure of the team. In particular, Nishii ([2013](#)) has categorized team inclusion in the modern working environments in three (3) distinct sectors.

The first sector that describes inclusiveness within teams is the employment equitable practices. Whether inside the teamwork process and the review process are fair, or whether all team members have equal opportunities to be developed, or there is an open culture to discuss difficult issues, and importantly if there is an equal pay for equal work, are some examples of employment equitable practices. Hicks-Clarke and Iles ([2000](#)) suggest that the aforementioned, fairly practices develop an unbiased environment and a positive working climate. However, if these practices are not equally applied to everyone, team members of the group that are perceived as favored tend to consider themselves that they belong to the in-group and demand more respect, power, and resources ([Ridgeway, Boyle, Kuipers, & Robinson, 1998](#)). So, the distinction between who belongs in the in-group and who in the out-group defines the interpersonal dynamics between the team members ([Nishii, 2013](#)).

The second sector that defines the team inclusion in the organizations is the integration of differences. Differences can be said that are being integrated, firstly when team members are valued for who they are, share and learn from each other, appreciate individual's differences, secondly when employers support work-life balance, ensure that important resources are being delegated to team members, and thirdly when the environment is being generally described as non-threatening, in which team members feel safe to express themselves. Here, we are not only describing the mere representation of diverse backgrounds or implementing equitable human resources practices, but we propose that integration of differences concern the interpersonal absorption of diverse workforce at work ([Nishii, 2013](#)). Kahn ([1990](#)) and Ramarajan ([2009](#)) suggest that these practices reflect aggregating beliefs and norms concerning how open team members are able to enact and connect core aspects of their perceived self with the job tasks without experiencing unexpected consequences.

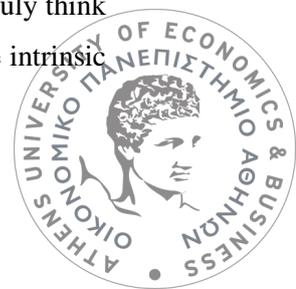


In the same notion, Berry (1984) through his model of acculturation distinguishes two (2) categories of organizations; The first one is the integrationist environment where all employees of every diverse background are being valued and their own culture is being highly represented in the working environment and the second one is the assimilationist environment, where non-dominant teams accept the beliefs and norms of the dominant groups leading to their downgrade. In the first case, team members have the chance to know each other, to share their personal stories, to experience high quality interactions and have a clear knowledge of one's identity (Ensari & Miller, 2001). Complex, in-depth contact let team members to destruct any negative stereotypes regarding the in-group and out-group, diminish their differences and reduce the conflicts that typically are being produced when gaps are in sight (Ensari & Miller, 2006). On the other hand, assimilationist environments enforce work on facades of conformity (Hewlin, 2003) and surface acting (Hochschild, 1983). This means that team members suppress their personal emotions, beliefs, and norms in order to shape personalities that are aligned with desired organizational role models suffering from depression, anxiety leading to psychological dismantling from work (Clair, Beatty & MacLean, 2005).

Inclusion in decision-making processes becomes the third dimension of inclusion in the modern, working environment. In this section belong actions such as every team member's input is being sought, everyone's ideas are being considered, teamwork practices are being redefined according to special, diverse needs, and, finally, team perceives that diverse background is the key its success. Especially, Ely and Thomas (2001) have mentioned that inclusion in decision-making processes describe the volume that the diverse workforce is being asked to participate even if there is a high risk of status quo decomposition and reformation. According to Morrison and Milliken (2000) in inclusive environments the decomposition of dominant norms and standards is not seen as a threat or unmoral, but rather as a value enhancing procedure. So, team members will have the chance to freely interact with each other, learn from each other, differentiate themselves, create their own personal identity (Argyris & Schön, 1978). As a result, we have a more penetrative understanding of the characteristic of the out-group, gaps between the in-group and the out-group are being eliminated (Ensari & Miller, 2006) and stereotypes, as well biases are being reduced within the decision-making process (Green & Kaley, 2008).

2.4.4. Theoretical Approaches of Team Inclusion

Past research has highly combined team inclusion with various theoretical approaches. In this chapter we will describe two (2) of them; Social Identity Theory and Self-Determination Theory. As far as Social Identity Theory is concerned, in-groups and out-groups are being formatted and members are being categorized according to which group it is believed to belong to. Relations, dynamics, and interactions between the in-group and the out-group define the level of inclusivity of the team, which in turns show how much team members can collaborate, share information, feel accepted, and truly think that they belong to the same group. Now, for the Self-Determination theory, we correlate the intrinsic



motivation with the high levels of inclusion within a team. In which ways we can increase the inner motivation of our employees, so they can feel as a true member of the whole group and, thus, strike for greater results. Both theories will be described as a tool to better increase the characteristic of inclusion among team members providing a better basis for our final goal, team innovation.

2.4.4.1. Team Inclusion and Social Identity Theory

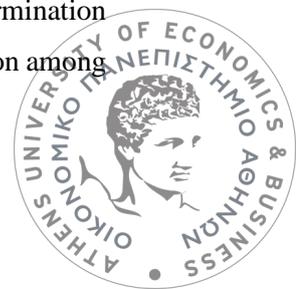
Social identity theory ([Tajfel, 1982](#)) is one of the most important theories that explains why a climate for inclusion affects the functioning of diverse workforces and lead to better organizational outcomes. Organizations take a stand creating a non-threatening and welcoming environment, where the employers (a) value the people for who they really are without depending on the job they have, (b) appreciate the differences between the individuals, and (c) provide enough sources to the team members to resolve any conflicts that may occur ([Nishii, 2013](#)). In this way, team members feel accepted belonging in the in-group fostering high levels of commodity among co-workers ([Tajfel, 1982](#)). As a result, individual's positive feelings of inclusiveness lower the inner boundaries and increase commonality, as well the relational connection between team members.

Furthermore, there are some psychological extensions regarding the social identity theory. Ridgeway and Correll ([2006](#)) suggest that the perceived identity differences between the team members become psychological significant on inclusion only when they are associated with status rankings, and permission to access resources in the terms of historical and societal reinforcement. When status and access of resources characterize the sociohistorical basis of the team, then it is more likely stereotypes to be created and bias to be directed to diverse team members ([Nishii, 2013](#)), losing the essence of inclusion.

So, when team members acknowledge the biased behaviors on co-workers, then the working environment becomes hostile, the competitive feelings are being increased and the sensation of the team belonging is being erased. In this way, the psychological safety within the team is being reduced, there is not a mutual connection between the team members, while negative and hostile feelings are being developed. A competitive and threatening environment spreads fear and untrust among team members leading to confiscation of crucial knowledge and information ([Stasser & Titus, 1987](#)). In this way, it becomes clear that negative aspects that arise from social identity theory has a negative effect on team psychological safety and on team knowledge sharing.

2.4.4.2. Team Inclusion and Self-Determination Theory

We are trying to explore the field of team inclusion through the lens of self-determination theory, combining the intrinsic motivation of the team members with the total levels of inclusion among



the team members ([Deci & Ryan, 2012](#)). According to Cagné and Deci ([2005](#)) intrinsic motivation is being defined as the inherent need and satisfaction of performing a task. For this reason, we state that team members need to truly belong to the team and perceive themselves as an unshakable, inseparable part of the it and not just be mere individuals forming a group ([Shore, Randel, Chung, Dean, Holcombe Ehrhart & Singh, 2011](#)). Being a mere member of the team is insufficient to develop inclusive feelings among team members, motivate them to excel their performance, and consequently, develop a welcoming, non-threatening, energizing environment ([Bidee, Vantilborgh, Pepermans, Willems, Jegers & Hofmans, 2017](#)).

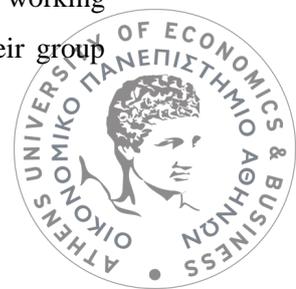
There are two (2) characteristics that influence the team members' willingness to continue and persist on an action; firstly, interest and, secondly, satisfaction ([Reeve, 1989](#)), both of them directed to pleasure human's needs. Interest and satisfaction are highly associated with the perceptions of inclusion, since they affect and influence the satiety of individual's psychological needs for autonomy, competence, and relatedness ([Deci & Ryan, 2000](#)). In our research we are focusing on teams in which team members interact with each other, share their personal knowledge, combine their skills and talents, and create a cumulative outcome. For this reason, we believe that inside team groups the perceptions of inclusiveness among team members are dynamical and, thus not static, meaning that we are supporting a within-person approach to the study of team inclusion and intrinsic motivation ([Bolger, Davis & Rafaeli, 2013](#)).

Team inclusion is highly associated with intrinsic incentives because inclusion within teams foster job satisfaction ([Acquavita et al., 2009](#)). Altruism, citizenship behavior, task performance, affective commitment, inclination for innovation are attitudes and behaviors that are being developed especially when team members feel they belong in the in-group ([Xiong Chen & Aryee, 2007](#)). Being included in opinion sharing discussions, knowledge sharing processes, decision-making procedures, there are high levels of satisfaction of the team members and creativity is being highlighted, leading them to perform better at work ([De Cooman, Vantilborgh, Lub & Bal, 2016](#)).

According to Brewer ([1991](#)) team members feel included to the team when they feel both similar and differentiated from the other. Optimal distinctiveness theory suggests that team members are trying to find a balance between feeling assimilated with their co-workers and at the same time feeling valued for their uniqueness ([Tajfel, Turner, Austin & Worchel, 1979](#)). This dyadic need of the individual foster positive feelings for the team and advance the job performance ([Ferdman, Avigdor, Braun, Konkin & Kuzmycz, 2010](#)).

2.4.5. Team Inclusion and Exclusion

Exclusion is one of the sever negative outcomes that is being reported when working environments are not inclusive or when team members feel that they do not belong in their group



([DeWall & Bushman, 2011](#)) It is highly reported that team members belonging in diverse groups often feel isolated and, thus, excluded from knowledge sharing processes and the acknowledgement of possible career opportunities leading to low levels of personal growth and development ([Durbin, 2011](#)). In instance, ethnic minorities report limited access to crucial information and social interactions ([Milliken & Martins, 1996](#)), while gender differences become accusable for creating conflict within the team distancing each other ([Pelled, 1996](#)). Mor Barak ([2016](#)) has found out the most commonly used word by these minority groups is *excluded*; the fear that they will be left out of the team.

Many researchers have studied the negative outcomes of a possible team member's exclusion. For example, when a team member is excluded from the decision-making processes, the willingness for turnover is being increased ([Mor Barak, Levin, Nissly, & Lane, 2006](#)). Hitlan and Noel ([2009](#)), as well as Scott, Restubog and Zagenczyk ([2013](#)) have connected exclusion with the creation of negative feelings, emotional stress, and high levels of anxiety, while Baumeister, Twenge and Nuss ([2002](#)) with limited personal welfare and organizational effectiveness. We understand that fear of marginalization has a positive relationship with the higher level of turnover among minority populations.

Exclusion feelings are being meticulously explained through the social comparison theory ([Tajfel & Turner, 1986](#)) and the relative deprivation theory ([Bernstein & Crosby, 1980](#); [Hyman, 1960](#)). These two (2) theories suggest that team members notice and understand the discrepancies between their group memberships ([Bernstein & Crosby, 1980](#); [Hyman, 1960](#)) and exactly by assessing these discrepancies they determine the social status and the levels of hierarchy ([Tajfel & Turner, 1986](#)). The moment individuals determine which groups have higher social status and power, they put a lot of effort to distinguish these groups from the others ([Brimhall et al., 2014](#)). In this way, boundaries are being created between the members of high-status groups and the others just to differentiate themselves and show where superiority is being maintained. Even though boundaries limit the inside communication and create distrust across team members ([Bernstein, Sacco, Young, Hugenberg & Cook, 2010](#)), team members have a tendency creating them just to examine which people can be accepted in these high-status groups and, consequentially, be perceived as one of them and which people are perceived to be different and, thus, excluded ([Tajfel & Turner, 1986](#)).

Brimhall et al., ([2014](#)) point out that exclusion has a great impact of identifying diversity as excessive, unbridgeable differences between the team members. Exactly these pointed out differences may bring team members to distance themselves from the team by perceiving a sever lack of similarity ([Tajfel & Turner, 1986](#)) leading to greater sense of exclusion, creating conflicts between the team members, and increasing levels of turnover.

Taking the above into consideration, we understand the high impact of the characteristic of inclusion among the members of a team on the establishment of a psychological safe environment. Especially minority groups, such as women, ethnic and LGBTQ+ individuals tend to feel more



welcomed in organizations where team members adopt practices that enforce the importance of organizational inclusiveness and acceptance of differences ([Rice, Young, & Sheridan, 2020](#)). So, we conclude the below relationship between team inclusion and team psychological safety:

- **Hypothesis 3:** Team inclusion is positively related to team psychological safety.

This research makes clear that inclusive organizations, units, and teams mostly focus on learning processes and involve all the members of the team. For instance, everyone's opinion matters, different perspectives are getting considered for the decision-making processes and significant contributions are being made by incorporating the demands, the feelings of belonging and perspectives of different communities into the design and realization of their business models ([Hung, Cheng, Hou & Chen, 2020](#)). Below we describe the direct influence of team inclusion on knowledge sharing between the members of a team, thus we conclude that:

- **Hypothesis 4:** Team inclusion is directly positively related to team knowledge sharing.

Apart from the direct effect of team inclusion on team knowledge sharing, we also describe the indirect effect through team psychological safety. This mediation let us understand that team knowledge sharing can be developed in team by implementing more than one (1) way. Taking Edmondson ([1999](#)) into consideration, we describe the mediation effect of psychological safety between inclusion in teams and knowledge sharing among the team members. Specifically, we provide the following relationship:

- **Hypothesis 5:** Team inclusion is indirectly positively related to team knowledge sharing though team psychological safety.

So far, we have analyzed the first of our two (2) independent variable that constitute the foundation stones of our model. The second is perceived supervisor support and it will be thoroughly described below. Having our last dimension described, we will provide the whole model, we will point out the complex combinations that appear and, finally, finish the presentation of our model.



2.5. Perceived Supervisor Support

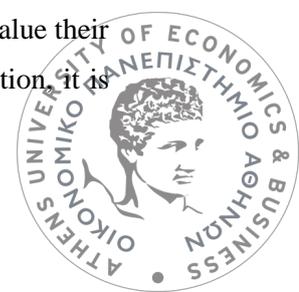
2.5.1. Introduction

In this section, we are going to describe the dimension of perceived supervisor support, how it is defined across working environments, what are the results of an effective supervisor guidance and how it can strengthen the inner bonds inside the team. According to past research there has been a great variation regarding the definition of perceived supervisor support ([Eisenberger et al., 2002](#); [Kottke & Sharafinski, 1988](#)). While some of them describe it as the caresses of the supervisor for the team members' wellbeing, others address it as the identity of the problem solver responsible for providing sustainable solutions or, in general, responsible for grant value to their contributions ([Maertz et al., 2007](#)). Especially nowadays, modern working environments shape teams that consist of various team members and a supervisor. For this reason, it is necessary to understand the specific connections between the supervisor and the team members, the different dynamics that are being created and how supervisor can manage the human and financial resources for the better performance of the group.

Having already concluded that the characteristic of inclusion within the team plays an important role in team psychological safety and team knowledge sharing, now we are examining the ways the perceived supervisor support serves as our second component of our team-model research and facilitates the feelings of safety and the information exchange processes across teams correspondingly. So, we understand that in order to create a psychological safe environment in the work where information is freely distributed, it becomes necessary supervisor to be open, adaptive, supportive, acceptive, and inclusive. According to Nembhard and Edmondson ([2006](#)) leader inclusiveness can be defined as the leader's openness to new and diverse structural systems and support for interaction with their teammates.

Perceived supervisor support can bring many advantages within the team optimizing the final, cumulative effort. Specifically, when supervisors recognize each member's strengths, then an intense, fortified feeling of acceptance, appreciation and valuation is being spread within the team ([Hu et al., 2018](#)). This validation allows team members to increase their level of self-confidence, allowing them to feel secure around the team and capable enough of speaking up and addressing issues ([Exline & Geyer, 2004](#)). Most importantly, according to Owens and Hekman ([2012](#)) the way that the leader views own shortcomings and team members' strengths foster the foundations of team innovation, which is the important element of this research.

Employees form global beliefs and general views concerning the extent to which supervisors value team members' efforts and contributions, and unselfishly care about their physical and emotional state ([Kottke & Sharafinski, 1988](#)). Just as employees form global perceptions concerning their valuation by the organization, they develop general views concerning the degree to which supervisors value their contributions and care about their well-being ([Kottke & Sharafinski, 1988](#)). In the same notion, it is



greatly supported that supervisors who are empathetic and responsive to employees' needs are particularly successful at managing employees' emotional reactions ([Humphrey, 2002](#); [Pescosolido, 2002](#)). A supervisor needs to be precise with the communication with the team members, understand everyone, cope with their difficulties and fears, handle inside conflicts, instrument dynamics, accept diverse beliefs and ideas, and trust the team members in order to successfully manage a whole team. In the case supervisor lacks communication and high levels of clarity in the interactions with the team members, then the perceived trustworthiness is being decreased by the team members ([Nikandrou et al., 2000](#)).

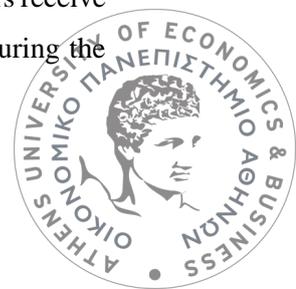
Ultimately, according to Anderson and West's ([1998](#)) team climate theory we suggest 2 (two) crucial factors that connect the perceived supervisor support with our innovation model: (a) team psychological safety, i.e., the extent to which team members feel safe and unthreatened by the team climate ([Edmondson, 1999](#)); and (b) team knowledge sharing, i.e., the procedures of exchanging crucial information and important ideas within the team ([De Dreu, 2007](#)). So, perceived supervisor support will be meticulously described and will be linearly connected to the team psychological support and team knowledge sharing of our model.

2.5.2. Perceived Supervisor Support and Turnover

During the last decades, the concern of organizational researchers has been highly increased considering the turnover rates and the discovery of specific ways to reduce them. For example, Griffeth and Hom ([2001](#)) have proven that unnecessary turnover may be costly and unbeneficial for the team or company. So, Pfeffer ([2005](#)) suggests that is essential to create a welcoming team environment in order to be able to retain talent and increase the competitive advantage of the company by enforcing human capabilities. It becomes clear that in the future is better to understand the causes of turnover ([Maertz et al., 2007](#)), how supervisor support can achieve a safer psychological climate and decrease the rates of turnover.

As we try to enlighten the darker corners of the team structure, we support Kottke & Sharafinski's ([1988](#)) proposes that team members generate opinions and beliefs about their teams concerning the degree they understand the support of the supervisor. Specifically, Allen, Shore and Griffeth ([2003](#)) have shown that individual's decision to stay faith to the same working environment is affected by relational inducements, such as the support from the supervisor and the expectations of the individual. So, for example, some of them focus on the respect they get from the supervisor, or the support they get balancing working and private life or just the acceptance of their diverse and unique ideas.

Satisfying the perceived expectations of the essential supervisor support, team members receive greater inducements ([March & Simon, 1959](#)), thus, potentially the cases of positive mood during the



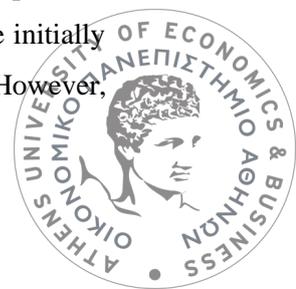
working hours are being increased. Creating positive feelings and emotional associations between team members and supervisor, affective commitment is being developed in the team and, expandingly, in the organization ([Eisenberger, Armeli, Rexwinkel, Lynch & Rhoades, 2001](#)) decreasing the turnover behaviors ([Mathieu & Zajac, 1990](#)). Finally, Allen et al. ([2003](#)) conclude that job satisfaction that originate from supervisor support has an immediate positive effect in the psychology of the individual. Combining and emitting the tranquility and the comfort of every team member, a veil of mutual trust is being shared between them, increasing the rates of the psychological safety across the team and fostering the knowledge sharing processes between team members.

2.5.3. Perceived Supervisor Support and Organizational Support

Past research has already shown that perceived supervisor support is linked with team psychological safety and knowledge sharing not only directly as we previously proved, but also indirectly through perceived organizational support. Organizational support theory supports that to meet social and emotional needs and understand the organization's willingness to reward team members' efforts, employees shape globally applied beliefs regarding the volume to which organization values their efforts and contributions, cares about their physical and emotional wellbeing and develops the feeling of belonging ([Eisenberger et al., 1986](#); [Shore & Shore, 1995](#); [Eisenberger, Cummings, Armeli, & Lynch, 1997](#)). In the same sense, employees express a consistent model of agreement with diverse declarations concerning the extent to which organization understands the needs of the employees, enacts upon them, and treats team members favorably or unfavorably in various circumstances ([Eisenberger et al., 1990](#); [Shore & Tetrick, 1991](#); [Shore & Wayne, 1993](#)). In this way, team members evidently develop beliefs that organization has a positively or a negatively treatment towards them that contains both the acknowledgement of their efforts and the true concern about their welfare ([Eisenberger et al., 2002](#)).

Due to the fact that supervisors are responsible for a series of procedures that encompass team members' presence in the organization, such as direction and evaluation of their performance, employees would mirror supervisor's favorably or unfavorably orientation towards them as a criterion of the general organization's support ([Eisenberger et al., 1986](#); [Levinson, 1965](#)). For example, in case a performance appraisal is positively associated with the efforts and the contributions of the subordinates there is the tendency that the organization is acting supportively towards them. Correspondingly, if the evaluation comprehends negative aspects or notes for improvement, team members tend to extend their subjective opinion of supervisor's unfair treatment towards the whole organization. This interconnection is getting intensified when team members think that supervisor's evaluations are being advanced to the upper-level management and influence the executives' views, further connecting the supervisor support with the organizational fairness ([Eisenberger et al., 2002](#)).

Examining the basis of organizational support theory, conclusions considering the positive relationship between perceived supervisor support and perceived organizational support have initially interpreted to shape an effect from PSS to POS ([Yoon, Han & Seo, 1996](#); [Yoon & Lim, 1999](#)). However,



Yoon and Thye's theory (2000) suggests that a reverse direction of this relationship exists with perceived organizational support enhancing perceived supervisor support. Explicitly, in case team members share the perception that organization supports efforts, values contributions and cares for their welfare might unconsciously lead them to the belief that also supervisors, as representatives of the organizations, have a favorable inclination towards them and they will be continuously, positively connected in the future.

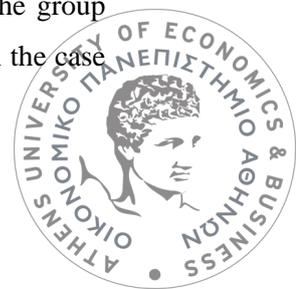
Combining this simultaneously and alternating effect between perceived supervisor support and perceived organizational support we address their effects on the development of feelings of psychological safety and knowledge sharing. As far as the psychological safety is concerned, trust feelings are being developed when organization and supervisors allow team members to express their thoughts and ideas, care about team's welfare and have the best interests for their employees, providing organizational rewards, offering help when necessary, showing concern to team members' issues and shaping favorable job conditions, such as on time payments, chances of training, planned future promotions, and job rotation (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002).

On the other hand, this dyadic interaction between perceived supervisor support and perceived organizational support is importantly combined with team knowledge sharing. Specific procedures that this relationship directly affects can be described as the individual attention to each team member through coaching, directing, helping employees fulfill their job requirements, and performance appraisal (Liaw, Chi & Chuang, 2010). In particular, when the organization and the supervisor are being perceived a supportive, then team members also reciprocate by donating their precious, personal knowledge and by exchanging crucial information regarding the problem-solving processes.

2.5.4. Perceived Supervisor Support and Leader Member Exchange

One of the most important processes that are being developed between the supervisor and the supervisee is the "Leader Member Exchange". Nishii and Mayer (2009) have defined it as one of the relational approaches to leadership and it is widely used to examine the quality of the interactions between the supervisor and the team members and drive the final team outcomes. Through these reciprocal activities, leaders develop either strong and high-quality relationships based in trust and respect or feeble, low-quality that can be characterized by lack of trust and respect (Graen & Uhl-Bien, 1995). In the first case, leader treats the subordinates as member of the in-group, whereas in the second case leader treats the subordinates as members of the out-group. Murphy and Ensher (1999) have conceptualized the aforementioned cases on a continuum ranging from high-quality relationships (in-group) to low-quality connections (out-group).

Depending on whether team members develop high-quality connections or low-quality connections with the supervisor, they shape their perceptions on where they stand within the group (Cogliser & Schriesheim, 2000; Liden, Erdogan, Wayne & Sparrowe, 2006). For instance, in the case



an employee is developing a high-quality connection with the supervisor, the mere picture of it influences the acceptance of the whole team ([Brimhall et al., 2014](#)). If the leader accepts someone, it becomes more likely the other team members to accept the individual ([Schyns, Paul, Mohr & Blank, 2005](#)) as well and open the entrance for the in-group ([Murphy & Ensher, 1999](#)). The more team members feel accepted in the in-group by their leader, the more emotionally empowered they feel concluding in sharing knowledge, creating trust, and taking risks ([Gómez & Rosen, 2001](#)). This suggests that the relationship between the supervisor and the team members may affect perceptions of inclusion, either help the individual feel accepted or excluded, shaping the team psychological safety of the working environment ([Brimhall et al., 2014](#)).

In the organizational level, employee perceptions on high- or low-quality connections influence the turnover decisions in diverse groups ([Nishii & Mayer, 2009](#)). The stronger the interactions are between the supervisor and the team members, the connection between diversity and turnover weakens ([Nahrgang, Morgeson & Ilies, 2009](#)). In this way, team members have more trust to their supervisor creating feelings of safety and belonging. Nishii and Mayer ([2009](#)) aggregate these findings shaping the element of inclusive leadership. Inclusive leadership happens when team members are also asked to participate in decision-making processes letting them create high quality connections between inclusion and leader member exchange ([Brimhall et al., 2014](#)).

Taking everything into consideration, we understand that supervisors play an important role in creating welcoming, friendly, non-threatening environments. If a leader takes an authoritarian, unsupportive, or defensive stance, individuals will tend to low their voices, be afraid to express their opinions leading to worse job performance. In contrast, if a leader is democratic, supportive, acceptive and is not afraid of questions and challenges, the levels of the psychological safety among the team will be increased letting team members believe that are an inseparable part of the team ([Carmeli & Gittel, 2009](#)). Following the above sensation, we describe the below relationship:

- **Hypothesis 6:** Perceived supervisor support is positively related to team psychological safety.

Also, we understand that team members' communication and interaction is highly influenced by the agreement of the supervisor. When supervisors support the interpersonal communication among the team members, they feel that their opinion is valued, their beliefs are taken into consideration and their unique knowledge is being deployed for the enhancement of the working procedures ([De Vries, Bakker-Pieper & Oostenveld, 2010](#)). So, we are taking the chance to propose the next hypothesis between perceived supervisor support and knowledge sharing among the team members:

- **Hypothesis 7:** Perceived supervisor support is directly positively related to team knowledge sharing.



Our team-based model also explains the indirect effect of perceived supervisor support on team knowledge sharing through the level of the psychological safe feelings. Team members are comfortable being themselves and expressing their opinions when there is no fear of negative consequences to their image, status, or career (Kahn, 1990). Thus, feeling safety increases the willingness of knowledge sharing, since feelings of insecurity are being substituted by feelings of belonging and self-value.

- **Hypothesis 8:** Perceived supervisor support is indirectly positively related to team knowledge sharing through team psychological safety.

Taking the above literature review into consideration, we are providing Table 1, where all the connections are being showed. The eight (8) hypotheses are being depicted with linear lines and the mediation patterns are easily distinguishable. Team innovation consists the dependent variable of our model, whereas team knowledge sharing, team psychological safety, team inclusion and perceived supervisor are each time the respective independent variables. In the following chapters we will show you the methodology that we have followed to accomplish our research, details regarding the questionnaire and check which of these hypotheses can be proven or not by actualizing our statistical analysis with IBM SPSS 25. Final results of our analyses will be meticulously provided giving us serious evidence to deploy our model in the scientific community and business market.

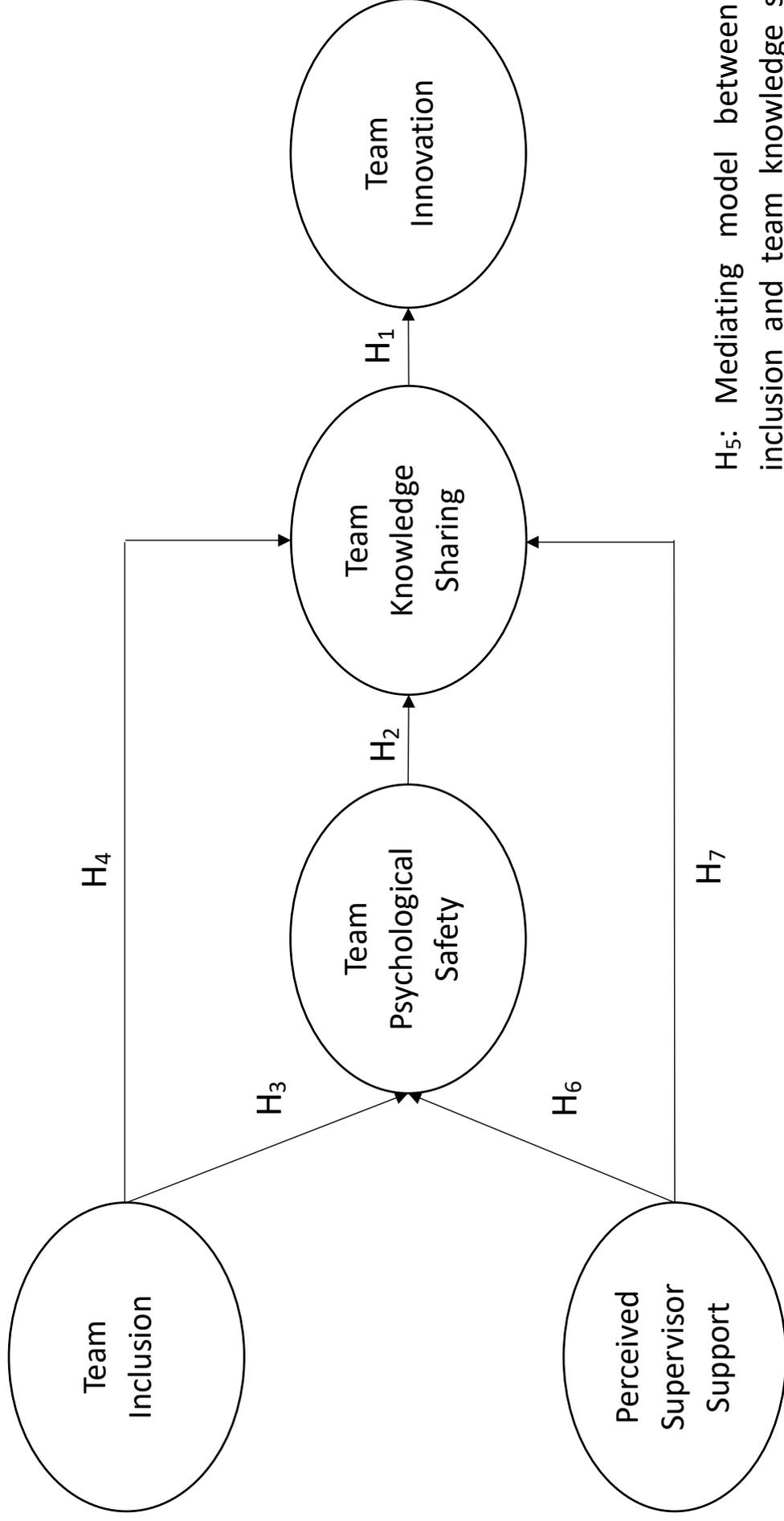
Table 1. Hypotheses

H ₁ Team knowledge sharing is positively related to team innovation
H ₂ Team psychological safety is positively related to team knowledge sharing
H ₃ Team inclusion is positively related to team psychological safety
H ₄ Team inclusion is directly positively related to team knowledge sharing
H ₅ Team inclusion is indirectly positively related to team knowledge sharing though team psychological safety
H ₆ Perceived supervisor support is positively related to team psychological safety
H ₇ Perceived supervisor support is directly positively related to team knowledge sharing
H ₈ Perceived supervisor support is indirectly positively related to team knowledge sharing through team psychological safety

Below, we are providing our team-based, innovation-driven model with the Hypotheses that we have developed in the previous chapter (Figure 2):



Figure 2. Hypotheses based on the theoretical team-focused linear research model.



H₅: Mediating model between team inclusion and team knowledge sharing through team psychological safety.
H₈: Mediating model between perceived supervisor support and team knowledge sharing through team psychological safety.

3. Methodology

3.1 Introduction

In the previous sections we have provided the most significant literature review based on the research that has been made by important scientists regarding the dimensions that our researching model is providing. We have described how team knowledge sharing influences team innovation, how team psychological support affects team knowledge sharing, how team inclusion affects both team psychological support and team knowledge sharing, how perceived supervisor support influences both team psychological support and team knowledge sharing, and our two (2) paths of mediation. Furthermore, all the hypotheses have been provided in order to shape our final, team-based, linear model, and help us conduct the qualitative research and deduce the final results.

In the following section we will describe the methodology that has been followed in order to conduct the research and extract the final results of our model. Specifically, we will provide information regarding the sample and the procedure, the development of the final questionnaire, the measures that have been used to calculate each dimension, the control variables that are important to constrain for the needs of our model and the explanation of the data analysis that has been actualized. This chapter is especially important because it provides the validation of our methodology and the justification of our model for future implementation in the organizations.

Before starting our analysis, we would like to give some information regarding the reasons why we have chosen to deduct a quantitative research. The results of quantitative research explain what is and is not important and have proven that influence a particular portion of the population. It also provides answers to questions about the frequency of a phenomenon, or the magnitude to which the phenomenon affects the sample population. Using the IBM SPSS 25 software, data can be very consistent, precise, and reliable. All in all, quantitative data help us see the big picture and give us a human voice to our final results.

3.2 Sample and Procedure

For the needs of our team-focused research our sample is geared towards professionals that they are working inside a team. Specifically, the respondents are working in operating environments where the team is concrete and tangible, while the role of the supervisor is also distinguished. In this way, the answers are being provided according to their own practical experience, marginalized the effects of theoretical or hypothetical approaches.



The time of the data collection has been estimated in one (1) month during September of 2020, a period of time when the correct sample was attracted and took participation in the questionnaire. Simultaneously, the data is getting audited and cleared for the better statistical analyses. After data cleansing two hundred and ten (210) questionnaires in total have been filled in. Of this total two (2) questionnaires are excluded because they participants did not finish the whole procedure; thus, data was missing. The reduced number of two hundred and eight (208) represents the final sample of this present research. Since all participants have been carefully chosen, there was no waste of questionnaires due to the lack of team in their working environment.

At this point, we thoroughly present all the demographic characteristics of our sample that are very important for the analyses and the clarification of the results. The number of items, the frequencies, and the percentages of each characteristic are depicted in Table 2. At the end of the questionnaire, contestants were asked to anonymously share their demographic background. Below you may find charts and pies for better representation and visualization of the demographic characteristics of our sample, the way we have classified for the needs of the research and the percentages of each category.

2. Demographic information of respondents.

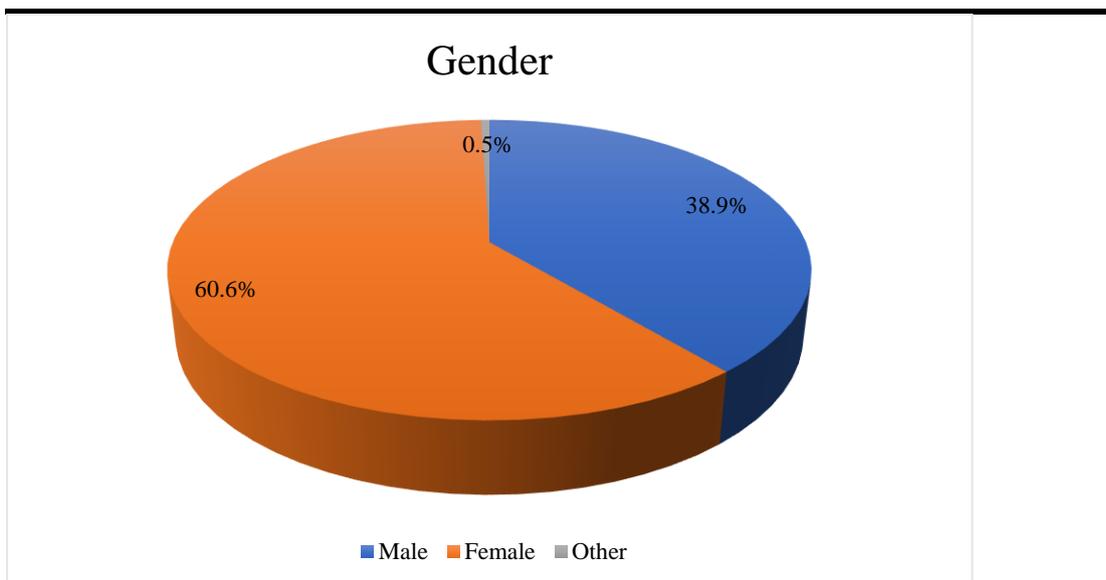
Measure	Items	Frequency	Percentage
Gender			
	Male	81	38.9
	Female	126	60.6
	Other	1	0.5
Age of Population			
	21-30	162	77.9
	31-40	24	11.5
	41-50	11	5.3
	51-60	11	5.3
Level of Education			
	Junior High School	0	0.0
	High School	24	11.5
	University degree	102	49.0
	Master degree	81	39
	Doctoral degree	1	0.5
Organizational Tenure			
	< 2 years	132	63.5
	2 - 5 years	40	19.2
	> 5 years	36	17.3
Marital Status			
	Unmarried	184	88.5
	Married	23	11.1



	Widower	0	0
	Divorced	1	0.5
<hr/>			
Number of Children	0	190	91.3
	1	7	3.4
	> = 2	11	5.3

All the respondents are Greek citizens who live in Greece, they are working right now, and they have a team in their working environment. In detail: As far as the genders of the population are concerned, observing Figure 3, we see that “female” represents the 60.6%, “male” declares the 38.9%, while “other” counts 0.6% of the total respondents. The average age of the female population is 28.38 (SD = 8.21) and that of the male population is 30.43 (SD = 8.32).

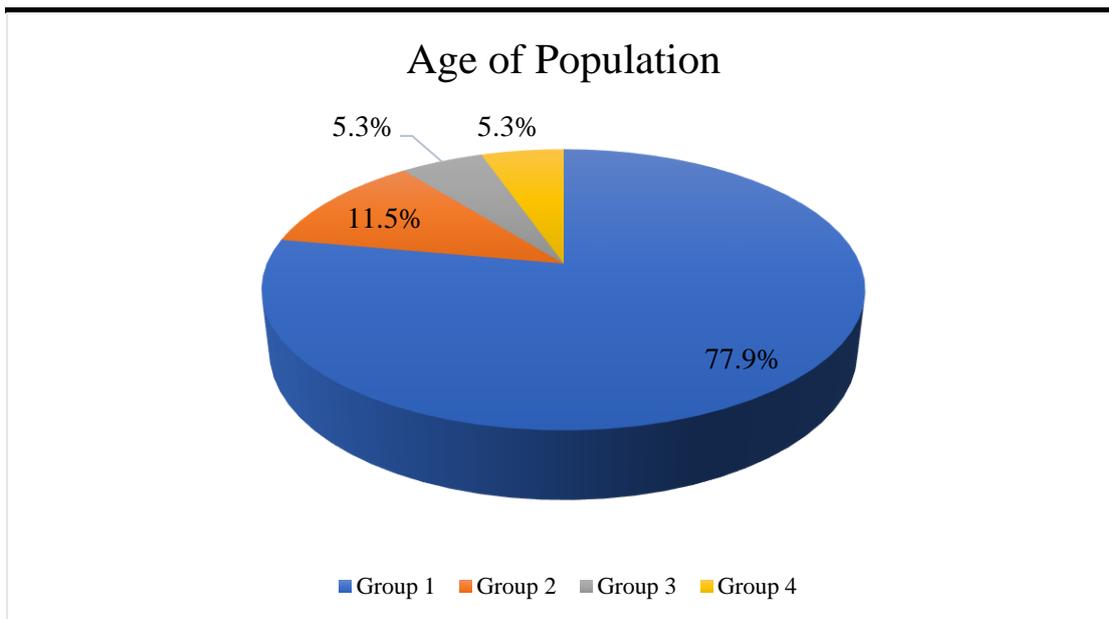
3. Gender



As far as the age of the sample population is concerned, it varies between 21 and 60. For better management of this specific characteristic we developed four (4) isometric groups (Figure 4). Group 1 represent ages between 21-30, Group 2 ages between 31-40, Group 3 between 41-50 and Group 4 between 51-60. In this way we can understand better the group age of our population and better check the influence of different age groups in our correlations and final results.

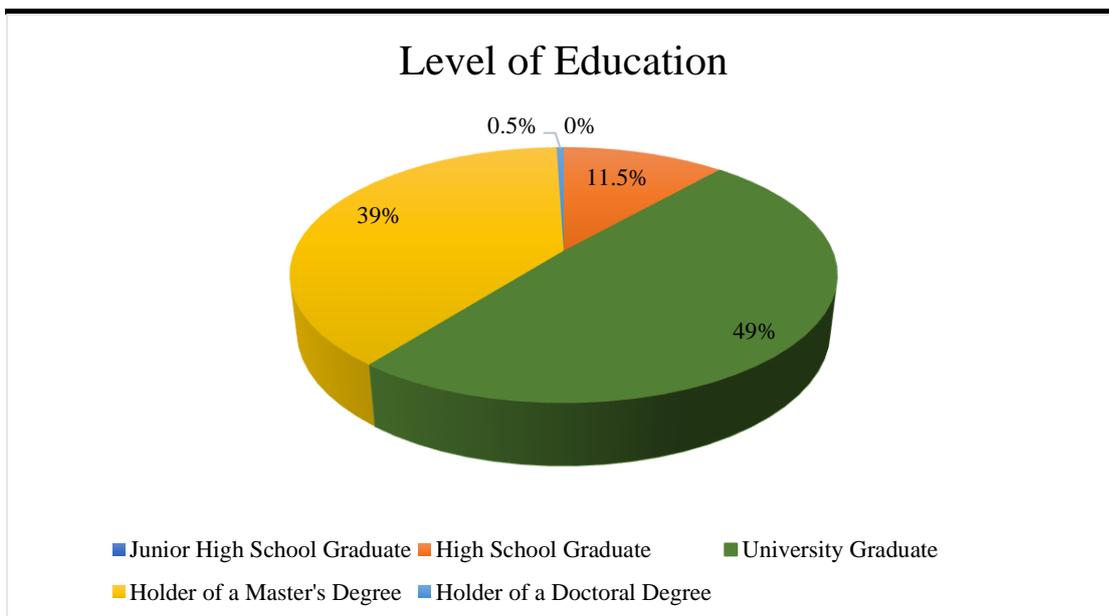


Figure 4. Age of Population



Focusing on the level of education (Figure 5), 11.5% of the respondents have graduated from Junior High School, 49% have graduated from High School, 39.9% holds a Master degree, while only the 0.5% holds a Doctoral degree.

Figure 5. Level of Education



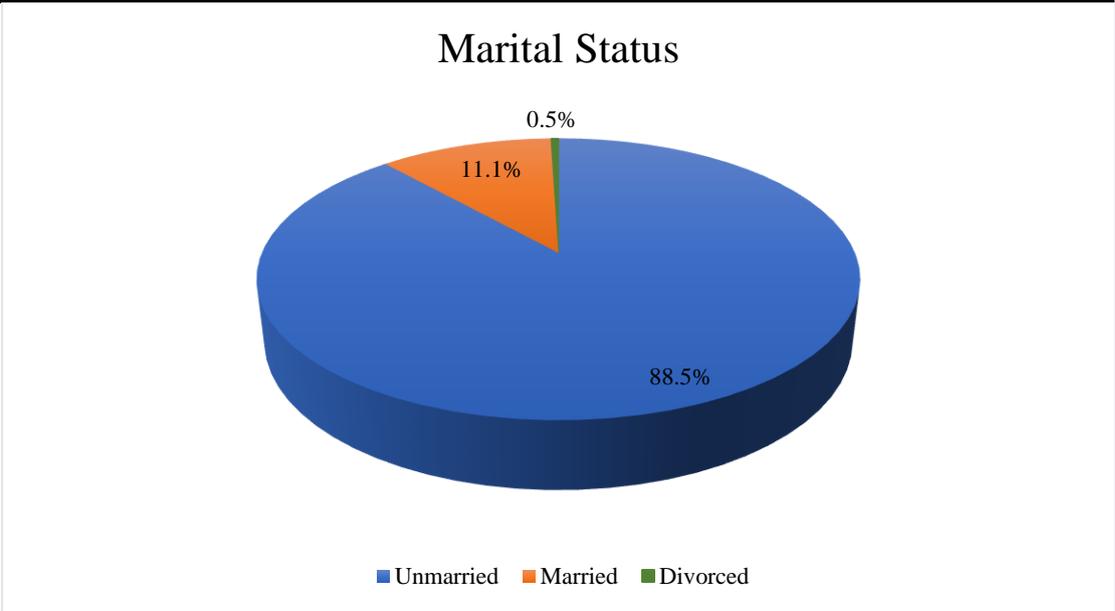
From the above, all the respondents have graduated from Elementary School. As far as the tenure is concerned (Figure 6), 63.5% have worked in the same organization less than two (2) years, 19.2% have worked between two (2) and five (5) years in the same organization, while the 17.3% have worked more than five (5) years in the same organization.

Figure 6. Organizational Tenure



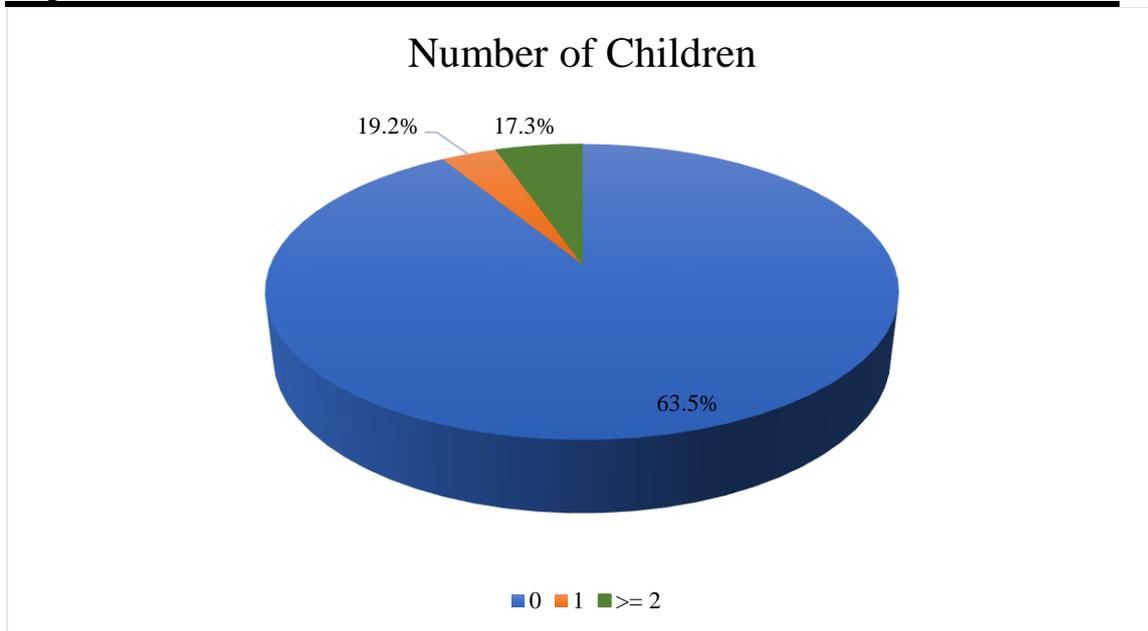
Examining the Marital Status (Figure 7), 88.5% of the respondents is “Unmarried”, 11.1% is “Married” and the 0.5% is “Divorced”.

Figure 7. Marital Status



Last but not least, we are counting the number of children each contestant has (Figure 8). Statistical analyses have shown that 91.3% has no children, 3.4% has one (1) child, 5.3% has at least two (2) children.

Figure 8. Number of Children



3.3 Questionnaire Development

The questionnaire has been created using Google Docs, originally written in English, and then translated into Greek. The distribution of the questionnaire was held in online platforms such as Facebook, LinkedIn, and Google targeting individuals that they appertain to the criteria of our research model. Clicking in the follow link you may find the questionnaire that was used to collect the data: <https://docs.google.com/forms/d/e/1FAIpQLSff1bndSgOfyt-9tckGLiNY2FW8BGnB4n7Z5WumxvDeJSBMWw/viewform>

The team-based questionnaire has been designed and constructed according to the rules and suggestions of Henerson, Morris and Fitz-Gibbon (1987) and Javeau (1996) and has been deployed to assess the five (5) dimensions of this research, them being team innovation, perceived supervisor support, team psychological safety, team knowledge sharing and team innovation. In total fifty (50) questions have been used for the measurement of the aforementioned variables. These questions were originally in English, so translation in Greek was necessary. All responses were measured on a 5-point scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). To be eligible to answer the questionnaire, contestants should state that they belong in a working team with distinct role of the team members and the supervisor. The reason why we have chosen to put this question in the beginning is because we believe that only workforce that is working already within the team and understands the role of the team members and the one of the supervisor will have the experience to answer the questionnaire and give us important and trustful insight of their way of working.

Putting together the aforementioned scales the final form of the questionnaire is being shaped. To minimize the time and increase the positivity of the participants experience all questions were separated in five (5) different forms, deploying the tools of Google Docs. Thus, all precautions have been taken into consideration to increase the watchfulness of the participants. In Appendix section the whole questionnaire is being presented in detail, focusing on the scales and the respective questions that have been used in the procedure.

3.4 Measures

Overall, existing multiple-item scale measures and published questions have been adapted and deployed in this research, always referring to their original manufacturers (Bearden & Netemeyer, 1999; Lester & Bishop, 2000). This is permissible for two reasons: On the one hand because the scales have been already tested and used multiple times successfully, increasing the validity of the measures. On the other hand, this dissertation will be able to produce conclusions that will be aligned with the conclusions of the previous scientists who first used or invented the questions. In this way, there will be comparative data that in turn could lead to new ideas and discoveries, as the initial research continues.



In addition, Cronbach's alpha variable is being calculated and clarified for each dimension. In detail, Cronbach's alpha is a test reliability of the scales that will follow and, thus, a measure of internal consistency of reliability for each dimension, that is, how closely related a set of items are as a group. We are providing the following clarifications for a better understanding of the coefficient of reliability "a":

- If you increase the number of items, you increase Cronbach's alpha
- If the average inter-item correlation is low, alpha will be low
- As the average inter-item correlation increases, Cronbach's alpha increases as well

The detailed scales of the main constructs, as well the coefficient of reliability Cronbach's alpha (Table 3), are being described below for each dimension. Furthermore, for each scale the respective items that were used in the questionnaire are being explicitly provided:

3.4.1 Team Innovation

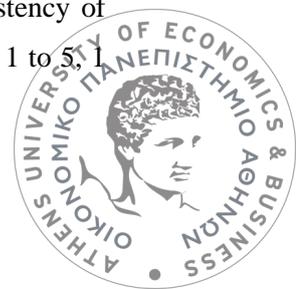
Individuals have reported innovation as a team characteristic across teams using Anderson and West's (1998) 8-item measure. Answers range from 1 to 5, 1 being "I strongly disagree" and 5 being "I strongly agree". The following questions are some examples of the bundle that measured the team innovation: "This team is always moving toward the development of new answers"; "Assistance in developing new ideas is readily available"; "This team is open and responsive to change"; "People in this team are always searching for fresh, new ways of looking at problems". Calculating Cronbach's alpha for team innovation we have found that $a = 0.92$, which is an excellent sign for the validity of measures.

3.4.2 Team Knowledge Sharing

Contestants have rated the level of knowledge sharing within their teams with six (6) items, lending the scale from De Dreu (2007). Due to internal consistency of reliability, we have used only the five (5) items of the mentioned scale. Answers range from 1 to 5, 1 being "I strongly disagree" and 5 being "I strongly agree". Explicitly examples of the items that were used are: "Communicating is a problem in my team"; "Members of my team inform each other about work-related issues"; "The quality of information exchange in our team is good. The Cronbach's alpha for this variable is $a = 0.75$, which is a satisfying sign for the validity of measures.

3.4.3 Team Psychological Safety

For the needs of measuring psychological support between team members a 7-item scale from Edmondson (1999) has been used. Taking into consideration the increase of internal consistency of reliability, we have used only the six (6) items of the mentioned scale. Answers range from 1 to 5, 1



being “I strongly disagree” and 5 being “I strongly agree”. Specifically, individuals have answered questions such as: “If you make a mistake on this team, it is often held against you”; “People on this team sometimes reject others for being different”; “It is safe to take a risk on this team”. The Cronbach’s alpha has been calculated as $\alpha = 0.75$, which is a satisfying sign for the validity of measures.

3.4.4 Team Inclusion

The team characteristic of team inclusion was measured using 15-item scale developed by Nishii (2013) aggregating and combining three (3) dimensions, them being i) equitable employment practices, ii) integration of differences and iii) inclusion in decision making. All answers range from 1 to 5, 1 being “I strongly disagree” and 5 being “I strongly agree”. In detail: For the first dimension, *Equitable Employment Practices*, these are some of the questions that were used in the questionnaire: “This team has a fair work process”; “The performance appraisal process is fair in this team”; “This team invests in the development of all of its members”. For the second dimension being *Integration of Differences* the following examples were assessed: “This team is characterized by a non-threatening environment in which team members can reveal their true selves”; “This team values work-life balance”; “This team commits resources to ensuring that team members are able to resolve conflicts effectively”. For the third and final dimension of team inclusion, *Inclusion in Decision Making*, below there are examples of the questions that have been deployed: “In this team, team member input is actively sought”; “In this team, everyone’s ideas for how to do things better are given serious consideration”; “In this team, team members’ insights are used to rethink or redefine teamwork practices”. All in all, the Cronbach’s alpha for the dimension of team inclusion is $\alpha = 0.93$, which is an excellent sign for the validity of measures.

3.4.5 Perceived Supervisor Support

Perceived supervisor support has been calculated using a 6-item scale by (Kottke & Sharafinski, 1988). All answers range from 1 to 5, 1 being “I strongly disagree” and 5 being “I strongly agree”. In particular respondents have answered the following questions, focusing on their actual team they have in their working environment: “My boss really seems to care about my well-being”; “My boss helps me when I have a problem and I need help”; “My boss cares about my views”. Calculating Cronbach’s alpha perceived supervisor support we have found that $\alpha = 0.91$, which is an excellent sign for the validity of measures.

Below, Table 3 shows the number of items that have been used for each scale and the Cronbach alpha for each dimension. So, we have all the proves to say that the inner validation in all our dimension is being accepted and give us the pass to continue our research and proceed further ahead.



Table 3. Cronbach alpha.

Variable	Number of Items	Cronbach alpha	Comment
1. Team Innovation	8	0.92	Accepted
2. Team Knowledge Sharing	5	0.74	Accepted
3. Team Psychological Safety	6	0.75	Accepted
4. Team Inclusion	15	0.93	Accepted
5. Perceived Supervisor Support	6	0.91	Accepted

3.5 Control Variables

In this section we are going to provide the reasons why we have chosen to control the specific variables and how they would affect our model. Past research has proven that demographic characteristics, such as gender and age, as well as the level of education and the organizational tenure in the same organization influence greatly our team-based model, since we are focusing in deep, cooperative, cognitive procedures. In order to remove their influence in our hypotheses, we have put them in the “Control Variables” section, when we have used the IBM SPSS 25 software and its Process extension. In this way, we are sure that we have been protecting the integrity of our results.

Specifically, we controlled the effects of (i) gender, (ii) age, (iii) level of education and (iv) organizational tenure to ensure the validity of our findings and to reduce the variance caused by other factors, as previous studies have shown. To begin with, Edmondson (2002) has proven that gender and age should be controlled, because they affect the variation of the team psychological safety. Also, the level of education has been controlled. According to Cheung, Gong, Wang, Zhou, and Shi (2016) the higher the educational level of the team is, the higher is the potential of knowledge and information they share to get connected with team innovation. Furthermore, organizational tenure has been controlled to determine the positive performance outcomes associated with the length of time individuals have stayed in the same organization (Post, 2012).

The aforementioned demographic variables have been controlled because team members tend to interact more with those the find some similarities (Schneider, 1987). These similarities according to Harrison and Klein (2007) tend to share similar beliefs and opinions and, consequently, affect the knowledge sharing across members with more common self-interests. On the other hand, team members with different educational experience may develop different methods of thinking and attitudes on innovation (Li, Lin, Tien & Chen, 2015). Particularly gender and level of education have “qualitatively different caches of knowledge” (Harrison & Klein, 2007). According to Hirst, van Knippenberg and Zhou (2009), findings have shown that organizational tenure has also a great effect on team innovation.



3.6 Data Analysis

In this section, we will describe the specific way we proceeded the analysis of the collected data. Two hundred and eight (208) questionnaires have been used for the data analysis, which was performed using the statistical software IBM SPSS Statistics 25 for Microsoft Windows. Below we provide the whole series of steps that we followed for the excellence of the data analysis of the results:

- Checking the minimum and the maximum values, as well as the missing values of the answered questionnaires.
- Performing the process of recoding to aggregate the results of each bundle of questions correctly.
- Assessing the internal consistency of reliability for each dimension calculating Cronbach alpha for each dimension.
- Checking the regularity of each dimension by examining the asymmetry and curvature, as well as by examining the histogram. No violations have been measured.
- Calculating the correlations of the direct and the direct hypothesis that our research will provide using PROCESS in SPSS. According to Rockwood and Hayes (2017) this software is ideal for the multilevel mediation model of our research.
- Checking whether the demographic characteristics of our sample influences the correlations of our model.



4. Results

4.1 Introduction

In this chapter we are going to provide and describe the final results of our team-based, linear model, which derive from the responses of the questionnaires. After collecting our data and proceeding to our analysis on IBM SPSS 25 software, now we are focusing on the validation of the hypothesis, both direct ones and indirect ones. First of all, we will provide the descriptive statistics of each of our dimensions. Means, standard deviations, reliabilities, and correlations will be provided (Table 4). In the meantime, Pearson correlations will be depicted giving us the final answers for the proposals that we have suggested in the section of the hypothesis. We understand that this chapter will be crucial, because either it will provide us of valid hypothesis, ready to be introduced and applied to organizations, or show us invalid hypothesis, giving us the feedback of further research and deeper understanding of the dimensions, that we are using in this research.

4.2 Descriptive Statistics

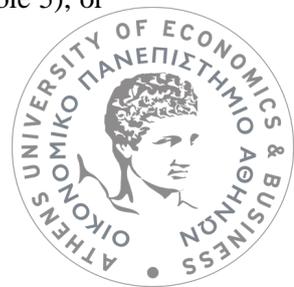
In the Table 4 we are reporting the total number of the questionnaires that have been used for each dimension, the minimum and maximum value, the means, the standard deviations, and the variance for each variable. Descriptive statistics provide an analytical overview of the data that we have used for our research.

Table 4. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Standard Deviation	Variance
1. Team Innovation	208	1.50	5.00	3.4	0.81	0.66
2. Team Knowledge Sharing	208	2.00	5.00	3.7	0.71	0.50
3. Team Psychological Safety	208	1.30	5.00	3.6	0.70	0.50
4. Team Inclusion	208	1.67	5.00	3.6	0.73	0.52
5. Perceived Supervisor Support	208	1.00	5.00	3.5	0.89	0.79

4.2 Correlations

In this section we are going to describe the correlations that have been found using the statistical software IBM SPSS 25. Correlations between our variables, as well as between the demographic characteristic of our sample, were computed using the Pearson correlation “r”. Positive or negative, significant, or non-significant correlations will be depicted below either in the next table (Table 5), or in the Appendix section.



To begin with, team knowledge sharing is significantly, directly positive related with team innovation ($r = 0.65, p < .01$). Following, team psychological safety is significantly, directly positive related with team knowledge sharing ($r = 0.67, p < .01$). Similarly, team inclusion is also directly, significantly, positive related with psychological safety ($r = 0.63, p < .01$) and directly, significantly, positive related with team knowledge sharing ($r = 0.72, p < .01$). Lastly, perceived supervisor support is significantly, positive related with team psychological safety ($r = 0.57, p < .01$) and directly, significantly, positive related with team knowledge sharing ($r = 0.59, p < .01$). The below Table 5 will be also displayed also in the Appendix section.

Table 5. Means, standard deviations, reliabilities, Pearson correlations, and reliabilities

Variable	Mean	Standard Deviation	1	2	3	4	5
1. Team Innovation	3.4	0.81	(0.92)				
2. Team Knowledge Sharing	3.7	0.71	0.65**	(0.74)			
3. Team Psychological Safety	3.6	0.70	0.59**	0.67**	(0.75)		
4. Team Inclusion	3.6	0.89	0.73**	0.72**	0.63**	(0.93)	
5. Perceived Supervisor Support	3.5	0.73	0.56**	0.59**	0.57**	0.63**	(0.91)

Reliabilities (coefficients alphas) are reported on the diagonal

** Significant at $p < .01$.

In addition to the correlations, we have examined the multicollinearity effect. Since we are examining thoroughly the deepest procedures and processes of the teams, there we wanted to be sure that. All the measures of the variables are acceptable, so we eliminate any chance of multicollinearity. Below, supporting documentation is provided (Table 6 & Table 7). In order to prove the absence of multicollinearity, we need two (2) requirements:

1. Tolerance > 0.1
2. VIF < 10

Table 6. Multicollinearity of Team Inclusion and Perceived Supervisor Support on Team Psychological Safety

Model	Collinearity Statistics	
	Tolerance	VIF
Team Inclusion	.609	1,643
Perceived Supervisor Support	.609	1,643

Table 7. Multicollinearity of Team Inclusion and Perceived Supervisor Support on Team Knowledge Sharing

Model	Collinearity Statistics	
	Tolerance	VIF
Team Inclusion	.609	1,643
Perceived Supervisor Support	.609	1,643



Team Inclusion	,609	1,643
Perceived Supervisor Support	,609	1,643

Thoroughly examining the above tables, it is clear that we are ensuring that no multicollinearity effect has been developed in our research. Combining it with the fact that all our correlations are positively associated, we highlight the establishment and functionality of our research model. Our suggestions, based on the literature review that was explicitly described in second chapter, will be one by one examined and proven in the next chapter.

4.3 Hypothesis Analysis and Testing

In this section, taking into consideration all the provided information from the previous chapters, we will represent each and every hypothesis of our research, show the final outcomes and justify our team-based model. Carefully observing Table 5, it becomes clear that all the direct correlations between the dimensions are being justified by our statistical analyses. Similarly, all the mediating correlations also are being supported by our findings. For the mediation effect we have deployed IBM SPSS 25 Process extension and used the Model 4, which is specifically appropriate for mediating processes (Hayes, 2013). We have used this extension in order to control the variables that according to past literature have a great impact in team processes. The control variables are (i) gender, (ii) age, (iii) level of education and (iv) organizational tenure. As we have explained in detail in previous chapters, we control these variables ensure the validity of our findings and to reduce the variance caused by other factors. To further justify our findings, confidence intervals are being provided. In total, the whole team-structured model is being highly endorsed by our findings providing a holistic, prismatic explanation of how team works, and explaining in depth how team members behave. In detail:

4.3.1 Hypothesis 1

Hypothesis 1 describes the relationship between team knowledge sharing with team innovation. We have proposed that there is a directly, significantly positive association between these variables. Taking into consideration the index of Pearson Correlation $r = 0.65$, the relationship is being greatly supported justifying that team knowledge sharing is positively related with team innovation. So, Hypothesis 1 is valid.

4.3.2 Hypothesis 2

Hypothesis 2 describes the relationship between team psychological safety and team knowledge sharing. We have proposed that there is a directly, significantly positive association between these variables. Looking at the index of Pearson Correlation $r = 0.67$, it becomes clear that the hypothesis is being greatly supported showing that team psychological safety is positively related to team knowledge sharing. So, Hypothesis 2 is valid.



4.3.3 Hypothesis 3

Hypothesis 3 describes the relationship between team inclusion and team psychological safety. We have proposed that there is a directly, significantly positive relationship between these variables. This time, the index of Pearson correlation is $r = 0.63$. So, we do understand that their association is being greatly supported meaning that team inclusion is positively related to team psychological safety in the working environment. So, Hypothesis 3 is valid.

4.3.4 Hypothesis 4

Hypothesis 4 describes the relationship between team inclusion and team knowledge sharing. We have proposed that there is a directly, significantly positive relationship between these variables. Taking the index of Pearson Correlation $r = 0.72$ into consideration, the hypothesis is being greatly supported meaning that team inclusion is positively related to team knowledge sharing in working environments. So, Hypothesis 4 is valid.

4.3.5 Hypothesis 5

Hypothesis 5 describes the first mediation path in our research model. It refers on the way team inclusion is indirectly, significantly associated with team knowledge sharing through team psychological safety. Taking the below table into consideration, findings highly support the mediation meaning that team inclusion intensifies the team knowledge sharing across the teams through their mediation effect of team psychological safety.

Firstly, we see that the relationship between team inclusion and team knowledge sharing is statistically important ($b=0.72$, $t(202)=15.33$, $p<.01$) with team inclusion playing an important role in shaping team knowledge procedures and processes. This represents the total effect. Now let us examine the mediation model. Team inclusion has a statistically important relationship ($b=0.60$, $t(202)=11.26$) with the mediator team psychological safety meaning that team inclusion shapes a trusty, non-threatening and welcoming environment. Correspondingly, team psychological safety has a statistically important relationship with team knowledge sharing ($b=0.39$, $t(201)=6.91$, $p<.01$), meaning that a safe environment leads to better knowledge exchange methods. Thoroughly examining the influences of the mediating variable, in this case team psychological safety, we come into conclusion that the influence of team inclusion on knowledge sharing is still positive, however decreased ($b=0.49$, $t(201)=6.91$, $p<.01$). The above triangle certifies our mediation model. Specifically, through statistics, the 90% Confidence Intervals= $[0.15, 0.31]$, with Estimate $IE_{TI-TPS-TKS}=0.23$, and $SE=0.04$. Since the 90% Confidence Intervals do not include zero (0), our first mediation structure is sealed. So, Hypothesis 5 is valid. More information regarding the Mediation Model will be displayed in the Appendix section PART II.I.



Table 8. Mediation Model between Team Inclusion and Team Knowledge Sharing through Team Psychological Safety

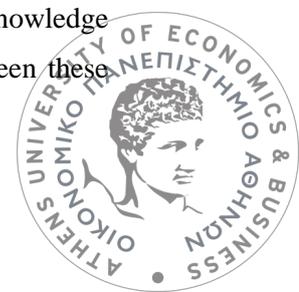
	Beta	t-test	R ²	Team Knowledge Sharing		
				Beta	t-test	R ²
Team inclusion perception on outcome (Total Effect)				0.72	15.33	0.55
Team inclusion on team psychological safety	0.60	11.26	0,41			
Team psychological safety on team knowledge sharing				0.39	6.91	0.63
Team inclusion perceptions on team knowledge sharing controlling for team psychological safety				0.49	9.04	
				Indirect effect of team inclusion on team knowledge sharing through team psychological support: Estimate=0.23, SE=0.04, 95% Confidence Intervals [0.15 , 0.31]		
Analyses was based on 5000 bootstrap sample.						
In this model the following control variables have been deployed: (a) Gender (b) Age, (c) Level of Education, and (d) Years of Tenure.						
Unstandardized regression coefficients (beta) are presented.						
Confidence Intervals are Bias-Corrected.						

4.3.6 Hypothesis 6

Hypothesis 6 describes the relationship between perceived supervisor support and team psychological safety. We have proposed that there is a directly, significantly positive relationship between these variables. Looking at the index of Pearson Correlation $r = 0.57$, our findings support the hypothesis noticing that the perceived supervisor support is positively related to team psychological safety. So, Hypothesis 6 is valid.

4.3.7 Hypothesis 7

Hypothesis 7 describes the relationship between perceive supervisor support and team knowledge sharing. We have proposed that there is a directly, significantly positive relationship between these



variables. The index of Pearson Correlation $r = 0.59$ supports the hypothesis noticing that perceived supervisor support is positively related to team knowledge sharing. So, Hypothesis 7 is valid.

4.3.8 Hypothesis 8

Hypothesis 8 describes the second mediation path in our research model. It refers on the way perceived supervisor support is indirectly, significantly associated with team knowledge sharing through team psychological safety. Taking the below table into consideration, findings highly support the mediation meaning that perceived supervisor support intensifies the team knowledge sharing across the teams through them mediation effect of team psychological safety.

Firstly, we see that the relationship between perceived supervisor support and team knowledge sharing is statistically important ($b=0.48$, $t(202)=10.69$, $p<.01$) with team inclusion playing an important role in shaping team knowledge procedures and processes. This represents the total effect. Now let us examine the mediation model. Perceived supervisor support has a statistically important relationship ($b=0.45$, $t(201)=9.96$, $p<.01$) with the mediator team psychological safety meaning that perceived supervisor support shapes a trusty, non-threatening and welcoming environment. Correspondingly, team psychological safety has a statistically important relationship with team knowledge sharing ($b=0.52$, $t(201)=8.75$, $p<.01$), meaning that a safe environment leads to better knowledge exchange methods. Thoroughly examining the influences of the mediating variable, in this case team psychological safety, we come into conclusion that the influence of team inclusion on knowledge sharing is still positive, however decreased ($b=0.24$, $t(202)=5.24$, $p<.01$). The above triangle certifies our second mediation model. Specifically, the 90% Confidence Intervals = [0.15 , 0.31], with Estimate $IE_{PSS-TPS-TKS} = 0.23$, and $SE = 0.03$. Since the 90% Confidence Intervals do not include zero (0), also our second mediation structure is sealed. So, Hypothesis 8 is valid. More information regarding the second Mediation Model will be displayed in the Appendix section PART II.II.

Table 9. Mediation Model between Perceived Supervisor and Team Knowledge Sharing through Team Psychological Safety

	Beta	t-test	R ²	TEAM KNOWLEDGE SHARING		
				Beta	t-test	R ²
Perceived supervisor support on outcome (Total Effect)				0.48	10.69	0.37
Perceived supervisor support on team psychological safety	0.45	9.96	0.36			

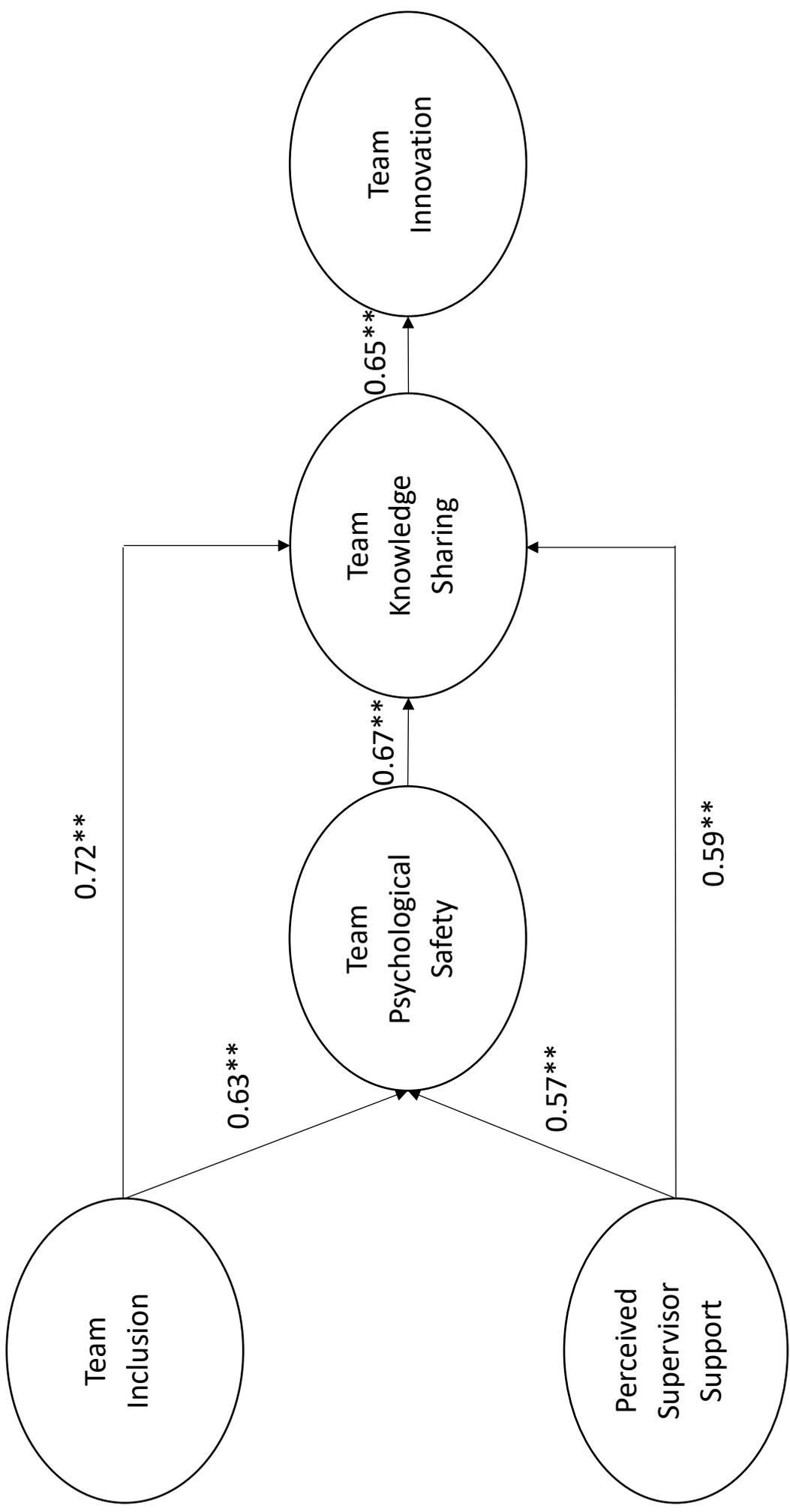


Team psychological safety on team knowledge sharing				0.52	8.75	0.55
Perceived supervisor support perceptions on team knowledge sharing controlling for team psychological safety				0.24	5.24	
				Indirect effect of perceived supervisor Support on team knowledge sharing through team psychological support: Estimate=0.23, SE=0.03, 95% Confidence Intervals [0.17 , 0.30]		
<p>Analyses was based on 5000 bootstrap sample.</p> <p>In this model the following control variables have been deployed: (a) Gender (b) Age, (c) Level of Education, and (d) Years of Tenure.</p> <p>Unstandardized regression coefficients (beta) are presented.</p> <p>Confidence Intervals are Bias-Corrected.</p>						

Below we provide our model filled with the proven Pearson correlations visualizing the tested hypotheses. Direct patterns are being depicted in Figure 9 completing the correlations that we wanted to focus on and choose to analyze. Later, relying on this model we will connect our findings with the previous literature review that we have already provided, describe the possible limitations, and mention how future research could be directed.



Figure 9. Theoretical team-focused linear research model with respective Pearson correlations.



4.4 Demographic Influence

In this section we are going to check whether specific demographic characteristics of the sample population influence the above correlations and hypotheses that we have provided. Past research ([Edmondson, 2002](#); [Cheung et al., 2016](#); [Post, 2012](#)) has proven that a man perceives differently the role of the team than a woman, different age levels have different beliefs on the functionality of a team, people from different levels of education may understand or not crucial inner procedures that take place among the team members, different organizational status may affect the construction of a team, people with different marital status may intensify or not the value of teamwork and, lastly people with children may understand the definition of a team in a plural way that people without a child.

All the above concerns will be lifted soon since below we will provide significant results that will show that change on these demographic characteristics do not affect the hypotheses that we have provided, nor the final outcomes of our model. These statistical analyses have been made using IBM SPSS 25 software.

4.4.1 Correlations between Demographic Characteristics and Model Dimensions

In the last section of the questionnaire, we have asked our contestants to provide us some of their personal, demographic characteristics. We have decided to choose the specific characteristics of gender, age, level of education, organizational tenure, marital status, and number of children to check if there is a specific pattern, a correlation between them. Since we are discovering in this research the deepest, team-based procedures, it becomes essential to see if a specific demographic characteristic shows a special connection with the dimensions that our model examine. These dimensions are team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support.

Observing below (Table 10) we can draw the conclusion that no correlation can be found between the demographic characteristics and the dimension of our model. There is no significance relationship that can combine the background of a team member with the procedures and processes that are being developed with the structure of a team.



Table 10. Correlations between Demographic Characteristics and Model Dimensions

Variables		Gender	Age	Level of Education	Organizational Tenure	Marital Status	Number of Children
1. Team Innovation	Pearson Correlation	-,114	-,088	-,048	-,085	-,026	-,045
	Sig. (2-tailed)	,101	,206	,490	,223	,712	,522
2. Team Knowledge Sharing	Pearson Correlation	-,089	,016	-,015	-,073	,071	,045
	Sig. (2-tailed)	,201	,816	,831	,293	,311	,519
3. Team Psychological Safety	Pearson Correlation	-,130	-,113	-,063	-,005	,001	-,072
	Sig. (2-tailed)	,062	,103	,365	,941	,987	,300
4. Team Inclusion	Pearson Correlation	-,129	-,101	-,025	-,053	,026	,005
	Sig. (2-tailed)	,063	,149	,725	,451	,714	,943
5. Perceived Supervisor Support	Pearson Correlation	-,082	,016	,033	,054	,075	,042
	Sig. (2-tailed)	,238	,817	,631	,439	,284	,545

Focusing on the highlighted parts of the above table, we understand that there is no significantly important correlation between the demographic characteristics and the dimensions of our model. Consequently, we cannot deduct any conclusion combining the background of our team members with the dimensions of our team-based, linear model.

4.4.2 Independent-Samples T-test between Gender and Model Dimensions

In this t-Test we will examine whether the different gender plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the t-Test we will examine if there is a significant difference on the means regarding the dimensions of our model. Since we have the variable of the gender, we will use the independent t-Test.

Table 11. Independent-Samples T-test between Gender and Model Dimensions

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
1. Team Innovation	,360	,549	1,669	205	,097



2. Team Knowledge Sharing	,179	,672	,936	205	,351
3. Team Psychological Safety	4,158	,043	1,480	205	,140
4. Team Inclusion	,084	,773	1,603	205	,110
5. Perceived Supervisor Support	2,135	,146	,948	205	,344

Taking into consideration the highlighted part of Table 11, we conclude that there is no significantly important difference between the means of the males and the females. So, there is no significant difference between the two (2) genders on any dimension of our model.

4.4.2 One-Way ANOVA Test between Age and Model Dimensions

In this One-Way ANOVA test we will examine whether the different age group plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the One-Way ANOVA we will examine if there is a significant difference on the means regarding the dimensions of our model. Since we have four (4) different age groups, we will use the One-Way ANOVA Test.

Table 12. One-Way ANOVA Test between Age and Model Dimensions

Dependent Variable	Age Group i, i=1,2,3,4	Age Group j, j≠i	Mean Difference (i-j)	Std. Error	Sig.
1. Team Innovation	1	2	,04185957	,17793666	,814
		3	,20615881	,25347860	,417
		4	,14934063	,25347860	,556
	2	1	-,04185957	,17793666	,814
		3	,16429924	,29621302	,580
		4	,10748106	,29621302	,717
	3	1	-,20615881	,25347860	,417
		2	-,16429924	,29621302	,580
		4	-,05681818	,34688917	,870
	4	1	-,14934063	,25347860	,556
		2	-,10748106	,29621302	,717
		3	,05681818	,34688917	,870
2. Team Knowledge Sharing	1	2	,10154321	,15525408	,514
		3	,08866442	,22116627	,689
		4	-,18406285	,22116627	,406
	2	1	-,10154321	,15525408	,514



		3	-,01287879	,25845310	,960
		4	-,28560606	,25845310	,270
	3	1	-,08866442	,22116627	,689
	3	2	,01287879	,25845310	,960
	3	4	-,27272727	,30266928	,369
	4	1	,18406285	,22116627	,406
	4	2	,28560606	,25845310	,270
	4	3	,27272727	,30266928	,369
3. Team Psychological Safety	1	2	-,02597737	,15459823	,867
		3	,18424991	,22023197	,404
		4	,18424991	,22023197	,404
	2	1	,02597737	,15459823	,867
		3	,21022727	,25736129	,415
		4	,21022727	,25736129	,415
	3	1	-,18424991	,22023197	,404
		2	-,21022727	,25736129	,415
		4	,00000000	,30139068	1,000
	4	1	-,18424991	,22023197	,404
		2	-,21022727	,25736129	,415
		3	,00000000	,30139068	1,000
4. Team Inclusion	1	2	-,01666667	,15947033	,917
		3	,21212121	,22717250	,352
		4	,18787879	,22717250	,409
	2	1	,01666667	,15947033	,917
		3	,22878788	,26547193	,390
		4	,20454545	,26547193	,442
	3	1	-,21212121	,22717250	,352
		2	-,22878788	,26547193	,390
		4	-,02424242	,31088889	,938
	4	1	-,18787879	,22717250	,409
		2	-,20454545	,26547193	,442
		3	,02424242	,31088889	,938
5. Perceived Supervisor Support	1	2	-,19714506	,19464660	,312
		3	,03486251	,27728264	,900
		4	-,23786476	,27728264	,392
	2	1	,19714506	,19464660	,312
		3	,23200758	,32403024	,475
		4	-,04071970	,32403024	,900
	3	1	-,03486251	,27728264	,900
		2	-,23200758	,32403024	,475
		4	-,27272727	,37946536	,473
	4	1	,23786476	,27728264	,392



		2	,04071970	,32403024	,900
		3	,27272727	,37946536	,473

Taking into consideration the highlighted part of Table 12, we conclude that there is no significantly important difference between the means of the 4 age groups. So, there is not an age group with higher results on any dimension of our model.

4.4.3 One-Way ANOVA Test between Level of Education and Model Dimensions

In this One-Way ANOVA test we will examine whether the different level of education plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the One-Way ANOVA we will examine if there is a significant difference on the means regarding the dimensions of our model. In order to use One-Way ANOVA we need to have more than 1 answer. So, we are excluding the state of “Doctoral Degree”. Since we have four (4) different valid levels of education, we will use the One-Way ANOVA Test.

Table. 13 One-Way ANOVA Test between Level of Education and Model Dimensions

Dependent Variable	Level of Education i, i=1,2,3,4	Level of Education j, j≠i	Mean Difference (i-j)	Standard Error	Sig.
1. Team Innovation	2	3	-,18933824	,18368512	,304
		4	-,01427469	,18816590	,940
	3	2	,18933824	,18368512	,304
		4	,17506354	,12049731	,148
	4	2	,01427469	,18816590	,940
		3	-,17506354	,12049731	,148
2. Team Knowledge Sharing	2	3	-,26470588	,16000723	,100
		4	-,10000000	,16391042	,542
	3	2	,26470588	,16000723	,100
		4	,16470588	,10496463	,118
	4	2	,10000000	,16391042	,542
		3	-,16470588	,10496463	,118
3. Team Psychological Safety	2	3	-,08619281	,15892610	,588
		4	,02237654	,16280292	,891
	3	2	,08619281	,15892610	,588
		4	,10856935	,10425541	,299
	4	2	-,02237654	,16280292	,891
		3	-,10856935	,10425541	,299
4. Team Inclusion	2	3	-,25408497	,16444444	,124
		4	-,07705761	,16845587	,648



	3	2	,25408497	,16444444	,124
		4	,17702735	,10787544	,102
	4	2	,07705761	,16845587	,648
		3	-,17702735	,10787544	,102
5. Perceived Supervisor Support	2	3	-,26072304	,20067948	,195
		4	-,15528549	,20557483	,451
	3	2	,26072304	,20067948	,195
		4	,10543755	,13164560	,424
	4	2	,15528549	,20557483	,451
		3	-,10543755	,13164560	,424

Taking into consideration the highlighted part of Table 13, we conclude that there is no significantly important difference between the means of the four (4) levels of education. So, there is not a group with higher results on any dimension of our model.

4.4.4 One-Way ANOVA Test between Organizational Tenure and Model Dimensions

In this One-Way ANOVA test we will examine whether the different organizational tenure plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the One-Way ANOVA we will examine if there is a significant difference on the means regarding the dimensions of our model. Since we have four (3) different, valid periods of time of organizational tenure, we will use the One-Way ANOVA Test.

Table 14. One-Way ANOVA Test Organizational Tenure and Model Dimensions

Dependent Variable	Organizational Tenure i, i=1,2,3	Organizational Tenure j, j≠i	Mean Difference (i-j)	Standard Error	Sig.
1. Team Innovation	1	2	,09384470	,14628818	,522
		3	,17613636	,15239769	,249
	2	1	-,09384470	,14628818	,522
		3	,08229167	,18620336	,659
	3	1	-,17613636	,15239769	,249
		2	-,08229167	,18620336	,659
2. Team Knowledge Sharing	1	2	,07924242	,12788537	,536
		3	,12979798	,13322632	,331
	2	1	-,07924242	,12788537	,536
		3	,05055556	,16277930	,756
	3	1	-,12979798	,13322632	,331
		2	-,05055556	,16277930	,756



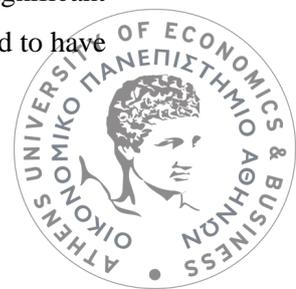
3. Team Psychological Safety	1	2	-,22424242	,12636185	,077
		3	,08964646	,13163917	,497
	2	1	,22424242	,12636185	,077
		3	,31388889	,16084008	,052
	3	1	-,08964646	,13163917	,497
		2	-,31388889	,16084008	,052
4. Team Inclusion	1	2	-,20626263	,12995902	,114
		3	,18855219	,13538657	,165
	2	1	,20626263	,12995902	,114
		3	,39481481*	,16541874	,018
	3	1	-,18855219	,13538657	,165
		2	-,39481481*	,16541874	,018
5. Perceived Supervisor Support	1	2	-,28465909	,15964967	,076
		3	-,04577020	,16631721	,783
	2	1	,28465909	,15964967	,076
		3	,23888889	,20321057	,241
	3	1	,04577020	,16631721	,783
		2	-,23888889	,20321057	,241

Taking into consideration the highlighted part of Table 14, we conclude that there is only one significantly important difference between the means of the three (3) different time periods of organizational tenure. This difference is marked with yellow color and concerns the dimension of team inclusion. Our findings suggest that there is a significant difference on the impact on team innovation between the contestants having worked two (2) to five (5) years and those you have worked more than five (5) years in the same organization.

We believe that the contestants who have worked two (2) to five (5) years in the same organizations are enthusiastic, eager to meet and welcome new members and try to create an inclusive environment for everyone. However, the team members who have worked more than five (5) years in the same company are accustomed to the already existent people making them more unwilling to welcome new members to their teams.

4.4.5 Independent-Samples T-test between Marital Status and Model Dimensions

In this independent-samples t-Test we will examine whether the different marital status plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the t-Test we will examine if there is a significant difference on the means regarding the dimensions of our model. In order to use t-Test we need to have



more than 1 answer. So, we are excluding the state of “widowed”. Since we have only two (2) options for the variable of the organizational tenure, we will use the independent t-Test.

Table 15. Independent-Samples T-test between Marital Status and Model Dimensions

	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	df	Sig. (2-tailed)
1. Team Innovation	,034	,855	,913	205	,362
2. Team Knowledge Sharing	1,662	,199	-,243	205	,808
3. Team Psychological Safety	,233	,630	,226	205	,822
4. Team Inclusion	,120	,730	-,359	205	,720
5. Perceived Supervisor Support	,543	,462	-,667	205	,505

Taking into consideration the highlighted part of Table 15, we conclude that there is no significantly important difference between the means of the married and divorced. So, there is no significant difference between the two (2) marital statuses on any dimension of our model.

4.4.6 One-Way ANOVA Test Number of Children and Model Dimensions

In this One-Way ANOVA test we will examine whether the different number of children plays an important role on team innovation, team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support. For the One-Way ANOVA we will examine if there is a significant difference on the means regarding the dimensions of our model. Since we have four (3) different, valid number of children, we will use the One-Way ANOVA Test.

Table 16. One-Way ANOVA Test between the Number of Children and Model Dimensions

Dependent Variable	Number of Children i, i=0,1,2	Number of Children j, j≠i	Mean Difference (i-j)	Std. Error	Sig.
1. Team Innovation	0	1	,30272556	,31235399	,334
		2	,02350478	,25168924	,926
	1	0	-,30272556	,31235399	,334
		2	-,27922078	,39240149	,478
	2	0	-,02350478	,25168924	,926
		1	,27922078	,39240149	,478
2. Team Knowledge Sharing	0	1	,15909774	,27254388	,560
		2	-,21492823	,21961097	,329



	1	0	-,15909774	,27254388	,560
		2	-,37402597	,34238918	,276
	2	0	,21492823	,21961097	,329
		1	,37402597	,34238918	,276
3. Team Psychological Safety	0	1	,17243108	,27160480	,526
		2	,18325359	,21885427	,403
	1	0	-,17243108	,27160480	,526
		2	,01082251	,34120944	,975
	2	0	-,18325359	,21885427	,403
		1	-,01082251	,34120944	,975
4. Team Inclusion	0	1	,24065163	,28030074	,392
		2	-,10133971	,22586131	,654
	1	0	-,24065163	,28030074	,392
		2	-,34199134	,35213391	,333
	2	0	,10133971	,22586131	,654
		1	,34199134	,35213391	,333
5. Perceived Supervisor Support	0	1	-,03251880	,34249555	,924
		2	-,22894737	,27597677	,408
	1	0	,03251880	,34249555	,924
		2	-,19642857	,43026749	,648
	2	0	,22894737	,27597677	,408
		1	,19642857	,43026749	,648

Taking into consideration the highlighted part of Table 16, we conclude that there is no significantly important difference between the means of the three categories of children. So, there is not a group with higher results on any dimension of our model depending on how many children each team member has.



5. Discussion

In this chapter we will discuss the final outcomes of this team-based, innovation-focused research that are being extracted from the literature review that we have already provided, as well as from the results of the statistical analysis that we have followed. Furthermore, we will provide useful theoretical and practical implications of our model in the modern working environments, in which teams compose the core value of handling the workload with innovative behaviors. Especially, nowadays, that business market is changing so drastically, suddenly, and randomly, it becomes necessary for organizations to shape innovative teams that can handle changes, provide new ideas, and surf together on the river of improvement and development. Afterwards, we will provide the limitations of our research and the specific terms that future research could be relied on and further develop our model. Last but not least, we will display the final conclusions, point out our findings and the value in the community of science.

To begin with, the purpose of this study was to clarify the need of the development of the characteristic of innovation and explore the specific ways that can be achieved taking into consideration interacting activities between the team members. Specifically, we have focused on the affects team-based procedures and processes, such as team knowledge sharing, team psychological support, team inclusion, and perceived supervisor support on team innovation. This study generally confirms that there is a concrete linear path between the aforementioned dimensions, each of them establishing a welcoming environment for advancing the levels of innovative thinking. Below, we will describe each and every connection of our model, justified now by the literature review and the final results of the statistical analyses.

Firstly, our findings support that sharing knowledge and crucial information between team members influence positively the levels of innovation. In order to have high level of innovative thinking, diverse team members should be merged in a team, different beliefs should be introduced, new ideas should be shared, new methods should be adopted leading to changes, substitutes, and development. In this way, we are enforcing the findings of De Dreu and West (2001), who have found that in order a team to be innovative new ideas, modern thoughts, and pioneering methods should be created and implemented. By dwelling in routines, existing practices, and outdated methodologies, companies and organizations lose the synchronization with the changes that appear globally (Abernathy & Clark, 1985). In this way, they do not create any competitive advantage against their competitors leading to significant decreases of the share in the business market and, consequently, the levels of profitability. We understand that not all team members are used to changes, modifications, and alterations making them view innovation with a suspicious eye. However, by sharing knowledge and crucial information, by increasing the overall social capital of the team (Nahapiet & Ghosal, 1998), by activating the donating and collecting mechanisms (Van den Hooff, & de Leeuw van Weenen, 2004), and by enabling the



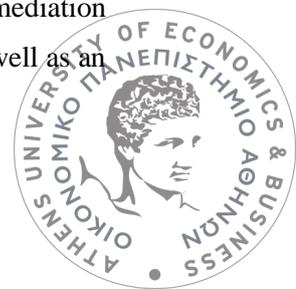
extrinsic and intrinsic incentives ([Deci & Ryan, 1987](#)), amounts of knowledge and information is being shared across the team, the units, and the organizations encouraging people understand each other perspectives leading to decrease of the fear of the unknown. As a result, innovation is being supported since coming up with new ways no longer feel threatening.

Moreover, we highly support the connection between team psychological safety and team knowledge sharing. We understand that in order to foster an innovative environment, safety should be created among the team members leading them to better team information sharing. It becomes unquestionable that by increasing the feelings of security, trust, faith, and honesty team members tend to low their inner barriers sharing personal knowledge and special information to the group ([Stasser & Titus, 1987](#)). Not always individuals are willing to share their beliefs and ideas, especially when they feel that the environment is threatening and scary ([Fong & Chu, 2006](#)). This is the reason why, one of the most significant supervisor's tasks is to create a welcoming climate, where every diverse member feels safe to express his, her, its unique self without feeling the judgmental eye of the co-workers. In this way, team members feel more relaxed and supported to share their unique ideas, modern thoughts, and revolutionary suggestions without feeling afraid or judged by anyone.

Furthermore, we are concluding that team inclusion has a big impact in our team-based, innovation-driven mode. Firstly, we have showed that team knowledge sharing is being established by the high levels of team inclusion among the members of the team. The more acceptive, the more diverse, the truer to themselves, team members are, the more they tend to develop secure feelings, the feel they belong to the inner-group and they can be an important part in decision-making processes ([Mor Barak, 2016](#)). In many working environments, team members act in a competitive way between them, not letting new members feel welcomed in the team or get accustomed to the inner methods in an easy and quickly way. As a result, they do not feel they belong to the team lowering the level of the safety feelings. Thus, their personal ideas and beliefs are not taking thoroughly into consideration, letting them out of decision-making process. In our research we have provided the specific ways team inclusion can be developed in the modern working environments, enforcing better and better team's outcomes.

Secondly, team inclusion apart from the great impact on team psychological safety, it initiates the activities of team knowledge sharing. The more diverse, different, well-represented a team is, the more unique information each of them carries enforcing the total social capital of the team. When great minds with different backgrounds, lifestyles, choices come together, then we have the share combination of information that in any other way it would not be possible to merged together. Since every perspective matters and it is brought on the table, the best solution is sought after regarding all the unique ideas and thoughts. The percentage of creating a better outcome is highly increased leading to better outcomes.

One of the greatest findings of our research model is our mediation pattern. The first, mediation pattern explains that team inclusion has a great direct impact on team knowledge sharing, as well as an



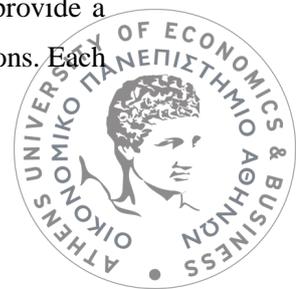
indirect impact through team psychological support. This realization is crucial because we understand that procedures and processes of the teams are not so simple and each dimension influences more than one component of the team. On the one hand team inclusion fosters the psychological safe environment that every team member needs in order to express oneself and truly belong in the team encouraging indirectly the team members to exchange information and knowledge. On the other hand, team inclusion directly enforces processes of knowledge sharing and information exchange by creating teams that are diverse, full of unique thoughts, beliefs, and ideas, ready to introduce their unique self to the whole team, units, and organizations ([Edmondson, 1999](#)). We do understand that team inclusion, nowadays, plays an important role in the activation of team procedures that benefit the final outcomes, and this is the reason why more and more leaders and organizations take inclusion into consideration even more.

The final variable that this research model has included in the research model is the perceived supervisor support. Initially, findings have confirmed that supervisors have a direct effect on team psychological safety by creating a friendly environment, by integrating mistakes in learning and development processes and by removing judgmental approaches to the team members. Our suggestions have been proved meaning that the more supportive, accepting, welcoming a supervisor is described by the team, the emotional and psychological state of the team members are highly supported. In accordance with Carmeli and Gittell ([2009](#)), we also do conclude that supervisors as a token of organizational support, positively influence the wellbeing of the team members by encouraging their teams to speak up, share their beliefs and communicate their unique ideas.

In addition, we have rightly connected perceived supervisor support with the team knowledge sharing. Team members when they feel they have the approval of the supervisor, express themselves, share the information they personally keep, participate in knowledge sharing process benefiting the total cognitive level of the team. We highly support the previous evidence of De Vries et al. ([2010](#)) by supporting that supervisor positively influence the knowledge sharing canals by valuing the efforts of each member and by taking into consideration each unique information that may be extracted by them.

The final, significant finding of our model that proves our literature review, our hypotheses is the second, mediation pattern of our model. We have proven that perceived supervisor support does not only positively influence team knowledge sharing by a direct way by creating knowledge sharing canals, but also supports the information exchange through team psychological safety indirectly. This means that team members choose to share their unique thoughts, beliefs, and ideas when they have the approval and support of the supervisor, but also when the environment is friendly, welcoming, and non-threatening ([Kahn, 1990](#)). This mediation pattern, as well as the first one, show the intercorrelation of team procedures, the difficulty to isolate each influence and the challenges we faced during our research.

Taking the above into consideration we are truly proud that we have achieved to provide a complete, team-based, innovation-oriented model that connects many and complicated dimensions. Each



and every hypothesis has been proved and all the connections have been supported both by the literature review, as well as by the results having used IBM SPSS 25 ([Hayes, 2013](#)). Below we will provide the specific ways that our research model can benefit the modern, working environment by giving information, suggestions, and solutions.

5.1 Implications for Theory and Practice

In this section we are going to describe the impact of our linear, team-based, innovation-oriented model in our community and it will be divided into three (3) parts, the implications for theory, the implications for practice and the HR practices. As far as the former is concerned, we are going to reflect on what this study has provided to the research community, how future research can benefit by our hypotheses and findings and how next generation may further develop and evolve our model according to future needs. Our model consists of a steppingstone where future scientists will get inspired by it, will have the chance to deploy it and discover through it their own paths. Secondly, we will discuss what the findings mean to individuals who work in teams and how this information may be delivered and implemented by practitioners. We will discuss the specific ways our team-based, innovation-driven model can be applied to modern working environments leading to better team performance and optimized final outcomes. Lastly, we will show how HR practices, such as training, pay and benefits, change models and recruitment and selection processes, may increase the levels of innovation based on our model. Especially, nowadays that business market put its faith in complex, cross-functional teams, it becomes essential to provide a specific way in which team members and supervisor may exist, interact, and work in harmony limiting and preventing the worst cases ([Tushman & O'Reily, 2002](#)). If we neglect to manage the diverse, unique, and explosive nature of the team members then we are doomed to devour the consequences.

To begin with the theory implications, through the exploration of this model, future research can understand that the business market is leading towards the creation of teams. The individualistic perception of work is being substituted bit by a bit by the creation of complex, cross-functional, and diverse who have multiple goals and they are accountable for the optimization of the profit. In our example, the characteristic that we have explored is team innovation, how it can be involved among the team members, how it can be further developed and how it influences the final team's outcomes. In this way, we serve the belief that more scientific attention must be directed to teams, the specific ways the team members interact and towards aggregated dynamics and powers. Much research has been focused on the actions and influences of the individual, rather than the value of the team. With this research we are trying to change the angle of view and emphasis the importance of team-based procedures.

Furthermore, this research model has provided to the scientific community the chance to explore a whole, holistic, completed model combining many and different attitudes, behaviors, processes, and



procedures, such as team knowledge sharing, team psychological safety, team inclusion, perceived supervisor support in the name of team innovation. The provided literature review combines all the aforementioned dimensions in one model letting the readers to understand that teams are multilevel creations with multiple aspects. In order to understand the phenomenon of the team, one should consider that there is more than one variable that influences the working environment. So, we provide this model to clarify that some ideas are complex and an individual should take many parameters into consideration.

One addition theoretical implication that this specific research model brings to the light is the usage and understanding of mediation models. We do understand that there are so many interactions between the dimensions that we have mentioned that it becomes necessary to address the mediation patterns. This means that for one dimension there is a direct and indirect effect of an another one. Taking this into consideration we understand that one dimension influences another through many ways and stations. For instance, in our model, team inclusion has a direct effect on team knowledge sharing, but also an indirect effect through team psychological safety. The same applies with the perceived supervisor support. In this way we understand that there is a multi-affectation phenomenon that future research should take into consideration when they will study and explore teams and its procedures.

Now, as far as the practical implications are concerned, we will describe the specific ways that supervisors, leader, units, and organizations can take into consideration through our research model and adopt policies, procedures and decisions that benefit team-based procedures leading to optimized outcomes. Since team innovation is our primary goal, firstly we will focus on the development of the ways that modern working environments can adopt by thoroughly examining this research and apply to their teams. Team innovation is highly connected with the bundle of team-based procedures, such as team knowledge sharing, team psychological safety, team inclusion, and perceived supervisor support providing the evidence that future business should focus more on the functions the team members develop.

Also, supervisors tend to rate innovation regarding the outcome or the product without paying attention to innovative thinking or innovative behaviors. For the modern business market is crucial to measure and enforce the level of the characteristic of innovation between the team members by detecting new ideas, pioneering methods and out of the box solutions. The final, innovative product will not come if there are not teams with high levels of innovative thinking bringing upfront diverse ideas that they have not been combined in these ways before. Having knowledge and information from different backgrounds, new markets can be created leading to blue oceans. Blue oceans emerge when people mistakenly labeled as different and unmatched are combined together to form a pioneering and constructive team with big dreams and enormous motivation.

As far as team psychological safety is concerned, we want to take the chance and introduce specific ways that supervisors may develop a welcoming, non-threatening, acceptive environment where



team members feel safe to express themselves. We have concluded that team members performance is highly increased by fostering an environment where mistakes are a crucial part of learning and developing procedures, where there are no judgments regarding the different or the unknown, where changes are adopted with fear, where trust among each other is being developed each day, where leadership takes a stand to bring every team member together. Especially nowadays that the business environment is so unstable, ever-changing with no security, organizations should focus more on the development of psychological safety feelings within the teams in order to provide them an environment where they can continue their activities without boundaries or barriers.

Moreover, this dissertation highlights the importance of inclusivity within the teams and promotes the need of further development of this characteristic among team members. Every belief, every perspective, every opinion, every idea, matters and brings advantages to the team. In this way, the best solution is being shaped, since every perspective and opinion has been taken into consideration in the decision-making procedures. It is highly supported that through inclusion the team outcomes are better leading to a greater market share in the business industry. We highly emphasize that the mere representation of diverse people is not enough, and inclusion describes the integration of gender, racial, religious, LGBTQ+ minorities in the business map of the organizations.

Furthermore, we highlight the importance of HR practices towards the increase of innovation within the teams. Change models and training have a great impact on shaping the environment of the organization ([Nikandrou, Apospori & Papalexandris, 2005](#)), in our case on developing the characteristic of innovation among the team members. We have already demonstrated that being afraid and unwilling towards changes and towards the new is negatively associated with the increase of innovation. When team members are in a threatening emotional state, they will close into their selves, they will not share any ideas and the team performance will be decreased. This is why HR has to focus on how the negative attitude can be reversed and the processes of changing the old procedures and adopting new ones will face as less resistance as possible. Training is one way that team members can get well informed and feel safe within the team. The more informed they are, the less afraid they feel against the unpredicted since they have developed the tools for defending themselves in any threatening case. Continuous and uninterrupted changing models, which take into consideration such trainings, shape the whole mentality of the organization by bringing value to the change and shaping personalities that are inclined to changes.

Last but not least, we are providing a great base for future recruitment and selection processes in the modern business environments. Our final variable is team innovation and, thus, this is the characteristic that the new employers need to have in increased levels in order to be hired. As we have already proven, the characteristic of innovation is the long-term, sustainable, competitive advantage of the companies and the tool to increase their share markets. To achieve this accomplishment, it becomes



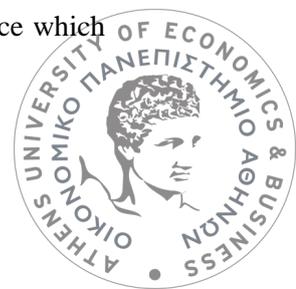
essential that the recruitment and selection processes need to be changed and to be focused on finding the best talents regarding the innovativeness they hold. Job descriptions need to be changed, interview questions need to assess efficiently the characteristic of innovation, the total branding of the company need to show that the value of innovation is so important that vibrates through every post, every article, every action the company makes. So, one alternative is to hire already innovative candidates that will benefit the team. Another way is to hire people with prospects of being developed into innovative personas through our model. It becomes clear that if a candidate has not high levels of innovation, yet has aspects that corresponds to our variables, such as the team knowledge sharing, the team psychological safety, the presence of inclusiveness, and the acknowledgement perceived supervisor support, there are higher possibilities that this candidate has high potential for innovation. So, it becomes essential to change the procedures of recruitment and selection and get them aligned with the final outcomes we want to increase, namely the innovation within the teams.

In conclusion, this chapter concludes that the theoretical and practical implications, as well as the HR practices are highly important because they can influence the future theory and subsequent research, policies and practices supported by true evidence. The findings target organizations, business market, even whole communities since the impact of this research is not limited only into working environments but influences socially the mentality of the citizens. Our model is not limited within the team of work, but it may be introduced in every team of the society, bringing the positive outcomes even in the face of our daily life. Changes in the working life set the positive examples for the personal life. Despite the abundant theoretical and practical implications our team-based, innovative-oriented model has, below we will focus on the limitations that our research has and the paths in which future research may be directed to.

5.2 Limitations and Future Research Directions

In this section we are going to describe the limitations of our research, how we have dealt with them and how future research may avert these limitations and move forward. There are some limitations that had to be considered in order to accomplish this dissertation providing the chance to future research to hinge on them and further develop our team-based, innovation-oriented model.

The first thing we are going to point out is the total number of the questionnaires that have been used for the actualization of the research. Even if the sample is satisfying ($n=208$), we understand that our results cannot be generalized for every organization. Each organization, each unit, each team is unique, the needs are different, and the ways of solutions should be accustomed to every occasion. Supervisors should scan and detect the strong points of their teams and enforce the aspects in which team members can be improved. This research has been conducted to show to the supervisors the different point of views that should be taken into consideration and offer the chance to notice which parts can benefit their teams.



One more thing that should be taken into notice regarding the sample is the control variables. Past research has shown that it would be beneficiary for the results to control the number of the team members within each team. Different size of the team changes the whole dynamics of the team members. For instance, 5-member-team enacts and works in a different way than a 10-member-team does. Procedures like team knowledge sharing or team psychological safety may be more difficult to be efficiently achieved as the size group grows.

As far as future research is concerned, it becomes clear that we suggest controlling the size of the team. According to Hirst et al. (2009) team size has a great impact on innovation; thus, it should be the same for each team that will be examined. Another great research would be to examine the differences between a small or a large size group mentioning how the procedures of team knowledge sharing and team psychological safety are being influenced by team size. It would be beneficiary for the business market to provide insights according to whether small or big teams successfully develop team procedures and process.

Furthermore, we suggest future study to explore if there is a negative relationship between team innovation and team psychological safety. We have examined the positive way establishing the support of the supervisor, thus providing a safe climate leading to high levels of team knowledge sharing and team innovation. However, research has shown that in case some team members show much more pioneering and innovative thoughts and ideas than others, the latter are developing fear of the unknown and prefer to abstain from the teamwork. In this way, focus should be given on the conditions in which team innovation has a positive impact to team psychological safety and the ways we can keep the positive and reduce the negative results.

In our research we have examined two (2) mediation models. How team inclusion directly influences team knowledge sharing and indirectly through team psychological safety and how perceived supervisor support directly influences team knowledge sharing and indirectly through team psychological safety. One more mediation pattern future research should examine is the direct effect of team psychological safety on team innovation and the indirect effect having as mediator team knowledge sharing. We understand the team procedures and complex and sometimes correlated, thus, we suggest examining new ways of combining the dimensions our research has introduced.

The last call for future research is the need for a total analysis of the model using SEM. In this research we have focused on specific correlations and patterns that we thought that they will bring the utmost in the developing of the team innovation providing interesting insights for the organizations. Now, we are requesting future research to analyze and every single connection of the model using SEM in order to understand how the model works as a unity and what advantages may bring to the working environments.



5.3 Conclusion

Taking all the above information into consideration, it becomes clear that nowadays teams play a crucial role in business development. For this reason, we thought that diving deep into the processes and procedures of the team will only benefit the modern working environment providing them better suggestions, mechanisms, and solutions. Through this research we want to provide a solid model that holds accountable for strengthening and enforcing teams and for benefiting the final team's outcomes. As the business environment is drastically and uncertainly changing we truly believe and prove that having a team with high level of innovative thinking helps the whole organization overcome obstacles, secure the safety of the survival and lead to increased profits.

We have established the high levels of team innovation among the team members by successfully examining the impact of team knowledge sharing, team psychological support, team inclusion, and perceived supervisor support. Each of the aforementioned dimensions influence on its own way the environment where innovation can be created. Each of them has a crucial effect on the psychology, actions, and total dynamic of the whole team. We have shed light in the darkest corners of the procedures in which a team encompasses providing crucial information on the specific ways in which teams function, act, and work in our era having the development of innovative thinking as a compass.

We hope that this research will inspire scientific community to further explore the structure of the team, to examine the processes and procedures that teams are engaged to, understand the needs each team member has, and optimize the final team outcomes. Strong teams lead to strong units and strong units lead to strong organizations. Respectively, strong organizations have the ability to assist individuals, groups, as well as whole communities taking into consideration the globalization that our world is experiencing.

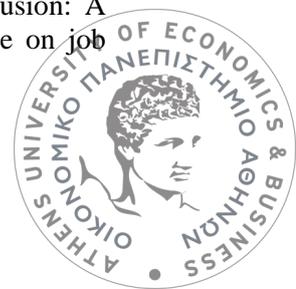


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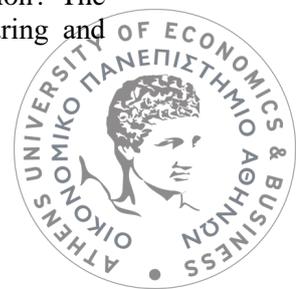
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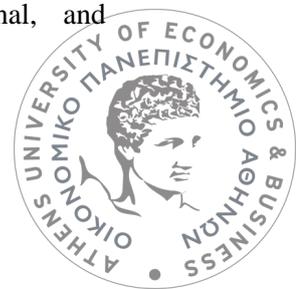
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Appendix

I. TABLES

The below Table depicts the means, standard deviations, reliabilities, correlations, and reliabilities of each variable. The table is also presented in chapter 4.2.

Table 5. Means, standard deviations, reliabilities, Pearson correlations, and reliabilities

Variable	Mean	Standard Deviation	1	2	3	4	5
1. Team Innovation	3.4	0.81	(0.92)				
2. Team Knowledge Sharing	3.7	0.71	0.65**	(0.74)			
3. Team Psychological Safety	3.6	0.70	0.59**	0.67**	(0.75)		
4. Team Inclusion	3.6	0.89	0.73**	0.72**	0.63**	(0.93)	
5. Perceived Supervisor Support	3.5	0.73	0.56**	0.59**	0.57**	0.63**	(0.91)

Reliabilities (coefficients alphas) are reported on the diagonal

** Significant at $p < .01$.

II. MEDIATION PROCESS ANALYSIS

II.I Mediation Model between Team Inclusion and Team Knowledge Sharing through Team Psychological Safety

***** PROCESS Procedure for SPSS Version 3.5 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2018). www.guilford.com/p/hayes3

Model: 4

Y: TEAM KNOWLEDGE SHARING

X: TEAM INCLUSION

M: TEAM PSYCHOLOGICAL SAFETY

Covariates:

GENDER | AGE | LEVEL OF EDUCATION | ORGANIZATIONAL TENURE

Sample

Size: 208

OUTCOME VARIABLE:

TEAM PSYCHOLOGICAL SAFETY

Model Summary

R	R-sq	MSE	F	df1	df2	p
,6422	,412	,2985	28,3626	5,0000	202,0000	,0000



Model

	coeff	se	t	p	LLCI	ULCI
constant	1,6980	,3130	5,4248	,0000	1,0808	2,3152
TEAM INCLUSION	,5978	,0531	11,2572	,0000	,4931	,7025
GENDER	-,0940	,0782	-1,2012	,2311	-,2482	,0603
AGE	-,0091	,0060	-1,5359	,1261	-,0209	,0026
LEVEL OF EDUCATION	-,0378	,0586	-,6445	,5200	-,1534	,0778
YEARS OF TENURE	,0857	,0616	1,3925	,1653	-,0357	,2071

**OUTCOME VARIABLE:
TEAM KNOWLEDGE SHARING**

Model Summary

R	R-sq	MSE	F	df1	df2	p
,7956	,6330	,1889	57,7813	6,0000	201,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	,2650	,2666	,9942	,3213	-,2606	,7906
TEAM INCLUSION	,4873	,0539	9,0418	0,000	,3810	,5936
TEAM PSYCHOLOGICAL SAFETY	,3866	,0560,	6,9067	0,000	,2762	,4970
GENDER	,0762	,0625	1,2207	,2236	-,0469	,1994
AGE	,0193	,0048	4,0494	,0001	,0099	,0287
LEVEL OF EDUCATION	-,0126	,0467	-,2695	,7878	-,1047	,0795
YEARS OF TENURE	-,1633	,0492	-3,3185	,0011	-,2604	-,0663

***** TOTAL EFFECT MODEL *****

**OUTCOME VARIABLE:
TEAM KNOWLEDGE SHARING**

Model Summary

R	R-sq	MSE	F	df1	df2	P
,7389	,5459	,2326	48,5680	5,0000	202,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
Constant	,9215	,2763	3,3348	,0010	,3766	1,4663
TEAM INCLUSION	,7185	,0469	15,3253	,0000	,6260	,8109
GENDER	,0399	,0691	,5780	,5639	-,0962	,1761
AGE	,0158	,0053	,2,9980	,0031	,0054	,00261
LEVEL OF EDUCATION	-,0272	,0518	-,5254	,5999	-,1293	,0749
YEARS OF TENURE	-,1302	0,544	-2,3951	,0175	-,2374	-,0230

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
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,7185 ,0469 15,3253 ,0000 ,6260 ,8109

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,4873	,0539	9,0418	,0000	,3810	0,5936

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,2311	,0398	,1546	,3102

Partially standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,3269	,0568	,2208	,4460

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,2375	,0402	,1602	,3179

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output: 95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

----- END MATRIX -----

II.II Mediation Model between Perceived Supervisor Support and Team Knowledge Sharing through Team Psychological Safety

***** PROCESS Procedure for SPSS Version 3.5 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018) www.guilford.com/p/hayes3

Model: 4
Y: TEAM KNOWLEDGE SHARING
X: PERCEIVED SUPERVISOR SUPPORT
M: TEAM PSYCHOLOGICAL SAFETY

Covariates:

GENDER | AGE | LEVEL OF EDUCATION | YEARS OF TENURE

Sample
Size: 208

OUTCOME VARIABLE:
TEAM PSYCHOLOGICAL SAFETY



Model Summary

R	R-sq	MSE	F	df1	df2	p
,5991	,3589	,3257	22,6200	5,0000	202,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	2,5843	,2824	9,1496	,0000	2,0274	3,1412
PERCEIVED SUPERVISOR SUPPORT	,4482	,0450	9,9635	,0000	,3595	,5368
GENDER	-,1533	,0811	-1,8893	,0603	-,3132	,0067
AGE	-,0137	,0062	-2,2190	,0276	-,0259	-,0015
LEVEL OF EDUCATION	-,0618	,0613	-1,0083	,3145	-,1826	,0590
YEARS OF TENURE	,0593	,0644	,9206	,3584	-,0677	,1864

OUTCOME VARIABLE:

TEAM KNOWLEDGE SHARING

Model Summary

R	R-sq	MSE	F	df1	df2	p
,7387	,5457	,2339	40,2436	6,0000	201,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	,8524	,2847	2,9946	,0031	,2911	1,4137
PERCEIVED SUPERVISOR SUPPORT	,2438	,0465	5,2373	,0000	,1520	,3356
TEAM PSYCHOLOGICAL SAFETY	,5216	,0596	8,7490	,0000	,4041	,6392
GENDER	,0392	,0694	,5650	,5727	-,0976	,1759
AGE	,0171	,0053	3,2160	,0015	,0066	,0275
LEVEL OF EDUCATION	-,0212	,0521	-,4072	,6843	-,1238	,0814
YEARS OF TENURE	-,1871	,0547	-3,4202	,0008	-,2950	-,0793

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

TEAM KNOWLEDGE SHARING

Model Summary

R	R-sq	MSE	F	df1	df2	p
,6105	,3727	,3213	24,0056	5,0000	202,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
Constant	2,2005	,2806	7,8434	,0000	1,6473	2,7537
PERCEIVED SUPERVISOR SUPPORT	,4776	,0447	10,6890	,0000	,3895	,5657
GENDER	-,0408	,0806	-,5059	,6135	-,1997	,1181
AGE	,0099	,0061	1,6116	,1086	-,0022	,0220
LEVEL OF EDUCATION	-,0534	,0609	-,8778	,3811	-,1734	,0666



YEARS OF TENURE -,1562 ,0640 -2,4405 ,0155 -2,2824 -,0300

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
,4776	,0447	10,6890	,0000	,3895	,5657

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,2438	,0465	5,2373	,0000	,1520	,3356

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,2338	,0331	,1725	,3021

Partially standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,3306	,0455	,2478	,4262

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TEAM PSYCHOLOGICAL SAFETY	,2933	,0385	,2203	,3704

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output: 95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

----- END MATRIX -----

III. QUESTIONNAIRE

In the following questionnaire we examine how various characteristics and processes within the group, such as the characteristic of including its members, the support of the supervisor, the creation of a psychologically safe climate and the exchange of knowledge / information between its members, help to develop the characteristic of innovation in the team.

This study was designed by Kourousias Mario, a graduate student of the Postgraduate Program in Human Resources Management at the Athens University of Economics and Business under the supervision of Professor Mrs. Nikandrou Eirini.

Please read all the questions carefully and choose your answers as accurately as possible. The duration of completing the questionnaire is 10 '.



All data will be collected anonymously, ensuring the confidentiality of your answers. By clicking the "NEXT" button, you give your consent for your participation in the study and that your data will be used exclusively for academic research.

Thank you for your participation.

UNIT 1. TEAM INNOVATION

The following sentences refer to personal beliefs and attitudes. Keep in mind that there are no right or wrong answers, so please answer as honestly as you can about yourself.

In the team I work for:

1. Its members are always on the move to find new answers.
2. In my team there is immediate help in developing new ideas.
3. Its members are "open" and responsive to change.
4. Its members are always looking for new ways to handle problems.
5. We take the time it takes to develop new ideas.
6. Its members work together to develop and implement new ideas.
7. Its members provide and share resources to help implement new ideas.
8. Its members provide practical support for new ideas and their implementation.

UNIT 2. TEAM KNOWLEDGE SHARING

The following sentences refer to personal beliefs and attitudes. Keep in mind that there are no right or wrong answers, so please answer as honestly as you can about yourself.

In the team I work for:

9. Communication is a problem.
10. My team members keep each other informed about work-related issues.
11. The quality of information exchange is good.
12. I receive new facts and ideas from my colleagues.
13. During business meetings we do not exchange new information and only mention what is already known.
14. We do not repeat the same information and arguments during group meetings.

UNIT 3. TEAM PSYCHOLOGICAL SAFETY

The following sentences refer to personal beliefs and attitudes. Keep in mind that there are no right or wrong answers, so please answer as honestly as you can about yourself.

15. In my team, if I make a mistake, they often hold it against me.
16. My team members can bring problems and difficult issues to the surface.



17. My team members sometimes reject others because they are different.
18. In my team it is safe to take the risk.
19. It is difficult for a team member to seek help from others.
20. No one on this team would act deliberately to undermine my efforts.
21. Working with members of my team, my unique skills and talents are valued and used.

UNIT 4. TEAM INCLUSION

The following sentences refer to personal beliefs and attitudes. Keep in mind that there are no right or wrong answers, so please answer as honestly as you can about yourself.

In the team I work for:

22. The distribution of labor is fair.
23. Performance appraisal is fair.
24. We invest in the development of all its members.
25. Its members receive equal pay for equal work.
26. Its members are provided with safe ways to express their grievances.
27. An environment prevails where its members feel that they are not threatened and can reveal their true selves.
28. The balance between professional and personal life is assessed.
29. Resources are provided to ensure that its members can effectively resolve conflicts.
30. Its members are valued for who they are as people and not just for the work they perform.
31. Its members often share information and learn from each other.
32. There is a culture in which its members value the different perspectives that everyone brings to teamwork.
33. The participation of its members is actively sought.
34. Everyone's ideas on how to make things better are taken seriously.
35. The information of its members is used to rethink or redefine teamwork practices.
36. Its members are considered the key to its success.

UNIT 5. PERCEIVED SUPERVISOR SUPPORT

The following sentences refer to personal beliefs and attitudes. Keep in mind that there are no right or wrong answers, so please answer as honestly as you can about yourself.

37. My boss really seems to care about my well-being.
38. My boss helps me when I have a problem and I need help.
39. My boss cares about my views.
40. I consider it possible for my boss to use his power in the company to help me solve my work problems.



41. I am confident that my boss will get me out of the difficult position even at his own expense.
42. My boss takes my goals and values seriously.
43. If my boss had the chance, he would take advantage of me.
44. My boss shows very little interest in me.

