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A Conceptual Framework for Describing the Innovation in Teams

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Abstract: This article aims to establish a framework that predicts innovation in teams. The Input-Process-Output model and Transformational leadership theory provide the foundation for this framework. According to Input Process output model, transformational leadership and team size work as input variables while teamwork quality as process variable that ultimately causes innovation as output variable. The relevant literature for this study has been searched by consulting many electronic databases like emerald, SAGE, Wiley online, Science Direct, Springer, JSTOR and Tailor & Francis. A number of keywords like transformational leadership, teams, innovation, team size, teamwork and teamwork quality have been used to specifically identify the concerned literature. So, the constructive overview and debate of earlier literature provides the interaction of three variables being the possible predictors of innovation. These variables are transformational leadership, team size and teamwork quality. At the end, the conclusion has been drawn with discussion about limitations and future implications.

Keywords: Innovation, transformational leadership, teams, teamwork, team size, teamwork quality, Input-Process-Output model

I. INTRODUCTION

Innovation works as the foundation for organizational wellbeing, national strength [1], economic growth [2], [3], competitiveness [2], [4], [5], [6], firm value and longevity of organizations in this turbulent environment [8], [9]. Likewise, the technological forces are clearly demarking the situation in which either the organizations will innovate or they will demolish. As the list of fortune 500 companies shows that 88 % firms that were present in 1955 have been disappeared in 2014 and this decline is going on with more accelerated rate. Thus innovation is the only survival tool for organizations and consequently the world economy [10].

Leadership is widely held topic for wide range of commentators, researchers, organizational leaders, professionals and consultants [11]. Accordingly, innovation in organizations depends upon leadership. A poor leadership can spoil the whole innovation process even the external factors are much favorable [12]. The misfortune stories of organizations are actually the mishandlings of their leadership [11]. On the other hand, success of highly innovative organizations like Google, Microsoft, Virgin, Toyota, 3M, Samsung, Dell and Logitech is actually the success of their leadership [13],[14]. Thus leadership in general and transformational leadership in particular appears to address innovation ridden scenario of today's business world [15].

Nowadays, Teams are also emerged as enhancer of fruitful business outputs [16]. Furthermore, teamwork is among the most significant factors through which the effectiveness of teams can be gained and highly functional teams can be produced. The need to link teamwork with outcomes of the work has been rising intensely and effective teamwork has been considered as most vital part for making project success [17]. Additionally, now innovation in organizations has not remained the individual discovery but rather it is fruit of collaboration. Thus, innovation being the source of competitive advantage needs team for sustaining the position in global competition [18]. Similarly, the leadership in team's context has also been emerged as a new discipline and has gained the attention of contemporary researchers and practitioners [19]. As the effect of leadership can be found in teams of every sizes and leader plays his leading role even for a small team or a big organization [20].

The future hub of innovation and technology will be the emerging economies with large population [21]. Pakistan is also among these countries [10],[22]. But Pakistan is facing massive challenges on geo-political and economic grounds [23] and innovation is one of the most problematic areas to do business in Pakistan [10]. In this context, Service Sector is important for progress and growth of Pakistan's economy. Particularly, telecom sector is vital as being the part of service sector and it adds its large share in GDP of Pakistan [24]. But this sector is also suffering due to country's less innovative culture & circumstances [25]. Thus its revenues have declined. Telecom sector can enhance its revenue generation by introducing the innovative solution in their value added services with innovative thinking of employees [26],[27]. In terms of competition, Harfindahl-Hirschman Index (HHI) also tells that telecom market Pakistan is highly competitive and every player will have to perform in extremely innovative way [28]. Consequently, leadership plays vital role in this competitive and dynamic environment. The transformational leaders bear charisma in their personalities that has far reaching influence over the followers, so transformational leaders foster firm's performance through innovation. Therefore, telecom organizations necessarily need transformational leaders [29]. Similarly, the contemporary innovation state of play also requires team like structures instead of typical hierarchies [30].

While the theoretical perspective present several gaps in literature with a need of inquiry. For instance, the empirical results regarding the influence of transformational leadership on innovation are scarce [31], [32], [33], [34] and mixed that show contradiction at all levels of the organization e.g [35], [36], [37], [38], [39], [40], [41], [42], [43]. Thus the mediating and moderating processes between the relationship of transformational Leadership and innovation are needed to be searched [31], [44], [45], [46], [47], [48], [49]. Additionally, the mediating and moderating variables for this relationship at team level must be explored as major innovation takes place at team level so the interaction mechanisms of individuals and being team should be observed [39], [43], [50], [51], [52]. By focusing aspect of teamwork quality, it also bears the

scarcity of research [51], [53] and needs to be investigated in relationship with transformational leadership and innovation [51], [52], [54], [55]. So it is also a possibility that transformational leadership may impart its influence on innovation through the mediation model of teamwork quality and inter team collaboration [54]. As well, team size is an organizational reality as every organization needs the teams of all sizes and shapes, so team size needs the attention of today's researchers [54], [56]. But, the effects of team size on team processes are not fully understood and empirical results of studies are showing contradiction [57]. Therefore, team size as a moderator can affect the underlying relationship of transformational leadership and teamwork quality. Thus its moderating effect should be examined [54].

Furthermore, the large and well established structures of companies in telecom sector also provide opportunity to apply and test the concepts and theories that had the points of debate in earlier literature [58]. But very scarce deal of research is found for this sector especially from leadership perspective [29]. Recently, researchers have also urged to study innovation in real work settings and services [59], [60], [61], [62], [63]. Consequently, the concept of Team work quality also needs to be inquired in different sector for generalizability [64]. Thus the model having the relationship of transformational leadership, team size and teamwork quality needs to be investigated in different contexts and sectors [54]. Specifically, there is also a need for finding the mediating and moderating factor for explaining the relationship of Transformational leadership and Innovation in Pakistan's context [65] and especially in telecom sector of Pakistan [66]. Thus by considering the above mentioned practical and theoretical gaps, this study aims to propose a Framework for the relationship of Transformational leadership and innovation in telecom sector of Pakistan through the mediating effect of team work Quality between the relationship of transformational leadership and innovation and moderating effect of Team size on the relationship of transformational leadership and teamwork quality.

This paper is organized in a way that first of all, the key concepts with corresponding research gaps are introduced. Secondly, literature review is presented with help of earlier theories and empirical studies. Thirdly, a Framework is proposed having possible predictors of innovation with the foundation from literature review. Lastly, conclusion has been drawn with recommendations and analysis of study's strengths & limitations.

II. LITERATURE REVIEW

(A) Innovation

“Innovation is the intentional introduction and application within a role, group or organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group or organization or wider society” [7]. So innovation is a process that passes through different stages, keeps different patterns and bears certain phases that that lead towards the creation or adoption of new ideas. In actual, there are certain differences between the process of creation and the process of adoption. The creation process includes all the activities through which the novel ideas are created developed and transferred for the purpose of their utilization by others [68]. While, adoption is a process in which initiations are done, the decision about adopting are made and implementation is tackled [69]. Thus dimensional view shows that innovation is a process that involves suggestion of ideas and implementation of ideas [70].

Since 1980, the research on innovation has passed through more than three decades and this period of time has discovered broad set of innovation's antecedents at individual, team and organizational level [71], [72]. For instance, personality [73], [74], [75], [76], motivation [62], [72], [77], [78], cognitive ability & style [79], [80] and task orientation are found as antecedents of innovation at individual level. While at team level, structure [39], [81], [82], climate [83], [84], [85], [86], [87] and leadership [39], [44], [85], [88], [89] have been found as antecedents of innovation. While at organizational level, Structure [69], [90], culture [81], [83], [91] and resources [83], [90], [91] are determinants of innovation. But still there is a lot to be explored about the factors affecting innovation [92]. Thus the upcoming sections are discussing about the possible variables that may impart direct or indirect influence on innovation in teams.

(B) Theoretical Foundation

Transformational leadership theory and Input-Process-Output model (I-P-O) provide the theoretical footings for certain relationships. According to Transformational leadership theory, leaders play a central role in facilitating innovation [92], and can affect innovation in a variety of ways due to their positions within their organizations [93]. According to this theory, transformational leader also enhances the quality of teamwork through articulation of clear vision [94], enhancement of team cohesion [95], empowerment of subordinates [96] and intellectual stimulation [37].

Furthermore, the input process output model [97], theory of adaptation [98] and theory of team innovation [81] support the relationship of team input and process variables with innovation [39]. Thus Teamwork quality as a process variable has the linkage with innovation and many empirical supports are in favor of this notion [39], [99], [100], [101], [102], [103]. The team leader also works as both "input" and "process" variable [104]. Additionally, as a component of team composition and an input variable, team size can be viewed not only as a catalyst of team dynamics but also as a context that moderates behavioral or social phenomena [105]. So the earlier theories and models identify certain variables that may interact to ultimately cause innovation. Thus in the next sections, empirical literature is also reviewed to develop the propositions about the relationship of variables that relate to eventually trigger innovation.

(C) Transformational leadership

Transformational leadership is postulated as identifying an articulating vision, providing an appropriate model, fostering the acceptance of group goals, high performance expectations and intellectual stimulation [106]. Previous research has demonstrated that transformational leadership has the capacity to motivate employees in general to perform beyond expected levels (e.g., to innovate). Consequently, parallel to this, it is reasonable to assume that Transformational leadership can also positively increase the individual's willingness to implement an innovative behavioral approach within their specific work role in their firm or organization [63]. Moreover, Transformational leaders promote the innovative goals among their subordinates by giving the opportunities of extended knowledge base, personal development and consideration of team member's goals [107]. Transformational leaders challenge their followers and encourage them to seek new and fresh approaches to their task [108]. So leaders with transformational leadership style are recognized as the main driver of employee's creativity and innovation [109]. Transformational leadership helps employees in achieving the unique opportunity to develop learning and cooperative competence through knowledge sharing and intellectual stimulation that causes innovation at different levels of organization [110]. Several

empirical studies also contribute to strengthen this argument of relationship between transformational leadership and innovation e.g [33],[46],[47],[50],[72],[110],[111],[112],[113],[114],[115],[116],[117],[118]. Although the earlier research studies have also shown the inconsistencies But the overall view tells that the studies representing the positive relationship of transformational leadership and innovation are more as compared to the studies showing the insignificant or negative relationship [49]. Thus all the aforementioned arguments lead towards the following proposition:

P1: *Transformational leadership has a positive association with innovation in telecom Sector of Pakistan.*

(D) Teamwork Quality

Teamwork quality is termed as communication, coordination, balance of member contribution, mutual support, effort and cohesion in team [100]. Several research studies have supported the positive relationship of transformational leadership and teamwork quality. As [119] argued that effective teamwork requires effective leadership along with other tools like structured communication. Similarly, it is also stated that Transformational leadership fetches team work improvements by transforming the followers as leaders, by preparing followers for sacrificing their personal interest for the interest of whole and by empowering the followers. Furthermore, the effective leaders ensure the cohesiveness of team working and gain the support of their follower by showing concern for the team member's personal needs [53]. Additionally transformational leader impart positive influence on teamwork in terms of communication, collaboration, cohesiveness [120] and effort in teams [121]. So, it has been found that transformational leadership has a positive and significant relationship with teamwork quality [54]. Thus the above discussion posits towards the following proposition:

P2: *Transformational leadership positively influences teamwork quality in telecom sector of Pakistan.*

The interaction process of teams causes innovation through the processes like learning, exchange of information, motivation and negotiation [122]. Different research studies have found that Team Work Quality is an interactional mechanism through which the innovation is enhanced. The communication is a topic of prime importance for innovation in team climate [82]. Because the communication within teams and the communication with other teams paves the way for new knowledge acquisition [123] and these communications are positively related to team innovation [39]. Furthermore, the creativity of employees enhances with interactive support of co-workers [124]. Several studies have also found that teamwork plays the central role in case of highly innovative projects [100], [101], [102].

Moreover, [125] found that a cooperative climate is indispensable for a cross-functional team to be innovative. [126] also explained team working by elaborating that team members are willing to work together, communicate with one another frequently, solve design tasks together, and coordinate their tasks through input from all team members. Frequent communication and positive cooperation enables innovative ideas to be formed and applied in practice [38], [127], [128]. It is also argued that teams that communicate with each other will be able to work innovatively [103] and the meta analysis of [39] also reveals that team processes like communication and cohesion are the enhancers of innovation [99]. It is, therefore, posited that:

P3: *Teamwork quality positively influences innovation in telecom sector of Pakistan.*

Leadership influences team dynamics through influencing both individuals within the team and the team as a whole [129]. Thus leadership influences team processes and creative outcomes [51]. Several

studies have suggested that passage from leadership to innovation passes through different facets of teamwork. As it is asserted that leader needs to sustain teams for bringing innovation, so the leaders should create informal settings, overcome the obstacles for team member being a protector, harness the constructive debate, listen the employees and seek out the people who can go against status quo [50]. Moreover, The leaders of highly innovative organizations focus their attention for development of team work, collaboration and communication among team members [13] and transformational leaders use the tools of communication and collaboration for fostering the creativity and innovation at critical stages of innovation process [2]. Thus a transformational leader can bring innovation in organization through nourishment of teamwork [130]. Moreover, group cohesiveness is found to be the mediator between transformational leadership and innovation [31], [44], [45], [55], [131] Transformational leaders foster the collaboration among the team members and as a results, the ideas are developed and implemented [38]. Additionally, it can be assumed that transformational leadership may cause innovation via the framework representing team mechanisms like teamwork quality and inter team collaboration [54]. So all these arguments lead towards the following proposition:

P4: *Team work quality mediates the relationship of transformational leadership and innovation in telecom sector of Pakistan.*

(E) Team Size

Team size is termed as the number of members in team [54], [120], [132], [133]. Researchers have viewed that team size becomes liability from the standpoint of building teamwork quality [134]. For example, [135] has argued that large teams have less teamwork quality, whereas [136] has also pointed towards less inter member cooperation due to increased team size as coordination and interactions among members becomes difficult with increased team size due to inherent complexities in large-number of interactions [137]. Whereas, [57] found the positive impact of team size on team cohesion and showed the deviation from earlier belief about negative effects of team size. [138] also figured out that in large teams, instead of difficulties for collaboration, the element of free riding decreases and contribution of members for team effort intensifies. So members of large teams put more effort as compared to small teams in the conditions of competition. [139] also asserts that large teams are more collaborative than small teams and this collaboration dominates the phenomena of less effort or social loafing during complex tasks.

Even though, it is tough to catalyze of team work quality in large teams, but it has also been argued that the impact of transformational leadership on team work quality should be stronger as team size increases. When the team size increases, the amount of communication initiated by individual team members decreases [134]. The strength of the impact of transformational leadership on team work quality is greater in larger teams as larger teams need more coordination than smaller teams. Similarly, [136] has also viewed that the effect of leader modeling of collaborative behavior is stronger in larger teams. It has also been proved by empirical studies that that transformational leadership has more strong effect on teamwork quality in large teams as compared to small teams [54], [120]. Thus, transformational leadership is likely to have a stronger effect on team work quality as team size increases, leading to the following prediction:

P5: *Team size positively moderates the relationship of transformational leadership and teamwork quality in telecom sector of Pakistan.*

The next section describes the proposed framework having three important variables that may play role for development of innovation in teams

III. CONCEPTUAL FRAMEWORK

A research framework has been established with concoction of theory and empirical evidences. Three variables have been identified that are potential predictors of innovation. Figure 1 depicts that transformational leadership has been taken as independent variable, innovation as dependent variable and teamwork quality as mediator. Team size has also been proposed as moderator for the relationship of transformational leadership and teamwork quality. The dimensions of each variable have also been shown for in depth understanding of each construct. It has been shown in figure 1.

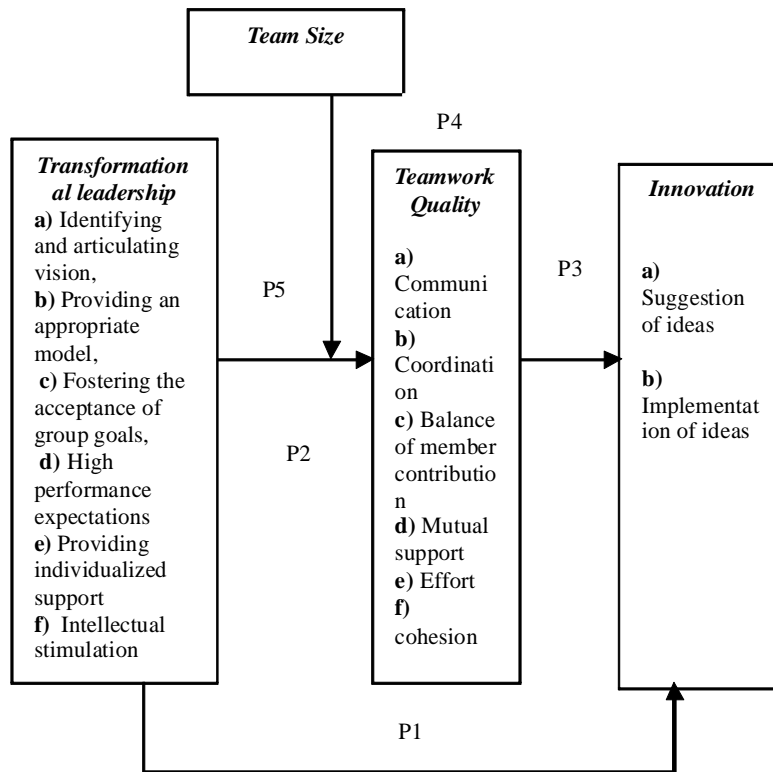


Figure 1: Proposed conceptual framework for measuring innovation

IV. CONCLUSION AND DISCUSSION

This study aimed to propose a conceptual framework for predicting innovation in teams. The focus of study was telecom sector of Pakistan. Thus by reviewing the earlier literature, a framework is proposed. It has been propositioned that transformational leadership and teamwork quality impart their positive influence on innovation. Consequently, teamwork quality also mediates the relationship of transformational leadership and innovation. Furthermore, team size also moderates the relationship of transformational leadership and teamwork quality. Thus it has been concluded that leadership, teamwork quality and team size being team input and process variables may bring remarkable changes in innovation dynamics of teams.

This study is significant in its nature as it has proposed a framework that has not been tested before. It also contributes for the telecom sector of Pakistan as this framework is developed by reviewing the contemporary requisites of this sector. But instead of strengths, this study also has certain limitations that invite the attention of future researchers. Firstly, although a conceptual framework is proposed but the study lacks empirical testing. So it has been suggested that the future researchers should empirically test the supposed relationships. Secondly, the study has identified certain variables that may influence innovation. But there are many potential variables that may influence innovation and team processes so those variables should also be ascertained. In this connection, thinking styles of team members, team member's proximity, project commitment, task complexity, cross functional diversity and knowledge sharing can be the possible areas of search. Thirdly, this study has highlighted the issues of telecom sector of Pakistan but future researchers can test the proposed relationship in different contexts and industries.

This study also has some implications for practitioners. As certain crucial factors for innovation have been discussed so it requires initiatives by the organizations especially in telecom sector of Pakistan. Leadership is suggested as the force that pulls innovation so management should review the role of leadership in general as well as in teams in particular. Similarly, teams have evolved as a current structural reality in organizations so the significance of the factors like teamwork quality and team size has also become more worthwhile. Thus organizations should focus upon these potential team mechanisms for achievement of organizational goals and objectives.

REFERENCES

- Zheng, W., Khoury, A. E., & Grobmeier, C. (2010). How do leadership and context matter in R&D team innovation?—A multiple case study. *Human Resource Development International*, 13(3), 265-283.
- Hyypiä, M., & Parjanen, S. (2013). Boosting creativity with transformational leadership in fuzzy front-end innovation processes. *Interdisciplinary Journal of Information, Knowledge and Management*, 8, 21-41.
- Isaksen, S. G., & Akkermans, H. J. (2011). Creative climate: A leadership lever for innovation. *The Journal of Creative Behavior*, 45(3), 161-187.
- Capitanio, F., Coppola, A., & Pascucci, S. (2010). Product and process innovation in the Italian food industry. *Agribusiness*, 26(4), 503-518.
- Ribeiro-Soriano, D., Urbano, D., Hernández-Mogollon, R., Cepeda-Carrión, G., Cegarra-Navarro, J. G., & Leal-Millán, A. (2010). The role of cultural barriers in the relationship between open-mindedness and organizational innovation. *Journal of Organizational Change Management*, 23(4), 360-376.
- Samad, S. (2012). The influence of innovation and transformational leadership on organizational performance. *Procedia-Social and Behavioral Sciences*, 57, 486-493.
- Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. *Journal of marketing*, 76(3), 130-147.
- Maura Sheehan, P., & M. Waite, A. (2013). Leadership's influence on innovation and sustainability: A review of the literature and implications for HRD. *European Journal of Training and Development*, 38(1/2), 15-39.
- Mokhber, M., Ismail, W., & Vakilbashi, A. (2011). The impact of transformational leadership on organizational innovation moderated by organizational culture. *Australian Journal of Basic and Applied Sciences*, 5(6), 504-508.
- Global Competitiveness Report, G. (2016-2017). *Global Competitiveness Report, 2016-2017*. Switzerland: World Economic Forum Retrieved from www.weforum.org/ger.
- Latham, J. R. (2014). Leadership for quality and innovation: Challenges, theories, and a framework for future research. *Quality Management Journal*, 21 (1), 5.

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- Seelos, C., & Mair, J. (2012). Innovation is not the Holy Grail. *Stanford Social Innovation Review, Fall, 2012*, 44-49.
- Bel, R. (2010). Leadership and innovation: Learning from the best. *Global business and organizational excellence, 29*(2), 47-60.
- Steiber, A., & Alänge, S. (2013). A corporate system for continuous innovation: the case of Google Inc. *European Journal of Innovation Management, 16*(2), 243-264.
- Alsalamy, E., Behery, M., & Abdullah, S. (2014). Transformational leadership and its effects on organizational learning and innovation: evidence from Dubai. *Journal of Applied Management and Entrepreneurship, 19*(4), 61.
- Gilley, J. W., Morris, M. L., Waite, A. M., Coates, T., & Veliquette, A. (2010). Integrated theoretical model for building effective teams. *Advances in Developing Human Resources, 12*(1), 7-28.
- West, M. A. (2012). *Effective teamwork: Practical lessons from organizational research*. John Wiley & Sons.
- Folkestad, J., & Gonzalez, R. (2010). Teamwork for innovation: A content analysis of the highly read and highly cited literature on innovation. *Advances in Developing Human Resources, 12*(1), 115-136.
- Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010). Leadership in teams: A functional approach to understanding leadership structures and processes. *Journal of management, 36*(1), 5-39.
- Northouse, P. G. (2012). *Leadership: Theory and practice*. Sage.
- OECD. (2016). *OECD Science, Technology and Innovation outlook 2016*. Paris: OECD Publishing Retrieved from http://dx.doi.org/10.1787/sti_in_outlook-2016-en.
- Sharma, A. (2016). What personal selling and sales management recommendations from developed markets are relevant in emerging markets? *Journal of Personal Selling & Sales Management, 36*(2), 89-104.
- Janjua, S. Y., & Mühlbacher, J. (2014). The changing business scenario antecedents and consequences of change factors: evidence from Pakistan. *International Journal of Business and Globalisation, 12*(2), 125-141.
- Hassan, M., Malik, A. A., & Faiz, M. F. (2012). An Empirical Assessment of Service Quality and its Relationship With Customer Loyalty Evidence From The Telecom Sector of Pakistan. *International Journal of Asian Social Sciences, 2*(6), 1293-1305.
- Younus, S., Afzal, S., & Ahsan, A. (2016). Changing Trends in Supplier Evaluation Criteria in Telecom Sector in Pakistan. *International Journal of Innovation, Management and Technology, 7*(6), 238.
- Khan, S., Rahman, S. U., & Hira Amin, D. (2013). What Defines Success: Analysis of Pakistan Telecom Industry. *Global Journal of Management and Business Research, 13*(3).
- Pakistan Economic Survey, P. (2015-16). *Pakistan Economic Survey 2015-16*. Economic Adviser's Wing, Finance Division, Government of Pakistan, Islamabad.
- Pakistan Telecommunication Authority, P. (2016). *Annual Report 2016*. Headquarters F-5/1, Islamabad, Pakistan: Pakistan Telecommunication Authority (PTA) Retrieved from www.pta.gov.pk.
- Hassan, M. U., Khalid, S., & Zamir, M. (2013). Inter-Relationship Among Transformational Leadership, Organizational Learning and Organizational Innovation: A Study of Pakistan's Telecom Sector. *World Applied Sciences Journal, 27*(10), 1372-1379.
- The Global Innovation Index, G. (2016). *The Global Innovation Index 2016 Winning with Global Innovation*. Beijing, China, and Geneva, Switzerland: Cornell University, INSEAD, and the World Intellectual Property Organization (WIPO) Retrieved from <http://creativecommons.org/licenses/by-nc-nd/3.0/igo/>.
- Gumusluoglu, L., & Ilsev, A. (2009). Transformational leadership, creativity, and organizational innovation. *Journal of business research, 62*(4), 461-473.
- Birasnav, M., Rangnekar, S., & Dalpati, A. (2011). Transformational leadership and human capital benefits: The role of knowledge management. *Leadership & Organization Development Journal, 32*(2), 106-126.
- Liu, Y., & DeFrank, R. S. (2013). Self-interest and knowledge-sharing intentions: the impacts of transformational leadership climate and HR practices. *The International Journal of Human Resource Management, 24*(6), 1151-1164.

- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of business research*, 67(1), 2891-2902.
- Jung, D. I. (2001). Transformational and transactional leadership and their effects on creativity in groups. *Creativity Research Journal*, 13(2), 185-195.
- Jaussi, K. S., & Dionne, S. D. (2003). Leading for creativity: The role of unconventional leader behavior. *The Leadership Quarterly*, 14(4), 475-498.
- Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: a longitudinal study of research and development project team performance. *Journal of Applied psychology*, 91(1), 202.
- Eisenbeiss, S. A., van Knippenberg, D., & Boerner, S. (2008). Transformational leadership and team innovation: integrating team climate principles. *Journal of Applied psychology*, 93(6), 1438.
- Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. *Journal of Applied psychology*, 94(5), 1128.
- Eisenbeiß, S. A., & Boerner, S. (2010). Transformational leadership and R&D innovation: taking a curvilinear approach. *Creativity and Innovation Management*, 19(4), 364-372.
- Yan, S.-f., Gu, B., & Tang, Y.-q. (2012). The Influences of Transformational Leadership on Team Innovation Climate and Team Innovation Performance. *Advances in Information Sciences & Service Sciences*, 4(21).
- Eisenbeiß, S. A., & Boerner, S. (2013). A double edged sword: Transformational leadership and individual creativity. *British Journal of Management*, 24(1), 54-68.
- Prasad, B., & Junni, P. (2016). CEO transformational and transactional leadership and organizational innovation: The moderating role of environmental dynamism. *Management Decision*, 54(7), 1542-1568.
- Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13(6), 705-750.
- Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation: Hypotheses and some preliminary findings. *The Leadership Quarterly*, 14(4), 525-544.
- Nusair, N., Ababneh, R., & Kyung Bae, Y. (2012). The impact of transformational leadership style on innovation as perceived by public employees in Jordan. *International Journal of Commerce and Management*, 22(3), 182-201.
- Si, S., & Wei, F. (2012). Transformational and transactional leaderships, empowerment climate, and innovation performance: A multilevel analysis in the Chinese context. *European Journal of Work and Organizational Psychology*, 21(2), 299-320.
- Van Knippenberg, D., & Sitkin, S. B. (2013). A critical assessment of charismatic—Transformational leadership research: Back to the drawing board? *The Academy of Management Annals*, 7(1), 1-60.
- Hu, H., Gu, Q., & Chen, J. (2013). How and when does transformational leadership affect organizational creativity and innovation? Critical review and future directions. *Nankai Business Review International*, 4(2), 147-166.
- Afsar, B., F. Badir, Y., & Bin Saeed, B. (2014). Transformational leadership and innovative work behavior. *Industrial Management & Data Systems*, 114(8), 1270-1300.
- Zhang, A. Y., Tsui, A. S., & Wang, D. X. (2011). Leadership behaviors and group creativity in Chinese organizations: The role of group processes. *The Leadership Quarterly*, 22(5), 851-862.
- Zhang, X. a., Cao, Q., & Tjosvold, D. (2011). Linking transformational leadership and team performance: A conflict management approach. *Journal of Management Studies*, 48(7), 1586-1611.
- Akhavan Tabassi, A., Ramli, M., Hassan Abu Bakar, A., & Hamid Kadir Pakir, A. (2014). Transformational leadership and teamwork improvement: the case of construction firms. *Journal of management development*, 33(10), 1019-1034.
- Cha, J., Kim, Y., Lee, J.-Y., & Bachrach, D. G. (2015). Transformational leadership and inter-team collaboration: Exploring the mediating role of teamwork quality and moderating role of team size. *Group & Organization Management*, 40(6), 715-743.

- Xie, X., Xie, X., Wu, Y., Wu, Y., Zeng, S., & Zeng, S. (2016). A theory of multi-dimensional organizational innovation cultures and innovation performance in transitional economies: The role of team cohesion. *Chinese Management Studies*, 10(3), 458-479.
- Klein, C., DiazGranados, D., Salas, E., Le, H., Burke, C. S., Lyons, R., & Goodwin, G. F. (2009). Does team building work? *Small Group Research*.
- Algesheimer, R., Dholakia, U. M., & Gurău, C. (2011). Virtual team performance in a highly competitive environment. *Group & Organization Management*, 36(2), 161-190.
- Malik, S. Z., & Masood, S. (2015). Emotional Intelligence and resistance to change: Mediating role of psychological capital in telecom sector of Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 9(2), 485-502.
- Miles, I. (2000). Services innovation: coming of age in the knowledge-based economy. *International Journal of Innovation Management*, 4(04), 371-389.
- Coelho, F., Augusto, M., & Lages, L. F. (2011). Contextual factors and the creativity of frontline employees: The mediating effects of role stress and intrinsic motivation. *Journal of Retailing*, 87(1), 31-45.
- Sousa, C. M., & Coelho, F. (2011). From personal values to creativity: evidence from frontline service employees. *European Journal of Marketing*, 45(7/8), 1029-1050.
- Tierney, P., & Farmer, S. M. (2011). Creative self-efficacy development and creative performance over time. *Journal of Applied psychology*, 96(2), 277.
- Slåtten, T., & Mehmetoglu, M. (2015). The effects of transformational leadership and perceived creativity on innovation behavior in the hospitality industry. *Journal of Human Resources in Hospitality & Tourism*, 14(2), 195-219.
- Bhagavatula, S. R. K. M. (2013). Evaluation of Team Quality.
- Khan, M. J., Aslam, N., & Riaz, M. N. (2012). Leadership styles as predictors of innovative work behavior. *Pakistan Journal of Social and Clinical Psychology*, 9(2), 17-22.
- Shah, T. A., & Nisar, M. (2011). Influence of transformational leadership on employees outcomes: Mediating role of empowerment. *African Journal of Business Management*, 5(21), 8558.
- West, M. A., & Farr, J. L. (1990). Innovation and creativity at work: Psychological and Organizational Strategies. NY: *John Wiley & Sons*, 265-267.
- Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management science*, 32(5), 590-607.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423-454.
- Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., & Harrington, E. (2000). Shopfloor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 73(3), 265-285.
- Anderson, N., De Dreu, C. K., & Nijstad, B. A. (2004). The routinization of innovation research: A constructively critical review of the state of the science. *Journal of Organizational Behavior*, 25(2), 147-173.
- Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis: American Psychological Association.
- Barron, F., & Harrington, D. M. (1981). Creativity, intelligence, and personality. *Annual review of psychology*, 32(1), 439-476.
- George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: an interactional approach. *Journal of Applied psychology*, 86(3), 513.
- Seibert, S. E., Kraimer, M. L., & Crant, J. M. (2001). What do proactive people do? A longitudinal model linking proactive personality and career success. *Personnel Psychology*, 54(4), 845-874.
- Keller, R. T. (2012). Predicting the performance and innovativeness of scientists and engineers. *Journal of Applied psychology*, 97(1), 225.

- Frese, M., Teng, E., & Wijnen, C. J. (1999). Helping to improve suggestion systems: Predictors of making suggestions in companies. *Journal of Organizational Behavior*, 1139-1155.
- Prabhu, V., Sutton, C., & Sauser, W. (2008). Creativity and certain personality traits: Understanding the mediating effect of intrinsic motivation. *Creativity Research Journal*, 20(1), 53-66.
- Basadur, M., Graen, G. B., & Scandura, T. A. (1986). Training effects on attitudes toward divergent thinking among manufacturing engineers. *Journal of Applied Psychology*, 71(4), 612.
- Feist, G. J., & Gorman, M. E. (1998). The psychology of science: Review and integration of a nascent discipline. *Review of general psychology*, 2(1), 3.
- West, M. A., & Anderson, N. R. (1996). Innovation in top management teams. *Journal of Applied Psychology*, 81(6), 680.
- Keller, R. T. (2001). Cross-functional project groups in research and new product development: Diversity, communications, job stress, and outcomes. *Academy of management journal*, 44(3), 547-555.
- Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management journal*, 39(5), 1154-1184.
- Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: development and validation of the team climate inventory. *Journal of Organizational Behavior*, 235-258.
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. *Personnel Psychology*, 52(3), 591-620.
- Bain, P. G., Mann, L., & Pirola-Merlo, A. (2001). The innovation imperative: The relationships between team climate, innovation, and performance in research and development teams. *Small Group Research*, 32(1), 55-73.
- Hunter, S. T., Bedell, K. E., & Mumford, M. D. (2007). Climate for creativity: A quantitative review. *Creativity Research Journal*, 19(1), 69-90.
- Pearce, C. L., & Ensley, M. D. (2004). A reciprocal and longitudinal investigation of the innovation process: The central role of shared vision in product and process innovation teams (PPITs). *Journal of Organizational Behavior*, 25(2), 259-278.
- Rosing, K., Frese, M., & Bausch, A. (2011). Explaining the heterogeneity of the leadership-innovation relationship: Ambidextrous leadership. *The Leadership Quarterly*, 22(5), 956-974.
- Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, 34(3), 555-590.
- Mann, L. (2005). Leadership, management, and innovation in R & D project teams: Praeger Pub Text.
- Akbar, A. A., Sadegh, R., & Chehrazi, R. (2015). Impact of Transformational and Transactional Leadership Style on Employees' Creativity and Innovation. *International Journal of Environmental Research*, 12(4), 1109-1123.
- Elenkov, D. S., Judge, W., & Wright, P. (2005). Strategic leadership and executive innovation influence: an international multi cluster comparative study. *Strategic Management Journal*, 26(7), 665-682.
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship. *Journal of management*, 22(2), 259-298.
- Dionne, S. D., Yammarino, F. J., Atwater, L. E., & Spangler, W. D. (2004). Transformational leadership and team performance. *Journal of Organizational Change Management*, 17(2), 177-193.
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of management journal*, 38(5), 1442-1465.
- McGrath, J. E. (1964). Social Psychology: A Brief Introduction. Holt, Rinehart and Winston. Inc., New York.
- Burke, C. S., Stagl, K. C., Salas, E., Pierce, L., & Kendall, D. (2006). Understanding team adaptation: A conceptual analysis and model. *Journal of Applied Psychology*, 91(6), 1189.

- Frimpong, S. K., & Agyemang, B. A. (2010). *Research on the Role of Teamwork in Innovation Management within Manufacturing Companies in China*. Paper presented at the Management and Service Science (MASS), 2010 International Conference on.
- Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science*, 12(4), 435-449.
- Hoegl, M., & Parboteeah, K. P. (2007). Creativity in innovative projects: How teamwork matters. *Journal of Engineering and Technology Management*, 24(1), 148-166.
- Hoegl, M., Parboteeah, K. P., & Gemuenden, H. G. (2003). When teamwork really matters: task innovativeness as a moderator of the teamwork–performance relationship in software development projects. *Journal of Engineering and Technology Management*, 20(4), 281-302.
- Jiang, J., Wang, S., & Zhao, S. (2012). Does HRM facilitate employee creativity and organizational innovation? A study of Chinese firms. *The International Journal of Human Resource Management*, 23(19), 4025-4047.
- Michan, S., & Rodger, S. (2000). Characteristics of effective teams: a literature review. *Australian Health Review*, 23(3), 201-208.
- Kozlowski, S. W., & Bell, B. S. (2003). Work groups and teams in organizations. *Handbook of psychology*.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142.
- Dvir, T., Eden, D., Avolio, B. J., & Shamir, B. (2002). Impact of transformational leadership on follower development and performance: A field experiment. *Academy of management journal*, 45(4), 735-744.
- Yunus, N., & Anuar, S. (2012). Trust as moderating effect between emotional intelligence and transformational leadership styles. *Interdisciplinary Journal of Contemporary Research in Business*, 3(10), 650-663.
- Jyoti, J., & Dev, M. (2015). The impact of transformational leadership on employee creativity: the role of learning orientation. *Journal of Asia Business Studies*, 9(1), 78-98.
- Choi, S. B., Kim, K., Ullah, S. E., & Kang, S.-W. (2016). How transformational leadership facilitates innovative behavior of Korean workers: Examining mediating and moderating processes. *Personnel Review*, 45(3), 459-479.
- Reuvers, M., Van Engen, M. L., Vinkenburg, C. J., & Wilson Evered, E. (2008). Transformational leadership and innovative work behaviour: Exploring the relevance of gender differences. *Creativity and Innovation Management*, 17(3), 227-244.
- Pieterse, A. N., Van Knippenberg, D., Schippers, M., & Stam, D. (2010). Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment. *Journal of Organizational Behavior*, 31(4), 609-623.
- Michaelis, B., Stegmaier, R., & Sonntag, K. (2010). Shedding light on followers' innovation implementation behavior: The role of transformational leadership, commitment to change, and climate for initiative. *Journal of Managerial Psychology*, 25(4), 408-429.
- Nijstad, B. A., Berger-Selman, F., & De Dreu, C. K. (2014). Innovation in top management teams: Minority dissent, transformational leadership, and radical innovations. *European Journal of Work and Organizational Psychology*, 23(2), 310-322.
- Schweitzer, J. (2014). Leadership and innovation capability development in strategic alliances. *Leadership & Organization Development Journal*, 35(5), 442-469.
- Pundt, A. (2015). The relationship between humorous leadership and innovative behavior. *Journal of Managerial Psychology*, 30(8), 878-893.
- Chen, L., Chen, L., Zheng, W., Zheng, W., Yang, B., Yang, B., Bai, S. (2016). Transformational leadership, social capital and organizational innovation. *Leadership & Organization Development Journal*, 37(7), 843-859.
- Khalili, A., & Khalili, A. (2016). Linking transformational leadership, creativity, innovation, and innovation-supportive climate. *Management Decision*, 54(9), 2277-2293.

- Leonard, M. W., & Frankel, A. S. (2011). Role of effective teamwork and communication in delivering safe, high quality care. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine*, 78(6), 820-826.
- Yang, L.-R., Huang, C.-F., & Wu, K.-S. (2011). The association among project manager's leadership style, teamwork and project success. *International Journal of Project Management*, 29(3), 258-267.
- Hargis, M. B., Watt, J. D., & Piotrowski, C. (2011). Developing leaders: Examining the role of transactional and transformational leadership across business contexts. *Organization Development Journal*, 29(3), 51.
- Drach-Zahavy, A., & Somech, A. (2001). Understanding team innovation: The role of team processes and structures. *Group Dynamics: Theory, Research, and Practice*, 5(2), 111.
- Perry-Smith, J. E., & Shalley, C. E. (2003). The social side of creativity: A static and dynamic social network perspective. *Academy of management review*, 28(1), 89-106.
- Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, 15(1), 33-53.
- Fay, D., Borrill, C., Amir, Z., Haward, R., & West, M. A. (2006). Getting the most out of multidisciplinary teams: A multi sample study of team innovation in health care. *Journal of Occupational and Organizational Psychology*, 79(4), 553-567.
- Kratzer, J., Leenders, R. T. A., & Van Engelen, J. M. (2006). Managing creative team performance in virtual environments: an empirical study in 44 R&D teams. *Technovation*, 26(1), 42-49.
- Hertel, G., Geister, S., & Konradt, U. (2005). Managing virtual teams: A review of current empirical research. *Human resource management review*, 15(1), 69-95.
- West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied psychology*, 51(3), 355-387.
- Wu, J. B., Tsui, A. S., & Kinicki, A. J. (2010). Consequences of differentiated leadership in groups. *Academy of management journal*, 53(1), 90-106.
- Weng, R. H., Huang, C. Y., Chen, L. M., & Chang, L. Y. (2015). Exploring the impact of transformational leadership on nurse innovation behaviour: a cross sectional study. *Journal of nursing management*, 23(4), 427-439.
- Sanders, K., & Shipton, H. (2012). The relationship between transformational leadership and innovative behaviour in a healthcare context: a team learning versus a cohesion perspective. *European Journal of International Management*, 6(1), 83-100.
- Amason, A. C., & Sapienza, H. J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of management*, 23(4), 495-516.
- Bantel, K. A., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10(S1), 107-124.
- Wheelan, S. A. (2009). Group size, group development, and group productivity. *Small Group Research*.
- Hoegl, M. (2005). Smaller teams—better teamwork: How to keep project teams small. *Business Horizons*, 48(3), 209-214.
- Gratton, L., & Erickson, T. J. (2007). Eight ways to build collaborative teams. *Harvard Business Review*, 85(11), 101-109.
- Bradner, E., Mark, G., & Hertel, T. D. (2005). Team size and technology fit: Participation, awareness, and rapport in distributed teams. *IEEE Transactions on Professional Communication*, 48(1), 68-77.
- Kugler, T., Rapoport, A., & Pazy, A. (2010). Public good provision in inter team conflicts: Effects of asymmetry and profit sharing rule. *Journal of Behavioral Decision Making*, 23(4), 421-438.
- Mao, A., Mason, W., Suri, S., & Watts, D. J. (2016). An experimental study of team size and performance on a complex task. *PloS one*, 11(4), e0153048.