The Mediating Role of Positive Psychological Capital between Perceived Leadership Styles and Workplace Advice Network Closeness

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Abstract

This paper attempts to explore mediation by positive psychological capital (PsyCap) between perceived leadership styles (PLS) and workplace advice network closeness. Fifteen different groups with a composition of 20-25 members were randomly selected in small workplaces which reached a total sample size of 329 cases. Data were collected using a partly-borrowed questionnaire of 30 items (12 for total PsyCap; 18 for PLS) and a sociometric matrix to measure workplace advice network closeness. Results of the categorical regression analyses (CATREG) showed PLS moving from authoritative to laissez-faire reduced the closeness of followers in the workplace advice network. The same shift in the leadership styles from authoritative to laissez-faire improved followers' PsyCap. Furthermore, an improved PsyCap of the followers tended to improve the closeness centrality. As advice is a very comprehensive term, further studies into knowledge sharing, flow instruction and directions may be carried out to advance the field of knowledge. Further, studies on how individual components of PsyCap affect closeness may also be considered.

Keywords: advice, advice network, closeness, centrality, perceived leadership styles, implicit leadership theory, positive psychological capital

1. Introduction

Organizational channels of communication and knowledge often facilitate flow of only the formal information needed to perform organizational tasks. No wonder, these channels often fall short to readily meet the immense diversity of knowledge and information requirements in a day-to-day work routine. Consequently, individuals form informal information-sharing relationships to overcome that knowledge deficit- known as workplace advice network. In these information-oriented networks, some employees tend to assume important positions and, thus, can play vital roles in the overall performance of all other actors in the same network as well the organization as a whole. Among different measures of actors' network positions including degree centrality, betweenness and coreness, closeness of a node represents its relative authority or importance over others in the network. This is because an actor close to a larger number of nodes enjoys greater opportunity to control the network through his influence on immediate contacts (Henneman & Riddle, 2005). On the other hand, actors close to many nodes in a network also serve as reference points for others (Henneman & Riddle, 2005) indicating the intensity of sharing between ties (Borgatti & Everett, 1999). Furthermore, in communication and advice-sharing networks the closeness reflects how soon the message will reach other nodes through the one in question (Borgatti & Everett, 1999).

Existing literature highlights several determinants of the positions actors acquire in a social network (Cross & Parker 2004; Hansen, 2002; Reagans & McEvily 2003). Some of these determinants include actors' formal status (Lazega et al., 2009), their performance (Burton et al., 2010) as well as their psychological and personality traits. Leadership, among others, has strong implications on the outcomes organizations yield from their employees (Den Hartog & Koopman, 2011) especially in teams where advice-sharing becomes an inevitable occurrence (Blau, 1955). Several previous researches have empirically tested how leadership styles determine the direction and flow of advice (Lazega et al., 2009); nonetheless, no study has yet mapped the relevance of the *implicit* leadership styles to workplace advice network. Conceptually, contrary to conventional literary concept of leadership, the implicit leadership theory tells that every follower may perceive an entirely different leadership style from that of his colleagues (Ensari & Murphy, 2003; Lord & Maher, 1993; Rosch, 1978; Schyns & Schilling, 2010). No study has thus far attempted to discover how perceived leadership styles, rather than leadership styles, affect advice network position of actors.

Besides PLS, positive psychological capital (PsyCap), a relatively new area of study, has been associated with enhanced workplace environment as well as individual performances and organizational success (Luthans et al., 2004; Luthans, 2002; Luthans & Youssef, 2004). Besides, various previous studies have brought in light the social content of PsyCap in organizational relationship building as well as improvement of work and ethical environment (Golparvar & Azarmonabadi, 2014), employee social attitudes and their appropriateness (Larson et al., 2013) and citizenship behavior (Dirzyte et al., 2013; Shahnawaz & Jafri, 2009). Correspondingly, as a WAN itself is a social system, PsyCap should, in theory, affect the formation of advice-sharing ties too and, as a result, the position of actors.

In the absence of any previous research, this study will improve theory not only in the field of social networks but also in the disciplines of management and psychology by establishing relationships between PLS, positive psychological capital (PsyCap) and

social network closeness of followers. Thus, the study has multidisciplinary academic value and contribution in different areas of study. In practice, this article will also improve the managerial understanding of advice networks and improve the way managers develop group knowledge and information sharing and consequently aggregate productivity. Thus, a better understanding of how perceived leadership styles (PLS) affect the flow of information and knowledge in the organization will help leaders in better knowledge management and organizational performance through better control of informal advice network at workplace.

Notwithstanding this, as this study is conducted in a Pakistani population, the academicians around the globe can learn about the connections among PsyCap, PLS and WAN's closeness in this geographical region and then conduct relevant researches in their contexts to test and improve upon the findings. The case can even be extended to other areas of study, especially in the field of management sciences, network analysis, psychology and leadership theories to further the development of knowledge.

Individuals (actors) bounded in an advice network assume roles of either transferring advice or receiving it. Prior studies have found several determinants of the number of actors an individual may be connected to in a network (Cross & Parker 2004. Hansen, 2002; Reagans & McEvily 2003). This number of relationships (or ties) determines the position of the actors in the network. Empirically, organizational status (Lazega et al., 2009) and organizational performance (Burton et al., 2010) have been reported as important determinates of network positions. There are several other studies that have also highlighted different other determinants of the position of an actor in a network (for example, Bapuji & Crossan, 2004; Borgatti and Cross, 2003; Lazega and Van Duijin, 1997). However, no study has yet explored how perceived leadership styles (PLS) affect network position and this study, thus, at first tests if PLS determines WAN closeness.

Additionally, research on PsyCap is a relatively new concept which has been associated with the improvement of social interactions as well as development of individuals. Again, no study has yet endeavored to investigate the relevance of PsyCap to WAN. As a matter of fact, research in the fields of PLS, PsyCap and network dynamics is still in its infancy and as such very little is known about their interaction. Particularly in the case of WAN, there is very little work on what forces determine who will advise whom. Though the research panorama in the field is very wide, this study is an attempt to bring the three constructs together theoretically as well as test mediation by PsyCap in the relationship between PLS and WAN closeness empirically. Ultimately, this study will advance the development of theory in different fields in general and social networks in particular.

Individuals in an organization perceive the extent of freedom of sharing ideas, knowledge and information differently from one another. In the face of a favorable, freedom-awarding perception about leadership, advice network should tend to show greater flow of advice and give rise to a distinctive structure of the network with some actors in the network whose influence and importance are known through their closeness. In other words, PLSs determine the participation of actors in the advice network and in turn their inclination to form advice-sharing ties. Thus, a favorable perception of actors in the workplace advice network can encourage them to seek or give advice more freely.

Moreover, we suspect that PLS affects followers' PsyCap, which in turn also affects the closeness of followers in an advice network. This is because a perception of leadership

style that allows free participation and sharing of information should also give way to the expression of one's PsyCap by improving hope, efficacy, resilience and self-efficacy of followers. Together, these qualities could improve the centrality of ties within network. In turn, that greater PsyCap would improve followers' closeness in the workplace advice network. Thus, the mediational role of PsyCap could be tested and verified.

Keeping in view the problem statement, certain research questions need to be answered as given below:

➢ Does PLS positively determine the closeness centrality of actors in a WAN?
➢ Does PLS positively affect the PsyCap of actors?
➢ Does PsyCap positively determine closeness centrality of actors in WAN?

The paper aims at exploring the mediating role of positive psychological capital in the relationship between perceived leadership styles and the closeness centrality measure of actors in a workplace advice network. As there is no previous study ever that has explored the relationship between PLS, PsyCap and closeness of followers, this study thus would have great contribution to literature should it finds statistically significant results for the proposed mediational analysis. Though the paper may, as such, be generalized globally, the primary target population comes from the service sector of Pakistan. Further confirming studies may be required from across other countries and different sectors to ensure the applicability of the findings in different geographic contexts.

2. Literature Review

2.1 Rationale of the Study

Workplace advice networks (WANs) are highly centralized systems where status recognition or formal organizational leadership plays an effective role in determining the network position of nodes (Lazega et al., 2009). In a workplace, individuals often need to seek information and guidance from their colleagues in order to perform organizational tasks (Bapuji & Crossan, 2004; Borgatti and Cross, 2003; Lazega et al., 2009). However, the manner in which organizational leader facilitates or impedes information sharing through his formal power greatly regulates the presence of such advice-sharing ties (Lazega & Van Duijin, 1997). Hence, leadership, which can determine the effectiveness of knowledge and information sharing, is an essential element in the formation and success of advice network relationships. This very view is well supported in previous studies, see for example Bapuji and Crossan, (2004), Borgatti and Cross, (2003), and Lazega et al. (2009).

Previous studies like that of Borgatti and Cross (2003) and Lazega et al. (2009) have found that actors with greater organizational status, formal leaders for example, acquire central positions in the WANs of organization. There are different ways in which the network positon of an actor may be conceptualized keeping in view the purpose of measuring it. In general, network position refers to the number of relationships or ties a node has with others, known as centrality of nodes (Pattison, 1993). There are different centrality measure and one of them is *closeness* which measures the geodesic distance of one node from the others (Freeman, 1979; Okamoto et al., 2008) and shows its impact on the flow of advice within the network (Borgatti, 1995). Nodes with high closeness receive/share the advice sooner than those with low closeness score (Borgatti, 2005).

Consequently in terms of network centrality, nodes with high scores on closeness acquire central positions in the network and thus are of greater importance (Borgatti, 2005; Freeman, 1979). The concept of closeness implies that an actor is connected to others in a way that he will have the ability to influence the network as a whole.

Despite the presence of studies on how leadership styles affect actors' WAN position, there is no work which has explored whether the same effect is also true for implicit leadership styles. Several previous studies have reported statistically significant positive relationship between authentic leadership and PsyCap including those of Gardner, Avolio et al. (2005), Rego et al. (2016) and Rego et al. (2012). It is noteworthy that Nichols and Erakovich, (2013) have considered authentic and implicit theories as overlapping forms of the concepts of leadership. So, a relationship statistically true for authentic leadership styles may also be valid for implicit leadership styles. Therefore, it is quite logical and necessary to foresee a relationship between PLS and PsyCap and attempt to test it empirically.

Likewise, authentic leadership has been found to positively determine followers PsyCap; whereas, PsyCap itself has been found as mediator between authentic leadership and organizational commitment (Rego et al., 2016). Again, as authentic and implicit leadership are two overlapping concepts, PsyCap should also be related with PLS. Moreover, there are several works that highlight the improvement of organizational social process through PsyCap (Dirzyte et al., 2013; Golparvar & Azarmonabadi, 2014; Harty et al., 2016; Larson et al., 2013; Shahnawaz & Jafri, 2009). This suggests a possible impact of PsyCap on WAN which are themselves social systems. Thus, greater PsyCap would theoretically affect centrality measures in a WAN including closeness. In short, the rationale for this study being researchable is evidently strong.

2.2 Leadership and Implicit Leadership Theories

Bryman (1992) states, 'Leadership is defined in terms of a process of social influence whereby a leader steers members of a group towards a goal'. This definition gives three important constructs that relate to this study: group, influence and goals (Bryman, 1992). It talks about leadership's influence on groups and in social networks it determines the direction of information sharing or in other words who seeks and who shares. Thus, a leader who allows or develops a perception of freedom of informal advice-sharing influences the flow and direction of knowledge, ideas and information. In turn, this influence determines followers' position in the advice network. In a laissez-faire leadership styles, for example, employees would form more relationship with other followers and thus might acquire better position and vice versa. However, the question remains unanswered whether this is true for perceived leadership styles also.

Bass (1990) and Den Hartog and Koopman (2011) have suggested that the leadership perception is developed through the conception of behavior by followers which gives rise to what is known as a leadership style. Several leadership styles have been put forth in the academic literature such as transformational (Burns, 1978); transactional (Bass, 1990) and so on. In this study, we have used the behavioral leadership styles proposed by Lewin. Lippit and White (1939) *viz-a-viz* autocratic, democratic and laissez-faire since it is the behaviors of leaders that results in the formation of certain perceptions about their styles in the minds of their followers (Lord & Maher, 1993). This perception suggests whether they have the freedom to form an advice tie or not. We, therefore, following

implicit leadership styles theory measured these styles as they are perceived by the followers rather than what leaders themselves claim.

The cognitive categorization theory (Rosch, 1978) proposes that followers classify their leaders in a workplace setup on their behaviors (Lord & Maher, 1993). This classification builds a mental perception of a particular leadership style of their leader in the minds of followers (Schyns & Schilling, 2010) in relationship with their own work-related conducts (Kenney et al., 1996; Ford & Kiran, 2008). Followers observe the behavior of their leadership in social encounters (Lord et al., 1984) and consequently each follower forms a leadership style perception of his leader (Ensari & Murphy, 2003). Therefore, it is quite possible that a follower perceives the leader to be autocratic; whereas another, at the same time, perceives a Laissez-faire leadership driven by the differences of interaction of the two followers with the same leader.

These differing leadership perceptions affect the way followers act and behave (Ho, 2012; Lord & Maher, 1993). For instance, Rehman et al. (2012) have reported positive correlations between the perceive leadership styles and organizational commitment. One can argue that greater commitment improves employees' involvement in the affairs of organization and hence a suggestive improvement their network centrality as well. It is because centrality of a WAN indicates the involvement of actors in the network. Likewise, Ford and Kiran (2008) have empirically found that there is an effect of perceived leadership styles on the roles individuals take up at a workplace. Thus, the connections of leadership styles and the flow of network content can be conceptualized in improving organizational role of an employee and the flow and formation of ties, in turn, should affect followers' position. In fact, the impact of leadership styles on the network positions of followers is not reported in previous researches.

Previous studies have reported leadership styles as important determinants of followers' positions in WANs (Bapuji & Crossan, 2004; Borgatti and Cross, 2003; Lazega et al., 2009). Nonetheless, no prior study has attempted to explore how WAN-PLS connections differ from the findings of status-position studies. Different leadership styles - autocratic, democratic and laissez-faire- as perceived by followers offer differing level of participatory freedom to them (Bosiok et al., 2013). We propose that this perception allows a follower to become more or less participatory in informal advice-sharing; whereas, a follower perceiving an autocratic style would not participate in a WAN and hence his advice-sharing role may be affected. Therefore, we hypothesize:

➤ **H₁:** Perceived leadership styles affect followers' closeness in an advice network.

2.3 Positive Psychological Capital (Psy Cap)

Positive psychological capital is a sub-domain of positive psychology, which is known as the study of positive human qualities, traits and experiences (Seligman & Csikszentmihalyi, 2000). In general, positive psychology relates to contentment and satisfaction in domestic, social and organizational life (Donaldson et al., 2014). Positive psychological capital, on the other hand, exists in four qualities in human resource including (1) hope in resolution of strategic goals in difficulties, (2) self-efficacy (confidence) to accomplish challenging tasks, (3) resilience to resume to the previous constructive state after difficulties and in demanding circumstances and (4) optimism about success (Luthans et al., 2004; Luthans, 2002; Luthans & Youssef, 2004). These

four qualities of hope, efficacy, resilience and optimism are sometime also referred to as HEROs collectively (as in Wyk, 2014).

Positive psychological capital (PsyCap) has vivid influence on an organization as it affects organizational environment and its ethical norms (Golparvar & Azarmonabadi, 2014), employee attitudes and their appropriateness (Larson et al., 2013), commitment and social behavior (Dirzyte et al., 2013; Shahnawaz & Jafri, 2009), leadership (Gupta & Singh, 2014; Norvapalo, 2014), goals accomplishment (Pillay, 2012), employee creativity (Sartori et al., 2013), retention (Ismail et al., 2014) and so on. Consequently, the development of PsyCap in employees has become an important managerial task across globe (Larson et al., 2013; Beal III et al., 2013; Donaldson & Ko, 2010; Harty et al., 2016).

2.4 Perceived Leadership Styles and Positive Psychological Capital

There already is some research that has explored the relationships between leadership and PsyCap- for example, Gupta and Singh (2014) and Norvapalo (2014). Moreover, certain studies have reported a positive deterministic relationship between authentic leadership and PsyCap. For example Gardner et al. (2005) suggest that authentic leaders have the tendency to improve all four qualities of PsyCap in followers including resilience, optimism, hope and efficacy. Similar results have been reported in other studies also (see for example, Avolio et al., 2005; Haar & Roche, 2013; Luthans & Youssef., 2004; Norman, Luthans & Luthans, 2005; Luthans et al., 2004). This case be extended to PLS as authentic leadership is another form of PLS (Nichols & Erakovich, 2013).

However, at the network/group level in an organization, there is no study as yet that has an emphasis on perceived leadership styles rather than leadership styles themselves in shaping followers' PsyCap. So, in line with studies on leadership styles that affect the development of PsyCap at the organizational level, it is proposed that the perceived styles of group's leadership should also influence followers' PsyCap.. Thus, we hypothesize that perceived leadership styles based on group leader's behavior affect the PsyCap of followers in an advice network:

> **H₂:** Perceived leadership style affects positive psychological capital of followers.

While PsyCap has been suggested to reward organizations as a whole at the source always are the employees. PsyCap helps employees build their career and yield career success (Huang & Lin. 2013), develop their collective self-esteem (Bissessar, 2014), reap job satisfaction (Dirzyte et al., 2013; Kaplan & Bickes, 2013) and cultivate creativity and performance (Bayramoglu & Sahin, 2015). In exact, PsyCap gives rise to HEROs who have the abilities to succeed in any situation and take up any tasks productively and efficiently. However, the gigantic task of developing PsyCap in a workplace almost entirely rests on the shoulders of management (Khan, 2013; Luthans et al., 2010).

As PsyCap of employees has both personal persona in the form of creativity (Bayramoglu & Sahin, 2015; Sartori et al., 2013), self-esteem (Bissessar, 2014), organizational success (Pillay, 2012), resilience and efficacy (Luthans et al., 2004; Luthans, 2002; Luthans & Youssef, 2004) and social lure of appropriate attitude (Larson et al., 2013), respects for values (Golparvar & Azarmonabadi, 2014) and citizenship behavior (Dirzyte et al., 2013; Shahnawaz & Jafri, 2009). Thus, employees having greater PsyCap have both intellectual as well as social desirability to attract advice-seekers to them. We can, therefore, argue that the greater intellectual ability and social attraction would lure greater number of

advice-seekers to their colleagues with higher PsyCap improving their advice network centrality since advice seeking follows sources of knowledge and ideas in a comfortable relationship. Thus, the result is an improved network position of followers who have greater PsyCap:

➤ **H₃:** Positive psychological capital of followers improves their closeness in an advice network.

If the above three hypotheses are established, then one can confirm if there is a mediational relationship among the constructs. In fact, the mediating role of PsyCap in the relationship between authentic leadership and organizational commitment has previously been tested by Rego et al., (2016). They have found that PsyCap positively mediates the relationship between the two. In case of our study we have proposed WAN's closeness in place of organizational commitment. Thus, the hypothesis H_{04}:

➤ **H₄:** Positive psychological capital mediates the relationship of perceived leadership style and followers' closeness in an advice network.

3. Methodology

Using a quantitative design, this study explores three constructs: perceived leadership styles, positive psychological capital and network position.

3.1 Sampling

The target population of this study consisted of members in different small organizations or parts of them in the service sector. The sample included organizations from both the private and the public sectors comprising schools, offices, banks, departments of universities and NGOs. The groups/networks within these organizations were formed formally with a hierarchy among employees in place. As each formal organization needs to share information among employees not only through its formal rules and standards but also through informal social ties among employees, this informal information and knowledge sharing gives rise to an informal advice network that facilitates the flow of advice in the form of instruction, information, knowledge-sharing and knowledge creation (Cross et al., 2001). In order to control the effect of group size, a network of members ranging from 20 to 25 actors was selected. A total of 15 groups were studied and 329 responses could actually be recorded. Great effort needed to be put in to achieve 100% response rate, a requirement for social network data collection.

3.2 Data Type, Collection Method and Instrument

The data were collected in the form of quantitative responses on different scales. A 7 point Likert-scale was used to measure PLS and PsyCap. Whereas, in order to calculate WAN closeness, sociometric matrix was used employing *the roster method technique*. The questionnaire for PLS was borrowed from Northouse (2011) and that for PsyCap was taken from Luthans et al. (2007). To compute the network position of followers, we used the centrality measure of closeness through their scores calculated using Ucinet 6.

The PLS questionnaire was an eighteen-item scale that had a score-based evaluation of three leadership styles: authoritarian, democratic and laissez-faire. The Northhouse's questionnaire in its original form asked for a self-evaluation of leadership style and not PLS. This required that we had to change the language of the original questionnaire to fit it in our case- perceived leadership styles as evaluated by the followers. The responses from the PLS questionnaire resulted in three categories of PLS score; every follower gave

score for autocratic, democratic and laissez-faire behaviors of the leader. The second 12-point questionnaire for PsyCap was developed by Luthans et al. (2007) for a score-based evaluation of hope, resilience, efficacy and optimism as well as total PsyCap. However, this study considered only the total PsyCap scores for every individual.

As the perceived leadership styles were measured through a questionnaire that was primarily developed to measure leadership as viewed by leader himself and we had changed the response categories from 5 to 7 to make this questionnaire match the second one, we needed to retest the scale to see if it did actually measure what we sought to. So, factor analysis was run for establishing the validity of this part of the instrument. In the original questionnaire, questions 1, 4, 7, 10, 13, and 16 measured authoritarian leadership style, questions 2, 5, 8, 11, 14, and 17 measured democratic leadership and items 3, 6, 9, 12, 15, and 18 measured laissez-faire leadership. The original inference of a leadership from the given guide was as follows:

1. If your score is 26–30, you are in the very high range.
2. If your score is 21–25, you are in the high range.
3. If your score is 16–20, you are in the moderate range.
4. If your score is 11–15, you are in the low range.
5. If your score is 6–10, you are in the very low range.

However, we had to alter this to match our response categories, the scheme was changed as:

1. If the score is 36–42, PLS is in the very high range.
2. If the score is 29–35, PLS is in the high range.
3. If the score is 22–28, PLS is in the moderate range.
4. If the score is 15–21, PLS is in the low range.
5. If the score is 08–15, PLS is in the very low range

The questionnaire returned responses showing that some respondents scored high for their leaders on more than one style. This meant- as we interpreted- that they either foresaw their leaders somewhere in between the two styles or they saw their leaders following the two styles alternatively- for example sometimes the leader showed authoritative style and sometimes he exhibited the democratic style. Thus, to convert the scores of perceived leadership styles into one scale the following scoring plan was followed:

0: Un-decisive- when all styles had equivalent scores

1: Highly authoritative style- for high score on authoritative style

2: Between authoritative and democratic styles- equivalent scores for both

3: Highly democratic- high score for democratic

4: Between democratic and laissez-faire styles as well as between authoritative and laissez-faire styles- equivalent scores for either authoritative and democratic or democratic and laissez-faire styles

5: Laissez-faire style- high scores for laissez-faire style

The three independent questionnaires were combined in a single self-administered instrument, which was then distributed among all group members in an organization to evaluate the leadership styles they perceive, their personal PsyCap and the

employees they share advice with. The entire questionnaire duly filled in was fed to SPSS 22 and Ucinet 6.

3.3 Avoiding Research Bias

There can be several sources of research biases that can undermine the validity of any study including error in study design, selection, recall and measurement biases (Pannucci & Wilkins, 2011). The study design bias was avoided through specifying and supporting the model through previous literature. The organizations sampled were selected randomly from a list of all service sector organizations in the available population with 20-25 employees. However, network data needed to be collected from everyone in the organizations finally sampled. In order to avoid the recall bias, a common issue in network data collection, roster method was used. This method required developing a list of all actors in the network prior to data collection and then presenting the list in the sociometric matrix for easy and ready recollection of every tie in the network. Finally, to avoid the measurement bias, well-tested instrument were chosen for PLS and PsyCap and their validity tested through factor analyses.

3.4 Analysis of Data

At the first stage, the responses from the questionnaire were divided into network data, leadership and PsyCap parts. The network data were first fed into MS Excel to form single-mode matrices for each group/network which then were exported to Ucinet 6 to find closeness scores for members of each group. The scores of the closeness thus calculated were entered into SPSS 22 for each individual. The scores for leadership styles and PsyCap were calculated using SPSS 22. This gave rise to three levels of scores on continuous/ ratio scale under three categories in SPSS 22: perceived leadership scores, PsyCap scores and network position scores. The score thus calculated were used for further statistical analysis.

Moreover, as the firms are selected randomly, the results can be fairly generalized to other such situations. Though there are no prior or expected relationships in view, regression analysis was used to define the exact nature and strength of the relationship in terms of Mediation.

3.5 Effect Size, Normality, Linearity and Reliability of the Data

Gpower 3.1.9.2 was used to calculate the effect size for the regression analyses we ran. The software allows input for α error probability, desired power of the statistics and the required effect size (Cohen's f^2) to return the minimum sample size for data collection. We set effect size to 0.35- large for R^2 (Cohen, 1992, 1998), α error probability equal to 0.05, power (1- β error probability) and number of predictor equal to 1 as our case is; the minimum sample size to maintained came up to be 40 cases. Whereas, our sample size exceeded this by a great margin.

Kolmogorov-Simirnov and Shapiro-Wilk tests of normality indicated that the data were non-normally distributed across advice network closeness, as well as across perceived leadership style and total PsyCap. In order to assess the linearity of the data, we plotted in all three cases independent variables against the dependent variables- see appendix 02. A visual study of the graphs showed that the data were not linear. Non-normality and non-linearity of the data had implications on the choice of analysis we undertook in the further statistical analysis.

We chose to run factor analysis (Principal Component Analysis) considering two reasons. Primarily, as factor analysis is a multivariate technique, Clason & Dormody, (1994) suggest that common normality test is not strong enough to account for multivariate normality. Secondly, the sample size exceeded 300 cases, and Thomas (1982) suggests that it somehow allows mean, medium and mode to fall fairly close together. On the contrary, in case of linear regression which is not a multivariate technique the choice was different and we chose to run CATREG instead to avoid bias in our results. The choice of CATREG is also supported through the fact that the data were not linear. Finally, the reliability of the scale was measured using Cronbach's alpha.

3.6 Factor Analysis

Factor Analysis is often used to test the validity of measurement instrument. As we adopted leadership questionnaire from Northouse (2011) and changed it; it was imperative to test its validity in our study. The factor analysis was run using Varimax rotation.

3.7 Regression Analyses

As our data exhibited non-normal distributions, we opted CATREG (Categorical Regression) instead of linear regression. Though CATREG is primarily a technique for categorical data, it can, however, be used on any combination of data including ratio scale (Kooij, Meulman, & Heiser, 2006) particularly when the assumptions of normality and linearity of data are not fulfilled (Shrestha, 2009). As we had already established that our data were neither normal nor linear; CATREG was the appropriate choice. Three regression analyses were run to test mediation between PLS, PsyCap and advice network closeness. The results for all the three analysis were significant though the R^2 were not very high. However, researchers often use effect size rather than R^2 to interpret regression.

3.8 Mediation

The presence of mediation was tested first by running regression analyses between PLS and PsyCap, between PsyCap and advice network closeness. Bootstrapping was used to ensure the significance of mediation in our CATREG analyses.

4. Results and Discussion

4.1 Reliability of the Scales

The reliability of our scale was checked using Cronbach's alpha for both the sections of perceived leadership styles and PsyCap. The Cronbach's alpha for the first section of perceived leadership style (PLS) was .660 and that for the section of PsyCap was .755. This indicates that in case of PLS the reliability is acceptable and in case of PsyCap the data were very reliable. All the questions in the PsyCap scale formed a single factor of 12 items. The results of the reliability of both the scales are given below in table 01:

Table 1: Reliability Statistics

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
Perceived Leadership Styles	.755	.756	12
PsyCap	.660	.669	18

4.2 Factor Analysis

A sample size of 319 respondents ensured that there were sufficient data to account for the non-normality of data and provide for interpretation of low communalities in the solution. Moreover, in order to establish that our solution matched theoretical division of the leadership questionnaire, we dropped the eigenvalue criterion in favor of subjective criterion of fixed factors through the theory. Three factor were allowed and they fairly followed the constructed sections of the questionnaire namely authoritarian leadership, democratic leadership and Laissez-Faire leadership styles. Whereas, to extract the components, principal component analysis was implied in SPSS 22 using Varimax rotation to ensure orthogonality. We also ran factor analysis on the entire sections of PLS and PsyCap and the underlying structure was confirmed again- though with negligible anomalies. This, nonetheless, showed that our instrument returned highly valid results.

The factor analysis on the PLS scale gave three factors for authoritative, democratic and Laissez-Fiare leadership styles as per theory. Questions 1, 4, 7, 10, 13 and 17 comprised factor one for authoritative styles, questions 2, 5, 8, 11, 14 and 16 formed the factor of democratic leadership and the rest of the 6 questions constituted the Laissez-Faire style. The results of the factor analysis can be seen in table 07 in the appendixes section.

4.3 Regression Analyses

In our case, most of the R^2 appeared to be small values. The reasons that can account for this is that there are only two variables in each regression analysis; a case when R^2 if often small. There is a strong case for interpreting R^2 with low values which vary across disciplines and research objectives. In some cases, large R^2 are very important, for example in medicines, but in others, like social sciences, it is very difficult to achieve high value of of R^2. This is due to the very nature of the predictability of patterns in data behavior (Frost, 2013). Further, low R^2 values are only problematic in making predictions (Frost, 2014). Thus, despite low R^2 the results can be interpreted if significant (Frost, 2013). Moreover, it is the effect size that is more important than R^2 in interpreting the solution (Cohen, 1998). In our case the effect size is large and we, thus, conclude that our analysis is significant and there does exist mediation among the three constructs.

4.3.1 Hypothesis 1

The results of regression offered statistical support for the all hypotheses. The first regression analysis was run between perceived leadership styles (PLS) and closeness in the advice network. PLS significantly predicted followers' scores for closeness in the

advice network: $R^2 = 0.121$, $F = 39.52$, $p = 0.000$ (bootstrapped at 2000 samples). Thus, we retained our first hypothesis that perceived leadership style affects followers' closeness in the advice network. The beta was positive and significant ($\beta = 0.247$; $p = 0.005$; SE = 0.201). Table 02 gives the results of the first regression analysis.

Table 2: Regression Analyses between WAN Closeness and PLS As Predictor

		Sum of Squares	Df	Mean Square	F	Sig.	R^2	Adj R^2	Beta
Dependent Variable: Advice Network Closeness; Predictor: Predictor: PLS	**Regression**	34.985	1	34.985	39.53	0			
	Residual	254.015	287	0.885					
	Total	289	288				0.121	0.118	
									0.302

These results imply that as the followers perceive a movement from authoritative to laissez-faire, the advice network closeness increases (as in indicated by a rising value of closeness). According to previous studies, followers are affected by the leadership styles (Bapuji & Crossan, 2004; Borgatti and Cross, 2003; Lazega et al., 2009; Lord & Maher, 1991). Here we find that this is also true for PLS which significantly affects followers' closeness in WANS. Walumbwa, Avolio, Gardner, Wernsing and Peterson (2008) have suggested that leadership styles cause a shift in the processing of information by the followers. Thus, one of the most probable reasons for improved WAN closeness through a perception of laissez-faire styles is that the perceived freedom results in a realization among the follower of a greater opportunity in making independent decisions (Bosiok et al., 2013). Such freedom in one's personal decision-making renders greater opportunity and need to consult with other actors in the network. On the contrary, when a follower perceives lesser authority in making independent decisions, the opportunity of consultation diminishes and as a result follower's closeness in the advice network deteriorates.

4.3.2 Hypothesis 2

The second hypothesis was also supported by the regression analysis. This regression was run between perceived leadership styles (PLS) and PsyCap of followers. It turned out that PLS significantly predicted PsyCap: $R^2 = 0.027$, $F = 4.009$, $p = 0.019$ (bootstrapped at 2000 samples). Thus, our second null hypothesis was also supported and we accept that PLS significantly determines PsyCap of followers. However, Beta was not significant ($\beta = 0.164$; $p = 0.528$; SE = 0.205), Nonetheless, we can rely on bootstrapping comfortably for the overall significance of the regression analysis even if Beta is not significant (Fox & Sanford, 2002). Table 03 summarizes the regression analysis:

Table 3: Regression Analyses between Psycap and PLS As Predictor

		Sum of Squares	Df	Mean Square	F	Sig.	R^2	Adj R^2	Beta
Dependent Variable: Tot PsyCap; Predictor: PLS	**Regression**	7.883	2	3.942	4.009	0.019	0.027	0.02	
	Residual	286.117	291	0.983					
	Total	294	293						0.13

Keeping in view the low coefficient of determination, we suggest that there is some bearing of PLS on PsyCap. The results indicate that as PLS moves from authoritative to laissez-faire, followers' positive psychological capital improves. These results are in line with the findings of Toor and Ofori (2008) and Walumbwa et al. (2008). This is because of the sense of low repercussions for followers' action, as a logical consequence, gives rise to followers' personal hope, efficacy, resilience and optimism. Similar findings are also reported by Walumbwa et al. (2008) where the authors have established that leadership behavior promotes positive psychological capacities and positive self-development.

4.3.3 Hypothesis 3

The third regression between PsyCap and followers' closeness in the advice network confirmed that followers' closeness in WANs regresses significantly upon PsyCap, $R^2 = 0.024$, $F = 3.853$, $p = 0.020$ (bootstrapped at 2000 samples). Thus, we accept our null hypothesis that PsyCap affects followers' closeness in the advice network. The Beta was negative and significant ($\beta = -0.156$; $p = 0.000$; SE = 0.051). See table 04 for regression analysis results:

Table 4: Regression Analyses between WAN Closeness and Psycap as Predictor

		Sum of Squares	Df	Mean Square	F	Sig.	R^2	Adj R^2	Beta
Dependent Variable: Advice Network Closeness; Predictor: Tot_Psycap	**Regression**	7.591	2	3.795	3.853	0.022	0.024	0.018	-0.205
	Residual	302.409	307	0.985					
	Total	310	309						

These results signify that followers with greater PsyCap acquired lesser WAN closeness. Ghazinour, Sharafi, Mahbadi, Forouhar and Riahi (2014) and Qiu, Yan and Lv (2015) have suggested that PsyCap results in higher knowledge by employees at a workplace as well as improved hope, efficacy, resilience and optimism which, in turn, results in

followers with greater positive psychological capital making independent decisions in workplace advice network closeness. This suggests that nodes in an advice network feel less inclined to ask for advice, instructions, information or directives on matter concerning workplace. This seems to be a natural outcome of improved PsyCap that allows nodes to work more independently as they are hopeful and confident about their actions, have the ability to make things work if they go wrong and are very positive about the outcomes. Consequently, PsyCap reduces advice seeking and thus has a negative beta.

4.3.4 Hypothesis 4: Mediation

There was sufficient statistical support for our mediational hypothesis in accordance with suggestions for mediation analysis put forth by Baron and Kenny (1986). PLS significantly affected both PsyCap and followers' closeness in the advice network. Similarly, PsyCap also significantly affected followers' closeness in the advice network. To test mediation further, we ran another regression analysis using both PLS and PsyCap as predictors and closeness and the outcome: $R^2 = 0.112$, $F = 9.613$, $p = 0.000$ ($\beta_{PLS} = 0.311$; $\beta_{PsyCap} = 0.\text{-}1.56$; $p_{PLS} = 0.289$; $p_{PsyCap} = 0.000$; $SE_{PLS} = 0.292$; $SE_{PLS} = 0.0.052$). The results of this analysis are given in table 05 below:

Table 5: Regression Analyses Between WAN Closeness and PLS and Psycap as Predictors

		Sum of Squares	Df	Mean Square	F	Sig.	R^2	Adj R^2	Beta
Dependent Variable: Advice Network Closeness; Predictors: PLS And Tot_Psycap	**Regression**	34.708	4	8.677	9.613	0	0.112	0.1	PLS= 0.289; Psycap -0.159
	Residual	275.292	305	0.903					
	Total	310	309						

As the overall association was significant, negative mediation by PsyCap between PLS and followers' closeness in the advice network is present. As the analyses were bootstrapped at 2000 samples, the mediation thus calculated it statistically significant (Fox & Sanford, 2002). Therefore, we retain the null hypothesis that there does exist mediation by PsyCap between PLS-closeness relationships.

5. Conclusion

This paper extends the philosophy of social exchange theory which states that individuals influence the groups they are part of and groups, in turn, influence them. In order to measure this influence, we opted social networking paradigms in the sphere of workplace advice network. The objective of the study was to explore if positive psychological capital mediated the relationship between perceived leadership styles (PLS) and followers' closeness in the advice network. Advice accounts for sharing of instructions, information, knowledge, directions and orders etc. Positive psychological capital (PsyCap) refers to four elemental characteristics in people: hope, efficacy, resilience and

optimism. Whereas, perceived leadership styles on the other hand is the follower's perception of the style of his leader. On the other hand, the followers' closeness refers to their geodesic distance from the other nodes and implies the pace of the flow of advice.

Previous studies have suggested that actors' status influences the position they acquire in a social network (Lazega et al., 2009). Hence, leadership styles strongly affect behaviors and outcomes of followers (Den Hartog & Koopman, 2011). The effect of leadership as an important determinant of the flow of advice in a workplace has been reported by Lazega et al. (2009). However, no study has as yet attempted to explore the effect of perceived leadership styles on the position of actors in a WAN. Conceptually, contrary to conventional literature on leadership, the implicit leadership theory tells that every follower may perceive an entirely different leadership style from that of his colleague (Ensari & Murphy, 2003; Lord & Maher, 1993; Rosch, 1978; Schyns & Schilling, 2010).

.PsyCap, on the other hand, is a relatively new area of study that has been reported to improve workplace environment through individual and organizational performances (Luthans et al., 2004; Luthans, 2002; Luthans & Youssef, 2004). Various previous studies have hinted upon the social content of PsyCap in organizational relationship development including improvement of work and ethical environment (Golparvar & Azarmonabadi, 2014), employee social attitudes and their appropriateness (Larson, Norma, Hughes, & Avey, 2013) and citizenship behavior (Dirzyte et al., 2013; Shahnawaz & Jafri, 2009). So, theoretically WAN being a social system should be affected by PsyCap, which should have influenced the network closeness centrality of employees.

In line with theoretically considerations, four hypotheses were established through the literature review: (1) perceived leadership style affects the followers' closeness in an advice network; (2) perceived leadership style affects the positive psychological capital of followers, (3) positive psychological capital of followers improves their closeness in an advice network and (4) positive psychological capital plays a mediating role between perceived leadership style and followers' closeness in an advice network. Categorical Regression Analysis (CATREG) was used to test the hypotheses as the data failed to meet the assumptions of normality and linearity.

The data were collected using a self-administered questionnaire developed with three constructs. The first part related to workplace advice network data which was constructed using a sociometric matrix. The second part of the data was about the perceived leadership styles and for this part the 18-item questionnaire was adopted from Northouse (2011). The original instrument measured self-leadership styles in terms of authoritative, democratic and laissez-faire leadership styles, and not the perceived leadership styles. As we distributed the questionnaire among followers and also changed the response categories from 5 to 7, there was a need to test if the instrument remained valid. A factor analysis confirmed that the instrument still measured the construct we intended to. The final part of the 12-item questionnaire measured total psychological capital and was borrowed form Luthans et al. (2007).

As the network data required 100% response rate, we had to design an approach compatible with the general conventions for data collection in any research. We decided to randomly select 15 workplace situations with somewhere between 20 to 25 employees in a bounded network. Small organizations were, thus, our target and the consequent

sample-size was 319 cases. The data collected on advice network were entered into Ucinet 6 to calculate closeness, which was then fed in SPSS 22 with data of the other parts of the questionnaire. Finally, three measures were arrived for scores for PLS, PsyCap and Closeness. The results confirmed that PsyCap mediates the PLS-closeness relationship in a workplace advice network.

6. Limitations of the Study

Though the overall results were satisfactory, low Cronbach's alpha requires that more groups are needed to be studied for improved reliability of data. Moreover, the study only used the total PsyCap measure to explore its mediation in the relationship between PLS and WAN closeness, the impact of individual components on WAN's closeness remains unexplored. Lastly, the study has primarily taken place in the target population of Pakistan, the results from other region and countries may further validate the results.

7. Future Directions

Since the meaning of advice is comprehensive further studies into knowledge sharing, flow instruction and directions may be carried out to further the field of knowledge. Moreover, the impact of individual components of PsyCap including hope, self-efficacy, resilience and optimism, on WAN closeness may also be studied to see if they differ from the total or if any one of them behaves different from the others.

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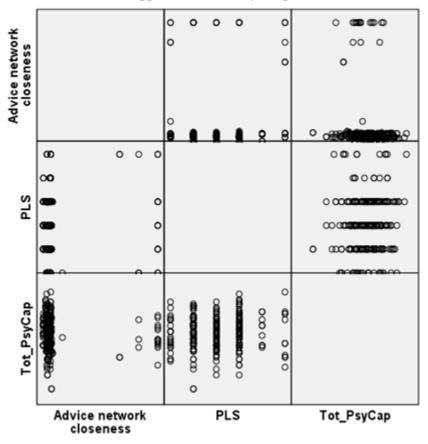
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Appendixes

Appendix 1: Normality Test

Table 6: Tests of Normality						
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Advice network degree	0.181	302	0	0.926	302	0
Advice network betweenness	0.282	302	0	0.645	302	0
Advice network closeness	0.468	302	0	0.348	302	0
PLS	0.178	302	0	0.911	302	0
Total PsyCap	0.06	302	0.01	0.987	302	0.007
a Lilliefors Significance Correction						

Appendix 2: Linearity Graphs

Figure 1: Linearity Graphs

Appendix 3: Factor Analysis- Complete Questionnaire

	Psycap	Authoritarian Leadership Style	Democratic Leadership Style	Laissez-Faire Leadership Style	Communalities
Table 7: Rotated Component Matrix					
PLS01		0.512			0.304
PLS02			0.576		0.365
PLS03				0.907	0.83
PLS04		0.613			0.452
PLS05		0.335	0.416		0.343
PLS06			-0.515	0.475	0.51
PLS07		0.664			0.468
PLS08			0.571		0.417
PLS09				0.464	0.252
PLS010		0.844			0.785
PLS011			0.544		0.305
PLS012			-0.443	0.314	0.337
PLS013		0.844			0.785
PLS014			0.407		0.204
PLS015		0.378	-0.422	0.348	0.45
PLS016		0.384			0.234
PLS017			0.475		0.226
PLS018				0.907	0.83
PsyCap_1	0.366		0.353		0.305
PsyCap_2	0.521				0.28
PsyCap_3	0.419				0.278
PsyCap_4	0.439				0.211
PsyCap_5	0.41				0.433
PsyCap_6	0.378				0.316
PsyCap_7	0.563				0.33
PsyCap_8	0.536				0.324
PsyCap_9	0.57				0.375
PsyCap_10	0.506				0.308
PsyCap_11	0.604				0.383
PsyCap_12	0.491				0.259
Principal Component Analysis; Varimax Rotation; 5 Iterations.					