

Linking Social Exchange Relations and Creativity through Mediation of Feeling of Energy: An Evidence from IT Firms

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Abstract

This study was aimed to investigate the dynamic role of social exchange relations and energy as an impetus for creative work involvement of IT professionals. One hundred and seventy five employees and sixty four team leaders were inquired at two points of time. At the first instance they were inquired for the perception of social exchange relations; and at the second instance, for energy and creativity. Analysis through structural equation modeling confirmed that social exchange relations (supervisory and coworker support) positively predict employees' feeling of energy which results in increased level of creative work involvement. This study highlights the significance of social exchange relations by focusing on the energy and creative involvement as an outcome. This study gives a new direction to the social exchange relation and its possible contribution at work. Its results prove that social exchange relations foster energy and lead to an increased level of creative involvement in IT firms. Implications and future directions for researchers are also given.

Keywords: creativity, involvement, energy, supervisory support, co-worker support, IT

1. Introduction

Organizations of today compete on the basis of productivity and creativity of their human resource (Carmeli & Schaubroeck, 2007; Wang, 2016). Creativity "...the production of novel and useful ideas by an individual or small group of individuals working together" being the competing force has been emphasized both on individual and organizational levels (Amabile, 1997; Mumford, Scott, Gaddis, & Strange, 2002). Previous literature has witnessed that creativity has been measured as an

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outcome: creative performance (e.g. Jing, 1998; Madjar, Oldham, & Pratt, 2002; Shalley & Perry-Smith, 2001; Tierney & Farmer, 2002), but employee creative involvement (CI) "... the extent to which an employee engages his or her time, effort and resources in creative process associated with work" has not been given due importance (Atwater & Carmeli, 2009; Carmeli & Schaubroeck, 2007).

CI is important as it becomes the basis for innovation and creative performance (Carmeli & Schaubroeck, 2007; Mumford et al., 2002), but how and when employees get involved creatively is unknown (Atwater & Carmeli, 2009). While looking at the factors that influence employees' creative attitudes Ekvall (1996) commented that creativity requires high energy, continuous efforts which should be backed by supportive and reassuring environment. Supportive environment should always hold culture of support and favors from all the parties i.e. organization, supervisor/s and peers (Ahmed, Ismail, Amin, & Nawaz, 2013).

These social exchange relations have been noticed to have many positive outcomes e.g. job involvement (Cheng, 2011; Rhoades & Eisenberger, 2002), entrepreneurial behavior (Zampetakis, Beldekos, & Moustakis, 2009), innovative behavior (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001), but its link with creative involvement is missing (Atwater & Carmeli, 2009).

Furthermore, the previous studies have linked only one dimension of social exchange e.g. organizational support (e.g. Eisenberger et al., 2001; Zampetakis et al., 2009), or leader-member exchange (Atwater & Carmeli, 2009; Wang, 2016; Zhao, 2015), but none of them has focused on other social exchange relations like social support (i.e. supervisory support and coworker support). Furthermore, there is a dearth of literature linking social support with either creativity or creative involvement as (Atwater & Carmeli, 2009) pointed that "...possible way is to more carefully draw upon research on high-quality interpersonal relationships at work" and "...more studies are needed to fully understand the complex relationship between leadership and creativity". (Benton, 2013) also values the role of social interaction in enhancing the creativity and believes that in social settings individuals' interaction with fellow beings work as a source of capital, which may offer returns in shape of creativity.

Cheung (2014) called social exchange as a way to embed employees to the workplace, offering creativity as an outcome. (Zivnuska, Kacmar, & Valle, 2017) valued the role of social exchange in increasing employees' developmental and promotional focus. They argued that social exchange foster new ideas and growth. Thus this research endeavor entails the existing gap and attempts to uncover the relation between social support (here supervisor and coworker support) variables and creative involvement.

Both supervisory support and coworker support are important ingredients of supportive environment at work (Ahmed, Ismail, Amin, Ramzan, & Khan, 2012). Supervisory and coworker support is defined as the perception of employees that their supervisor or coworkers value their contributions and care for their wellbeing.

Creativity has been noticed to be the outcomes of some specific offerings both from the individual (e.g. personality, attitudes) (Zampetakis et al., 2009) and organization (culture, environment, feedback, and rewards) (Oldham & Cummings, 1996; Stokols, Clitheroe, & Zmuidzinas, 2002) When employees feel that the supervisor and coworkers are supportive, he/she feels that the environment is supportive for creativity and he/she will perform creatively (Wang, Xue, & Su, 2010).

This association can be explained by the social exchange theory (Blau, 1964), and norm of reciprocity (Gouldner, 1960). Social exchange theory assumes that exchange relations exist between interacting parties, where one party favors the other which creates a reciprocity norm for the recipient party. It is further assumed that the reciprocal favors always create an everlasting exchange process thus benefiting both the parties (Ahmed et al., 2012; Blau, 1964). This study also assumes that support offered by supervisor and coworkers creates positive perception in the minds of employees and they reciprocate it with the creative involvement.

Kahrobaei and Mortazavi (2016) further commented that the mechanism between social exchange relations and creative involvement should further be explained. Valuing this call, this study entailed the role of energy “.....the feeling that a person is capable of and eager to engage in a particular behavior or undertake a task” (Dutton & Heaphy,

2003), in explaining the association of social support and creative involvement. Atwater and Carmeli (2009) commented that provision of support and better exchange relations make employee reciprocate with something positive and valuable, thus energize them.

The one possible way to reciprocate such favor is through the creativity and creative involvement. Ahmed, Ismail, and Amin (2014) also valued the role of energy and employee zeal in predicting the employee creative attitude. This study also values this association and assumes that social support will energize the employees to work creatively and depicts higher creative involvement. Thus this study covers two major considerations (i) the role of social support (social and coworker support) in energizing employees and (ii) role of energy and social support in employee creative involvement.

Furthermore, this study entailed the investigation of IT firms, as they are one of the most knowledge intensive firms and work on the principle of creativity. IT firms are involved in day to day processes and techniques of innovation (Anxo & Storrie, 2001). The nature of such firms is intangible, heterogeneous and perishable (Hislop, 2005; Jong & Hartog, 2007), thus require continuous and creative improvements (Anxo & Storrie, 2001) which can only be achieved by employees' creative behavior and outlook (Jong & Hartog, 2007). Thus studying the antecedents of employee creative involvement is a valuable contribution in such firms.

2. Theoretical Triangulation

These proposed associations are investigated by using theoretical triangulation (three imperative theories). Theoretical triangulation is useful as it helps in using various lenses to investigate the problem (Altrichter, Feldman, Posch, & Somekh, 2008; Denzin, 1978; Thurmond, 2001).

According to Banik (1993) in such form of triangulation both competing and supporting theories can be used, which enables researchers to get echoing and broader understanding of the problem. The first theory used is componential theory of creativity of Amabile (1983), which entails that creativity is function of personality and cognition, where intrinsic motivation plays a pivotal role in enhancing the creativity.

This study entails intrinsic motivation and cognition as the source of creativity, as social exchange relations have been noticed to be the source of intrinsic motivation (Amabile, 1997; Atwater & Carmeli, 2009). Secondly, this study focused on supervisor and coworker support as the social exchange relation, as they can foster the level of energy and creative involvement (Dutton & Heaphy, 2003).

Finally, it entails Quinn and Dutton's (2005) theory of coordination which proposes that interaction among people increases their vitality and energy and makes them work differently/creatively. Following section covers the literary background of the proposed association followed by hypotheses development and methodological stance.

3. Literary Background and Hypotheses Development

3.1. Supervisory Support, Coworker Support and Creative Involvement

Creativity is believed to be the outcome of a supportive environment (Ekvall, 1996), where support and favors from all of the interacting parties determine the perception of supportive environment (Ahmed et al., 2012; Stokols et al., 2002). In contemporary working environment firms tempt to be creative, which is largely dependent upon employees' creativity which is an offshoot of leader and organizational support or creativity. Thus, it is the organization and leadership that can foster creativity in organization (Ghosh, 2015).

Meta-analysis of Liu, Jian, Shalley, Keem, and Zhou (2016) also found that out of major determinants of creativity, social exchange and social support is one of the most important and significant. When employee will feel that the supervisor and coworker are supportive, he/she will feel that the environment is supportive for creativity and he/she will perform creatively (Wang et al., 2010). Stokols et al. (2002) and Chen, Yien, and Huang (2011) also noticed same results in the USA and Taiwan.

Previous studies focused on creativity but most of them did not emphasize on creative involvement instead. This study proposes that when employees feel that they have supportive environment in shape of supervisor and coworker support, they reciprocate it with positive and increased involvement towards creativity and creative processes. This

notion can be explained by the social exchange theory (Blau, 1964), and norm of reciprocity (Gouldner, 1960).

Both Social exchange theory and norm of reciprocity assumes that there exists social exchange between interacting parties, where favor and support from one party in-debts the recipient to return the favor positively. It is further assumed that the reciprocal favors always create an everlasting exchange process thus benefiting both the parties (Ahmed et al., 2012; Blau, 1964). Theory of coordination presented by Quinn and Dutton (2005) also states the creativity is a "...interplay of speech, acts and energy" (p. 79), where positive engagement of people increases their affection, autonomy and support perception and helps them work creatively.

Liu et al. (2016) meta-analysis also proved that social exchange relations (explained through social exchange theory, organizational support theory, leader-member exchange theory) are important predictors of workplace creativity. Thus it could be useful to infer that social relations (e.g. social and coworker support) are important predictors of creativity. While the linking role of social exchange at work, Ahmed et al. (2014) reported a positive relation between social exchange and employee creativity. Thus this study also entails social exchange relations as the cause of creative involvement, which is hypothesized below:

H1: Supervisory Support can positively predict employee creative involvement

H2: Coworker Support can positively predict employee creative involvement

3.2. Supervisory Support, Co-worker Support, and Feeling of Energy

Quinn and Dutton's (2005) theory of coordination explains the association of interpersonal relations and energy, as it is described "...interplay of speech, acts and energy" (Quinn, 2007, p. 79). This theory proposes that positive engagement among people creates feelings of belongingness, autonomy, affection and competence which lead to an increased level of energy (Quinn & Dutton, 2005).

Quinn (2007) further commented that social relations can positively influence the level of energy, as these relations bring zest and vitality, which is the basis for creativity and energy. Atwater and Carmeli

(2009) also commented that level of energy is exceptional when the interaction is regular. This notion can be applied to the interactional association of the employee with supervisor and coworker.

Provision of support from supervisor and coworkers will result in an increased level of affection, belongingness and energy. This notion can also be explained with social exchange theory of Blau (1964), which proposes that support from supervisor and employees will create a moral binding between the parties and the recipient will reciprocate this support with positive outcomes. Energy can be a reciprocal outcome of support offered by supervisor or coworkers. This association has not been investigated in past but Cattani and Ferriani (2008) proposed such association by commenting that “.....there has been virtually no systematic theoretical work probing the social network foundations of individual creativity” (p. 838). Thus following relations are hypothesized:

H3: Supervisory support can positively predict employee feeling of energy

H4: Coworker support can positively predict employee feeling of energy

3.3. Feeling of Energy and Creative Involvement

Creativity is found to be a function of time and energy (Amabile, 1983). Welbourne, Andrews, and Andrews (2005) also captured the significance of energy by commenting “....motivation at work is really about employee energy” (p. 56). Association of energy and creativity is mandated by various creativity models e.g. Isen and fellows’ “impact of positive effects on cognitive abilities and activities model” (Isen & Nowicki, 1987; Isen, 1999); Broaden-and-Build theory of positive emotions of Fredrickson (2003); and Socially embedded model of thriving at work (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005).

Isen and Nowicki (1987) presume that presence of positive affects influence the cognition as they commented that “positive affect gives rise to enlarged cognitive context.....” (p.222). Further investigation proves that positive affect encourages resourceful, flexible and open cognitive processes, which becomes basis for creativity (Isen, 1999).

Amabile, Barsade, Mueller, and Staw (2005) further strengthened the view by commenting that positive affect brings cognitive variation and broaden cognitive association. Feeling of energy is considered as a positive affect which offers positive returns or cognition in shape of

creativity and creative involvement (Atwater & Carmeli, 2009). Similarly, Broaden-and-Build model of positive emotions also suggests that positive emotions offer increased creativity as they reduce reaction time, increase the response propensity, and offers novel ways to reach to a conclusion (Fredrickson, 2003).

Oldham and Cummings (1996) also commented that individual's positive emotions and willingness can increase the excitement for creative performance of a task, thus increases their involvement towards creative work. Liu et al. (2016) meta-analysis attempted to find out the antecedents of creativity and found that literature proves the motivational factors as the prime sources of creativity. Atwater and Carmeli (2009) and Kark and Carmeli (2009) also proved this association empirically. Ahmed et al. (2014) also proved the association through empirical investigation and found that its energy that makes employees work creatively, thus increases their creative involvement. Both the previous models help us conclude that energy is vital for creativity and creative involvement.

Yet, Spreitzer et al. (2005) socially embedded model of thriving advocates that there are always some enablers (thriving enablers) which affects the psychological states of individuals. These enablers stem from the social associations and bindings among people, as these interactions create energy (Dutton & Heaphy, 2003). These relations become the basis for "zest or vitality", which is the basis for energy (Miller & Stiver, 1997).

Atwater and Carmeli (2009) commented that the level of energy is exceptional when the interactions are frequent and regular. Quinn (2007) further strengthened this view by emphasizing the role of social interactions as energizer, enabler, zeal and zest in predicting the creativity. Cattani and Ferriani (2008) also gauged the issue of creativity and emphasized on the positive social interactions. The above mentioned literature proves that energy works as an affect or zest in predicting creativity, thus we hypothesized following relation:

H5: Feeling of energy positively predicts employees' creative involvement

As discussed earlier both supervisor and coworker support can positively predict creative involvement (H1 & H2) and feeling of energy (H3 and H4), while feeling of energy also predicts creative involvement

(H5), it can be inferred that feeling of energy can better explain the existing association as a mediator. Thus following mediational hypotheses are assumed:

H6: Feeling of energy mediates the relationship of supervisory support and creative involvement

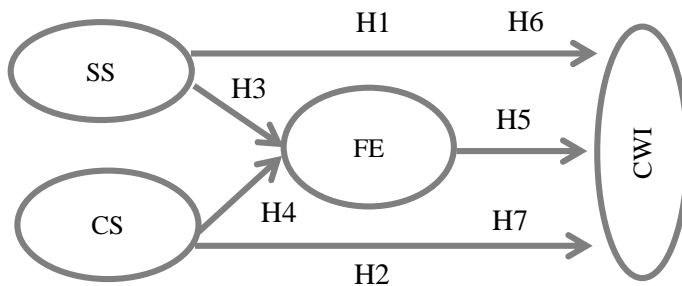
H7: Feeling of energy mediates the relationship of coworker support and creative involvement

4. Methodology

4.1. Respondents and Data Collection

This study entails the investigation of thirty two IT firms, located in Lahore, Pakistan; covering sixty four teams (two teams from each firm). The companies were medium sized firms employing 35-55 employees.

Figure-1: Model of the Study



SS=Supervisory Support, **CS**=Coworker/Peer Support

FE=Feeling of Energy, **CWI**=Creative Work Involvement

These teams were led by a team-leader and employed three hundred and thirty nine employees. The selection of team was done with the help of HR department of respective firm. An approval letter was taken from respective authorities before investigation. These teams employed individuals with varying job titles and designations.

Participants were requested to complete research survey at two points of time (T-1= May, 2012 and T-2=August). Employees were inquired for their perception of supervisor and coworker support at T-1,

while at T-2 employees responded for their feeling of energy while team-leaders responded for employee creative work involvement.

Self-administrated questionnaire were used as a medium of data collection at both phases of the study. An attempt was made to cover all of the teams. From each team three employees were selected using simple random sampling techniques, thus one hundred and ninety two questionnaire were distributed to selected employees at T-1, out of which only one hundred and eighty nine completely filled questionnaires were received back. These questionnaires were coded with the help of respective HR department and saved for the next phase of study.

At T-2, only those employees were contacted who have already filled the questionnaire at T-1, this time only one hundred seventy nine questionnaires were received back as ten employees were either at leave or absent from duty. Furthermore four questionnaires were either incomplete or carelessly filled, thus considered redundant. Finally, we had one hundred and seventy five completely filled questionnaires for both T-1 and T-2.

Majority of the respondents were male (two hundred and thirteen), while the rest were female (fifty nine), with the average age of 32.56 years (S.D., 8.12), and average tenure of 5.30 years (SD, 2.65). Majority of the respondents were at lower level jobs (one hundred forty two, 59.41%), while rest were linked with middle level jobs (ninety seven, 40.59%). Forty two percent of the respondents held bachelors' degree while only fourteen percent had masters' degree or above, while the rest were having certification of lower degrees.

4.2. Measures

The measures of supervisory and coworker support were operationalized from three item scale of Yoon and Lim (1999), for instance, "my supervisor/co-workers can be relied upon when things get tough on my job". It was noticed as suitable measure with acceptable value of internal consistency ($\alpha=0.70$ and 0.78 respectively). Feeling of energy was operationalized with the eight items scale of Atwater and Carmeli (2009) and its exemplary items include: "The work in this organization gives me positive energy". It was found to be a good measure with high reliability ($\alpha =0.97$).

Tierney, Farmer, and Graen (1999) nine item scale was used to operationalize creativity at work. It was also useful scale with higher internal consistency ($\alpha=0.89$). It included items like: “..... demonstrated originality at work”. All the scales were operationalized at five point scale ranging from 1-strongly disagree to 5-strongly agree.

4.3. Control Variables

Previous studies showed that various demographical variables have significant influence on creativity, e.g. Atwater and Carmeli (2009) commented that gender, education and type of job significantly influence the level of creativity and creative involvement. Oldham and Cummings (1996) also commented that tenure can significantly influence individual's creativity. Thus all the above mentioned variables were controlled in the process of inquiry.

4.4. Data Analysis

In order to investigate the hypothesized associations we used structural equation modeling, as it can test both confirmatory analysis and hypotheses testing simultaneously (Hair, Black, Babin, Anderson, & Tatham, 2006; Nunnally, 1978).

We used goodness of fit indices described by Hair et al. (2006) which includes assessment of chi-square, GFI, AGFI, CFI, NFI, NNFI and RMSEA (see table-3 for their standard values).

4.5. Avoidance of Common Method Biasness

To avoid the issue of common method variance data was collected at two points of time and from two respondent groups. Furthermore, instructions of Podsakoff, MacKenzie, Lee and Podsakoff (2003) were used to investigate the said issue (see annexure-A for details).

5. Results

5.1. Descriptive Statistics

Table-1 contains the information about descriptive statistics (Mean, standard deviation), reliability (Cronbach's alpha) and correlational coefficients. It is evident that all the values of internal consistency fall in acceptable limits (>0.70) Hair et al. (2006); Nunnally (1978). A look at the bivariate correlation shows that supervisor and coworker support are positively correlated with both feeling of energy ($r=0.585$, $p<0.001$; $r=0.593$, $p<0.001$ respectively) and creative work involvement ($r=0.446$,

$p < 0.05$; $r = 0.416$, $p < 0.05$ respectively), thus support our hypothesized association (H1-H4). It is also evident that supervisory support is better predictor of creative involvement, but coworker support can better predict energy. These relations are further investigated in the following sections.

5.2. Preliminary Analysis

Before testing hypothesized relations through structural models, we sought to measure the construct validity of the constructs (all the measures given in annexure-B). A measurement model was analyzed through confirmatory factor analysis shown in table 2, which offered factor loading and construct validity as an output (Atwater & Carmeli, 2009). The model showed acceptable fitness where all model fitness indices were much above the standard ($\chi^2 = 765$, $df = 309$, $GFI = 0.976$, $AGFI = 0.923$, $CFI = 0.965$, $TLI = 0.952$, $IFI = 0.942$, $RMSEA = 0.03$). Factor loadings for all of the items were acceptable (0.69-0.91, $p < 0.05$).

Table 1

Descriptive Statistics (Mean, Standard Deviation, and Correlation)

	Mean	S.d.	1	2	3	4
1 Supervisor support	3.78	1.18	(0.750)			
2 Coworker support	3.99	0.98	0.135**	(0.734)		
3 Feeling of energy	4.59	1.44	0.585*	0.593*	(0.889)	
4 Creative involvement	4.33	1.39	0.446**	0.416**	0.488*	(0.921)

$N = 272$, $p < 0.001^*$, $p < 0.05^{**}$. *S.d.* = Standard Deviation, *a in ()*

The next step was to analyze the measures for its construct (convergent & discriminant) validity. All the scales were found to be good at both convergent validity ($AVE > 0.50$) (Hair et al., 2006) and discriminant validity (as the correlation of all the constructs were 0.12-0.29 < 0.85) (Kline, 2005). This helped us proceed further with model testing and path analysis.

5.3. Path analysis

Structural equation modeling (SEM) was applied to investigate the hypothesized relations.

SEM is recommended because of its ability to use both factor analysis and multiple regressions instantaneously (Hair, et al., 2006). Model fitness indices recommended by Hair et al. (2006) were used as

the standard, presented in table-3. It is evident that the structural model was perfectly fit, thus we proceeded further with path analysis.

Results of hypotheses testing (path analysis) are shown in Table-4 and Figure-2. It is evident that the model is making significant contribution in creative work involvement ($r^2=0.521$, $p=0.000<0.001$). Both figure-2 and table-4 represent the standardized path coefficients. It is evident that both H1 and H2 are supported as supervisor support (SS) and coworker support (CS) positively predicts creative work involvement (CWI) ($\beta=0.20$, $p<0.05$; $\beta=0.19$, $p<0.05$).

Further investigation shows that both SS and CS also predicts the feeling of energy ($\beta=0.45$, $p<0.001$; $\beta=0.49$, $p<0.001$), which ultimately predicts CWI ($\beta=0.51$, $p<0.001$), helping us conclude that all other hypotheses are also supported (H3-H5). These results supported our assumptions that social exchange relations can foster energy and creative work involvement.

This study also hypothesized mediational role of FE in explaining the relationships of social exchange (SS & CS) and CWI (H6 & H7 respectively). All these mediational associations were also tested through SEM (Hair et al., 2006). Table-5 shows the results for mediational analysis, where it is evident that indirect effects of SS & CS over CWI are greater than the direct effects ($0.23>0.20$, and $0.25>0.19$ respectively).

Furthermore, all the paths are significant. Thus both H6 and H7 are supported as FE acts as a partial mediator in the relationship of social exchange relations and CWI (Ahmed et al., 2013; Hair et al., 2006).

6. Discussion

This study covers some unexplored dimension of social exchange and creativity relation. The foremost is to have a look at the unexplored link of social exchange relations (supervisor & coworker support) and creative involvement. Furthermore this study aimed at looking the mediational role of feeling of energy in explaining the association of social exchange and CWI. Previous studies like Atwater and Carmeli (2009), and Cattani and Ferriani (2008) highlighted the need of investigation of social relations at work and their role in creativity and creative involvement.

Table 2
Confirmatory Factor Analysis

	Standardized Factor Loading	Composite Reliability	Average variance extracted	Standardized Factor Loading	Composite Reliability	Average variance extracted
Feeling of Energy						
FE1	0.83			CWI1	0.73	
FE2	0.77			CWI2	0.77	
FE3	0.73			CWI3	0.83	0.79
FE4	0.69			CWI4	0.89	
FE5	0.74	0.84	0.67	CWI5	0.90	0.65
FE6	0.79			CWI6	0.78	
FE7	0.88			CWI7	0.77	
FE8	0.89			CWI8	0.88	
				CWI9	0.90	
Supervisor Support						
SS1	0.83	0.82	0.66	Coworker Support		
SS2	0.90			CS1	0.85	0.71
SS3	0.91			CS2	0.85	
				CS3	0.90	

Table 3
Structural Equation Model

	Standard value	Direct effect
χ^2		765.01 (df=309)
χ^2/df	≤ 3.00	2.47
$\Delta \chi^2$		-
GFI	≥ 0.90	0.976
AGFI	≥ 0.80	0.923
CFI	≥ 0.90	0.965
NFI	≥ 0.90	0.960
NNFI	≥ 0.90	0.952
RMSEA	≤ 0.80	0.030

Figure 2: Structural Model

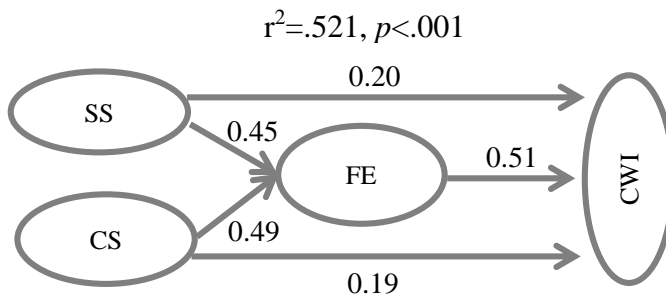


Table 4
Hypotheses Testing

Hypotheses	Effects	Standardized Regression weights	C.R.	p	Result
H1	SS→CWI	0.200	3.790	**	Supported
H2	CS→CWI	0.190	5.358	**	Supported
H3	SS→FE	0.450	4.993	*	Supported
H4	CS→FE	0.490	4.303	*	Supported
H5	FE→CWI	0.510	3.450	*	Supported

** $p < 0.05$, * $p < 0.001$

Table 5
Supervisor/Coworker Support, Feeling of Energy, and Creative Work Involvement

	Direct effect	Indirect effect	Total effect
SS→CWI	0.20	0.23	0.43
CS→CWI	0.19	0.25	0.44

The results of current study confirm our assumption that social exchange relations foster creativity (creative involvement in this study), these results are consistent with previous studies on exchange relation and creativity association e.g. Atwater and Carmeli (2009); Cattani and Ferriani (2008); Carmeli and Schaubroeck (2007); Chen et al. (2011); Mumford et al. (2002); Oldham and Cummings (1996); Stokols et al. (2002); Wang et al. (2010). All these studies have witnessed the significant role of social exchange relations and creativity, but none of them focused on social support (supervisor & coworker support) in predicting creative involvement.

This research also concluded that social exchange relations actually work as the source of energy (feeling of energy), which is the basic premise of “effects and cognitive abilities model” of Isen and Nowicki (1987); Broaden-and-Build theory of positive emotions of Fredrickson (2003); and socially embedded model of thriving at work presented by Spreitzer et al. (2005). These findings also strengthened the theoretical perspective of Quinn’s coordination theory (2007), which proposes that social coordination and alignment work magically in predicting creativity at work.

Furthermore, these results strengthened the theoretical stance of social exchange theory, which proposes that presence of exchange relation in-debts recipient to reciprocate favorably. Thus, this study helps us investigate the issue of social relations and creativity with the lenses of theoretical triangulation. All the theories work well to explain the association of social support and creativity (Altrichter et al., 2008; Thurmond, 2001).

Here it is evident that when employees feel that they are supported by their supervisor and coworker they depict high involvement in creative tasks. This study also offered a distinctive (mediational) role of

energy in the relationship of exchange relations and creative outcomes. This relation has not largely been investigated in the past studies.

This study also adds value by offering an insight of the Pakistani organizations; where it is witnessed that culture is traditional, employees have no opportunities for personal growth and development and are not largely encouraged to work creatively Hussain and Yousaf (2011). But a look at the IT industry, Shahzad, Iqbal, and Gulzar (2013) reported that IT sector has decentralized structure, where teams form the operational units and having modernized techniques and thinking styles, which enables employees to work well.

The determinants of innovation and creativity, Hassan, Shaukat, Shakeel, and Imran (2012) valued the worth of organizational culture (i.e. mission, values, learning & empowerment, and employee trust) as the important forces that foster creativity in Pakistani organizations.

As previous studies have worked on culture and its values, but a gap was left unattended covering the role of support at work (supportive culture) and its influence on creativity. This study adds value and attempts to provide an evidence for that unattended area. Results of current study also enlightens the existing body of knowledge by highlighting the value of social relations at IT firms and its influence on employees' creativity, the most important parameter of performance in the said sector.

7. Implications, Limitations and Future Directions

As the study covered some new and unexplored dimensions it offers some useful implications of the study. One of the most important implications of this study is to highlight the significance of social exchange relations in nurturing creativity at work. This study values the contribution of social exchange relations which could be exploited to win creative involvement of employees. Organizations can use social exchange relations to foster the creativity, which is the basis of strength in current organizations. This study proves that creativity is led by energy which is the prime outcome of social relations.

When social relations are strong, organizations will be rewarded with energized employee, which will ultimately increase the involvement of the employees in creative tasks. Along with some competitive offerings, this study is prone to some limitations. This study covers only IT firms but this study can be extended to other sectors. Another future

consideration could be to investigate the creative look at groups and organizations. Future studies could also investigate the link of social relations, creativity and entrepreneurial venturing (Zampetakis et al., 2009).

Another future direction could be to have a look at the role of organizational support (organization-employee exchange relation) and its role in nurturing creativity. Furthermore, personal characteristics are also important determinants of creativity and creative involvement (Atwater & Carmeli, 2009). Social exchange relations and creativity can also be linked with organizational learning culture as learning is the basis for creativity.

8. Conclusion and Contribution

This research offers good results to conclude the significance and link of variables of interest. It is evident from the results that social exchange relations are the prime force which can foster both energy and creative involvement of employees. These results prove that when organization is focusing on creativity and creative involvement of their employees a focus should be given to social exchange relations. When organization is able to foster the social links and bindings the creativity outcomes are obvious. This study also shows that how social exchange relations lead to creativity by focusing on the energy and its significance.

References

- Ahmed, I., Ismail, W. K. W., & Amin, S. A. (2014). Guanxi network and leader-member exchange: the impetus for employee creative involvement. *Asia-Pacific Journal of Business Administration*, 6(1), 64–77. doi: <https://doi.org/10.1108/APJB A-05-2013-0048>
- Ahmed, I., Ismail, W. K. W., Amin, S. M., & Nawaz, M. M. (2013). A social exchange perspective of individual guanxi network: evidence from Malaysian-Chinese employees. *Chinese Management Studies*, 7(1), 127–140. doi: <https://doi.org/10.1108/17506141311307640>
- Ahmed, I., Ismail, W. K. W., Amin, S. M., Ramzan, M., & Khan, M. K. (2012). Theorizing antecedents of Perceived Organizational Support: A literature review approach. *Middle-East Journal of Scientific Research*, 12(5), 692–698. doi: 10.5829/idosi.mejsr.2012.12.5.2579
- Altrichter, H., Feldman, A., Posch, P., & Somekh, B. (2008). *Teachers investigate their work; An introduction to action research across the professions*. (2nd edition ed.): Routledge.
- Amabile, T. M. (1983). *The social psychology of creativity*. New York: Springer-Verlag.
- Amabile, T. M. (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1), 39–58. doi:10.2307/41165921
- Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, 50, 367–403. doi: <https://doi.org/10.2189/asqu.2005.50.3.367>
- Anxo, D., & Storrie, D. (2001). *The Job Creation Potential of the Service Sector in Europe* (Vol. XXX): Luxembourg EC.
- Atwater, L., & Carmeli, A. (2009). Leader-member exchange, feelings of energy, and involvement in creative work. *The Leadership Quarterly*, 20(3), 264–275. doi: <https://doi.org/10.1016/j.leaqua.2007.07.009>
- Banik, B., J. . (1993). Applying triangulation in nursing research. *Applied Nursing Research*, 6(1), 47–52. doi: [https://doi.org/10.1016/S0897-1897\(05\)80042-4](https://doi.org/10.1016/S0897-1897(05)80042-4)
- Benton, R. A. (2013). Social Capital and work activity: autonomy, supervision, and creativity in interpersonal networks. In S.

- McDonald (Ed.), *Research in the Sociology of Work* (Vol. 24, pp. 269–293): Emerald Group Publishing Limited.
- Blau, P. M. (1964). *Exchange and Power in Social Life*. New York: Wiley.
- Carmeli, A., & Schaubroeck, J. (2007). The influence of leaders' and other referents' normative expectations on individual involvement in creative work. *The Leadership Quarterly*, *18*, 35–48.
- Cattani, G., & Ferriani, S. (2008). A core/periphery perspective on individual creative performance: Social networks and cinematic achievements in the hollywood film industry. *Organization Science*, *19*(6), 824–844. doi: <https://doi.org/10.1287/orsc.1070.0350>
- Chen, K.-H., Yien, J.-M., & Huang, C.-J. (2011). The perceived leader support behavior for subordinate's creativity: The moderating effects of trust. *Journal of Social Sciences*, *7*(2), 257–264.
- Cheng, C.-H. (2011). A study of critical factors of the job involvement for hotel employees—taking hotels in Taiwan as an example. *International Journal of Hospitality Management*, *30*(4), 990–996. doi: <https://doi.org/10.1016/j.ijhm.2011.03.001>
- Cheung, H.-H. (2014). The effect of social embeddedness on bloggers' creativity. *Online Information Review*, *38*(3), 399–416. doi: <https://doi.org/10.1108/OIR-06-2013-0144>
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: McGraw-Hill.
- Dutton, J. E., & Heaphy, E. D. (2003). The power of high-quality connections at work. . In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 263–278). San Francisco: Berrett-Koehler Publishers.
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D., & Rhoades, L. (2001). Reciprocation of perceived organizational support. *Journal of Applied Psychology*, *86*(1), 42–51. doi: <http://dx.doi.org/10.1037/0021-9010.86.1.42>
- Ekvall, G. (1996). Organizational climate for creativity and innovation. *European Journal of Work and Organizational Psychology*, *5*(1), 105–123. doi: <http://dx.doi.org/10.1080/13594329608414845>
- Fredrickson, B. L. (2003). The value of positive emotions. *American Scientist*, *91*, 220–225.

- Ghosh, K. (2015). Developing organizational creativity and innovation: Towards a model of self-leadership, employee creativity, creativity climate and workplace innovation orientation. *Management Research Review*, 38(11), 1126–1148. doi: <https://doi.org/10.1108/MRR-01-2014-0017>
- Gouldner, A. W. (1960). The Norm of Reciprocity: A preliminary statement. *American Sociological Review*, 25(2), 161–178. doi: 10.2307/2092623
- Hair, J. F. J., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis*. Upper Saddle River NJ: Pearson Prentice Hall.
- Hassan, M., Shaukat, S., Shakeel, M., & Imran, M. (2012). Interrelations between organizational culture, Innovation and employee performance: Evidence from banking sector of Pakistan. *Pakistan Journal of Social Sciences*, 32(2), 339–355.
- Hussain, T., & Yousaf, I. (2011). Organization culture and employees' satisfaction: A study in private sector of Pakistan. *Journal of Quality and Technology Management*, 7(2), 15–36.
- Isen, D., K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology*, 52, 1122–1131. doi: <http://dx.doi.org/10.1037/0022-3514.52.6.1122>
- Isen. (1999). Positive affect. . In T. Dalgleish & M. J. Power (Eds.), *Handbook of cognition and emotion* (pp. 521–539). New York: Wiley & Sons.
- Jing, Z. (1998). Feedback valence, feedback style, task autonomy, and achievement orientation: Interactive effects on creative performance. *Journal of Applied Psychology*, 83(2), 261–276. doi: <http://dx.doi.org/10.1037/0021-9010.83.2.261>
- Jong, J. P. J. d., & Hartog, D. N. D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), 41–64. doi: <https://doi.org/10.1108/14601060710720546>
- Kahrobaei, S., & Mortazavi, S. (2016). How leader-member exchange can uplift team's energy to increase creative work involvement. *Team Performance Management: An International Journal*, 22(1/2), 75–91. doi: <https://doi.org/10.1108/TPM-06-2015-0029>

- Kark, R., & Carmeli, A. (2009). Alive and creating: The mediating role of vitality in the relationship between psychological safety and creativework involvement. *Journal of Organizational Behavior*, *30*(6), 785–804. doi: 10.1002/job.571
- Kline, R. B. (2005). *Principles and Practice of Structural Equation Modelling*. New York: The Guilford Press.
- Liu, D., Jian, K., Shalley, C. E., Keem, S., & Zhou, J. (2016). Motivational mechanism of employee creativity: A meta-analytic examination and theoretical extension of the creativity literature. *Organizational Behavior and Human Decision Processes*, *137*, 236–263. doi: <https://doi.org/10.1016/j.obhdp.2016.08.001>
- Madjar, N., Oldham, G. R., & Pratt, M. G. (2002). There's no place like home? The contributions of work and nonwork creative support to employees' creative performance. *Academy of Management Journal*, *45*(4), 757–767. doi: 10.2307/3069309
- Miller, J. B., & Stiver, I. P. (1997). *The healing connection: How women form relationships in therapy and in life*. Boston: Beacon Press.
- 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. doi: [http://dx.doi.org/10.1016/S1048-9843\(02\)00158-3](http://dx.doi.org/10.1016/S1048-9843(02)00158-3)
- Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed ed.). New York: McGraw-Hill.
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, *39*(3), 607–634. doi: 10.2307/256657
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903. doi: <http://dx.doi.org/10.1037/0021-9010.88.5.879>
- Quinn, (2007). Energizing others in work connections. In J. E. Dutton & B. R. Ragins (Eds.), *Exploring positive relationships at work: Building a theoretical and research foundation* (pp. 73–90): Mahwah, NJ: Lawrence Erlbaum Associates.
- Quinn, & Dutton, J. E. (2005). Coordination as energy-in-conversation. *Academy of Management Review*, *30*(1), 36–57. doi: 10.5465/AMR.2005.15281422

- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature *Journal of Applied Psychology*, 87(4), 698–714.
- Shahzad, F., Iqbal, Z., & Gulzar, M. (2013). Impact of organizational culture on employees job performance: An empirical study of software houses in Pakistan. *Journal of Business Studies Quarterly*, 5(2), 56–64.
- Shalley, C. E., & Perry-Smith, J. E. (2001). Effects of Social-Psychological Factors on Creative Performance: The Role of Informational and Controlling Expected Evaluation and Modelling Experience. *Organization Behavior and Human Decision Processes*, 84(1), 1–22. doi: <https://doi.org/10.1006/obhd.2000.2918>
- Spreitzer, G., Sutcliffe, K., Dutton, J., Sonenshein, S., & Grant, A. M. (2005). A socially embedded model of thriving at work. *Organization Science*, 16(5), 537–549. doi: <https://doi.org/10.1287/orsc.1050.0153>
- Stokols, D., Clitheroe, C., & Zmuidzinas, M. (2002). Qualities of work environments that promote perceived support for creativity. *Creativity Research Journal*, 14(2), 137-147. doi: http://dx.doi.org/10.1207/S15326934CRJ1402_1
- Thurmond, A. V. (2001). The point of triangulation. *Journal of Nursing Scholarship*, 33(3), 253–258. doi: 10.1111/j.1547-5069.2001.00253.x
- Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: potential antecedents and relationship to creative performance. *Academy of Management Journal*, 45(6), 1137–1148. doi: 10.2307/3069429
- Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relations. *Personnel Psychology*, 52, 591–620. doi: 10.1111/j.1744-6570.1999.tb00173.x
- Wang, C.-J. (2016). Does leader-member exchange enhance performance in the hospitality industry?: The mediating roles of task motivation and creativity. *International Journal of Contemporary Hospitality Management*, 28(5), 969–987. doi: <https://doi.org/10.1108/IJCHM-10-2014-0513>
- Wang, D., Xue, H., & Su, H. (2010). Influence of work support on employee creativity: An empirical examination in the People's

- Republic of China. *African Journal of Business Management*, 4(8), 1546–1553.
- Welbourne, T. M., Andrews, S. B., & Andrews, A. O. (2005). Back to basics: Learning about employee energy and motivation from running on my treadmill. *Human Resource Management*, 44(1), 55–66. doi: 10.1002/hrm.20040
- Yoon, J., & Lim, J.-C. (1999). Organizational support in the workplace: The case of Korean hospital employees. *Human Relations*, 52(7), 923–945.
- Zampetakis, L. A., Beldekos, P., & Moustakis, V. S. (2009). “Day-to-day” entrepreneurship within organizations. The role of trait Emotional Intelligence and Perceived Organizational Support. *European Management Journal*, 27(3), 165–175. doi: <https://doi.org/10.1016/j.emj.2008.08.003>
- Zhao, H. (2015). Leader-member exchange differentiation and team creativity: A moderated mediation study. *Leadership and Organization Development Journal*, 36(7), 798–815. doi: <https://doi.org/10.1108/LODJ-12-2013-0172>
- Zivnuska, S., Kacmar, K. M., & Valle, M. (2017). The mechanism of regulatory focus: mindfulness, leader-member exchange, and motivation outcomes. *Career Development International*, 22(1), 37–49. doi: <https://doi.org/10.1108/CDI-07-2016-0120>

Annexure-A

Following steps were taken to avoid common method biasness. Firstly, data was collected at two points of time. At first instance (T-1), employee responded for their perception of supervisor and coworker support. While at second instance (T-2), employees responded for their feeling of energy and supervisor responded for the creative involvement of their team members (employees). But common method variance may still exist as two variables from same respondent were investigated at T-1. In order to investigate the problem further two models were formulated and were analyzed using CFA. First model was one factor model with all observed items were specified to one latent variable. This model showed poor model fitness (CFI=0.79, TLI=0.77, IFI=0.80, RMSEA=0.12). In second model the observed items were specified to their specific latent variables. This model showed acceptably fit indices ($\chi^2=536$, df-119, CFI=0.96, TLI=0.92, IFI=0.93, RMSEA=0.02), which helped us infer that the biasness in data collection due to a single source is not severe.

Annexure-B

SS1	My team leader is helpful to me in getting my job done	
SS2	My team leader is willing to listen to my job-related problems	Yoon & Lim (1999)
SS3	My team leader can be relied upon when things get tough on my job	
CS1	My peers are helpful to me in getting my job done	
CS2	My peers are willing to listen to my job-related problems	Yoon & Lim (1999)
CS3	My peers can be relied upon when things get tough on my job	
FE1	I feel active and energetic at work	
FE2	I have high energy to complete my work	
FE3	During the work day I feel I am full of energy	
FE4	I have the energy to successfully do my job	Atwater & Carmeli (2009)
FE5	When I get to work in the morning I have energy for the new day	
FE6	I feel enthusiastic when I am doing my work	
FE7	The work in this organization gives me positive energy	
FE8	When I am at work I feel vital and alive	
CW1	Demonstrated originality in his/her work	
CW2	Took risks in terms of producing new ideas in doing job	
CW3	Found new uses for existing methods or equipments	
CW4	Solved problems that had caused other difficulty	Tierney et al., (1999)
CW5	Tried out new ideas and approached to problems	
CW6	Identified opportunities for new products /processes	
CW7	Generated novel, but operable work-related ideas	
CW8	Served as a good role model for creativity	
CW9	Generated ideas revolutionary to our field	