

The Impact of Transformational Leadership on Employee Creativity Considering The Mediating Role of Knowledge Management Capability in Employee of Education Department of Sirjan

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Abstract: Creativity is created by integration of innovative ideas, skills and expertise on base of formal education or experiences. Creativity in employee creates competitive advantage for organizations and it is considered as the most important aspect of an organizational environment. The aim of this study was to examine the impact of transformational leadership on employee creativity considering the mediating role of knowledge management capability. This study is applied in terms of goal and it is survey-descriptive in terms of data collection. The population of this study includes teachers and employees of Education Department of Sirjan. The sample size was determined using the finite population formula and 419 teachers and administrative employees were selected as a minimum sample size of study. Questionnaire was used to collect data and it was distributed among samples of study after that its validity and reliability were verified. SPSS software was used in the descriptive statistics section to analyze the data while structural equations model was used in the inferential statistics to test the hypotheses by using Lisrel software. The results showed that there is significant correlation between transformational leadership and employee creativity, between transformational leadership and knowledge management capability and between employee creativity and knowledge management capability. The results also showed that knowledge management capability mediates the relationship between transformational leadership and employee creativity.

Key words: Transformational leadership, employee creativity, knowledge management, capability, organizational environment, population formula

INTRODUCTION

Employee creativity is vital for the development of any organization and it largely depends on teamwork dynamism (Bai and Li, 2016). Creativity is created by combination of innovative ideas, skills and expertise according to formal education or experience (Gong *et al.*, 2009). Employee's willingness to creativity creates competitive advantage for organization. According to Sosik *et al.* (1999), it is considered as the most important aspect of organizational environment (Jyoti and Dev, 2015). In general, it can be said that creativity is concerned with creating useful and new ideas, actions, service or processes which are useful for organization, innovatively and potentially (Ford and Gioia, 2000; Madjar *et al.*, 2002; Shalley *et al.*, 2004). Employee creativity is described as a framework in which creativity is a function of the individual characters (such as personality, skills, experience and motivation) a function of organizational characters (such as leadership, management type and culture) and other characters (Sigala and Chalkiti, 2015).

Creativity can also be a result of individual thoughts on the social aspects and knowledge (Hemphala and Magnusson, 2012; Aubke, 2014). Education process can develop creative thinking and educate creative, innovative and productive people. Thus in countries where there is dynamic education development of creativity is considered as one of the most important goals of education. Philosophies, approaches and methods that can be used in education and the conditions governing on it have great impact on creative thinking. Therefore, education provides an opportunity for the development of creativity, innovation and correct and goal-oriented use of capabilities and abilities. On other hand, it requires developing and using creativity and innovation at the organizational level for its dynamism. In light of current study literature we aim to examine the impact of transformational leadership role and knowledge management capability on employees' creativity.

Without doubt the role of leadership is critical in developing creativity among employees. Many previous studies have stated that transformational leadership

increases and develops employees' creativity. This style of leadership found high popularity among organizational researchers due to its unique method (Wang and Cheng, 2010). Among the different styles of leadership, organizational researchers have paid the greatest attention to transformational leadership. In many studies, including Bass and Avolio, (1994) it has been stated that transformational leadership has four important dimensions, including idealized influence, inspirational motivation, intellectual stimulation and individualized consideration (Mittal and Dhar, 2015). Many studies have examined the relationship between transformational leadership and employee creativity in organization (Shin and Zhou, 2003; Zhou and Shalley, 2008; Wang and Rode, 2010). Transformational leadership refers to charismatic role and inspirational actions of leader, affecting employees in doing their duties beyond specified expectations (Dvir *et al.*, 2002). Despite the positive relationship between transformational leadership and creativity of employees a number of conflicting results can be found considering the relationship between transformational leadership and employee creativity (Hammond *et al.*, 2011; Rosing *et al.*, 2011; Vessey *et al.*, 2014).

On one hand the concept of creativity is linked with innovation and knowledge. Knowledge and innovation are crucial competitive factors leading to excellent and stable performance (Bohn, 1994; Mertins *et al.*, 2000). Effective knowledge management involves creating, collecting, sharing, implementing and exploiting of knowledge (Egbu, 2004). The idea of knowledge management refers to collecting, sorting, storing and spreading all knowledge needed for the growth and development of the organization (Mukherjee *et al.*, 2011). Knowledge management enhances innovation and creativity and enables organization to perform successfully in sharing and developing tacit knowledge convert tacit knowledge into explicit knowledge create a promotion culture create and share knowledge. Knowledge management capability is the ability of one organization or company in influence power of existing knowledge through continuous learning to create new knowledge (Bose, 2003). On other hand, Liu *et al.*, (2004) explained that knowledge management capability not only refers to the ability to gain knowledge and information but also it refers to organizational ability to protect knowledge and information in order to encourage employees to use this ability as a tool for more and efficient work (Tseng, 2014). According to the literature mentioned in this research, we aim to examine the impact of transformational leadership on employee creativity considering the mediating role of knowledge management capability in

Education Department. The necessity of this study is due to importance of creativity in organization to create competitive advantage and distinct performance. Therefore, according to mentioned literature, we aim to find an answer for this question: What is the impact of transformational leadership on employee creativity considering the mediating role of knowledge management capability?

Literature review

Transformational leadership and employee creativity:

Nowadays, employee creativity is considered as importance issue rather than limiting research and development activities of employees, since creativity helps employees to express their innovative ideas directly and indirectly. Each employee can offer innovative ideas in every position and at every organizational level (Bai and Li, 2016). Previous studies have considered creativity as a function of an employee's personal traits and their cognitive abilities (Oldman and Cummings, 1996; Gong *et al.*, 2012). Leadership is a key factor that can motivate employees to be creative in their works (Mumford *et al.*, 2002). Leader and manager of an organization can affect employee creativity in several ways. They determine and shape the work context within which employees can define goals, problems and solutions. By offering a perspective that focuses on long-term outcomes rather than short-term outcomes managers can guide their employees so that their efforts can be led into initiative work processes. Once an organization provides internal and external rewards to gain new skills and tests innovative practices the willingness of employees to engage in creative efforts will be strengthened (Wang and Rode, 2010). The positive effect of transformational leadership on employee creativity has been shown in some previous studies, even in meta-analysis studies (Herrmann and Felfe, 2013; Qu *et al.*, 2015). Therefore the following hypothesis is proposed:

- H₁: There is a significant relationship between transformational leadership and employee creativity

Additionally, following sub-hypotheses are proposed with regard to first hypothesis:

- H_{1a}: There is a significant relationship between idealized influence of leader and employee creativity
- H_{1b}: There is a significant relationship between inspirational motivation of leader and employee creativity
- H_{1c}: There is a significant relationship between intellectual stimulation of leader and employee creativity

- H_{1d}: There is a significant relationship between individualized consideration of leader and employee creativity

Transformational leadership and knowledge management capability: Education system has undergone numerous changes. Therefore, the organizations require innovation to adapt themselves with changing external environment (Hua *et al.*, 2011). Employees use various tools such as IT to gain knowledge that is an important tool to gain knowledge from external and internal resources of organization. With higher creativity, employee can rely on mental models, experiences, information and their experiences and knowledge and capability can assist them in better solving of the problems. Of course, knowledge dissemination for better performance and creativity requires proper culture (Loke *et al.*, 2012). There are few empirical studies to support and facilitate the creation and transfer of knowledge by transformational leadership. The theory of charismatic and transformational leadership provides useful perspective to understand the impact of leaders on knowledge management of organization. Transformational leadership is one of the most appropriate style of leadership for the knowledge-based organizations. Components of transformational leadership have good consistency with knowledge management process and employees are more productive when they have more freedom to create new ideas, share them with their coworkers and test new ideas (Sosik, 1997). Based on what was said the following hypothesis is proposed:

- H₂: There is significant relationship between transformational leadership and knowledge management capability

Knowledge management capability and employee creativity: Creativity is a vital factor for organizations since it helps them to be responsible against rapidly environmental changes. It is in fact a stimulus for internal flexibility of organization. Researchers have shown that creativity, viability and competitive competencies enhance organizational performance (Williams *et al.*, 2011; Shin *et al.*, 2012). In general, employees' creative performance has a positive impact on innovative performance of organizations (Slatten and Mehmetoglu, 2011). The relationship between knowledge management, innovation and creativity is very important (Sigala and Chalkiti, 2015). Several studies have focused on impact of knowledge management and its capabilities on innovative performance (Revilla *et al.*, 2009;

Cantner *et al.*, 2009; Ozbag *et al.*, 2013; Sigala and Chalkiti, 2015). Therefore, the following hypothesis is proposed:

- H₃: There is a significant relationship between knowledge management capability and employee creativity

Transformational leadership, employee creativity and knowledge management capability: Knowledge management capability of an organization is to leverage existing knowledge in order to create and protect new knowledge. In addition, the organization must combine individual skills and knowledge, physical and technical resources, structure and culture to stimulate continuous dynamism of knowledge (Prieto and Smith, 2006). Although, the organizational knowledge management capability cannot affect solely and directly innovation and creativity, understanding of future opportunities, response to dynamic environment and coordination of internal and external sources affect organizational performance (Felin and Hesterly, 2007). Some studies have shown a close relationship between knowledge management capability, innovation and increased skill of employee and their better performance (Kiessling *et al.*, 2009). Successful implementation of knowledge management requires clear commitment and leadership of senior management across the knowledge management efforts. In other words, a paradigm shift is required in the philosophy of senior management. Instead of insisting on controlling the employees, management should emphasize on commitment, reliability and trust. The new paradigm makes managers believe that employees are important part of the organization they can be trusted to do a duty well and they are capable, creative and innovative. In other words the new leadership style involves a deeper insight and less management at micro level, more informative and less control, team-oriented, with a win-win focus and more team responsibilities and less individual activities (Pickering and Matson, 1992). According to the literature, the following hypothesis is proposed.

- H₄: there is a significant relationship between transformational leadership and employee creativity considering the mediating role of knowledge management capability

MATERIALS AND METHODS

Based on the literature review, conceptual model of research was presented adapted from (Jyoti and Dev, 2015).

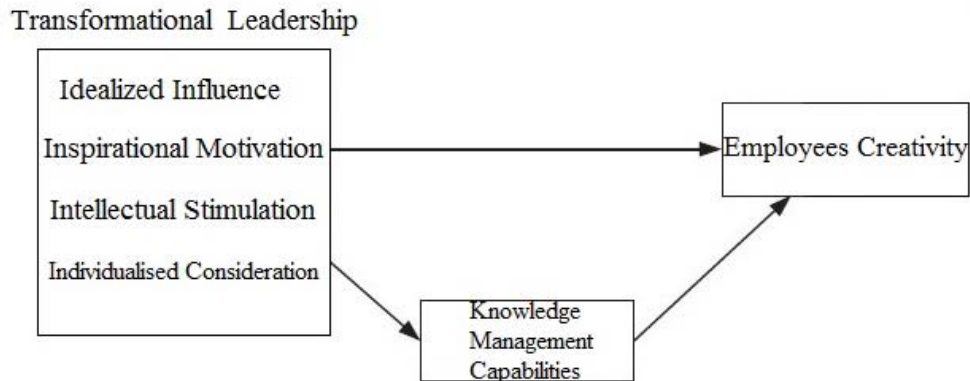


Fig. 1: Conceptual model of study

model in which we are looking to find an appropriate answer for this question: What is impact of the transformation leadership on employees' creativity considering the mediating role of knowledge management capability Fig.1.

This research is applied in terms of goal. It is also survey-descriptive in terms of data collection. The population of study included teachers and employees of Education Department of Sirjan City. First, 20 questionnaires were distributed among the population and the variance of the dependent variable was calculated and inserted in limited community. The sample size was determined using the finite population formula and 419 people, including teachers and administrative employees, were selected as a minimum sample size:

$$n = \frac{\frac{Z_{\alpha}^2 \times S_X^2 \cdot N}{2}}{e^2 N - e^2 + \left(\frac{Z_{\alpha}^2 \times S_X^2}{2}\right)} \quad (1)$$

$$n = \frac{(1/96)^2 \times (0/55)^2 \times 4200}{(0/05)^2 \times 4200 - (0/05)^2 + [(1/96)^2 (0/55)^2]} = 419 \quad (2)$$

In the present study, field method and questionnaires were used to collect data and 5-point Likert scale was used in this study. Regarding transformational leadership variable consisting of 4 dimensions, 20 items presented by Jyoti and Dev (2015) were used, 5 items were used for idealized influence, 5 items were used for inspirational motivation, 5 items were used for intellectual stimulation and 5 items were used for individualized consideration. Regarding employee creativity, 13 items were used which

Table 1: Results of exploratory factor analysis

Test	KMO test	Value of χ^2	DF	Sig.
KMO and Bartlett's test for transformational leader employee creativity questionnaire data				
Bartlett's test	0.920	3499.185	190	0.000
KMO and Bartlett's test for employee questionnaire data				
Bartlett's test	0.938	3442.401	78	0.000
KMO and Bartlett's test for knowledge management capability questionnaire data				
Bartlett's test	0.900	1722.762	15	0.000

were presented in Jyoti and Dev (2014). In the case of knowledge management capability variable, 6 items developed by Tseng and Lee (2014) were used. Questionnaires were distributed randomly. To measure validity of data collection tools, explanatory factor analysis (Table 1) and confirmatory factor analysis (Table 2) were used. Cronbach's alpha coefficient for all variables was calculated >0.7 (Table 2). SPSS Software was used to analyze data in the descriptive statistics and present questionnaire is reliable. To analyze data in descriptive statistics section, Spss software was used and to test hypotheses of study in the inferential statistics section, structural equation modeling was used by Lisrel Software.

In exploratory factor analysis, KMO index and Bartlett's test were used. Based on these two tests, data are suitable for factor analysis when KMO index is higher than 0.6 and close to 1 and significant level of Bartlett's test is <0.05 . Since KMO and Bartlett's test results have recognized that data obtained from the questionnaire were appropriate for factor analysis, confirmatory factor analysis can be implemented on the questionnaire.

In confirmatory factor, t-value should be >1.96 so that it can be stated that relationship between each question and considered variable is significant. In Table 2 as t-value for all questions is >1.96 , the relationship between questions and considered variable is significant.

Therefore, questions can explain the considered variable appropriately. In the standard estimate, factorial loads standard is shown in which as factorial load is larger and closes to 1, observed variable (question) can better explain the latent variable. If the factorial load is < 0.3 , this relationship is considered weak. Factorial load between 0.3 and 0.6 is acceptable and if it is > 0.6 , it is considered desirable. As shown in Table 2, factorial load of all questions is > 0.3 . Therefore, this question can explain appropriately the considered variable.

Table.2:Confirmatory Factor Analysis (CFA) and reliable of variable

variable	Number of Factor question	Loading	t-value	Cronbach's alpha	Researchers
Transformat leadrship	TL1	0.68	14.62	0.91	(Jyoti and Dev, 2015)
	TL2	0.65	13.93		
	TL3	0.68	14.68		
	TL4	0.72	15.88		
	TL5	0.67	14.39		
	TL6	0.61	12.78		
	TL7	0.70	15.28		
	TL8	0.51	10.26		
	TL9	0.61	12.77		
	TL10	0.67	14.34		
	TL11	0.73	16.35		
	TL12	0.70	15.42		
	TL13	0.59	12.51		
	TL14	0.64	13.83		
	TL15	0.55	11.30		
	TL16	0.51	10.35		
	TL17	0.77	17.40		
	TL18	0.78	18.22		
	TL19	0.72	15.99		
	TL20	0.64	13.59		
Employee creativity	EC1	0.69	15.82	0.93	(Jyoti and Dev, 2015)
	EC2	0.65	14.68		
	EC3	0.65	14.49		
	EC4	0.68	15.53		
	EC5	0.66	14.91		
	EC6	0.80	19.28		
	EC7	0.77	18.30		
	EC8	0.74	17.24		
	EC9	0.74	17.44		
	EC10	0.76	18.09		
	EC11	0.71	16.39		
	EC12	0.79	19.05		
	EC13	0.72	16.75		
Knowledge management capability	KMC1	0.80	19.16	0.92	(Tseng and Lee, 2014)
	KMC2	0.77	18.18		
	KMC3	0.87	21.90		
	KMC4	0.79	18.90		
	KMC5	0.85	21.03		
	KMC6	0.79	19.00		

RESULTS AND DISCUSSION

As the results of Table 3 show, there is significant correlation between transformational leadership and employee creativity ($r = 0.650$, $p < 0.05$). The correlation coefficient between transformational leadership and knowledge management capabilities is ($r = 0.509$, $p < 0.05$), so this correlation is significant. The results also suggest that there is a significant relationship between knowledge management capability and employee creativity ($r = 0.509$, $p < 0.05$). In addition there is significant relationship between the dimensions of transformational leadership and employee creativity.

Fit indices of model show appropriate values for variables of study (Table 4). The most important appropriate index in LISREL software is 2/df and as it smaller than 3, it will have better fit. Another index is RMSEA (Root Mean Square Error of Approximation). The index is constructed based on the model errors. When the value of this statistic is < 0.05 , it indicates that the model has a good fit. If it is between 0.05 and 0.08, fit is acceptable and if it is between 0.08 and 0.1, the fit is moderate and if it is > 0.1 , fit is weak (Ghasemi, 2010). GFI index has values between zero and one. When this index is closer to 1, the model goodness of fit with observed data is greater. RMR Index is a criterion to measure the average of remaining and if it is closer to zero, the model will have better goodness of fit. CFI index tests the improvement value by comparing the model (so-called independent in which there is no relationship between variable) with proposed model. The index > 0.9 is acceptable and indicates model fit. When NFI index is equal or > 0.9 , the fit of theoretical models is considered appropriate. NNFI index is similar to NFI index and its value < 0.9 indicates that the model should be revised (Ghasemi, 2010).

To confirm or reject the hypotheses, structural equation modeling was used through LISREL 8.8 software (see Fig. 2-5). To confirm or reject the hypothesis, standardized coefficients and significant numbers have been used (Table 5). General model fit indices in structural equation modeling are shown in Table 6. The indices of model fit and their acceptance level in the structural equation modeling for transformational leadership variable

Table.3:Correlation matrix of main variable studies

Variable	1	2	3	4	5	6	7
Transformational leadership	1						
Idealized influence	0.730	1					
inspirational motivation	0.734	0.601	1				
Intellectual stimulation	0.763	0.646	0.630	1			
Individualized consideration	0.705	0.511	0.559	0.604	1		
Employee creativity	0.650	0.378	0.555	0.520	0.711	1	
Knowledge management capability	0.509	0.403	0.410	0.432	0.449	0.519	1

Table 4:Indices related to fit of model in confirmatory factor analysis

Variable	df	RMSEA	GFI	RMR	CFI	NFI	NNFI
Transformational leadership	4.13	0.077	0.95	0.062	0.95	0.94	0.94
Employee creativity	2.81	0.074	0.90	0.042	0.97	0.95	0.96
Knowledge management cpability	3.11	0.039	0.80	0.067	0.95	0.92	0.94

Table 5:Result of implementation of structure equation modling of hypotheses

Variables relationship	t-value	Direct impact (R)	Indirect impact	Total impact	Result
H1	10.19	0.63	-	0.63	confirmed
H2	10.57	0.57	-	0.57	confirmed
H3	3.91	0.20	-	0.20	confirmed
H4	-	-	0.114=0.20*0.57	0.114	confirmed
H1	3.44	0.31	-	0.31	confirmed
H1b	2.63	0.35	-	0.35	confirmed
H1c	3.56	0.58	-	0.58	confirmed
H1d	9.22	0.66	-	0.66	confirmed

Table 6:General model fit indices in structure equation modling

Index	DOF/Chi-square	RMSEA	GFI	AGFI	CFI	NFI	IFI
Calculated value	3.87	0.069	0.84	0.74	0.92	0.91	0.92
Acceptance level	<3	<0.1	>0.90	>0.90	>0.90	>0.90	>0.90
Result	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate	Appropriate

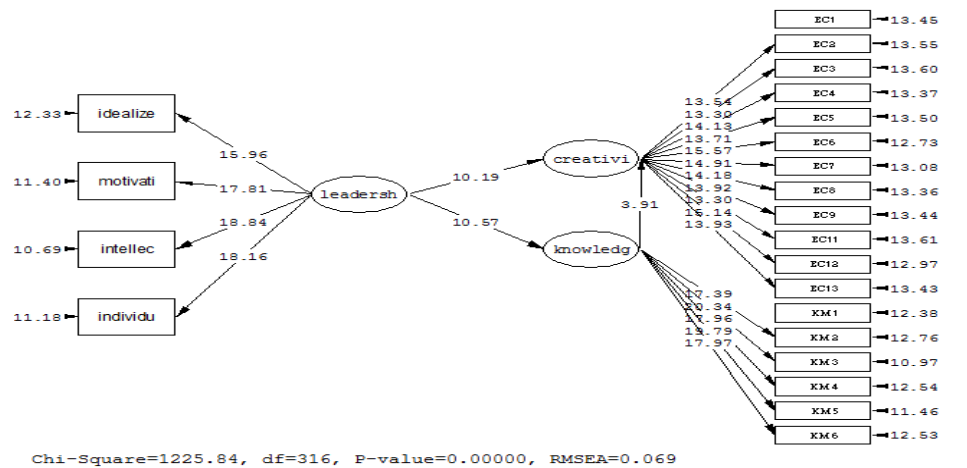


Fig. 2: Significant values resulted from structural equation modeling

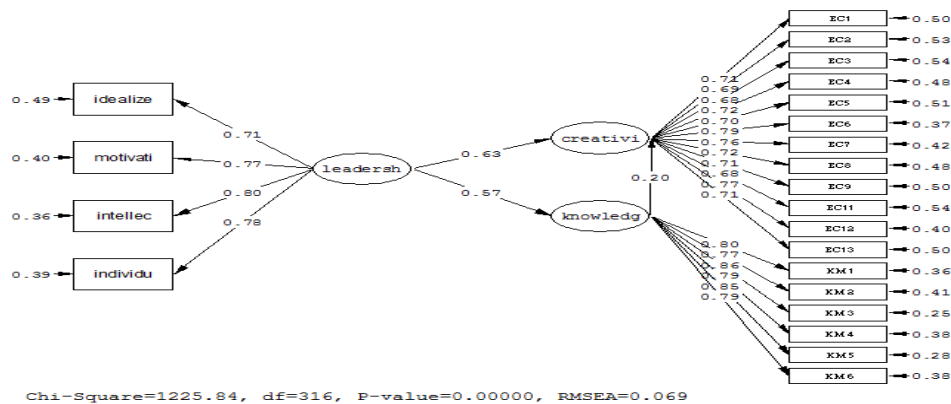


Fig. 3: Standardized coefficients values resulted from structural equation modeling

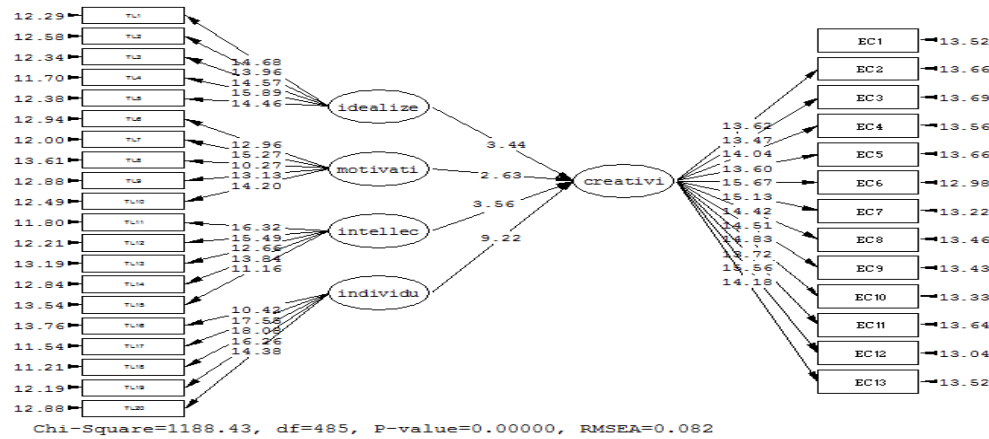


Fig. 4: Significant values resulted from structural equation modeling of the relationship between transformational leadership and employee creativity

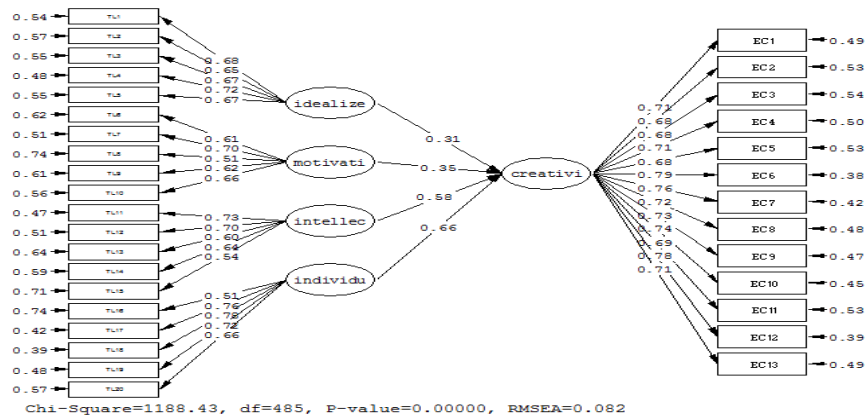


Fig. 5: Standardized coefficient values resulted from structural equation modeling of the relationship between transformational leadership and employee creativity

Table 7: Indices of mode fit in structral equation modding for dimension of transformational leadership variable

Row	Model fit index	Acceptance value	Model value
1	Chi-square/DOF	1-5	2.45
2	RMSEA	<0.1	0.082
3	GFI	>0.9	0.86
4	RMR	>0.1	0.039
5	NFI	>0.9	0.92
6	NNFI	>0.9	0.96

are shown in the Table 7. It is seen that model of study has appropriate fit and acceptance level of indices have been estimated.

CONCLUSION

According to the first hypothesis, there is statistically significant relationship between transformational

leadership and employee creativity. The significant relationship between transformational leadership and employee creativity shows that leadership and management of organization should emphasize on employee creativity rather than limiting employees, so that they can express their innovative ideas (Bai *et al.*, 2016). The results of this hypothesis are also consistent with the results of previous research carried out by (Shin and Zhou, 2003; Zhou and Shalley, 2008; Wang and Rode, 2010) while they are not consistent with results of some studies including (Hammond *et al.*, 2011; Rosing *et al.*, 2011; Vessey *et al.*, 2014).

Moreover, results of first four sub-hypotheses are in line with results of research conducted by (Jyoti and Dev, 2015). Based on results of this study, there is

significant relationship between transformational leadership and knowledge management capability. Results of this hypothesis is important since leadership or management of organization can help them equip themselves with knowledge considering the relationship between transformational leadership and employee creativity. Knowledge management capability not only refers to ability to gain knowledge and information but also it refers to protecting them to motivate employees to use these abilities as a tool for more and efficient work (Tseng, 2014).

Most of studies conducted in this regard are in the area of leadership and knowledge while similar studies have not been conducted with regard to relationship between knowledge management capability and leadership. Results of the third hypothesis showed significant correlation between knowledge management capability and employee creativity. The results of this hypothesis are in line with the results of previous research carried out by (Ozbag *et al.*, 2013; Sigala and Chalkiti, 2015) and they show that the relationship between knowledge management, innovation and creativity is very important (Sigala and Chalkiti, 2015).

The results of fourth hypothesis also showed that there is significant relationship between transformational leadership and employee creativity, taking into account the mediating role of knowledge management capability. The results of this hypothesis showed that the successful implementation of knowledge management requires clear commitment and leadership of senior management in knowledge management efforts. In other words, a paradigm shift is required in the philosophy of senior management. Instead of insisting on control of employees, management should emphasize on commitment, reliability and trust. In other words, new leadership style emphasizes on less control of employees but giving more opportunity for them (Pickering and Matson, 1992).

Some previous studies have showed a close relationship between knowledge management capability and increased skill of employees (Kiessling *et al.*, 2009). Based on this study results, it is recommended that managers to take into account the creativity of employees, especially teachers with regard to type of leadership and management in Education Department. They should create positive changes in educational space by relying on creativity and innovation. In addition, with global changes and the necessity of paying attention to knowledge management capabilities and transferring of knowledge within the organization, transformational leadership can create constructive interaction with employees and use employee creativity as an opportunity

for organization, since creativity and innovation not only lead to development of organization, especially education department but also they will lead to greater trust of employees in management. Finally, in the case of using knowledge capacity, capability and a dynamic environment in the education department, it will lead to positive and effective performance in the organization. In the current study as respondents were selected among employees of Sirjan Education Department, results of this scientific achievement can only be generalized to this group of employees.

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