

## **The Study of Relationship between Leadership Styles (Transformational/ Transactional) and Knowledge Conversion Processes among Faculty Members in University**

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**Abstract:** Nowadays, leaders face the challenge of being effective in a global knowledge environment. Now, more than ever, leaders must play the key role in helping organizations cope with the challenges they face from knowledge systems. The purpose of this research was to investigate the relationship between leadership style (transformational/transactional) and Knowledge conversion processes among employees of University. This study was conducted using the correlation method. 90 faculty members of University of Isfahan were chosen by using stratified randomized sampling as a sample case. The results have indicated that there is a positive and significant relationship between transformational leadership style and Knowledge conversion processes dimensions. In addition, there is no significant difference between faculty members' knowledge conversion process & leadership style considering the variables of age, gender, and field of study and employment status.

**Key words:** Knowledge conversion process, Leadership style

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### **INTRODUCTION**

In recent years, the rapid development of information technology has led to an economic system with global, virtual, and dynamic industries (Ahn and Chang, 2004). In order to cope with radical changes in the business environment, enterprises have explored various management methods, such as total quality management (TQM), business process re-engineering (BPR), enterprise resource planning (ERP), supply chain management (SCM), customer relationship management (CRM), electronic commerce (EC), and knowledge management (KM) ( Ketchen and Hult, 2007).

In the other hand, today, an important aspect of a manager's leadership style is the way he or she communicates with colleagues and subordinates (Bass, 1990). Leadership is a process that is affected by the new orientation of the leading staff (Kets de Vries, 2005), starting to try to define some particularities provided by the new context. It means that knowledge becomes a new factor that shapes the characteristics of leaders thinking and actions, besides the classical ones that include the social and cultural norms, the economic power of organization. It is a mechanism that will have powerful consequences on the organizations changes (Năstase, 2009), on the design as on the content of these adjustments. There is a strong connection that has to be properly explored between the leader's decisions and the acquiring and use of knowledge (Lakshman, 2005) within organizations.

This paper first presents a recapitulation of the definitions leadership style and knowledge conversion. Then it provides an extensive review of the literature in order to identify a list of leadership style and knowledge conversion outcomes. Following this, the paper presents the results of studies conducted to explore and examine the proposed out-come. Finally, the paper culminates with a discussion on the research findings and suggestions for future research work.

### **2. Literature review:**

#### **2.1. Leadership style:**

When developing leadership skills, an important practical question is what leadership styles work best for a person and an organization. According to Bass (1990), leadership style is the model of behavior used by a leader who influences group members and makes decisions regarding the mission and operations. Each person has a predominant leadership style with which he or she feels most comfortable (Black, 2001). A review of research demonstrates that leadership has been regarded as one of the most important factors to determine organizational learning and creativity (Waldman, Galvin & Keller 2006). Little research attention, however, has been given to

further our understanding of the implications of leadership for effective knowledge-conversion and its underlying processes (Jung, Chow & Wu 2003).

### **2.1.1. Transformational Leadership:**

The original formulation of transformational leadership theory comes from Burns (1978). At the core of transformational leadership is the concept of transformation, or change of the organization. Tichy and Devanna (1986) noted that companies were being asked to make fundamental changes. Transformational leadership best reflects this change (Bass, 1985). Burns (1978) defined transformational leadership as a process in which "leaders and followers raise one another to higher levels of morality and motivation" (p. 20). A chief element of transformation is the ability to cultivate the needs of the follower in a follower centered (person-centered) manner. According to Burns, focusing on needs makes leaders accountable to the follower. Transformational leadership focuses on how leaders can change themselves, others, groups, and organizations. Transformational leadership is about implementing new ideas.

The transformational leader raises the level of awareness and the level of perception about the significance and value of selected outcomes and ways of reaching them. Transformational leaders must have a vision of the future and the ability to express and implement innovative and coordinated strategies for achievement (Gilkey, 1999). Transformational leadership focuses on innovative thinking. It challenges the leader to be creative when motivating team members to produce beyond their current capabilities (Avolio & Bass, 2002; Kouzes, 2003; Stone *et al.*, 2004). Transformational leaders strive for innovative creativity to motivate employees to exceed corporate expectations (Boerner *et al.*, 2007). The key to transformational leadership is the employees and what motivates them to excel in their duties (Avolio & Bass, 2002; Kouzes, 2003; Stone *et al.*, 2004).

A successful transformational leader should perform five key practices: create a method, motivate a shared vision, challenge the process, allow others to act, and support the heart (Kouzes, 2003). The leader should consider these five practices when defining goals and expectations as well as when developing a plan of action for success (Avolio & Bass, 2002; Kouzes, 2003; Stone *et al.*, 2004). Transformational leadership has been identified as an effective approach to facilitate knowledge-creation processes because such leadership draws on the assumption that certain leader behaviours can arouse followers to a higher level of thinking, enhance commitment to a well-articulated vision and inspire followers to develop new ways of solving problems (Bass 1985, 1998; Avolio & Bass 1994).

### **2.2.2. Transactional Leadership:**

Transactional leadership approaches from a business standpoint. The transactional leader builds on the need to accomplish tasks. The leader supports structures and systems that reinforce organizational goals. The transactional leader focuses on daily operations and is concerned with short-term goals. "One important dimension of transactional leadership is the use of contingent rewards whereby leaders clarify expectations and provide resources and support in return for effort on the part of the follower" (Cray *et al.*, 2007, p. 6). Transactional leaders "approach their followers with an eye to trading one thing for another: jobs for votes, subsidies for campaign contributions" (Burns, as cited in Bolman & Deal, 2003, p. 361). An important advantage of the transactional style lies in the fact that such leaders are readily available; they can often be found within the organization.

### **2.3. Knowledge conversion:**

Knowledge is created through continuous, dynamic interactions between explicit knowledge and tacit knowledge (Nonaka, 1994; Nonaka *et al.*, 2000). This kind of interaction is called "knowledge conversion" or SECI (socialization, externalization, combination, internalization). The four key modes of knowledge conversion entail the following:

#### **2.3.1. Socialization:**

Socialization is the process of converting tacit knowledge into new tacit knowledge. The first phase of the knowledge conversion process is sharing and distributing the ideas and the interaction of tacit knowledge with tacit knowledge. It is the same event that occurs during the dynamics of effective teams or between colleagues with common ideas. In this phase, the members discuss about what is more important and use the others' thoughts. The socialization is also known as converting new knowledge through shared experiences. Organizations gain new knowledge from outside their boundaries such as interacting with customers, suppliers and stock holders. This occurs in traditional environments where the son learns the technique of wood craft from his father by working with him (rather than from reading from books or manuals) (Nonaka, 1994; Nonaka *et al.*, 2000).

### **2.3.2. Externalization:**

Externalization is the process of articulating tacit knowledge into explicit Knowledge. This process focuses on tacit to explicit knowledge linking. Externalization requires the expression of tacit knowledge and its translation into comprehensible forms that can be understood by others. In a team climate, metaphors and allegories assist the individuals to externalize their own tacit knowledge (personal experiences, ideas, beliefs, and so on) and imagine a clear picture of others' ideas. It helps in creating new knowledge as tacit knowledge comes out of its boundary and becomes collective group knowledge. In this process we can say that knowledge is crystallized. The process of externalization is often driven by metaphor analogy and models. Quality circles are formed in manufacturing sectors where workmen put their learning and experience they have had to improve or solve the process related problems (Nonaka, 1994; Nonaka *et al.*, 2000).

### **2.3.3. Combination:**

Combination is the process of converting explicit knowledge into more complex and systematic sets of explicit knowledge. Here, the explicit knowledge, in the form of different collections of knowledge, already exchanged, distributed, and documented or discussed during meetings and sessions, is processed and categorized in order to create new knowledge. It is easily documented and distributed, when the knowledge is explicit and evident (Nonaka, 1994; Nonaka *et al.*, 2000).

### **2.3.4. Internalization:**

Internalization is the process of embodying explicit knowledge into tacit Knowledge. Internalization involves the process of converting the explicit knowledge to tacit knowledge. Internalizing these ideas is effective in creating an understanding and developing a learning culture (learning through action). When this tacit knowledge is read or practiced by individuals then it broadens the learning spiral of knowledge creation. The organization tries to innovate or learn when this new knowledge is shared in socialization process. Organizations provide training programs for their employees at different stages of their working with the company. By reading these training manuals and documents employees internalize the tacit knowledge and try to create new knowledge after the internalization process. Internalization is converting the explicit knowledge to tacit knowledge and Combination is converting the explicit knowledge to explicit knowledge. These conversion processes are interacting in the spiral of knowledge creation (Nonaka, 1994; Nonaka *et al.*, 2000).

## **2.4. Leadership style and knowledge conversion processes:**

Few researchers address the link between information management and leadership, and even fewer address the relationship between transformational leadership and knowledge management. According to Klenke (1994), information technology and the actions of leaders create new organizational forms. Leaders play a crucial role in building and maintaining an organizational knowledge. They specifically infer that leaders must attach a high value to knowledge, encourage questioning and experimentation through empowerment, build trust, and facilitate experiential learning of tacit knowledge (Stonehouse & Pemberton, 1999).

Leaders play a central role in the process of managing organizational knowledge. Leaders provide vision, motivation, systems and structures at all levels of the organization that facilitate the conversion of knowledge into competitive advantages. Managing knowledge requires a conscious effort on the part of leaders at all levels of the organization to manage three key knowledge processes: creating, sharing and exploiting knowledge. Transformational leadership theory and transactional leadership theory provide a foundation for understanding how leaders impact the cultivation of knowledge (Conger & Kanungo, 1998). Conger (1999) argued that exploring the role of leadership styles in converting knowledge into competitive advantages is important to our understanding of leaders and organizations.

Some theorists argue that effective leading organizational knowledge processes is essential to achieving and sustaining a competitive advantage (Glazer, 1998; Teece, 1998).

Based on the characteristics of knowledge conversion, Bryant (2003) suggested that transformational leadership influences how individuals approach, interpret, and establish knowledge conversion at work. In fact, the characteristics of transformational leadership facilitate effective knowledge-conversion processes (Bryant, 2003).

This paper aims to investigate the relationship between organizational knowledge and leadership by exploring the impact of transformational and transactional leadership on knowledge conversion processes.

## **3. Hypotheses and conceptual model:**

Some limited empirical studies in the field of leadership and knowledge management have been published. Walderssee (1997) concluded that leaders should target five specific areas: Maximize message reception, Create and embed an intellectual transformation of the workforce, Motivate to learn, Raise self-confidence, and Enable navigation through a changing environment.

Politis (2001) found that self-management, transformational, and transactional leadership styles are related to dimensions of knowledge acquisition. Bryant (2003) argued that there is a clear relationship between transformational leadership and knowledge management in organizations. Ngugen and Mohamed (2009) in his study titled “Examination of the relationships among leadership styles, organizational culture and knowledge management practices” indicated that organizational culture doesn’t moderate the relationship between leadership and knowledge management, and organizational culture appears to be directly linked to knowledge management. Gholy Zadeh (2005) in his study titled “The rate of knowledge conversion process and organizational culture in the university” demonstrated that Internalization in the realm of knowledge conversion process has the highest place in the university, and after that, in descending order, are Socialization, Externalization, and Combination.

In conclusion, by widely reviewing previous researches in the field of leadership style and KM, we assumed that:

H1: There is a significant relationship between transformational & transactional leadership style and knowledge conversion processes in the faculty members.

H2: There is a significant relationship between transformational & transactional leadership style and knowledge Socialization in faculty members.

H3: There is a significant relationship between transformational & transactional leadership style and knowledge Externalization in the faculty members.

H4: There is a significant relationship between transformational & transactional leadership style and knowledge Combination in the faculty members.

H5: There is a significant relationship between transformational & transactional leadership style and knowledge Internalization in the faculty members.

H6: There is a significant difference between leadership style and knowledge conversion in faculty members in terms of demographic variables (gender, scientific degree, field of study, and employment status).

The conceptual model of study is presented in Figure1.

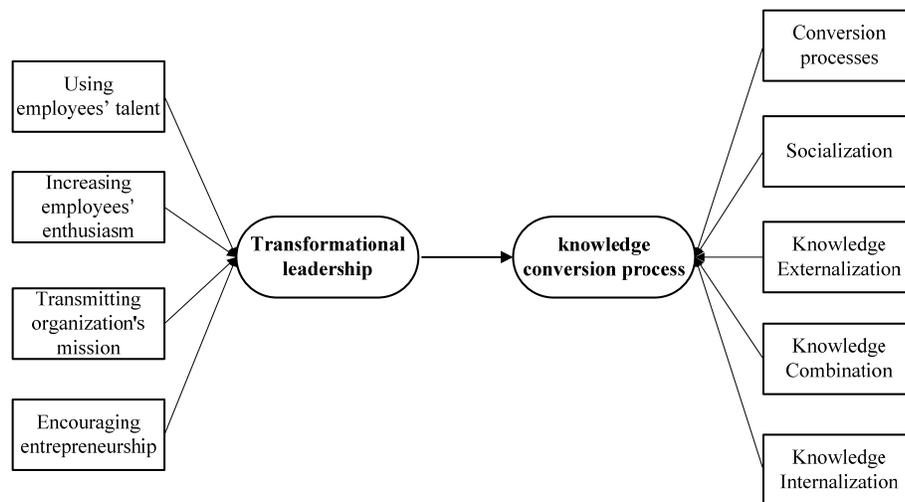


Fig. 1: Conceptual model

**4. Methodology:**

This study was conducted using the correlation method. Correlation research method is the ability to prove a positive or negative correlation between two subjects (Dellavar, 2007). The statistical population consists of 491 individuals from the faculty members of University of Isfahan. The sample was determined by stratified randomized sampling proportional to the volume of 90 respondents.

**Table 1:** The sample of faculty members in the university

College	population	sample
Education	47	9
Physical Education	15	3
Foreign Languages	49	9
Human Science	99	18
Economic & Official Affaires	78	15
Science Basic	131	23
Technical & Engineering	72	13
Total	491	90

The tools for gathering data was leadership style Questionnaire with 27 items and a researcher-made questionnaire for knowledge conversion process with 26 items based on Likert five-point scale (5= strongly agree and 1= strongly disagree)

The study uses the scale of four items developed by McColl-Kennedy and Anderson (2002) and then García-Morales *et al.* (2011) for assessing leadership style. We modified the features of scale and the questions for each feature, and then considered the following features:

1. Encourages creativity, innovation, entrepreneurship.
2. Transmits the organization's mission, reason for being, and purpose to all of the employees.
3. Increases employees' level of enthusiasm.
4. Emphasizes the use of employees' intelligence and talent.

The items asked the respondents to evaluate whether their CEO demonstrated the leadership behavior described.

The scale for assessing knowledge management process includes five elements of:

1. Conversion processes
2. Socialization
3. Knowledge Externalization
4. Knowledge Combination
5. Knowledge Internalization

In total, 100 questionnaires were circulated to targeted population. Out of 100 questionnaires we received 90 completed questionnaires. This response rate is quite suitable for this type of study. By using Cronbach's Alpha, coefficient and reliability coefficients were obtained equal to 0.92 for knowledge conversion process measurement and 0.95 for leadership styles measurement. Also, both questionnaires were confirmed by 10 faculty members and 19 experts in the university in terms of nominal and content validity. The analysis of the data was performed in two levels of descriptive (frequency, percentage, average, and standard deviation) and inferential level (correlation coefficient, ANOVAs and t-test), using SPSS statistical software.

## RESULTS AND DISCUSSIONS

This section deals with the research findings, presented in Tables 2 through Table 5.

**Table 2:** Results from correlation coefficient of transformational & transactional leadership style and components of knowledge conversion process

Hypotheses	variables		f	r	Sig.
H1	Transformational leadership	knowledge conversion process	115	0.45	0.000
	Transactional leadership			0.12	0.006
H2	transformational leadership	knowledge Socialization	115	0.40	0.001
	Transactional leadership			0.08	0.14
H3	Transformational Leadership	knowledge Externalization	115	0.37	0.001
	Transactional leadership			0.2	0.04
H4	Transformational Leadership	Knowledge Combination	115	0.3	0.004
	Transactional leadership			0.1	0.07
H5	transformational Leadership	Knowledge internalization	115	0.62	0.000
	transactional leadership			0.06	0.18

Analysis of the results related to H1 indicated that correlation coefficient between the transformational leadership style and knowledge conversion processes was significant at the level of  $P \leq 0.05$ . The rate of relationship between two variables was  $r = 0.45$ , indicating an average and direct correlation between these two variables. Also, the determination coefficient showed that about 20% of variance of scores is related to the transformational leadership style. Correlation coefficient between the transactional leadership style and knowledge conversion process was not significant at the level of  $P \leq 0.05$ . The rate of relationship between two variables was  $r = 0.12$ , indicating an average and direct correlation between these two variables. Also, the determination coefficient showed that about 0.014% of variance of scores is related to the transactional leadership style. The regression coefficient showed that Transformational leadership style has an effective role

in knowledge conversion process. On the other hand by increasing Transformational leadership style, the level of knowledge conversion process would enhance.

Analysis of the results from H2 indicated that the correlation coefficient between the knowledge Socialization and the transformational leadership style was significant at the level of  $P \leq 0.05$ . The rate of correlation between two variables was  $r = 0.40$ , indicating a linear correlation between these variables. Also, the determination coefficient showed that Knowledge Socialization and the transformational leadership style share about 16% of variance of scores. Correlation coefficient between the knowledge Socialization and the transactional leadership style was not significant at the level of  $P \leq 0.05$ . The rate of correlation between two variables was  $r = 0.08$ , indicating a linear correlation between these variables. Also, the determination coefficient showed that Knowledge Socialization and the transactional leadership style share about 0.0064% of variance of scores. The faculty members try to understand others' thoughts and personal information, the internal networks of organizations are used to exchange the professional information and data, and always a written summary of experiences and learnt points are proposed to the managers and administrators. The members exchange their personal and professional experiences both in team projects and across the independent research teams with each others.

Analysis of the results from H2 indicated that the correlation coefficient between the knowledge Socialization and the transactional leadership style was not significant at the level of  $P \leq 0.05$ . The rate of correlation between two variables was  $r = 0.08$ , indicating a linear correlation between these variables. Also, the determination coefficient showed that Knowledge Socialization and the transactional leadership style share about .0064% of variance of scores. Transformational leader encourage joint activities—such as being together, spending time, living in the same environment— share feelings, emotions, experiences, and mental models rather than transactional leader.

By analyzing of the results from H3 it became clear that there was a significant relationship between the knowledge externalization and the transformational leadership style at the level of  $P \leq 0.05$ . According to the output of Pierson's correlation coefficient test, the value for  $r$  was equal to 0.37. It indicates that these two variables have an average and direct correlation. Also, the determination coefficient showed that these two variables share 14% of variance of scores. By analyzing of the results from H3 it became clear that there was a significant relationship between the knowledge externalization and the transactional leadership style at the level of  $P \leq 0.05$ . According to the output of Pierson's correlation coefficient test, the value for  $r$  was equal to 0.2. It indicates that these two variables have an average and direct correlation. Also, the determination coefficient showed that these two variables share .04% of variance of scores. Indicating that the members tend to highlight their purposes by offering the objective instances; they often encourage each other to deliberate about their occupation and use the comparisons about their occupations to describe the concepts and are encouraged to use the net and databases to become familiar with their duties. Through transformational leaders, an individual commits to the group and becomes one with the group, The sum of the individuals' intentions and ideas fuse and become integrated with the group's mental world rather than transactional leader.

According to the analysis of results from H4, the relationship between knowledge combination and the transformational leadership style is 0.3 at level of  $P \leq 0.05$ . Also, the determination coefficient showed that these two variables share .09% of variance of scores. According to the analysis of results from H4, the relationship between knowledge combination and the transactional leadership style is 0.1 at level of  $P \leq 0.05$ . Also, the determination coefficient showed that these two variables share .01% of variance of scores. These results show that the members have little time to think about what is discussed. They have fewer tendencies to organize ideas and results from the discussed subjects in formal sessions, and when they need the information, they do not know whom to ask. Transformational leaders foster the combining of new explicit knowledge with existing information, generating and systematizing explicit knowledge throughout the organization. The combination of explicit knowledge is most efficiently supported in collaborative environments created by transformational leaders.

According to the analysis of results from the H5, the correlation coefficient between knowledge internalization and the transformational leadership style is  $r = 0.62$  at level of  $P \leq 0.05$ . So, there is a correlation between two variables. Also, the determination coefficient showed that these two variables share 38% of variance of scores. The condition of uncertainty of these parameters is unknown and non-measurable. Correlation coefficient between knowledge internalization and the transactional leadership style is  $r = 0.06$  at level of  $P \leq 0.05$ . So, there is a correlation between two variables. Also, the determination coefficient showed that these two variables share .0036% of variance of scores. The condition of uncertainty of these parameters is unknown and non-measurable.

The regression coefficient showed that Transformational leadership style has an effective role in knowledge conversion process. On the other hand by increasing Transformational leadership style, the level of knowledge conversion process would enhance.

**Table 3:** Regression coefficient of leadership styles and KNOWLEDGE CONVERSION process

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
(Constant)	178.2	24	0	7.462	.000
Transformational leadership	0.4	0.5	.020	2.8	.02
Transactional leadership	0.1	0.28	-.041	.53	.12

According to the obtained results from H6, the observed F did not show positive and significant difference among the means of the components of the leadership styles & knowledge conversion process in terms of gender, scientific degree (instructor, assistant professor, associated professor, full professor), field of study (Technical & engineering, Science, Humanistic science) and employment status ( $P \leq 0.05$ ).

**Table 4:** The categorical variable

	source	Value label	Code	N
H6	Gender	male	1	70
		female	2	45
	Employment status	temporary	1	35
		formal	2	80
	Scientific degree	assistant	1	63
		Associate	2	35
		professor	3	17
	Field of study	Humanistic science	1	57
		Science	2	34
		Technical & engineering	3	24

**Table 5:** ANOVA of knowledge conversion process and the leadership styles of the members of faculty in terms of demographic variables.

Source	Variable	Mean square	df	F	Sig.
constant	Leadership style	487.762	15	52.321	.000
	knowledge conversion process	42.17	15	264.162	.000
Scientific degree	Leadership style	67.05	2	1.68	0.137
	knowledge conversion process	45.40	2	1.28	0.188
gender	Leadership style	66.33	1	0.85	0.42
	knowledge conversion process	665.318	1	2.01	0.061
Employment status	Leadership style	422.412	1	1.97	0.055
	knowledge conversion process	570.956	1	1.18	0.09
Field of study	Leadership style	323.92	2	2.05	0.52
	knowledge conversion process	842.507	2	1.33	0.14
Error	Leadership style	917.989	109		
	knowledge conversion process	943	109		
Total	Leadership style		115		
	knowledge conversion process		115		

\*\*\*Purpose of error (MSW): mean of within group error

Environment of the universities, when a problem occurs, personal experiences are used to solve it. The skilled individuals are encouraged to teach their skills and experiences to others and to cooperate with professionals in other fields, and the data and information are organized to support the decision making. Transformational leaders facilitate the process of converting explicit knowledge into the organization's tacit knowledge that is accomplished via learning-by-doing, training, and exercises to allow the individual to access the knowledge of the group and the entire organization rather than transactional leaders.

**6. Conclusion, implications, limitations:**

The results of this study provide ample support for the notion that knowledge management and leadership style are strongly related to each other and also provide insights into the role of transformational leadership in knowledge-conversion processes. Researchers have suggested that it is the person-centered nature of transformational leadership that makes the difference, presumably because of the authentic and ethical nature of the influence relationship (Crawford, 1998). Additionally, these findings show that knowledge conversion is not enhanced by transactional leadership. These findings are evidence of a growing interest in the relationship between the "high touch" nature of leadership and the "high tech" aspect of the modern workplace. In total, the evidence here is clear transformational leaders are better suited to handle even the most technical aspects of the modern workplace than are transactional leaders. So that leader's universities could adopt the most appropriate leadership style in alignment with their knowledge organization that without question is transformational leadership. Transformational leaders are more successful across a variety of organizational constructs. Future research needs to more clearly focus on the specific aspects of transformational leadership and knowledge

conversion in a variety of contexts, but the results of this study clearly support the relationship between these variables.

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