

## A study on effects of leadership style on innovation: A case study from automaker industry

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### ABSTRACT

Leadership is one of the most important components of management in any business unit. An organization with good leadership tends to have a better chance to survive in today's competitive environment. This paper considers the effects of leadership style on innovation in one of the biggest automakers in Iran named Iran Khodro. The proposed study of this paper designs a questionnaire and distributes it among a sample of 278 regular employees and 61 middle level managers of this firm. The results of the survey indicate that there is a meaningful difference between leadership style and standard leadership style among middle level managers when the level of significance is five percent. In addition, there is a meaningful difference between innovation and its components with standards among regular employees. Finally, leadership has positive and meaningful impact on employees' innovation.

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## 1. Introduction

During the past few years, there have been tremendous efforts on measuring the effects of leadership on performance of organizations. There is no doubt that different leadership styles have various impacts on firms' components such as innovation, organizational change, etc. (Ehigie & Akpan, 2004) Iravani et al. (2012) studied the relationship between leadership style among teachers who worked in high schools and their orientation on organizational change. They reported that there was no meaningful relationship between leadership style and gender, leadership style and job experience, organizational change and gender, management change and gender. Sehhat et al. (2012) investigated the relationship between informal communications with leadership style in some of governmental organizations located in free islands of Chabahar, in south east part of Iran. They reported that there was a positive and meaningful relationship between leadership style and informal relationships.

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Moghaddas Pour et al. (2012) performed an investigation on relationship between relationship-oriented leadership style and solution-oriented strategy as well as between leadership style and conflict management. The proposed study distributed a questionnaire among 43 managers who were in different industries in west part of Iran. They considered relationship between leadership style and conflict management, which includes the relationship between relationship-oriented and task-oriented leaderships with avoiding conflict management strategy, solution and control based conflict managements. The results confirmed that there was only a meaningful relationship between relationship-oriented leadership with solution-based conflict management. In other words, their survey confirmed that when there was a conflict, management could handle the problem using his/her relationship and find appropriate solution to resolve any possible conflict.

Morshedian Rafiee and Mohammadi (2012) investigated the relationship between leadership style and self-esteem. The survey considered four groups of leadership style including autocratic-charity, autocratic-exploitation, management consulting and participative and their effects on self-esteem. The results of the survey indicate that there was a positive and strong relationship between participative leadership management style and self-esteem. The results also indicated that there was a strong relationship between educational background and self-esteem.

Derakhshandeh and Gholami (2012) studied the relationship between leadership style and perceived organizational effectiveness by directors and managers in organizations. The proposed study distributed a questionnaire consists of 37 questions among some management team of Agricultural ministry in one of the provinces of Iran. They examined the positive relationship between leadership style and perceived organizational effectiveness. The results of Spearman-Pearson test confirmed that there was a meaningful and positive relationship between leadership style and perceived organizational effectiveness. Malmir et al. (2013) reviewed recent advances on leadership style and various perspectives of organizational cultures completed during the past few years.

Shalley and Gilson (2004) presented a comprehensive review of research examining contextual factors that can either foster or hinder employee creativity at the individual, job, group, and organizational level. They investigated the role of leadership and the use of various human resource practices for developing a work context that is supportive of creativity. They discussed practical implications for managers, proposed areas that needed further research attention, and highlight possible new directions for future research.

Oldham and Cummings (1996) examined the independent and contributions of employees' creativity-relevant personal characteristics and three specifications of the organizational context—job complexity, supportive supervision, and controlling supervision—to three indicators of employees' creative performance; patent disclosures written, contributions to a firm suggestion program, and supervisory ratings of creativity. According to Mumford (2003) and Mumford and Licuanan (2004), the need for innovation in organizations has resulted in a new concentration on the role of leaders in shaping the nature and success of creative efforts. De Jong and Den Hartog (2007) provided an inventory of leader behaviors likely to enhance employees' innovative behavior, including idea generation and application behavior. According to Anderson et al. (2004) facilitators of innovation at the individual, group, and organizational levels were not well identified and suggested more discussion on this issue.

## **2. The proposed study**

The proposed study of this paper tries to find the present conditions of leadership style among middle levels managers who work for one of the biggest automakers in Middle East called Iran Khodro. The survey also tries to rank different leadership styles among middle levels managers. We plan to find out the present circumstances of innovation in this business unit and using some statistical techniques,

we rank them, accordingly. Finally, we try to find out whether innovation has any impact leadership style. The proposed study of this paper designs a questionnaire and distributes it among a sample of 278 regular employee and 61 middle level managers of this firm. The study uses Cronbach alpha to verify the questions of the survey and this figure was calculated for 20 questions of leadership style as 0.89. In addition, Cronbach alpha has been calculated for 22 questions of innovation as 0.92. These numbers are well above the minimum acceptable level of 0.7 and they validate the overall questionnaire of this survey. The proposed study of this paper uses structural equation modeling to investigate the information. Table 1 summarizes the results of some basic statistics.

**Table 1**

The summary of some basic statistics on macro scale

Row	Scale	Frequency	Mean	Standard deviation
1	Leadership style	61	2.92	0.287
2	Innovation	278	2.16	0.201

In addition, Table 2 demonstrates mean and standard deviation for four different leadership styles including autocratic-charity, autocratic-exploitation, management consulting and participative.

**Table 2**

The summary of some basic statistics on leadership components

Row	Component	Frequency	Mean	Standard deviation
1	Transformational Style / Convertible	61	2.79	0.253
2	Light situational / contingency	61	2.66	0.219
3	Style democratic / participative	61	2.32	0.238
4	Light servant	61	2.44	0.245

Finally, Table 3 demonstrates the results of basic statistics associated with innovation components.

**Table 3**

The summary of some basic statistics on innovation components

Row	Component	Frequency	Mean	Standard deviation
1	Environmental innovation	278	2.31	0.319
2	Leadership innovation	278	2.44	0.308
3	Individual innovation	278	2.51	0.218
4	Environment - Feedback	278	2.39	0.318
5	Individual-Feedback	278	2.52	0.214

### 3. The results

In this section, we present details of our findings on testing various hypotheses.

#### 3.1. The first hypothesis: Leadership condition

The first question of the survey investigates leadership circumstances in this organization. Table 4 demonstrates the results of t-student on each leadership component.

**Table 4**

The summary of some t-student test on leadership components

Row	Component	Mean	Standard deviation	t-value	Sig.
1	Transformational Style / Convertible	2.79	0.253	4.56	0.01
2	Light situational / contingency	2.66	0.219	3.81	0.01
3	Style democratic / participative	2.32	0.238	2.54	0.01
4	Light servant	2.44	0.245	3.78	0.01

As we can observe from the result of Table 4, all t-student are statistically significance with  $\alpha = 0.05$ . Therefore, the first hypothesis of this survey is confirmed and we can conclude that leadership styles are different among middle level of management team in this business unit.

### 3.2. Ranking leadership styles: Freedman test

The second question of this survey is associated with ranking different components of leadership style using Freedman test. Table 5 demonstrates the results of the test.

**Table 5**

The summary of some Freedman statistics on leadership components

Row	Component	Mean	Ranks
1	Transformational Style / Convertible	3.72	1
2	Light situational / contingency	3.28	3
3	Style democratic / participative	3.46	2
4	Light servant	2.80	4

Chi-Square = 1857.21 df = 1 Sig. = 0.01

According to the results of Table 5, Transformational Style / Convertible is number one priority followed by Style democratic / participative, Light situational / contingency and Light servant.

### 3.3 Innovation circumstances

The third question of the survey investigates innovation circumstances within organization and we use t-student test to verify the components, which are given in Table 6 as follows,

**Table 6**

The summary of some basic statistics on innovation components

Row	Component	Mean	Standard deviation	t-value	Sig.
1	Environmental innovation	2.31	0.319	5.36	0.01
2	Leadership innovation	2.44	0.308	3.45	0.01
3	Individual innovation	2.51	0.218	4.17	0.01
4	Environment - Feedback	2.39	0.318	4.89	0.01
5	Individual-Feedback	2.52	0.214	3.69	0.01
6	Innovation	2.31	0.319	2.98	0.01

The results of Table 6 clearly show that all components on innovations are statistically significant and we can confirm that the levels of innovation components are different from standard levels.

### 3.4. Ranking innovation components

The fourth question of the survey is to find the relative importance of each component of the innovation. Table 7 demonstrates the summary of our survey based on Freedman test.

**Table 7**

The summary of Freedman test on innovation components

Row	Component	Mean	Rank
1	Environmental innovation	3.01	4
2	Leadership innovation	4.06	1
3	Individual innovation	3.58	2
4	Environment - Feedback	3.10	3
5	Individual-Feedback	2.01	5

Chi-Square = 1657.42 df = 1 Sig. = 0.01

Based on the results of Table 7, Leadership innovation plays the most important item followed by individual innovation, environment-feedback, environmental innovation and individual-feedback comes the last in terms of priority.

### 3.5. Relationship between innovation and leadership style

The last question of this survey is associated with the relationship between innovation and leadership style and in order to study the relationship between these two components we need to perform Pearson correlation test, which yields 0.254 with P-value=0.001. This means there is a positive and meaningful relationship between these two components. Next, we perform ANOVA test before implementing linear regression model. Table 8 demonstrates the results of our survey.

**Table 8**

The summary of ANOVA test

Source of change	Sum of Squares	df	Mean squares	F	Sig.
Regression	13.458	3	12.89	16.45	0.01
Error	11.5	274	89.1		
Total	24.958	277			

The results of Table 8 clearly show that F-value is statistically meaningful when the level of significance is one percent. Therefore, we can use proceed linear regression analysis and the results are presented in Table 9 as follows,

**Table 9**

The summary of regression analysis

Independent variable	No-standard coefficients	Standard value	standard coefficients	T	Sig.
Intercept	13.14	569	245	12.15	5
Transformational Style / Convertible	36.8	468	415	2.12	5
Light situational / contingency	19.7	311	214	98.1	5
Style democratic / participative	89.3	114	116	56.8	5
Light servant	2.3	215	105	2.8	5

The results of regression between innovation, as dependent variable, and leadership styles as independent variables indicate that all four components statistically maintain significant impact on dependent variable, innovation, and we can confirm the positive relationship between two items.

## 4. Conclusion

In this paper, we have presented an empirical investigation to study the relationship between innovation and leadership style in one of the biggest Iranian automakers. The study has determined that presently this automaker is well away from standards in terms of both leadership style and innovation. In addition, the survey has concluded that innovation is a function of leadership components.

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